

West Burton C (Gas Fired Generating Station)

Appendix 11B: West Burton C - Ground Investigation Environmental Support and Sampling Report

EDF Energy (Thermal Generation) Ltd

Project Number: 60572265

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1. Background

1.1 Overview

- 1.1.1 EDF Energy Thermal Generation Ltd (hereafter referred to as the Applicant) is currently developing options to expand gas-powered electricity generation capability at the West Burton Power Station Site.
- 1.1.2 The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of a gas fired generating station with a gross electrical output of 299MW; comprising up to five open cycle gas turbine (OCGT) units (depending on the technology to be selected refer to **Section 4.2** of **Chapter 4**: The Proposed Development (ES Volume I) for details of potential technology options).
- 1.1.3 The Proposed Development Site (the Site) is located within the boundary of the existing West Burton Power Station site (and associated land within the ownership of the Applicant). The Site has undergone previous assessment. The land was previously used for Pulverised Fuel Ash (PFA) and Furnace Bottom Ash (FBA) storage, and during the WBB Power Station construction was also used as a construction laydown area. It is understood that some ground improvement works, including compaction and PFA stabilisation, were carried out prior to the site being used as construction laydown, to improve the bearing capacity and support the increased loading.
- 1.1.4 A Phase I Geo-environmental Site Assessment for the Proposed Development was prepared in support of the Preliminary Environmental Information (PEI) Report to inform formal consultation as part of the application for a Development Consent Order (DCO). One of the recommendations of the Phase 1 Geo-environmental Site Assessment report (Appendix 11A of ES Volume II) was that additional site investigation be undertaken at the Site, in order to enable further assessment of potential development constraints and risks to the environment associated with the Proposed Development.
- 1.1.5 AECOM was commissioned by the Applicant to provide environmental support during the intrusive investigation and post-works monitoring, including:
 - inspection of soils for visual and olfactory evidence of contamination, including conducting headspace analysis of Volatile Organic Carbon (VOC by PID) in soil samples;
 - collection of samples of made ground, PFA and natural soils for chemical laboratory analysis;
 - identification of potential presence and depth of groundwater and observation of installation of gas and groundwater monitoring positions;

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- development of installed monitoring wells, to ensure groundwater ingress during sampling works is representative of the surrounding formation;
- · monitoring of gas and groundwater; and
- collection of ground and surface water samples for chemical laboratory analysis.



2. Site Works

2.1 Scope

- 2.1.1 During the intrusive investigation AECOM observed the sinking of 12 windowless sample (WS) holes, 6 rotary boreholes (BH) and 13 trial pits (TP). A further 2 rotary boreholes were sunk for geotechnical reasons as part of the wider investigation, however these were not observed by AECOM.
- 2.1.2 Gas and groundwater monitoring was conducted at 12 installed locations. Surface water samples were collected at 2 locations.
- 2.1.3 A summary of the site work undertaken is detailed in **Table 1** below.

Table 1 – Summary of Site Works

Date(s)	Works Undertaken
30/11/17	 NCP training Meeting representatives from site investigation contractors (Firbeck Construction and Socotec).
04/12/17	Site inductionSite entry drug and alcohol testing'Lifestyle' drug and alcohol testing
11/12/17 - 15/12/17	 Liaison with the Applicant, Firbeck Construction and Socotec site representatives Observation of intrusive works (window sampling, rotary coring and trial pitting) and collection of soil samples from arisings Development of newly installed monitoring wells
18/12/17 - 22/12/17	 Liaison with the Applicant, Firbeck Construction and Socotec site representatives Observation of intrusive works (window sampling, rotary coring and trial pitting) and collection of soil samples from arisings Development of newly installed monitoring wells Gas and groundwater level monitoring at installed well locations Collection of groundwater samples from installed locations Collection of surface water samples



2.2 Soil Sampling

- 2.2.1 During intrusive works, 64 soil samples were recovered from trial pit and borehole arisings. A summary of soil samples collected is presented in **Table 2**. Each of the samples was analysed for volatile hydrocarbons using headspace analysis with a photo-ionisation detector (PID) fitted with a 10.6 eV lamp. The results of the headspace analysis are presented in **Table 2**. Of the 64 natural and made ground samples subjected to headspace analysis, none returned PID readings greater than 5 parts per million (ppm).
- 2.2.2 Once collected, the samples were placed in cool boxes pre-chilled with ice. These were then shipped via the laboratory courier under chain of custody to Exova Jones environmental laboratory in Hawarden, Deeside.

Table 2 – Summary of Soil Samples

Location	on Depth PID Reading parts per billion (ppb)		Scheduled for Analysis	
	0.50	0	Made ground/PFA	
BH101	14.70	0.3	Weathered bedrock (Mercia Mudstone)	
	2.20	0	Made ground/PFA	
BH102	13.80	0.1	Weathered bedrock (Mercia Mudstone)	
	21.30	0	Weathered bedrock (Mercia Mudstone)	×
	0.50	0	Made ground	
BH103	9.30	0	Natural superficial deposits (clay)	
BH104	1.00	0.2	Made ground/PFA	
BH106	1.00	0.3	Made ground/PFA	
	0.60	0.3	Made ground/PFA	
TP102	2.50	0.2	Natural superficial deposits (silt)	
TP103	1.20	0.2	Natural superficial deposits (silt)	×
17103	3.00	3.5	Natural superficial deposits (silt)	
TP104	0.80	0.1	Made ground/PFA	
17104	3.00	0	Made ground/PFA	×



Location	Depth	PID Reading parts per billion (ppb)	Material	Scheduled for Analysis
TP105	2.00	0.5	Made ground/PFA	
TP106	0.50	0.1	Made ground/PFA	
11 100	1.50	0	Made ground/PFA	×
TP107	0.20	0	Made ground	
11 107	1.00	0	Made ground	×
TP108	0.50	0.3	Made ground/PFA	
17 100	1.50	0.4	Made ground/PFA	×
	0.20	0	Made ground/PFA	
TP110	1.40	0.4	Natural superficial deposits (silt)	
TD444	2.00	1.5	Natural superficial deposits (silt)	
TP111	3.00	0	Natural superficial deposits (silt)	×
TP112	0.50	0.6	Natural superficial deposits (clay)	
	2.50	0.5	Weathered bedrock	
TP113	2.00	0.1	Made ground/PFA	
TD444	1.00	0.1	Made ground/PFA	
TP114	3.00	0	Made ground/PFA	×
	1.50	0.2	Made ground/PFA	
TP115	3.00	1.3	Natural superficial deposits (clay)	
TD440	1.00	0	Made ground	×
TP116	3.00	0.2	Made ground	
WO404	3.50	0.5	Natural superficial deposits (silt)	
WS101	4.00	0	Natural superficial deposits (clay)	
	3.00	1.9	Made ground/PFA	
WS102	8.60	1.5	Weathered bedrock (Mercia Mudstone)	
WS103	3.20	0.2	Made ground/PFA	

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Location	Depth	PID Reading parts per billion (ppb)	Material	Scheduled for Analysis
WS104	0.50	0	Made ground/PFA	
W3104	14.00	0.8	Made ground/PFA	
	1.30	0.1	Made ground/PFA	
WS105	6.50	0.2	Made ground/PFA	
	14.50	0.1	Weathered bedrock (Mercia Mudstone)	
WS106	10.50	0.6	Natural superficial deposits (clay)	
	0.50	0	Made ground/PFA	
	2.00	0	Made ground/PFA	×
WS107	3.65 – 4.10	0	Made ground/PFA	
	11.70	0	Natural superficial deposits (clay)	
	4.50	0	Made ground/PFA	
	6.00	0	Made ground/PFA	×
WS108	7.00	0	Made ground/PFA	
	8.50	0.1	Made ground/PFA	
	12.00	0.1	Weathered bedrock	
WS109	15.00	0	Weathered bedrock (Mercia Mudstone)	×
	2.00	0.2	Made ground/PFA	
WS110	15.00	2.5	Weathered bedrock (Mercia Mudstone)	
	0.5 – 1.00	0	Made ground/PFA	
	4.00	0	Made ground/PFA	
WS111	8.20	0	Made ground/PFA	
	13.65	0	Weathered bedrock (Mercia Mudstone)	×
	2.00	1	Made ground/PFA	
WS112	12.90	0.7	Natural superficial deposits (clay)	×



2.3 Ground and Surface Water Sampling

- 2.3.1 Following installation of the groundwater wells, each well was developed in accordance with the Environment Agency guidance document "Guidance on the design and installation of groundwater quality monitoring points" Science Report SC020093, published in January 2006.
- 2.3.2 The well development was conducted to remove any water added during drilling and well installation and to remove any fines entrained in the sand filter pack during installation. Water removal was continued until the wells ran dry, or a minimum of ten well volumes were removed and the groundwater was visibly clear with no trace of suspended solids. The wells were left to recharge for a minimum of 24 hours prior to sampling.
- 2.3.3 During post-works monitoring, 12 groundwater samples were recovered from newly installed monitoring wells (excluding samples taken for QA/QC purposes). Prior to sampling, each well was purged in accordance with EA guidance (see above). During purging, measurements of temperature, conductivity, pH, dissolved oxygen, and redox were made using a YSI multimeter. The volume of the well was calculated and successive well volumes were removed until the field parameters stabilised to within 5% of the previous set of readings. Where the recharge rate of wells was insufficient to allow full purging of the well, grab samples were taken. The final set of YSI readings for the groundwater which was sampled are presented in **Annex A**. A groundwater sample was collected from each of the installed wells, with a further duplicate sample collected for quality assurance and quality control (QA/QC) purposes.
- 2.3.4 Two surface water samples and one QA/QC sample were recovered from sampling points at Wheatley Beck and the Fishing Ponds, outside of the intrusive works site boundary.
- 2.3.5 A summary of the groundwater and surface water sampling conducted is presented in **Table 3**.

Table 3 – Summary of Water Samples

Sample Type	Location	Screened Unit
	WS101	Natural superficial deposits
	WS102	Natural superficial deposits / bedrock
	WS103*	Natural superficial deposits / bedrock
Groundwater Samples	WS104*	PFA / bedrock
Significant Samples	WS106*	PFA / natural superficial deposits
	WS108*	PFA / natural superficial deposits / bedrock
	WS109	PFA / natural superficial



Sample Type	Location	Screened Unit
		deposits/bedrock
	WS110*	Bedrock
	WS111	Natural superficial deposits / bedrock
	WS112	Natural superficial deposits / bedrock
	BH104*	PFA/natural superficial deposits
	BH105*	Natural superficial deposits / bedrock
Surface Water Samples	SW01	Fishing Pond
Surface Water Samples	SW02	Wheatley Beck
	DUP01	Duplicate of WS102
QA/QC	DUP02	Duplicate of SW01
	Trip Blank	N/a
* Water level falling, grab	sample taken	

2.4 Soil Analysis

- 2.4.1 A subset of the soils samples were selected for chemical analysis for a range of contaminants. The analytical suites were based on the contaminants of concern identified in the Phase 1 Geo-environmental Site Assessment report (Appendix 11A in ES Volume II) and varied according to whether the sample was of natural soil or made ground. Samples of made ground from a range of depths were selected for analysis.
- 2.4.2 A summary of the soil samples submitted for analysis is provided in **Table 4** below.



Table 4 – Summary of Soil Analysis by Material

Soil type	Anions	CLEA ¹ Metals	рН	TPH CWG ²	PAH ³	SVOC ⁴	VOC ⁵	Total Organic Carbon	Asbestos Screen	Cyanides
Made ground	3	3	3	-	2	-	-	3	2	2
Made ground/PFA	21	29	29	2	12	6	6	29	29	29
Natural superficial deposits (clay)	3	6	6	3	-	4	4	6	-	-
Natural superficial deposits (silt)	3	5	5	2	-	3	3	5	-	-
Weathered bedrock (Mercia Mudstone)	4	8	8	7	-	7	7	8	-	-

Contaminated Land Exposure Assessment (CLEA) Handbook and software which help assess the risks of contaminated land exposure for human health.

Total Petroleum Hydrocarbon Criteria Working Group (TPH CWG)

Polyaromatic Hydrocarbons

Semi-volatile organic compounds

Volatile Organic compounds



2.5 Ground and Surface Water Analysis

- 2.5.1 Ground and surface water samples recovered were sent for chemical analysis for a range of contaminants. The analytical suites were based on the contaminants of concern identified in the Phase 1 Geo-Environmental desk based assessment (**Appendix 11A** in ES Volume II).
- 2.5.2 A summary of the water samples submitted for analysis is provided in **Table 5** below.

Table 5 – Summary of Water Analysis by Type

Waters type	Anions	Metals	рН	TPH CWG	PAH	svoc	voc	Total Organic Carbon	Cyanides
Groundwater	12	12	12	12	12	12	12	12	12
Surface Water	2	2	2	2	2	2	2	2	2
Waters QA/QC*	3	3	3	3	3	3	3	3	3

^{*}Duplicate samples (see Table 3) and a trip blank



3. Laboratory Results

3.1 Results

3.1.1 The results of laboratory testing of soils and waters are attached as **Annex B**.

3.2 QA/QC

- 3.2.1 To assess the precision and accuracy of the sampling and analytical methods a trip blank and field duplicates, were analysed in addition to the primary field samples. The field duplicates were submitted for the same suite of analysis under a different identifier and the results compared.
- 3.2.2 QA/QC data is presented in **Annex C**.
- 3.2.3 A review of the analytical data indicated that all samples were extracted and analysed within acceptable holding times.

Duplicate Sample Review

- 3.2.4 Duplicate water samples from WS102 and surface water sampling point SW01 were analysed. Comparison of testing results to the parent sample of each duplicate revealed that Relative Percentage Difference (RPD) values were below the ±30% criteria for the majority of analytes tested. Exceptions are listed below:
 - antimony 67% (SW01/DUP02)
 - molybdenum 33% (WS102/DUP01)
 - ortho phosphate as PO₄ 30% (WS102/DUP01)
- 3.2.5 In all instances where the target RPD value (±30%) was exceeded, the measured concentration was close to the Method Detection Limit (MDL) where analytical reproducibility is often more difficult.
- 3.2.6 Therefore based on the duplicate data, the reproducibility of the analytical results is considered acceptable for the purposes of this assessment.

Trip Blank Review

- 3.2.7 One trip blank was submitted for analysis of; anions, metals, VOCs, SVOCs, TPH-CWG, total organic carbon and total cyanide.
- 3.2.8 All analytes returned results below their respective MDLs.
- 3.2.9 Therefore the potential for cross contamination of the groundwater samples during transportation and prior to analysis is considered unlikely.



3.3 Data Screening

- 3.3.1 As part of these works, AECOM were commissioned by the Applicant to provide analysis and interpretation of the information gathered during the site investigation with regard to risks to receptors identified in the Phase I Geo-Environmental Site Assessment (Appendix 11A in ES Volume II) and also in relation to Hazardous Waste classification:
 - Data will be screened against Generic Risk Assessment criteria (GAC) to assess whether the soils and surface water/groundwater pose a potential risk to identified receptors. The results of the screening may be used to support the DCO application.
 - Analytical data for made ground will be input into the Waste Acceptance Classification (WAC) tool to assess whether the levels of contaminants may lead the made ground to be classified as hazardous waste. Additional WAC testing may be required to assess whether the waste is suitable for disposal at an inert non-hazardous landfill.

Selection of Generic Assessment Criteria (GAC) for Stage 2 Assessment

- 3.3.2 The results of the soil and water sampling conducted during the site investigation have been screened against Generic Assessment Criteria (GAC). These represent a level of minimal risk, below which it can be presumed that there is no risk to the receptor in question. Where GAC have been exceeded, it does not automatically mean that a risk to the relevant receptor exists but further interpretation of the results may be required. In some cases, the GAC used may also be an environmental standard.
- 3.3.3 The results are presented in **Annex D**, and discussed below.

Soils - Human Health Screening

- 3.3.4 Results of the soil analysis were screened against the GAC protective of human health, assuming an Industrial/Commercial end land use (sand, >3.48% Total Organic Carbon). None of the samples analysed exceeded the screening values selected.
- 3.3.5 A minor detection of asbestos (chrysotile fibres) was reported in one soil sample analysed (WS112, 2.0m depth). However, considering the depth at which the sample was retrieved and the low concentration of fibres reported (less than 0.1%), additional assessment regarding risk to human health is not considered necessary and is beyond the scope of this report.

Groundwater Screening – Human Health Screening

3.3.6 Results of the groundwater analysis were screened against the GAC protective of human health, assuming an Industrial/Commercial end use (sand, >3.48% Total



Organic Carbon). Screening against these values indicated that the GAC for Sulphates (250mg/l) was exceeded at all sample locations. Values for sulphates ranged from 941.3mg/l (WS102) to 2490.4mg/l (WS108). The GAC for NO₂ (0.5mg/l) was exceeded in three locations; BH105, WS104 and WS106. Values for NO₂ across the site ranged from <0.02mg/l, i.e. below the 'Limit of Detection' to 4.26mg/l.

Groundwater Screening – Controlled Waters Screening

- 3.3.7 Groundwater samples were screened against three different GAC to assess risks to Controlled Waters. The samples were screened against Environmental Quality Standards (EQS) Freshwater (to assess risks to fishing ponds and Wheatley Beck), EQS Coastal Water (for the tidal River Trent) and Drinking Water Standards (DWS), for the underlying groundwater, assuming abstraction for a potable supply.
 - EQS Freshwater screening values were exceeded for sulphate (400mg/l) at all sampling locations, with values ranging from 941.3mg/l (WS102) to 2490.4mg/l. The EQS Freshwater limit for manganese (123μg/l) was also exceeded at 8 of 12 sampling locations. Values for manganese ranged from 172μg/l to 1464 μg/l. Nickel (4μg/l) showed marginal exceedances in 3 locations, ranging from 4μg/l to 5μg/l. Zinc (10.9μg/l) showed exceedances in 3 locations, ranging from 21μg/l to 88μg/l. Iron (1000μg/l) showed exceedances in 2 locations, ranging from 7453μg/l to 12440μg/l. There was also a single exceedance for arsenic (50μg/l) at WS111 of 56.2μg/l.
 - EQS Coastal Water The EQS was exceeded at 4 sampling locations for zinc (6.8µg/l), with values ranging from 7µg/l to 88µg/l. Screening values were exceeded for iron (1000µg/l) at 2 locations, ranging from 7453µg/l to 12440µg/l. The screening value for arsenic (25µg/) was also exceeded at 2 locations, with values ranging from 36.2µg/l to 56.2µg/l.
 - Drinking Water Standards The UK Drinking Water Standards were exceeded at all groundwater sampling locations for sulphate (250mg/l), with values ranging from 941.3mg/l (WS102) to 2490.4mg/l. The standard was exceeded in 9 of 12 locations for manganese (50μg/l), with values ranging from 73μg/l to 1464μg/l. The standard for molybdenum was also exceeded at 9 of 12 sampling locations, with values ranging from 247μg/l to 5527μg/l. The standard was exceeded at 6 locations for selenium (10μg/l), with values ranging from 11μg/l to 95μg/l. The standard for arsenic (10μg/l) was exceeded in 4 locations, with values ranging from 10.3μg/l to 56.2μg/l. The standard for lron (200μg/l) was exceeded at 3 sampling locations, with values ranging from 692μg/l to 12440μg/l. There was a single exceedance of the Drinking Water Standard for EC16-EC21 aromatics (90μg/l) at sampling location WS111, with a value of 220μg/l.
- 3.3.8 It should be noted that the screening carried out above is conservative. The groundwater beneath the site is not being used in the immediate vicinity of the site



for potable supply, and is not in direct hydraulic continuity with surface waters and no consideration has been made of dilution, degradation and retardation. A range of metals and sulphates occur naturally in the Mercia Mudstone and can therefore be expected to be present naturally in the formation waters.

Surface Waters - Human Health Screening

3.3.9 Surface Water samples were screened against appropriate Generic Assessment Criteria for risk to human health. The GAC for Industrial/Commercial land use (Sand, >3.48% Total Organic Carbon) was selected. Screening against these values indicated that the GAC for sulphates (250mg/l) was exceeded at sample location SW02 on Wheatley Beck. The sample returned a value of 1095.8mg/l.

Surface Waters – Controlled Waters Screening

3.3.10 Surface Water samples were screened against three different Generic Assessment Criteria for risk to Controlled Waters. The samples were screened against Environmental Quality Standards (EQS) Freshwater, Environmental Quality Standards (EQS) Coastal Water and Drinking Water Standards (DWS). The only exceedance of any of the three GAC selected was for Sulphate at sample location SW02, which returned a value of 1095.8mg/l and exceeded both the EQS Freshwater (400mg/l) and the Drinking Water Standards (250mg/l).

Waste Acceptance Classification Screening

- 3.3.11 Soil sampling results from the Ground Investigation works were processed through the HazWasteOnline™ screening tool, which classifies waste in line with the Environment Agency WM3 guidance. This demonstrated that none of the soils sampled could be classified as 'Hazardous Waste'.
- 3.3.12 There was a single detection of asbestos in a soil sample from WS12 at 2.0m, but following quantification, the concentration of asbestos (chrysotile) present in the sample was recorded as less than 0.1%, which is below the threshold for determination as hazardous waste.

Summary

- 3.3.13 The results of the soil and groundwater analysis completed during the investigation have indicated that levels of contamination detected at the site do not currently present a risk to human health and controlled waters at the site. The Mercia Mudstone bedrock contains naturally occurring measurable concentrations of a range of metals and sulphates, which can also be expected to occur in surface waters where fed by groundwater. There are no local potable abstractions from groundwater or surface water; therefore plausible exposure pathways which could affect human health are not present.
- 3.3.14 The soil sampling and analysis has established a snapshot of conditions beneath the site prior to commencement of construction of the Proposed Development, and

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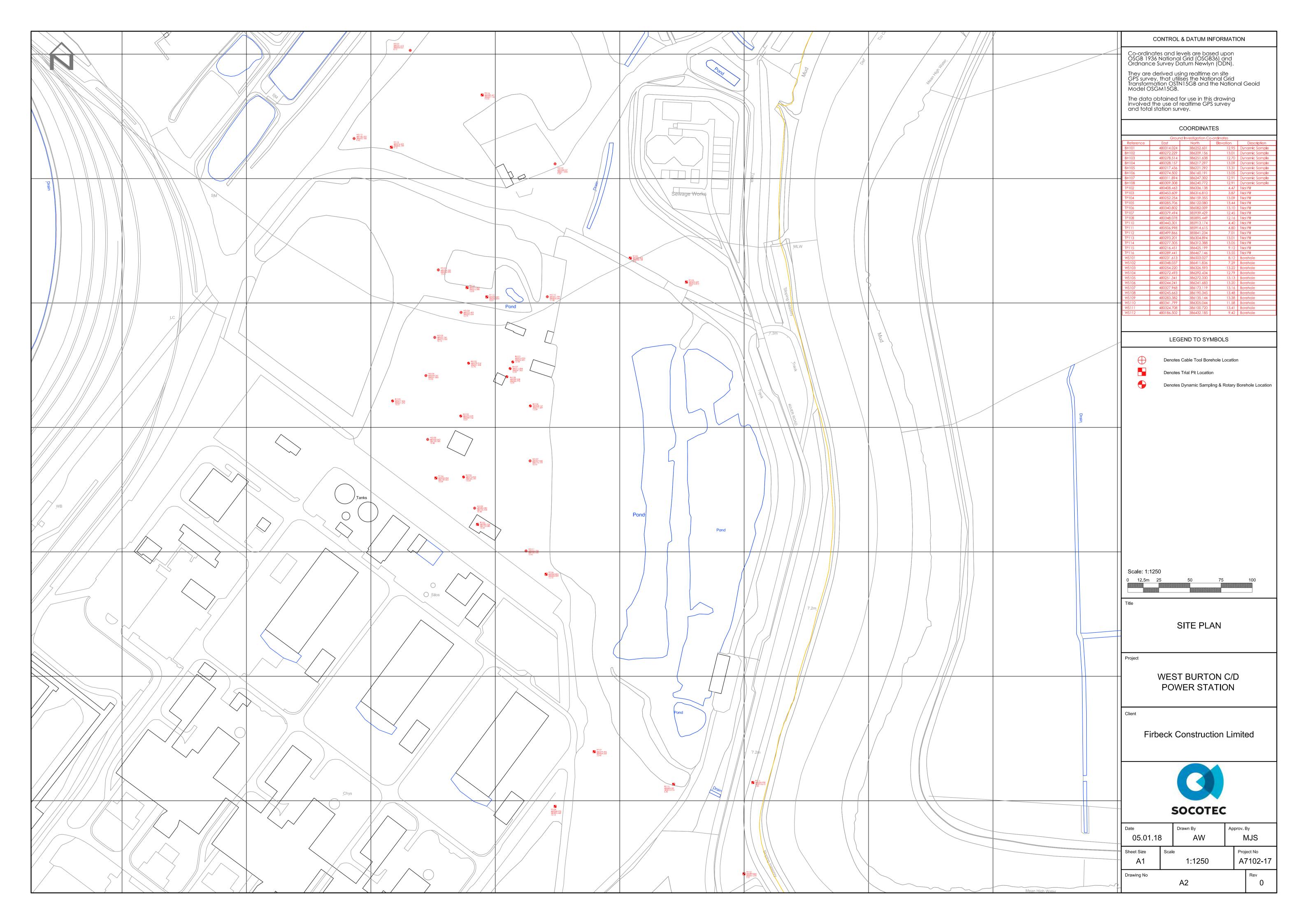
this data may be considered as part of a future Site Condition Report to establish baseline conditions at the Site for a future environmental permit.

3.3.15 Similarly, provided that the groundwater wells installed as part of this investigation are retained and suitably protected during the construction phase, these wells may form part of a future groundwater monitoring programme which may be required as part of a future environmental permit.



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Annex A Factual Report, Pressure Testing and Groundwater Field Parameters



Location	Depth to product (m btp)	Ground Level (m aOD)	Depth to Groundwater (m btp)	Depth of base (m btp)	Depth to base (m aOD)	Volume Purged (L)	Temperature (°C)	Dissolved Oxygen (%)	Conductivity (µS/cm)	рН	Field Redox	True Redox (mV)	Comments
WS101	-	8.12	4.399	11.890	-3.77	7	10.80	25.10	2219	7.15	-153.70	87.30	Clear, NVO.
WS102	-	7.29	3.970	10.600	-3.31	6	10.90	26.90	1816	7.41	-142.30	98.70	Very slightly silty (light brown), NVO.
WS103*	-	13.22	8.740	13.940	-0.72	14	10.50	46.50	4181	7.67	-118.60	122.40	Initially clear, then very slightly silty (light grey).
WS104*	-	12.79	8.310	13.570	-0.78	32	10.50	48.00	2336	8.79	-133.80	107.20	Slighty silty (light grey), NVO.
WS106*	-	13.2	7.460	10.300	2.90	18	11.00	49.00	2923	8.57	-97.10	143.90	Slighty silty (light grey), NVO.
WS108*	-	13.48	7.640	13.850	-0.37	13	10.80	66.00	2977	6.62	2.10	243.10	Slightly silty (greyish brown), NVO.
WS109	-	13.38	8.199	13.319	0.06	4	10.50	27.90	2576	9.21	-146.20	94.80	Clear, NVO.
WS110*	-	11.58	8.230	15.200	-3.62	12	10.70	48.00	3084	7.30	-106.60	134.40	Slightly silty (light greyish brown), NVO.
WS111	-	13.41	8.300	14.480	-1.07	3.5	10.40	30.20	2660	10.36	-210.00	31.00	Clear, NVO.
WS112	-	9.42	5.390	13.815	-4.40	9	10.80	24.10	2472	7.03	-156.90	84.10	Very slightly silty (light brown), NVO.
BH104*	-	13.09	9.250	14.160	-1.07	9	10.80	49.90	2957	8.52	-115.70	125.30	Slighty silty (grey), NVO.
BH105*	-	13.31	7.960	13.860	-0.55	13	10.70	60.40	2430	6.97	-89.30	151.70	Slighty silty (light grey), NVO.
SW01	-		-	-		-	4.50	79.50	3785	7.72	-218.80	22.20	Clear, NVO.
SW02	-		-	-		-	7.60	95.90	1708	7.85	-181.60	59.40	Clear, NVO.

Notes:

m aOD - Metres above Ordnance Datum

m btp - Metres below top of well pipe

Redox potential has been corrected according to Standard Hydrogen Electrode (SHE) values

' - ' - No product/groundwater detected

*(Water level dropping - grab sample taken)



WEST BURTON C/D POWER STATION

FACTUAL REPORT ON GROUND INVESTIGATION

Report No A7102-17

Knutsford Cheshire WA16 8GS







Please be aware that as of 17 October 2017, Environmental Scientifics Group Limited has become SOCOTEC UK Limited. This is a name change only, the legal identity of the company, including company registration number remains unchanged.

In the interim period during the rebranding process please note that some reports may display two logos and company references.

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January 2018

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1 INTRODUCTION

In November 2017 SOCOTEC UK Limited (formerly known as ESG) was commissioned by Firbeck Construction Limited (FCL), on behalf of EDF Energy, to carry out a site investigation at West Burton Power Station, Nottinghamshire. The Investigation Supervisor was Sir Robert McAlpine Design Group (SRM). The investigation was required to obtain geotechnical and geoenvironmental information for the proposed development of West Burton C and D gas turbine power plants adjacent to the existing station.

The scope of the investigation was specified by SRM and comprised cable percussion boreholes. dynamic sampling, rotary drilled boreholes, trial pits, in situ testing and laboratory testing. The investigation was performed in accordance with the contract specification, and the general requirements of BS 5930 (2015), BS EN 1997-2 (2007), BS EN ISO 22475-1 (2006) and other relevant related standards identified below. The fieldwork took place between 4 December 2017 and 21 December 2017.

This report presents the factual records of the fieldwork and laboratory testing. The information is also presented as digital data as defined in AG\$ (2017)

2 SITE SETTING

2.1 Location and Description

West Burton Power Station is situated off Gainsborough Road, approximately 7 km South West of Gainsborough. The site is located within the power station complex and is centred at National Grid Reference SK 803 862.

The site is bounded to the North and West by areas used for processing ash and to the East by the River Trent. The Southern boundary of the site consists of power station buildings and structures. The majority of the site consists of a landscaped area formerly used for ash disposal, with some wooded areas along the perimeter.

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2.2 **Published Geology**

The published geological map covering the site (GS sheet 101, 1967) and the BGS Geology of Britain Viewer (2018) shows the site to be underlain by Alluvium and River Terrace Deposits. Bedrock is shown to be the Mercia Mudstone Group consisting of mudstones with subordinate siltstone and beds of gypsum.

There is also Made Ground present associated with the historical use of the site. This was confirmed by the investigation.

3 **FIELDWORK**

3.1 General

The fieldwork was carried out in general accordance with \$S 5930 (2015), BS EN 1997-2 (2007) and BS EN ISO 22475-1 (2006).

The exploratory hole locations were selected by SRM. The locations were set out by EDF Energy and SOCOTEC UK Ltd from local features. The co-ordinates and reduced levels were surveyed by SOCOTEC UK Ltd to National Grid and Ordnance Datum, where applicable. The exploratory hole locations are shown on the Site Plan in Appendix A.

3.2 **Exploratory Holes**

The exploratory holes are summarised in the table below and in further detail in the Exploratory Hole Summary included in Appendix B.

TABLE 1: SUMMARY OF EXPLORATORY HOLES

TYPE	QUANTITY	MAXIMUM DEPTH (m)	REMARKS	
Cable Percussion Boreholes	12	15.60	WS101 to WS112	
Dynamic Sampling extended by Rotary Core Drilling	8	30.30	BH101 to 108	
Trial Pits	14	3.70	TP101 and TP109 omitted from the contract. TP107 and TP110 were hand excavated.	

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The exploratory hole logs are presented in Appendix B. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records in Appendix B, together with other explanatory information. The logging of soil and rock materials is in accordance with BS EN ISO 14688-1+A1 (2013) for soils and BS EN ISO 14689-1 (2003) for rocks, as amplified by BS 5930 (2015). The encountered mudstone and siltstone of the Mercia Mudstone Group has been divided according to the weathering grades defined in Spink and Norbury (1993).

Standard penetration tests (SPT) in the boreholes were carried out in accordance with BS EN ISO 22476-3+A1 (2011) and the SPT hammer energy ratio certificate is included in Appendix B. The SPT results are presented on the logs as uncorrected N values.

Photographs of the trial pits and rotary drilled core are presented in Appendix E.

On completion of the fieldwork geotechnical samples were transported to the Doncaster office of SOCOTEC for temporary retention, with those required for testing being transferred to the SOCOTEC laboratories.

3.3 Instrumentation

Instrumentation installed in the exploratory holes for groundwater and gas monitoring are shown on the logs and summarised in Appendix C.

SOCOTEC were not required to undertake post fieldwork monitoring of the instrumentation.

3.4 In Situ Testing

In situ testing was carried out in accordance with the relevant standards as tabulated below. The testing is summarised in the following table and the results are presented in separate reports as detailed below.

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TABLE 2: SUMMARY OF IN SITU TESTING

TYPE	QUANTITY	REMARKS
Self Boring Pressuremeter	4 tests at 2 locations – BH101 and BH102	BS 5930 (2015). Results presented in Geocone Report Ref: A7104-17
High Pressure Dilatometer Test (HPD)	6 tests at 2 locations – BH101 and BH102	BS 5930 (2015). Results presented in Geocone Report Ref:
Cross Hole Seismic Survey	3 locations – BH101, BH107, BH108	Results presented in Pelorus Report Ref: TBC

LABORATORY TESTING

Geotechnical laboratory testing was scheduled by SRM and was carried out in accordance with BS 1377 (1990), BS EN ISO 17892 (2014) Part 1 and 2 and IŞRM (2007) unless otherwise stated. The testing is summarised below and the results are presented in Appendix D.

TABLE 3: SUMMARY OF GEOTECHNICAL LABORATORY TESTING

TYPE	REMARKS
Water Content Determination	
Atterberg Limit Determination	
Particle Size Distribution Analysis	
pH and Water Soluble Sulphate Content of Soils Magnesium, Chloride, Nitrate, Acid Soluble Sulphate and Total Sulphur	Test methods are BS 1377 or others recognised in BRE Special Digest 1 (2005); they are indicated on the results report sheets in Appendix D.
Organic Matter Content	
Compaction Testing	
Unconsolidated Undrained Triaxial Compression Testing	
Uniaxial Compressive Strength of Rocks	
Point Load Testing of Rocks	

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REFERENCES

AGS: 2017: Electronic transfer of geotechnical and geoenvironmental data (Edition 4.0.4 February 2017). Association of Geotechnical and Geoenvironmental Specialists.

BGS Geology of Britain Viewer: 2018. www.bgs.ac.uk. British Geological Survey.

BRE Special Digest 1: 2005: Concrete in aggressive ground. Building Research Establishment.

BS 1377: 1990: Methods of test for soils for civil engineering purposes. British Standards Institution.

BS 5930: 2015: Code of practice for ground investigations. British Standards Institution.

BS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. British Standards Institution.

BS EN ISO 14688-1:2002+A1: 2013: Geotechnical investigation and testing - Identification and classification of soil - Part 1 Identification and description. British Standards Institution.

BS EN ISO 14688-2:2004+A1: 2013: Geotechnical investigation and testing - Identification and classification of soil - Part 2 Principles for a classification. Éritish Standards Institution.

BS EN ISO 14689-1: 2003: Geotechnical investigation and testing - Identification and classification of rock - Part 1 Identification and description. British Standards Institution.

BS EN ISO 17892-1: 2014: Geotechnical investigation and testing - Laboratory Testing of soil -Determination of water content.

BS EN ISO 17892-2: 2014: Geotechnical investigation and testing - Laboratory Testing of soil -Determination of bulk density.

BS EN ISO 22475-1: 2006; Geofechnical investigation and testing – Sampling methods and groundwater measurements Part 1 Technical principles for execution. British Standards Institution.

BS EN ISO 22476-3:2005+A1: 2011: Geotechnical investigation and testing - Field testing - Part 3 Standard penetration test. British Standards Institution.

CIRIA C570: 2001: Engineering in Mercia Mudstone. CIRIA.

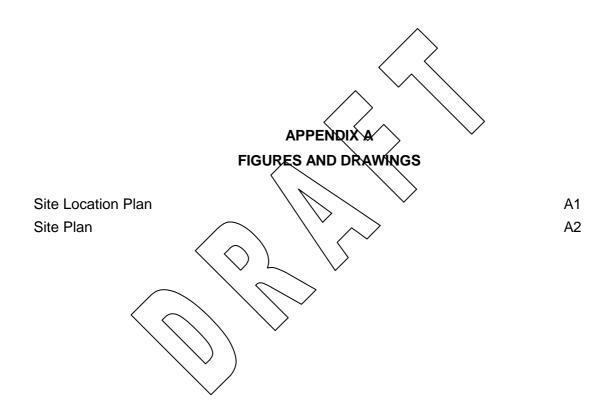
GS England and Wales Sheet 101: 1967: East Retford 1:63360 geological map (solid and drift) (Bedrock and Superficials). Geological Survey of Great Britain.

ISRM: 2007: The Complete ISRM Suggested Methods for Rock Characterisation, Testing and Monitoring (1974-2006). Commission on Testing Methods, International Society for Rock Mechanics (Editors Ulusay R & Hudson JA).

Spink TW and Norbury DR: 1993: The Engineering Geological Description of Weak Rocks and Overconsolidated Soils. Proc 26th Regional Meeting of Engineering Group of Geological Society. Leeds.

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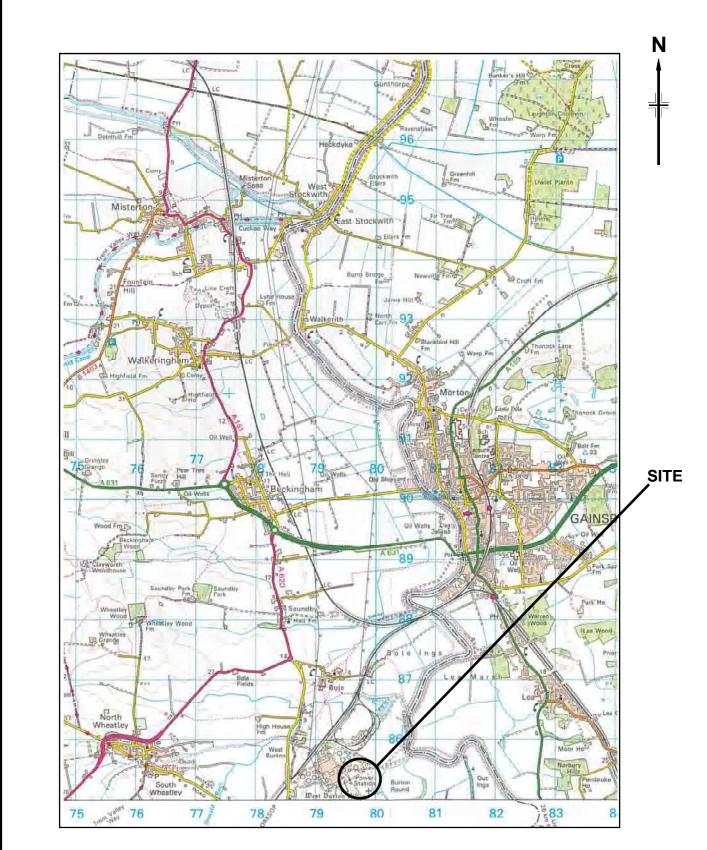


January 2018
Issue 1

Report No A7102-17
Appendix A

Site Location Plan





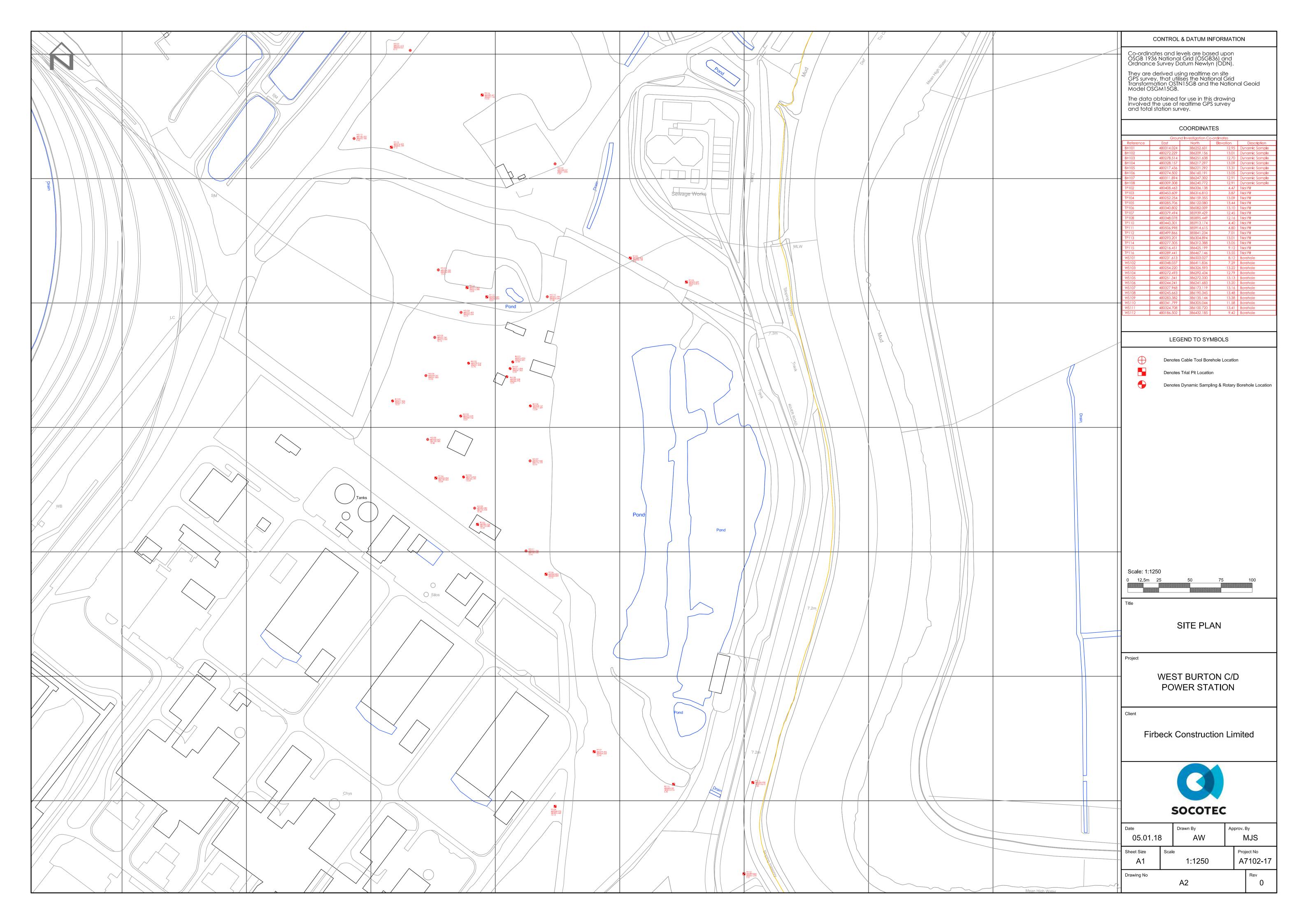
Reproduced from the 2005 Ordnance Survey 1:50 000 scale Landranger map No 112 by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright, Environmental Services Group Limited. All rights reserved. Licence Number 100006060

Notes:
Scale 1:50 000

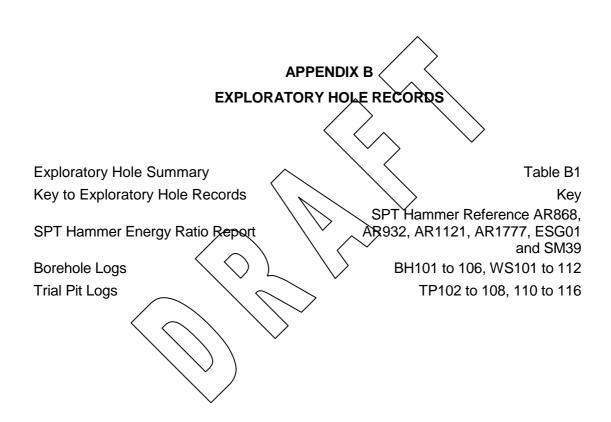
Project WEST BURTON C/D POWER STATION
Project No. A7102-17
Carried out for Firbeck Construction Limited

Figure

A1







January 2018
Issue 1
Report No A7102-17
Appendix B

Exploratory Hole Summary



Hole ID	Hole Depth, (m)	Hole Type	Eastings, (m)	Northings, (m)	Ground Level, (m AOD)	Start Date	End Date	Hole Remarks
BH101	30.30	WLS+RC	480314.02	386252.60	12.95	08/12/2017	15/12/2017	
BH102	30.07	WLS+RC	480272.23	386209.16	13.01	05/12/2017	08/12/2017	
BH103	29.80	WLS+RC	480278.51	386251.64	12.70	04/12/2017	08/12/2017	
BH104	30.10	WLS+RC	480328.16	386217.30	13.09	11/12/2017	15/12/2017	
BH105	29.50	WLS+RC	480217.44	386221.29	13.31	11/12/2017	15/12/2017	
BH106	29.80	WLS+RC	480274.50	386160.19	13.05	16/12/2017	19/12/2017	
BH107	30.00	RO	480311.89	386247.30	12.91	16/12/2017	18/12/2017	
BH108	28.00	RO	480309.31	386240.77	12.91	15/12/2018	18/12/2018	
TP102	3.00	TP	480408.46	386336.14	4.47	14/12/2017	14/12/2017	
TP103	3.50	TP	480453.61	386316.81	3.87	14/12/2017	14/12/2017	
TP104	3.70	TP	480252.25	386159.36	13.09	13/12/2017	13/12/2017	
TP105	3.50	TP	480285.71	386122.08	13.44	12/12/2017	12/12/2017	
TP106	3.50	TP	480340.80	386082.01	13.10	12/12/2017	12/12/2017	
TP107	1.20	TP	480379.49	385939.43	12.45	20/12/2017	20/12/2017	
TP108	3.50	TP	480348.08	385895.45	12.16	14/12/2017	14/12/2017	
TP110	1.20	TP	480443.30	385913.17	4.40	20/12/2017	20/12/2017	
TP111	3.50	TP	480507.00	385914.62	4.80	14/12/2017	14/12/2017	
TP112	3.50	TP	480499.87	385841.23	7.01	14/12/2017	14/12/2017	
TP113	3.50	TP	480293.20	386304.89	13.01	13/12/2017	13/12/2017	
TP114	3.50	TP	480277.31	386312.39	13.05	13/12/2017	13/12/2017	
TP115	3.50	TP	480216.45	386425.20	9.12	13/12/2017	13/12/2017	
TP116	3.50	TP	480289.44	386467.15	13.55	13/12/2017	13/12/2017	
WS101	15.15	CP	480231.61	386503.03	8.12	18/12/2017	20/12/2017	
WS102	10.88	CP	480348.04	386411.84	7.29	15/12/2017	18/12/2017	
WS103	15.00	CP	480254.22	386326.59	13.22	13/12/2017	14/12/2017	
WS104	15.00	CP	480272.49	386292.43	12.79	13/12/2017	15/12/2017	
WS105	15.45	CP	480251.34	386272.33	13.13	11/12/2017	12/12/2017	
WS106	15.00	CP	480244.24	386241.68	13.20	11/12/2017	12/12/2017	
WS107	15.45	CP	480327.97	386173.12	13.16	05/12/2017	06/12/2017	
WS108	14.60	СР	480245.66	386190.35	13.48	07/12/2017	07/12/2017	
WS109	15.45	СР	480283.38	386135.14	13.38	07/12/2017	08/12/2017	
WS110	15.00	СР	480341.80	386305.04	11.58	13/12/2017	14/12/2017	
WS111	15.60	СР	480324.71	386100.72	13.41	05/12/2017	06/12/2017	
WS112	15.00	СР	480186.50	386432.19	9.42	15/12/2017	18/12/2017	



Notes:

Key to Exploratory Hole Records



SAMPLES

Undisturbed

U Driven tube sample

UT Driven thin wall tube sample \searrow nominally 100 mm diameter and full recovery unless otherwise stated

TW Pushed thin wall tube sample Pushed piston sample

L Liner sample from dynamic (windowless) sampling. Full recovery unless otherwise stated

CBR CBR mould sample BLK Block sample

C / CS Core sample (from rotary core) taken for laboratory testing.

AMAL Amalgamated sample

Disturbed

D Small sample B Bulk sample

Other

W Water sample G Gas sample

Environmental chemistry samples (in more than one container where appropriate)

ES Soil sample EW Water sample

Comments Sample reference numbers are assigned to every sample taken. A sample reference of 'NR' indicates that, while an

attempt was made to take a tube sample, there was no recovery.

Samples taken from borehole installations (ie water or gas) after hole construction are not shown on the exploratory

hole logs.

Specimens for point load testing undertaken on site (or other non-lab location) are not shown on the log.

IN SITU TESTS

SPT S or SPT C Standard Penetration Test, open shoe (S) or solid cone (C)

The Standard Penetration Test is defined in BS EN ISO 22476-3:2005+A1:2011.

The incremental blow counts are given in the Field Records column; each increment is 75 mm unless stated otherwise and any penetration under self-weight in mm (SW) is noted. Where the full 300 mm test drive is achieved the total number of blows for the test drive is presented as N = ** in the Test column. Where the test drive blows reach 50 the

total blow count beyond the seating drive is given (without the N = prefix).

IV in situ vane shear strength, peak (p) and remoulded (r)
HV Hand vane shear strength, peak (p) and remoulded (r)
PP Pocket penetrometer test, converted to shear strength

KFH, KRH, KPI Permeability tests (KFH = falling head, KRH = rising head; KPI = packer inflow);

results provided in Field Records column (one value per stage for packer tests)

DRILLING RECORDS

The mechanical indices (TCR/SCR/RQD & If) are defined in BS 5930:2015

TCR Total Core Recovery, %
SCR Solid Core Recovery, %
RQD Rock Quality Designation, %

If Fracture spacing, mm. Minimum, typical and maximum spacing measurements are presented.

NI The term non-intact (NI) is used where the core is fragmented.

NA Used where a measurement is not applicable (eg. If, SCR and RQD in non-rock materials).

Flush returns, estimated percentage with colour where relevant, are given in the Records column

CRF Core recovered (length in m) in the following run

AZCL Assessed zone of core loss

GROUNDWATER

Groundwater entry

Depth to groundwater after standing period

Notes:

See report text for full references of standards.

Updated October 2017

Project WEST BURTON C/D POWER STATION

Project No. A7102-17
Carried out for Firbeck Construction Limited

Key

Sheet 1 of 3

Key to Exploratory Hole Records



INSTALLATION Details of standpipe/piezometer installations are given on the Record. Legend column shows installed instrument depths including slotted pipe section or tip depth, response zone filter material type and layers of backfill.

Standpipe/ piezometer

The type of instrument installed is indicated by a code in the Legend column at the depth of the response zone:

Standpipe

SPIE Standpipe piezometer PPIE Pneumatic piezometer **EPIE** Electronic piezometer

Inclinometer or Slip Indicator

The installation of vertical profiling instruments is indicated on the Record. The base of tubing is shown in the Legend

The type of instrument installed is indicated by a code in the Legend column at the base of the tubing:

ICE Biaxial inclinometer

ICM Inclinometer tubing for use with probe

SLIP Slip indicator

Settlement Points or **Pressure Cells** The installation of single point instruments is indicated on the Record. The location of the measuring device is shown in the Legend column.

The type of instrument installed is indicated by a code in the Legend column:

ESET Electronic settlement cell/gauge ETM Magnetic extensometer settlement point **EPCE** Electronic embedment pressure cell **PPCE** Electronic push in pressure cell

INSTALLATION / BACKFILL LEGENDS

A legend describing the installation is shown in the rightmost column. Legend symbols used to describe the backfill materials are indicated below.















STRATUM LEGENDS

The legend symbols used for graphical representation of soils, rocks and other materials on the borehole logs are shown below. For soils with significant proportions of secondary soil types, a combination of two or more symbols may be used.

Macadam	Concrete	Topsoil	Made Ground / Fill	Peat	Void or No Information	
袋				હ્યાંદ હ્યાંદ દ હ્યાંદ હ્યાં હ્યાંદ હ્યાંદ દ હ્યાંદ હ્યાં		
Clay	Silt	Sand	Gravel	Cobbles	Boulders	Coal
	× × × × × × × × × × × × × × × × × × ×			0 a 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	000	
Mudstone	Siltstone	Sandstone	Conglomerate	Breccia	Limestone	Chalk
	× × × × × × × × × × × × × × × × × × ×		0000 0000 0000 0000			
Igneous (Fine)	Igneous (Med)	Igneous (Coarse)	Metamorphic (Fine)	Metamorphic (Med)	Metamorphic (Coarse)	Tuff
	+ + + + + + + + + + + + + + + + + + + +	+ + + + + + + + + + + + + + + + + + + +				

Notes:

Updated October 2017

See report text for full references of standards.

WEST BURTON C/D POWER STATION

Project No.

Carried out for Firbeck Construction Limited Key

Key to Exploratory Hole Records



	3000120
NOTES	
1	Soils and rocks are described in accordance with BS EN ISO 14688-1:2002+A1:2013 and 14689-1:2003 respectively as amplified by BS 5930:2015.
2	For fine soils, consistency determined during description is reported for those strata where undisturbed samples are available. Where the logger considers that the sample may not be representative of the condition in situ, for whatever reason, the reported consistency is given in brackets. The reliability of the sample is indicated by Probably or Possibly as appropriate. Hence (Probably firm) indicates the logger is reasonably confident of the assessment, but (Possibly firm) means less certainty. Where the samples available are too disturbed to allow a reasonable assessment of the in situ condition, no consistency is given.
3	Evidence of the occurrence of very coarse particles (cobbles and boulders) is presented on the logs. However, because of their size in relation to the exploratory hole these records may not be fully representative of their size and frequency in the ground mass.
4	The declination of bedding and joints is given with respect to the normal to the core axis. Thus in a vertical borehole this will be the dip.
5	The assessment of SCR, RQD and Fracture Spacing excludes artificial fractures.
6	Observations of discernible groundwater entries during the advancement of the exploratory hole are given at the foot of the log and in the Legend column. The absence of a recorded groundwater entry should not, however, be interpreted as a groundwater level below the base of the borehole. Under certain conditions groundwater entry may not be observed, for instance, drilling with water flush or overwater, or boring at a rate faster than water can accumulate in the borehole. Similarly, where water entry observations do exist, groundwater may also be present at higher elevations in the ground than where recorded in the borehole. In addition, where appropriate, water levels in the hole at the time of recovering individual samples or carrying out in situ tests and at shift changes are given in the Records column.
7	The borehole logs present the results of Standard Penetration Tests recorded in the field without correction or interpretation. However, in certain ground conditions (eg high hydraulic head or where very coarse particles are present) some judgement may be necessary in considering whether the results are representative of in situ mass conditions.
REFERENCES	
1	BS EN ISO 14688-1:2002+A1: 2013: Geotechnical investigation and testing - Identification and classification of soil. Part 1 Identification and description. British Standards Institution
2	BS EN ISO 14689-1 : 2003 : Geotechnical investigation and testing - Identification and classification of rock. Part 1 Identification and description. British Standards Institution
3	BS EN ISO 22476-3:2005+A1 : 2011 : Geotechnical investigation and testing - Field testing. Part 3 Standard penetration test. British Standards Institution
4	BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING AINLEYS INDUSTRIAL ESTATE ELLAND WEST YORKSHIRE HX5 9JP

Report Date:

Test Date:

16/08/2017

16/08/2017

File Name:

AR868.spt

Test Operator:

SH

Instrumented Rod Data

Diameter d_r (mm): 54 Wall Thickness t_r (mm): 6.0 Assumed Modulus Ea (GPa): 208 Accelerometer No.1: 7080 Accelerometer No.2: 11609

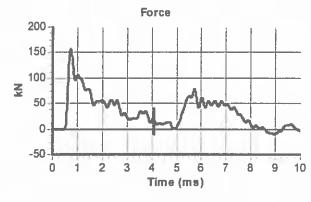
SPT Hammer Information

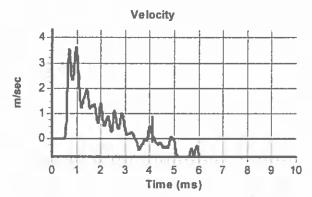
SPT Hammer Ref: AR868

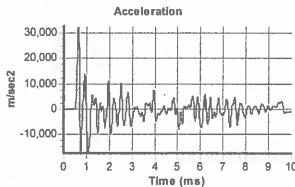
Hammer Mass m (kg): Falling Height h (mm): 760 SPT String Length L (m): 10.0

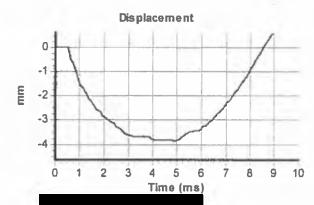
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2): 905 Theoretical Energy E_{theor} (J): 473 Measured Energy E_{meas} (J): 343

Energy Ratio E_r (%): 72 Signed: S. HOWARTH Title: FITTER

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING
AINLEYS INDUSTRIAL ESTATE

ELLAND

WEST YORKSHIRE

HX59JP

SPT Hammer Ref: AR932

Test Date:

19/12/2016

Report Date:

19/12/2016

File Name:

AR932.spt

Test Operator:

SH

Instrumented Rod Data

Diameter d_r (mm):

54

Wall Thickness t_r (mm):

6.1

Assumed Modulus Ea (GPa): 208

Accelerometer No.1:

7080

Accelerometer No.2:

7079

SPT Hammer Information

Hammer Mass m (kg): 63.5

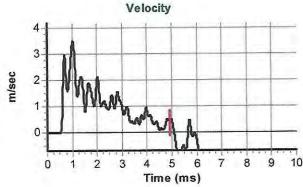
Falling Height h (mm): 760

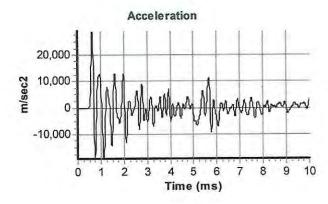
SPT String Length L (m): 10.0

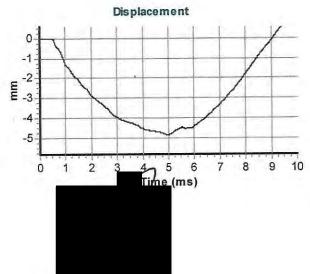
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2):

918

Theoretical Energy E_{theor} (J):

473

Measured Energy E_{meas} (J):

(J): 288

Energy Ratio E_r (%):

61

Signed: S. HOWARTH
Title: FITTER

The recommended calibration interval is 12 months

Hammer Energy Report



Date of test: 03/01/2018

Hammer ID: AR1121

Instrumented rod:

Hammer mass (m)63.5 kgFall height (h)0.76 m

Type NWY
Cross-sectional area (A a) 11.30 cm²

Test type: SPT
Manufacturer: Archway

Young's modulus (Ea) 207000 MPa

Model: Automatic Trip Hammer

Length 0.60 m

Rig: Beretta T51

Test rod type: NWY

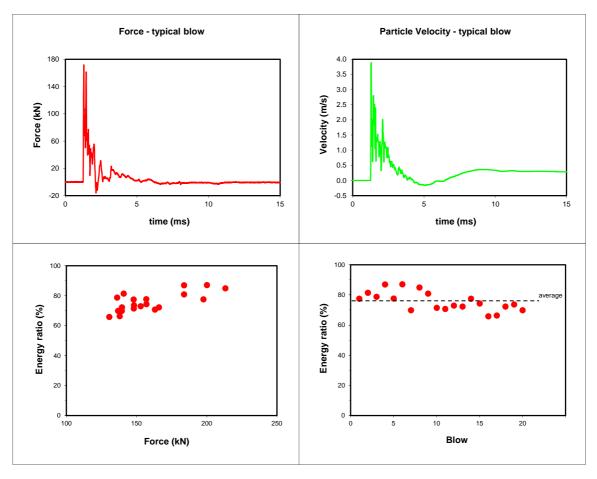
Rig ID: R62

Type: Rotary

Foreman: D Strong

Remarks:

Data obtained from test carried out in BH1, located in the SOCOTEC UK Doncaster yard. Test carried out at depth of 4.96 mbgl, with a total blow count of 20. Energy determined from every blow.



Theoretical energy (E_{theor}) = $m \times g \times h$ =

0.473 kN-m (473 J)

Measured energy (E_{meas}) average of 20 blows =

0.359 kN-m

Energy ratio = $\frac{E_n}{E}$

76 %

Test carried out by: John Holt

Test carried out in accordance with BS EN ISO 22476-3:2005

Signed for issue:

Equipment used: SPT Analyzer Serial No. 4032T

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING AINLEYS INDUSTRIAL ESTATE

ELLAND

WEST YORKSHIRE

HX59JP

SPT Hammer Ref: AR1777

Test Date: 13/04/2017

Report Date: 13/04/2017

File Name: AR1777.spt

Test Operator: SH

Instrumented Rod Data

Diameter dr (mm): 54 Wall Thickness tr (mm): 6.0 Assumed Modulus Ea (GPa): 208 Accelerometer No.1: 7080

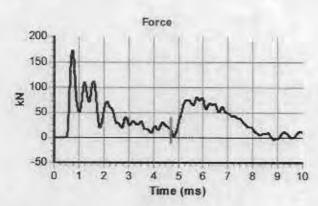
Accelerometer No.2: 11609

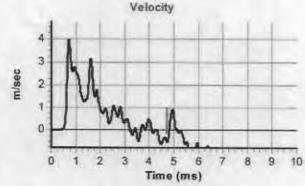
SPT Hammer Information

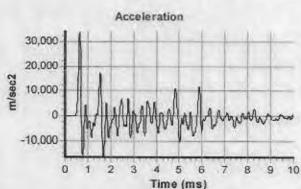
Hammer Mass m (kg): 63.5 Falling Height h (mm): 760 SPT String Length L (m): 10.0

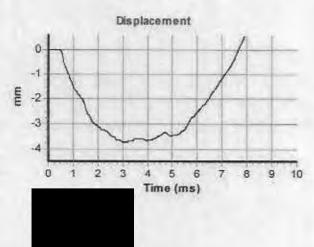
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2): 905 Theoretical Energy Etheor (J): 473 Measured Energy E_{meas} (J): 340

Energy Ratio E, (%): 72

The recommended calibration interval is 12 months

Signed: S. HOWARTH

Title: FITTER

Hammer Energy Report



Date of test: 19/05/2017 Hammer ID: ESG01

Instrumented rod:

Type BW

11.30 cm² Cross-sectional area (Aa) Young's modulus (Ea) 207000 MPa

0.60 m

Length

NWY Test rod type:

Rig: Beretta T41

63.5 kg

0.76 m

Archway

Automatic Trip Hammer

SPT

R29 Rig ID: Type: Rotary

Hammer mass (m)

Fall height (h)

Manufacturer:

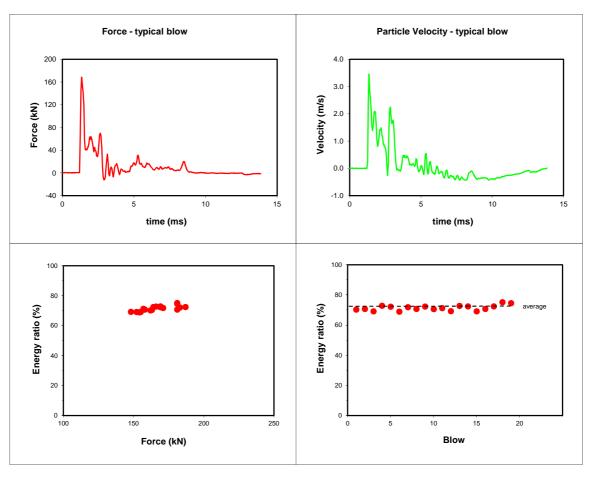
Test type:

Model:

J Govan Foreman:

Remarks:

Data obtained from test carried out in BH1, located in ESG Doncaster yard. Test carried out at depth of 5.70 mbgl, with a total blow count of 19. Energy determined from every blow.



Theoretical energy (E_{theor}) = $m \times g \times h$ =

0.473 kN-m (473 J)

Measured energy (E_{meas}) average of 19 blows =

0.340 kN-m

Energy ratio = 72 %

Test carried out by: John Holt Test carried out in accordance with BS EN ISO 22476-3:2005

Signed for issue:

Equipment used: SPT Analyzer Serial No. 4032T

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

ARCHWAY ENGINEERING AINLEYS INDUSTRIAL ESTATE ELLAND WEST YORKSHIRE

WEST YORKSH.

HX59JP

SPT Hammer Ref: SM39

Test Date:

29/06/2017

Report Date:

06/07/2017

File Name:

SM39.spt

Test Operator:

SH

Instrumented Rod Data

Diameter d_r (mm):

54

Wall Thickness t_r (mm):

6.0

Assumed Modulus Ea (GPa): 208

7080

Accelerometer No.1: Accelerometer No.2:

11609

SPT Hammer Information

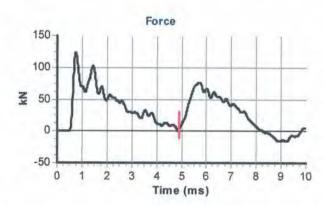
Hammer Mass m (kg): 63.5

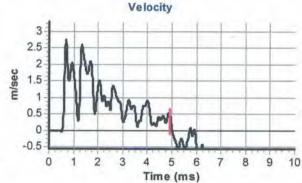
Falling Height h (mm): 760

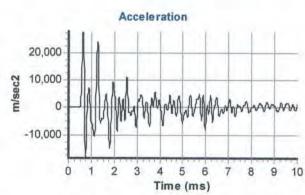
SPT String Length L (m): 10.0

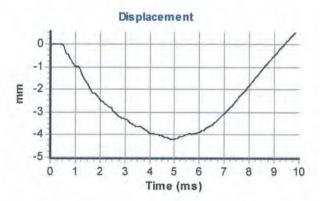
Comments / Location

CALIBRATION









Calculations

Area of Rod A (mm2):

905

Theoretical Energy Etheor (J):

473

Measured Energy Emeas (J):

290

Energy Ratio E r (%):

61

Signed: M.GARDNER
Title: FITTER

The recommended calibration interval is 12 months



				_						COTE
rilled DS	Start	Equipment, Methods and Re	marks		D	(m) (m)	iameter Casing Depth (mm) (m) 121 16.00			12.95 m
ogged DP	08/12/2017	 Comacchio 305. Dynamic sampling followed by SPT Hammer ID: AR868, Rod 	rotary core drilli	ing (PWF	size) using water flush.	1.20 30.30	121 16.00	Coordinates (m)		E 480314
necked MS	End		type: NWY.					National Grid	1	N 386252
proved	15/12/2017	<u>'</u>			Otrosto Donosiustico					
amples ar			Date	Time	Strata Description			Depth, Level	Legend	Back
Depth	TCR SCR RQD	If Records/Samples	Casing	Water	Main		Detail	(Thickness)	Legend	Dack
		0.00-1.20 Hand excavate inspection pit.	d		TOPSOIL.		=	(0.25)		
0.25 - 1.20	В3				Dark grey slightly sandy SIL	T.	1 =	0.25 +12.70		
0.50	D 1				(MADE GROUND - Pulveris	ed Fuei Asn)	_			
							_			[Y]
1.00	D 2						_			
1.20 - 1.65	SPTS	N=32 (4,5/7,8,8,9)					_			\mathbb{N}
1.20 - 2.20 1.20	L 5 D 4						_			
							_			
							=			
			08/12/17	1630			_			
2.20 - 2.65	SPTS	N=20 (3,3/4,7,4,5)	2.20	Dry			=			\mathbb{N}
2.20	D 6		11/12/17 2.20	0800 Dry			_			
							_	(4.75)		\parallel
]			
							-			
3.50 - 3.95	SPTS	N=9 (2,2/3,2,2,2)	2.20	1.95			_			
3.50 - 4.50 3.50	L 8 D 7	· · · · · · · · · · · · · · · · · · ·								
							_			
							=			
4.50 - 4.95	SPTS	N=12 (3,2/3,3,3,3)	2.20	3.55						
4.50 - 5.20	L 9						=			
								5.00 +7.95		
					Firm dark red, mottled bluish Gravel is angular coarse of p		_	(0.20) 5.20 +7.75		\setminus
					siltstone. (MADE GROUND)	,	/ =	0.20 11.10		
5.50 - 5.95 5.50 - 6.50	SPTS L 12	N=24 (3,4/5,5,6,8)	5.50	3.10	Dark grey slightly sandy SIL	Т.	'			\bot
5.50 5.50	D 10 D 11				(MADE GROUND - Pulveris	ed Fuel Ash)	5.70-6.00 clayey -			
							_			
							=			\setminus
6 50 - 6 95	SDTS	N=54 (6 9/10 13 15 16)	5.50	3 00] =			
6.50 - 6.95 6.50 - 7.00 6.50	L 14 D 13	N=54 (6,9/10,13,15,16)	5.50	3.90			_			
0.50	D 13						_			
7.00 - 8.50	L 15						7.00-7.50 brownish— grey —			
							_			
							=	(5.10)		
								,		
							_			
8.50 - 8.95 8.50 - 9.50	SPTS L 17	N=26 (5,5/6,6,7,7)	8.50	4.65			_			
8.50	D 16						_			
							_			
							=			
9.50 - 10.50	L 18						9.50-10.00 slightly —			$ \cdot $
5.55 - 10.50	L 10						gravelly. Gravel is - angular to -			
							subrounded of =			\downarrow
							cemented siltstone		rxxxxxxxx	
ındwater Entr	rios				Donth Polated Remarks			Chiecline Det-	le .	
	ries rike Remarks	3	Depth Se	aled	Depth Related Remarks Depths (m) Remarks			Chiselling Detai Depths (m)	IS Duration (mins)	Tools
									,	
: For explanat	tion of symbols	and abbreviations Proje	ct	WES	ST BURTON C/D POWER STATIO	N		Borehole		
ey to Explorate ed levels in me	tory Hole Record etres. Stratum t	ds. All depths and nickness given in							рцили	
ets in depth co	olumn. Copyriaht SOCC	TEC UK Limited AGS	ct No.		02-17				ועוחכ	
duced levels in me	etres. Stratum t olumn. Copyright SOCC	Proje	ct No. ed out for		02-17 eck Construction Limited			I	BH101 Sheet 1 of 4	



Logged D	DS DP MS	Start 08/12/20 ⁻ End	17 Cor	uipment, Methods and Rema nacchio 305. namic sampling followed by ro F Hammer ID: AR868, Rod typ	tary core drillin	ng (PWF	size) using water flush.			mmeter Casing Depth mm) (m) 121 16.00	Ground Le Coordinate National G	es (m)	12.95 mOD E 480314.02 N 386252.60
Approved	WIS	15/12/20		Triammer 12.74 (000, 1004 typ							National G	iiu	14 300232.00
Sample	s and				Date	Time	Strata Description	n					
Dep	pth	TCR SCR RQD	lf	Records/Samples	Casing	Water		ain		Detail	Depth, L (Thickness)	evel Legend	Backfill
	12.00	SPTS L 20 D 19		N=11 (5,3/3,2,3,3)	9.00	4.15	Dark grey slightly sandy: (MADE GROUND - Pulve Firm greyish brown silty (odour. (ALLUVIUM) Thinly laminated orangisl and grey, becoming dark Slight organic odour. (ALLUVIUM)	erised Fuel Ash) CLAY. Strong org	brown		10.30 (0.30) 10.60	+2.65	
	- 13.50	L 21										X X X X X X X X X X X X X X X X X X X	
- - - - - - - - - - - - - - - - - - -		SPTS L 21A		N=9 (3,3/2,2,2,3)	11/12/17 9.00 12/12/17 9.00	1630 6.10 0800 7.50				-	(4.60)	X X X X X X X X X X X X X X X X X X X	
- 14.50	- 16.00	L 22			12/12/17	1707	Soft to firm reddish brown greenish grey, CLAY. (MERCIA MUDSTONE -	•	light		15.20	-2.25	
- - 16.00 - - 16.0			- NA -	N=15 (3,4/3,4,4,4) D 23	13/12/17 16.00 13/12/17 16.00	0800 3.60					(1.25)	-3.50	
- - - - - - - - -	- 17.50	100 40 0	NI 30 60				Extremely weak thinly lar grey, mottled reddish bro reduced to subrounded fi in a clay matrix. Fracture closely spaced, undulatin (MERCIA MUDSTONE -	wn, MUDSTONE ine gravel size fra s are subhorizon ng and planar, sm	E, locally agments ital, very	17.10 10 degree - 5mm band of white - fibrous gypsum - 17.35 subhorizontal - 10mm band of white -	(1.15)		
17.50 - 18.05 -		100 34 25	- NA -	Flush: 16.00 - 19.80 Water 100% CS 24			Stiff reddish brown, locall grey, CLAY, locally reduc coarse very stiff clay to e lithorelics. (MERCIA MUDSTONE -	ed to subrounded xtremely weak m Class C)	d fine to nudstone	fibrous gypsum	17.60 (0.45) 18.05	-5.10	
18.83 - 18.30 -		87 82 59	NI 100 200	CS 25			Extremely weak very thin grey, locally mottled light MUDSTONE with 20 deg (up to 20mm) of white fib are subhorizontal, closely planar and smooth. (MERCIA MUDSTONE -	reddish brown, ree subhorizonta rous gypsum. Fr y spaced, undula	al bands actures	19.15 subhorizontal 40mm spaced bands of white fibrous gypsum	(1.85)		
- - - 19.80 -	- 19.94			SPTC 50 (25 for 70mm/50 for 70mm)	16.00	1.90				19.53 10 degree 30mm bands of white fibrous gypsum.	- - 19.90	-6.95	
Groundwate No. Dep	er Entries pth Strike		κs		Depth Seal	led	Depth Related Remarks Depths (m) Remarks				Chiselling Depths (m		ins) Tools use
Notes: For ex see Key to Ex reduced level brackets in de Scale 1:5	xploratory I ls in metres epth colum © Copy	Hole Reco s. Stratum	rds. All d thicknes OTEC UI	epths and		A71	ST BURTON C/D POWER STA' 02-17 eck Construction Limited	TION			Borehole	BH10 ² Sheet 2 of 4	



							· · · · · · · · · · · · · · · · · · ·				
Drilled D	DS	Start	· ·	uipment, Methods and Rema	ırks			iameter Casing Depth (mm) (m)	Ground Level		12.95 mOD
Logged D	DP	08/12/201		macchio 305. namic sampling followed by ro	tary core drilli	na (PWF	1.20 30.30	121 16.00	Coordinates (m)		E 480314.02
Checked N	MS	End	SP	T Hammer ID: AR868, Rod typ	e: NWY.		,g		National Grid		N 386252.60
Approved		15/12/201	17								
Sample	s and	Tests					Strata Description		1		
Dep		TCR SCR RQD	If	Records/Samples	Date	Time	Main	Detail	Depth, Level	Legend	Backfill
		RQD			Casing	Water	Extremely weak thinly laminated dark reddish		(Thickness)		- N L
_ F							brown MUDSTONE, locally disintegrating to	-			-1 $+1$
_ -			NI				subrounded fine to medium gravel size fragments in a clay matrix. Fractures are subhorizontal, very	-			NN
19.80 -	21.30	100 23	10	Flush: 19.80 - 21.30 Water 90%			closely spaced, undulating, rough.	_	(1.25)		$ \mathbf{k} $
_		0	30	90 /6			(MERCIA MUDSTONE - Class B)	-			1117
_											- V V
_ _				_			Extremely weak very thinly bedded light reddish	- :	21.15 -8.20		MK
							brown MUDSTONE, locally reduced to subangular				
			NI				and subrounded fine to coarse lithorelics of very stiff clay to extremely weak mudstone. Fractures	21.50 20 degree - 10mm band of off -			-1 M
			20 120				are subhorizontal, very closely spaced, planar,	white fibrous	(1.00)		NN
_		100					rough. (MERCIA MUDSTONE - Class B)	gypsum = 21.70 subhorizontal =			+
21.30 -	22.80	37 19		Flush: 21.30 - 22.80 Water 85%			,	30mm band of off white fibrous	22.15 -9.20		$\downarrow \uparrow \downarrow \uparrow \downarrow \uparrow$
-				3070			Extremely weak, locally very weak, very thinly bedded dark reddish brown, becoming light	gypsum _ 21.80 subhorizontal	1		- V V
_ 22.50 -	- 22.59			CS 26			greenish grey, locally mottled reddish brown,	30mm band of off	1		N K
<u>-</u>					13/12/17 16.00	1615 3.60	MUDSTONE with 10 degree subhorizontal, closely spaced (up to 10mm) bands of white	white fibrous _ gypsum _	1		+11
- 22.80 - - 22.88 -				SPTC 50 (25 for 50mm/50 for 70mm)	14/12/17	0800	fibrous gypsum. Fractures are subhorizontal,	22.05-22.10 20 - degree stepped -	1		$\exists A \lor$
	20.10			CS 27	16.00	7.60	closely, locally medium spaced, planar, smooth. (MERCIA MUDSTONE - Class B)	10mm band of off— white fibrous -			
Ξ							(gypsum -	1		+1L
=		100	30					22.60-22.80 turning - to clay and -	(0.70)		$\exists A Z$
22.80 -	24.30	97 75	200 350	Flush: 22.80 - 24.30 Water 100%				subangular to - subrounded fine to -	(2.70)		M
- -		13		10070				coarse gravel size lithorelics of			\mathbb{R}^{1}
_								mudstone			1417
E								23.30 subhorizontal _ 30mm band of white _			NN
_								fibrous gypsum _ 23.85 subhorizontal _	_		+11.
24.50 -	- 24.69			CS 28				60mm band of white _			
_								fibrous gypsum – 24.10 10 degree –			NN
- 04.00	05.00	92		-			Extremely weak very thinly bedded dark reddish	15mm band of white - fibrous gypsum -	24.85 -11.90		
24.30 -	25.60	62 51					brown MUDSTONE, locally turning to (up to	24.25 20 degree			[] []
-							50mm) clay bands and subangular to subrounded fine to coarse gravel size mudstone lithorelics.	fibrous gypsum	_		AV
_							Fractures are subhorizontal, closely spaced,	24.30-24.35 - subhorizontal and -			$ \mathbf{A} \mathbf{A}$
_							undulating, smooth. (MERCIA MUDSTONE - Class B)	80 degree bands (up to 5mm) of white			
- - 25.82 -	- 25.92			Flush: 24.30 - 27.10 Water 50%			(MERCHANIOSOFORE Glass S)	fibrous gypsum 24.65 10 degree			$ \mathcal{A} $
				CS 29				50mm band of white			
_		80						fibrous gypsum _ 25.70-25.90 _			
25.60 -	- 27.10	27	NI 100					subhorizontal and - 70 degree 5mm -	(3.10)		- A /
		19	140					band of withe — fibrous gypsum -	(6.10)		MK
_								26.25 10 degree -	_		+11
								30mm band of white - fibrous gypsum -			-1 $+1$ $^{\prime}$
 27.10 -	- 27.25			SPTC 50 (19,6 for	14/12/17 16.00	1430 1.10		26.70 subhorizontal 30mm band of			NN
- - 27.30 -	27.43			15mm/50 for 60mm) CS 30	15/12/17	0800		fibrous white gypsum			
- -					16.00	8.90		26.70-27.10 AZCL.	1		
- -								Core loss assumed _ to be more _	1		$- \mathcal{A} \setminus$
– – 27.10 -	- 28.70	94 43						weathered material _ 27.15 10 degree _	-		$ \mathcal{M} $
		43		1			Extremely weak thinly laminated dark reddish	20mm band of— fibrous white -	27.95 -15.00		+11
_							brown, becoming light greenish grey, MUDSTONE, locally reduced to clay and angular	gypsum -	1		A/A/A
_							to subrounded fine to coarse gravel size	-	1		MK
_							mudstone lithorelics. Fractures are randomly orientated, extremely closely locally, very closely	-	1		+11
_				Flush: 27.10 - 30.30 Water 80%			spaced, smooth, planar.		1		-[A]
_			NI NI				(MERCIA MUDSTONE - Class B)		1		NN
- -			8						(2.35)		+I L
_		94 50						-	1		-[A]
_ 28.70 -	- 30.30	0						_			NV
-								-	1		
- -								=	1		111
Groundwate No. Dep	er Entries pth Strike		, e		Depth Sea	alod	Depth Related Remarks Depths (m) Remarks		Chiselling Deta Depths (m)	ils Duration (mins)	Tools used
ло. Бер	pui otike	Neman			թեհա 26։	aieu	sopula (III) Indiidina		Debuis (III)	Duration (IIIIIIS)	ioois used
Natac: 5	vola/'	of a:1		handations I- :		10.00	T BURTON C/D DOW/CD CTATION		Davet - 1-		
Notes: For ex see Key to Ex educed level	xploratory	Hole Reco	rds. All d	depths and		WES	ST BURTON C/D POWER STATION		Borehole	D	
reduced level orackets in de	epth colum	nn.		Project	No.	A71	02-17			BH101	
Scale 1:5	50 Copy	yright SOC		Carried Carried	out for	Firb	eck Construction Limited			Sheet 3 of 4	
					_						



rilled DS	Start	Equip	oment, Methods and R	emarks		Depth from to	Dia	meter Casing Depth	Ground Level		12.95 mOD
ogged DP	08/12/2017	Coma Dynar	acchio 305. mic sampling followed b	y rotary core dril	ling (PWF	(m) (m) 1.20 30.30 size) using water flush.	30	mm) (m) 121 16.00	Coordinates (m)		480314.02
hecked MS	End 15/12/2017	SPT F	Hammer ID: AR868, Roo	type: NWY.					National Grid	N	386252.60
amples and						Strata Description			ł		
		If	Records/Samples	Date	Time			Detail	Depth, Level	Legend	Backfil
Бериі	RQD		records/oumples				:h	Detail	(Thickness)		
Depth Depth	Tests TCR RQD	If	Records/Samples	Date Casing 15/12/17 16.00	Time Water 1630 Dry	Strata Description Main Extremely weak thinly laminated dark reddish brown, becoming light greenish grey, MUDSTONE, locally reduced to clay and ang to subrounded fine to coarse gravel size mudstone lithorelics. Fractures are randomly orientated, extremely closely locally, very clos spaced, smooth, planar. (MERCIA MUDSTONE - Class B) END OF EXPLORATORY HOLE	gular y	Detail	Depth, Level (Thickness) 30.30 -17.35	Legend	Backfil
								- - - - - - - - - - - - - - - - - - -			
	<u> </u>										
roundwater Entrie o. Depth Strik	s e Remarks			Depth Se	ealed	Depth Related Remarks Depths (m) Remarks			Chiselling Detail Depths (m)	s Duration (mins)	Tools us
tes: For explanation	of symbols ar	nd abbre	eviations Proj	ect	WE	ST BURTON C/D POWER STATION			Borehole		
Key to Exploratory	y Hole Records	s. All dep	oths and		*****					211404	
ckets in depth colu	mn.		Limited AGS Proje	ect No.	A71	02-17			[3H101	
© Cop ale 1:50			Carr 3 09:34:06	ied out for	Firb	eck Construction Limited				Sheet 4 of 4	



rilled DS ogged DP hecked MS	Start 05/12/201 End 08/12/201	7 C D S	quipment, Methods and Remonacchio 305. ynamic sampling followed by r PT Hammer ID: AR868, Rod ty	otary core dril	ling (PWF	(m) (m) (i	mmeter Casing Depth mm) (m) 121 12.30	Ground Level Coordinates (m National Grid		13.01 mOD E 480272.23 N 386209.16
pproved Samples and		/				Strata Description				
		lf	Records/Samples	Date	Time		Detail	Depth, Level	Legend	Backfill
0.20 0.20 - 1.20 0.50 - 1.00 1.20 - 1.65 1.20 - 2.20 1.20	D1 B4 D2 D3 SPTS L6 D5	If	Records/Samples 0.00-1.20 Hand excavated inspection pit. N=58 (2,8/12,16,16,14)	Date	Time Water	Main TOPSOIL. Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail	Depth, Level (Thickness) (0.25) 0.25 +12.		Backfill
3.50 - 3.95 3.50 3.50 - 4.00 4.00 - 5.30	SPTS D7 B8 L9		N=32 (3,5/5,7,9,11)	05/12/17 5.50 06/12/17 5.50	2.30 1630 0.10 0800 0.35	Firm dark greyish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of clinker and brick. (MADE GROUND) Firm reddish brown, locally mottled light bluish grey, slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of clinker. Frequent pockets (up to 20mm) of light bluish grey silt. (MADE GROUND) Firm thinly laminated brown and dark grey slightly sandy silty CLAY with rare angular fine to medium gravel of clinker. (MADE GROUND) Dark grey slightly sandy SILT.	4.00-4.15 AZCL— 4.70-4.75 light grey angular coarse gravel of quartzite	4.20 (0.10) +8.6 4.30 (0.10) +8.7 (0.70) +8.0 (0.50) +7.5		
6.50 - 6.95 6.50 - 7.50 6.50	SPTS L 10 D 9A		N=2 (1,0/0,1,0,1)	6.00	3.90	(MADE GROUND - Pulverised Fuel Ash)	6.80-7.50 rare - angular fine to - medium gravel of brick -			
7.50 - 8.80 8.80 - 9.25 8.80 - 9.80 8.80	L 11 SPTS L 13 D 12		N=10 (2,3/2,2,3,3)	6.00	6.30			(4.25)		
9.80 - 11.30 iroundwater Entrie	L 14			Depth Se		Firm dark greyish brown, becoming dark brown, silty CLAY with rare relict roots (<2x<120mm). Depth Related Remarks Depths (m) Remarks	-	9.75 +3.2 Chiselling Det Depths (m)	<u> </u>	
otes: For explanatio te Key to Explorator duced levels in met	n of symbols y Hole Recoi res. Stratum	and al rds. All thickne	depths and ess given in LIK Limited AGS	:	WE:	ST BURTON C/D POWER STATION 02-17 eck Construction Limited		Borehole	BH102 Sheet 1 of 4	



Drilled DS Logged DP	Start 05/12/201	`	uipment, Methods and Rema	arks			iameter Casing Depth (mm) (m) 121 12.30	Ground Level Coordinates (m)		13.01 mOD E 480272.23
Checked MS	End	Dyr	namic sampling followed by ro T Hammer ID: AR868, Rod typ	tary core drilli be: NWY.	ng (PWF	size) using water flush.	121 12.30	National Grid		N 386209.16
Approved	08/12/201	7								
Samples and	l Tests	•				Strata Description				
Depth	TCR SCR RQD	lf	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
_	RQD			Casing	water	Faint organic odour.	_	(0.75)	×_^	\neg
= =						(ALLUVIUM)	10.30-10.50 mottled -	(0.70)	<u> </u>	\mathbb{Z}/\mathbb{Z}
Ė						Thinly laminated dark orangish brown, mottled	dark greyish green -	10.50 +2.51	— <u>×</u> ^	
E						brown and light grey, slightly sandy clayey SILT with rare relict rootlets. Rare pockets (up to 5mm)				
						of dark purple fine sand.		_		
= -						(ALLUVIUM)	-	(1.30)		
- 11.30 - 11.75 - 11.30 - 12.70	SPTS L 16		N=11 (2,1/2,3,3,3)	9.00	3.65		_	-	$\times \times $	1//
11.30 	D 15								$\times \times $	Y/,
<u>-</u>						Thinly laminated dark brown slightly sandy clayey	-	11.80 +1.21	$\times \times $	
_						SILT with rare relict roots (<3x<40mm). (ALLUVIUM)	_	-	$\times \times \times \times \times$	
-								(0.80)	$\times \times $	
E] =	12.60, 40) +0.41	$\times \times \times \times$	-1/2
- 12.70 - 13.15 - 12.70			N=36 (6,6/7,8,10,11) D 17	10.50	6.55	Firm reddish brown, mottled light bluish grey, silty CLAY.	<i> </i> =	12.60 12.70 ^{0.10}) +0.41 +0.31	×	1//
Ė						Soft to firm, mottled greenish brown, silty CLAY. (MERCIA MUDSTONE - Class Dc)		(0.70)	×	+//
- 12.70 - 13.80	86 NA						13.20-13.40 clayey -	(3.70)	××	
E	NA					Firm reddish brown, locally mottled light greenish	silt -	13.40 -0.39	×	
<u> </u>				06/12/17 12.30	1703 3.90	grey and brown, slightly gravelly CLAY. Gravel is subangular fine lithorelicts of extremely weak]	_		
-		-		07/12/17	0800	mudstone. (MERCIA MUDSTONE - Class Da)		1		
F		NA -		12.30	3.90	(METON MODOLONE - Class Da)	14.10-14.15 light -	1		1//
F							greenish grey - clayey silt -	(1.84)		
13.80 - 15.30	97 4						_			-V/
-	0									
L							14.90-15.24 firm - thinly laminated	-		
-			20			Extraoreal consists the land to the land t	bluish grey, mottled - light reddish brown, -	15.24 -2.23		
E			40 60			Extremely weak thinly laminated light reddish brown, locally mottled light bluish grey	clayey SILT	(0.26) 15.50 -2.49		1//
E		- NA				MUDSTONE with frequent white gypsum (<1x<20mm). Fractures are subhorizontal, very	1 =	(0.40)		\mathbb{R}/\mathbb{Z}
ļ.	67	-	_			closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)	15.95 subhorizontal	15.90 -2.89		-V/
15.30 - 16.80	17	NI 20				Soft to firm dark reddish brown, mottled light greenish grey, gravelly CLAY with rare subvertical	10mm band of white _ fibrous gypsum _	1		
[50	-			bands (up to 5mm) of white fibrous gypsum.	16.15 subhorizontal _ 50mm band of white _			
F		NA -				Gravel is tabular fine to coarse lithorelicts of extremely weak mudstone.	fibrous gypsum — 16.20-16.30 —	1		1//
– – 16.80 - 16.86			SPTC 50 (25 for 30mm/50	12.30	3.60	((MERCIA MUDSTONE - Class Da) Extremely weak thinly and thickly laminated light	reduced to - subrounded coarse -	1		1//
- 16.90 - 17.00 			for 30mm) CS 18			grey, locally dark grey, dark reddish brown, mottled dark greenish grey, MUDSTONE with	gravel size - fragments			$\mathbb{Y}/$
E						subhorizontal undulating bands (up to 20mm) of white fibrous gypsum. Fractures are	16.90-17.00 mottled dark reddish brown			
<u> </u>	100	NI 40				subhorizontal, extremely closely to closely	17.25-17.30 reduced to clay	(2.95)		
16.80 - 18.30 - 17.70 - 17.78	43 7	60	CS 19			spaced, undulating, planar, rough, smooth. (MERCIA MUDSTONE - Class B)	bound tabular fine to coarse gravel size mudstone lithorelicts	1		
_							17.60-17.70 _ reduced to clay			
— 18.00 - 18.15 —			CS 20				bound tabular fine to _ coarse gravel size _			1//
<u> </u>			-				mudstone lithorelicts – 17.75-17.80 mottled –	1		Y/
 		NA					dark reddish brown — 17.80-18.25 10-30 —	-		
-		-	- NI				degree very closely = spaced, undulating =	18.850 10) -5.84		
 18.30 - 19.80	100 5		20 30			Extremely weak thinly laminated dark grey MUDSTONE with very closely spaced, 30 degree	bands (up to 5mm) of white fibrous	18.85 _{0.10} -5.84 18.95 ^{0.10} -5.94		
E	0					bands (up to 5mm) of white fibrous gypsum. Fractures are subhorizontal, very closely spaced,	gypsum _ 18.25-18.85 very		F	
L		- NA				undulating, rough. (MERCIA MUDSTONE - Class B)	stiff thinly laminated dark reddish brown,	(1.15)	[- <u>-</u> <u>1</u>	1//
! .		-				Stiff fissured reddish brown, locally mottled bluish	mottled dark _ greenish grey, clay _	(1.13)	[-	1//
- 19.80 - 19.88 -			SPTC 50 (25 for 40mm/50 for 40mm)	12.30	2.90	grey, CLAY, locally reduced to clay bound tabular fine to coarse gravel size lithorelicts of mudstone.	18.50 20 degree _ 20mm band of white _	1	<u> </u>	\mathbb{Z}/\mathbb{Z}
							fibrous gypsum		,	
Groundwater Entrie	s			<u> </u>		Depth Related Remarks		Chiselling Detai	ls	
No. Depth Strik	e Remark	s		Depth Sea	aled	Depths (m) Remarks		Depths (m)	Duration (mins	s) Tools used
Notes: For explanation see Key to Exploratory	y Hole Recor	rds. All d	epths and		WES	ST BURTON C/D POWER STATION		Borehole		
reduced levels in metr brackets in depth colu	mn.		s given in K Limited AGS	No.	A71	02-17			3H102	
Scale 1:50	Jyright SOC		K Limited AGS 018 09:34:06 Carried	out for	Firb	eck Construction Limited			Sheet 2 of 4	



Drilled DS	Start	E	quipment, Methods and Rema	arks				meter Casing Depth	Ground Leve	el	13.01 mOD
ogged DP	05/12/20		omacchio 305.		(5)4/5	1.20 3	(m) (r 30.07	nm) (m) 121 12.30	Coordinates	(m)	E 480272.23
Checked MS	End		ynamic sampling followed by ro PT Hammer ID: AR868, Rod typ		ng (PWF	size) using water flush.			National Grid	i	N 386209.16
Approved	08/12/20	17									
Samples and						Strata Description			ł		
	TCR		T	Date	Time	•			Depth, Le	vel Legend	Backfill
Depth	SCR RQD	If	Records/Samples	Casing	Water	Main		Detail	(Thickness)		
20.13 - 20.26			NI 100			Fissures are randomly orientated, very clo spaced, undulating, rough.	osely	18.95-19.05 60 _ degree 2mm bands _	20.10 (0.25)	-7.09	
			120 CS 21			(MERCIA MUDSTONE)	tlad dark	of white fibrous _ gypsum _	1	7.34	
19.80 - 21.30	100	-				Extremely weak dark reddish brown, mottl grey, MUDSTONE. Fractures are subhorize		19.15 subhorizontal — 15mm band of white —			
	21 15	NA -				10 degree, closely spaced, undulating, sm	mooth.	fibrous gypsum -	(0.60)		
						(MERCIA MUDSTONE - Class B) Soft, locally firm, reddish brown, mottled b	bluish	19.50 subhorizontal – 20mm band of white –	20.95	7.94	
=		NI 30				grey, gravelly CLAY. Gravel is angular to		fibrous gypsum 19.75-19.80			
21.30 - 21.38		30	SPTC 50 (25 for 50mm/50	12.30	3.00	subrounded fine to medium of very stiff to extremely weak mudstone lithorelicts.	' /	extremely weak - thinly laminated -			///
		NI	for 30mm) Flush: 12.70 - 30.00 Water			(MERCIA MUDSTONE - Class C) Extremely weak to very weak thinly lamina	otod light	bluish grey mudstone			
21.57 - 21.90		110 330	100% CS 22			and dark grey, locally mottled dark reddish		19.80-19.85			1/
	400					MUDSTONE, locally reduced to clay boun tabular fine to coarse gravel size mudston		subvertical 2mm _ bands of white _			//
21.30 - 22.80	100 45					lithorelicts. Fractures are subhorizontal, ve		fibrous gypsum 19.85-20.10 _	(2.15)		
	27					closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)		subhorizontal to 20 _ degree very closely _			
		NI 30				,		spaced bands (up to – 5mm) of white –			+/
		100						fibrous gypsum -			
	<u> </u>	-						20.30-20.35 tending to clay bound	}		- /
-								tabular fine to medium gravel size	22.40	10.00	1/
			1			Very stiff fissured reddish brown gravelly 0 with very closely spaced, 30 degree bands		lithorelicts 20.50 subhorizontal	23.10 -	10.09	//
	100					10mm) of white fibrous gypsum. Gravel is	s ` '	20mm band of white	. ,	10.44	
22.80 - 24.30	7	NI				subangular fine to coarse lithorelicts of extended weak mudstone. Fissures are randomly	ktremely	21.45-21.50 40 _ degree 5mm band _	-55		
		5 10				orientated, very closely spaced, undulating	ng,	of white fibrous _	1		\mathbb{Y}
						planar, rough. (MERCIA MUDSTONE)		gypsum _ 21.95 subhorizontal			//
						Extremely weak thinly bedded dark reddis		20mm undulating – band of white –			
24.30 - 24.39			SPTC 50 (25 for 50mm/50 for 40mm)	12.30	3.10	MUDSTONE, locally reduced to clay boun tabular coarse gravel size mudstone lithor		fibrous gypsum - 22.70-22.80 2No			
		60 130	•			Fractures are subhorizontal, very closely t	to	50mm bands of — white fibrous —			//
24.72 - 24.85		200				medium spaced, planar, undulating, rough smooth.	h,	gypsum -			
_	100		_			(MERCIA MUDSTONE - Class B)		22.80 subhorizontal 20mm band of white			
24.30 - 25.80	33 23							fibrous gypsum _ 24.00-24.20 10	(3.20)		\times
								degree very closely _ spaced bands (up to _			
								5mm) of white fibrous gypsum _			
								24.30-24.50 10-30 _			1/
		<u></u> .						degree very closely – spaced band (up to0 –			//
-		NI -						10mm) of white— fibrous gypsum -			
								24.93 subhorizontal = 20mm band of white =			
25.00. 27.20	100							fibrous gypsum _ 25.10-25.30 40 _			
25.80 - 27.30 26.62 - 26.73	13		CS 24			Extremely weak to very weak thinly bedde	ed dark	degree very closely		13.64	//
						reddish brown MUDSTONE with very clos	sely	spaced band (up to	(0.20) 26.85 - (0.15)	13.84	
				07/12/17	1630	spaced, subhorizontal to 20 degree band 2mm) of white fibrous gypsum. Fractures		fibrous gypsum 25.55 subhorizontal _	27.00 -	13.99	1/
27.30 - 27.42		NI NI	SPTC 50 (25 for 70mm/50	12.30	4.05	subhorizontal, closely spaced, undulating,		10mm band of white _ fibrous gypsum _			\mathbb{Z}_{2}
21.00-21.42		60 60	for 50mm)	08/12/17	0800 8.23	smooth. (MERCIA MUDSTONE - Class B)		26.60-26.70 dark _ bluish grey _	(0.80)		//
		60		12.30	8.23	Soft dark reddish brown slightly gravelly C		27.00-27.10 30 - degree 20mm band -	-		
			-			Gravel is angular fine to medium of very s extremely weak lithorelicts of mudstone.	ouiii	of white fibrous -	27.80 -	14.79	
27.30 - 28.80	100 8	NI				(MERICÁ MUDSTONE - Class Da) Extremely weak to very weak thickly bedd	ded dark	gypsum - 27.90 subhorizontal	10.00		
0 _0.00	0	NI 30				reddish brown and bluish grey MUDSTON	NE,	20mm band of white	(0.60)		
			_			locally reduced to clay bound tabular med coarse gravel size lithorelicts of mudstone		28.20 subhorizontal 30mm band of white	28.40 -	15.39	
						Fractures are randomly orientated, very cl		fibrous gypsum _	1		
						spaced, undulating, smooth. (MERICA MUDSTONE - Class B)	Ш	_	1		
						Extremely weak thinly bedded bluish grey		_			
		NI NI				MUDSTONE disintegrated to subrounded gravel size lithorelicts of mudstone in a cla		=	(1.50)		
28.80 - 30.00	100 13	50				matrix.	-,	=			
20.00 - 30.00	0					(MERCIA MUDSTONE - Class B) Extremely weak thinly bedded reddish bro	own	29.50-29.70 dark —			
						MUDSTONE. Fractures are randomly orie	entated,	bluish grey silty clay - with subrounded -			
			10	08/12/17 12:30	1130 Dry	very closely spaced, undulating, smooth. (MERCIA MUDSTONE - Class B)		coarse gravel of gypsum	29.90 -	16.89	
			10 30	12.30	Ury		/1		(0.17)	13 /3 /3 /3	
oundwater Entries						Depth Related Remarks			Chiselling I	Details	
o. Depth Strike		ks		Depth Sea	aled	Depths (m) Remarks			Depths (m)	Duration (mins) Tools us
tes: For explanation					WE	ST BURTON C/D POWER STATION			Borehole		
Key to Exploratory uced levels in metre	es. Stratum		ess given in	No		12.47				BH102	
ckets in depth colun © Copy		OTEC	UK Limited AGS Project			02-17				_	
ale 1:50			2018 09:34:06 Carried	out for	Firb	eck Construction Limited				Sheet 3 of 4	



Drilled DS Logged DP Chacked MS	Start 05/12/2017	Comacchio	t, Methods and Rem 305. ampling followed by r		ing (PWF	size) using water flush.	Depth from (m) 1.20	to (m) 30.07	Diame (mm	ter Casing Depth) (m) 1 12.30	Coordinates (m)	E	13.01 mOD 480272.23
Checked MS Approved	End 08/12/2017	OI I HAIIIM	io. io. anoud, kud t	ps. 1444 I.							National Grid	r	l 386209.16
		1				Strata Description	n .						
		If R	ecords/Samples	Date	Time					Detail	Depth, Level	Legend	Backfill
	RQD	SPTC	50 (25 for 30mm/50	12.50				s are				V. V. V. V	
Samples and Depth 30.00 - 30.07			ecords/Samples 50 (25 for 30mm/50 nm)	Casing	Time Water 3.10.	Meak white fibrous GYPs subhorizontal, very close smooth. END OF EXPLO	ain SUM. Fracture: ly spaced, und	lulating,		Detail	Depth, Level (Thickness) 30.07 -17.06		Backfill
- 										=		1	
Groundwater Entries No. Depth Strike		•		Depth Sea	aled	Depth Related Remarks Depths (m) Remarks					Chiselling Detai Depths (m)	s Duration (mins)	Tools used
Notes: For explanation see Key to Exploratory educed levels in metre brackets in depth column © Copt.	Hole Records es. Stratum thio nn. yright SOCOT	. All depths ar ckness given i	nd in d AGS		A71	ST BURTON C/D POWER STATE 02-17 eck Construction Limited	TION				Borehole	3H102 Sheet 4 of 4	



Drilled SR	Start	Equipment, Methods and Rem	arks			to Diameter Casing Depth	Ground Level	1	2.70 mOD
Logged DT	04/12/2017	Comacchio 305. Dynamic sampling and rotary co	ro drilling (DM	/E cizo) u	1 20 20	(m) (mm) (m) 9.80 121 15.30	Coordinates (m)	E	480278.51
Checked MS	End	SPT Hammer ID: SM39, Rod typ	e: NWY.	vr size) u	ing water nusn.		National Grid	N	386251.64
Approved	08/12/2017								
Samples and	d Tests				Strata Description				
Depth	TCR SCR RQD	If Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
_	RQD	0.00-1.20 Hand excavated	Cusing	Water	TOPSOIL.		(0.20)	X//XX/X	
=		inspection pit.			Dark grey slightly sandy SILT.		0.20 +12.50		V/I
_ 	D 1				(MADE GROUND - Pulverised Fuel Ash)	_			\mathbb{Z}/A
- 0.50 - 1.00 -	B 2								I / A
Ė									$Y \neq \lambda$
1.00 1.00 - 1.20	D 3 B 4					_			\mathbb{Z}/\mathbb{Z}
- 1.20 - 1.65 - 1.20 - 2.10	SPTS L 5	N=47 (3,4/7,10,15,15)		Dry			1		V/I
Ė									1/A
F									I / λ
F						-			Y/J
2.10 - 3.10	L 6								
_							(4.30)		\mathbb{Z}/A
F							1		[//
E]	1		r/1
L							1		\mathbb{Z}/\mathbb{Z}
- 3.10 - 3.58 - 3.10 - 4.10	SPTS L 7	N=3 (1,0/1,0,1,1) SW=25	3.00	Dry					VA
-							1		//
F						-	1		I/λ
ţ.							1		Y/J
<u> </u>							1		V/I
- 4.10 - 4.70 -	L8					=			1//4
-						-			I/A
F			05/12/17 4.00	1630 Dry	Dark reddish brown and grey subangular to		4.50 +8.20		Y/J
- 4.70 - 4.76 -	SPTC	50 (25 for 35mm/50 for 20mm)	06/12/17	0730	subrounded fine to coarse sandy silty GRA concrete and mudstone.	AVEL OF -	(0.50)		\mathbb{Z}/\mathbb{I}
<u> </u>		Floring 4.70 F FO Western	4.00	Dry	(MADE GROUND) Dark grey slightly sandy SILT.		5.00 +7.70		$\mathbb{Z}A$
E		Flush: 4.70 - 5.50 Water 100%			(MADE GROUND - Pulverised Fuel Ash)				I/A
	L 9					5.50-5.52 very —			I/λ
- 5.30 - 6.40						sandy - 5.50-6.20 slightly -			Y/J
- -						clayey			V/I
<u> </u>						-			1//
Ė						-			I/A
- 6.40 - 7.40 -	L 10								Y/λ
- -						-			\mathbb{Z}/\mathbb{Z}
F						-	(4.00)		V/I
-							(4.00)		\mathbb{Z}/A
_ - 7.40 - 7.85	SPTS	N=38 (1,2/4,6,11,17)	5.15	Domo		7.40.9.10 cliabily			I / A
- 7.40 - 7.65 - 7.40 - 8.30	L 11	11-00 (1,2/4,0,11,17)	0.10	Damp		7.40-8.10 slightly - clayey	1		\mathbb{Z}/\mathbb{Z}
<u> </u>							1		V/I
L									VA
L							1		//
- 8.30 - 9.30 -	L 12					-	1		Y/λ
F						_	1		\mathbb{Z}/\mathbb{Z}
ļ.						8.80 relic wood -			V/I
<u> </u>					Firm dark greyish brown slightly sandy silty	fragments - (80x2mm)	9.00 +3.70		//
ļ.					(ALLUVIUM)	8.90 rare coarse gravel of siltstone	1	XX	[//
- 9.30 - 9.75 - 9.30 - 10.30	SPTS L 13	N=11 (3,2/3,3,2,3)	9.15	Damp		9.30 clay becomes soft to firm	1	×-^x	Y/J
E						-	(1.30)	XX	V/I
E						-	<u> </u>	\times	VA
									\bot
Groundwater Entrie No. Depth Strik	s e Remarks		Depth Se	aled	Depth Related Remarks Depths (m) Remarks		Chiselling Detail Depths (m)	ls Duration (mins)	Tools used
					,		, ()		
Notes: For explanatio	n of symbols an	d abbreviations Project	:	WE	T BURTON C/D POWER STATION		Borehole		
see Key to Explorator reduced levels in met	es. Stratum thic	kness given in	No	A 7.1	12.47		.	3H103	
brackets in depth colu © Co	pyright SOCOTI	EC UK Limited AGS Carried	No.		02-17 eck Construction Limited				
Scale 1:50	12	/01/2018 09:34:07	. Jul 101	riib	55 SSIISUUGION EIIIIIGU		l .	Sheet 1 of 3	



Drilled SR Logged DT	Start 04/12/201	17 Cor	uipment, Methods and Ren macchio 305. namic sampling and rotary co	ore drillina (PV	VF size) us	sing water flush.	Depth from to (m) (m) 1.20 29.80	Diameter Casing Depth (mm) (m) 121 15.30	Coordinate	es (m)		12.70 mOD E 480278.51
Checked MS Approved	End 08/12/201	SP	T Hammer ID: SM39, Rod ty	pe: NWY.	-, -				National G	irid		N 386251.64
Samples and						Strata Descriptio	<u>L </u>		1			
Depth	TCR SCR RQD	If	Records/Samples	Date Casing	Time Water		lain	Detail	Depth, I		Legend	Backfil
	KQD			- Cuomig		Firm dark greyish brown	slightly sandy silty CLA	Y.	- (************************************		×_^×	\Box
10.30 - 11.30	L 14					(ALLUVIUM) Dark greyish brown, occa	asionally mottled	10.30-11.30 rare - wood fragments -	10.30	+2.40	$\overline{X} = \overline{X}$	
						brownish orange, slightly	sandy clayey SILT.	(<40x2mm) -	(0.60)		×××× ××××	
											(
_				06/12/17	1630	Thinly laminated dark gre SILT.	ey slightly sandy clayey		10.90	+1.80	$\times \times $	
11.30 - 12.30	L 15			9.15	Damp	(ALLUVIUM)		11.30-12.30 no			××××	
	2.0			07/12/17 9.15	0730 Damp			recovery -			(
					·				(1.40)		X X X X X X X X X X X X X X X X X X X	
_											X X X X X X X X X X X X X X X X X X X	
											××××	
12.30 - 13.30	L 16					Dark greyish brown sligh	tly sandy SILT.	12.30-12.50 very - clayey -	12.30	+0.40	XXXX	
						(ALLUVIUM)		12.60 becoming - thinly laminated -	1		×××× ××××	
								12.90-13.05 thickly	(0.85)		$\times \times \times \times$	
-								laminated clayey silt	13.15	-0.45	$\times \times $	
13.30 - 13.75			N=28 (8,3/4,5,7,12)	12.30	0.60	Soft to firm reddish brow greenish grey, CLAY.	n, locally mottled light	13.30-15.30 no	10.10	0.40		
						(MERCIA MUDSTONE -	Class Dc)	recovery -	1		L- <u>-</u>	$\mathbb{Z}_{\mathbb{Z}}$
13.30 - 14.30	0										<u> </u>	//
	0										<u> </u>	
											<u> </u>	
	0	_							(3.15)			
14.30 - 15.30	0	NA -							(****)			1/
-												1/
												//
15.30 - 16.30	100 4											
-	0							_			F_=_	
16.30 - 16.44			SPTS 50 (13,12 for	15.30	0.60		h	16.23-16.30 extremely weak	16.30	-3.60		1/
			25mm/50 for 45mm)			Firm to very stiff reddish CLAY. Gravel is subangu	lar to subrounded fine	to greenish grey				
						medium lithorelicts of ver weak mudstone. Fissure	s are randomly	' -				1/
- 40.00 47.00	100	- NA				orientated, extremely clo planar, rough.	sely to closely spaced,	17.05-17.06 off	(1.35)			
16.30 - 17.80	22 0	-				(MERCIA MUDSTONE -	Class C)	white fibrous				
								gypsum _ 17.30-17.32 off _ white fibrous _				
						Extremely weak and very	, weak thinly laminated	gypsum -	17.65	-4.95		
						very thinly bedded green brown, locally calcareous	ish grey and reddish	white fibrous				
		NI 40				are subhorizontal to subv	vertical, very closely	40.47.40.00 # -	(0.95)			
		90				spaced, undulating rough and gypsum.		white fibrous - gypsum -				1/
17.80 - 19.30	100 19 0		_			(MERCIA MUDSTONE -			18.60	-5.90		//
		_				Firm to very stiff fissured gravelly CLAY. Gravel is	subangular to	18.75-18.80 off white fibrous				
-		NA -				subrounded fine to media mudstone and very stiff of	clay lithorelics. Fissures	avneum	(0.70)			
19.30 - 19.42			SPTC 50 (18,7 for	15.30	0.80	are randomly orientated, spaced, planar to undula	ting, rough.	19.20-19.24 off - white fibrous -	19.30	-6.60		
			30mm/50 for 20mm)			\((MERCIA MUDSTONE - Stiff to very stiff fissured \)	Class C)	/ gypsum - 19.50 gypsum 40 -				1/
						mottled greenish grey, sli gravelly CLAY. Gravel is	ightly sandy slightly	degree 19.60 gypsum 40				
						subrounded fine to media		degree				
Froundwater Entries Froundwater Entries		ks		Depth Se	aled	Depth Related Remarks Depths (m) Remarks			Chiselling Depths (r	_	s Duration (mins	a) Tools
Dopai du ike	. Aumail			Sopin de		- Spare (m) Nomans			spais (i	, '	_ #. #. #. (IIIIII)	., 100is u
otes: For explanation e Key to Exploratory	Hole Reco	rds. All d	lepths and	t	WE	ST BURTON C/D POWER STA	TION		Borehole			
duced levels in metre ackets in depth colur	es. Stratum nn.	thicknes	ss given in Projec	t No.	A71	02-17				E	3H103	
© Cop Scale 1:50	yright SOC		K Limited AGS 018 09:34:07 Carrie	d out for	Firb	eck Construction Limited			L		Sheet 2 of 3	



				_				I	3	OCOTEC
led SR	Start		Equipment, Methods and Rem Comacchio 305.	arks		(m) (m)	(mm) (m)	Ground Level		12.70 mOE
iged DT	04/12/20		Dynamic sampling and rotary co		VF size) us	1.20 29.80 ing water flush.	121 15.30	Coordinates (m)		E 480278.51
ecked MS	End 08/12/20		SPT Hammer ID: SM39, Rod typ	e: NVVY.				National Grid		N 386251.6
oroved						Strata Description				
imples an				Date	Time			Depth, Level	Legend	Backfi
Depth	TCR SCR RQD	lf	Records/Samples	Casing	Water	Main	Detail	(Thickness)		
19.30 - 20.80						mudstone lithorelics. Fissures are subhorizontal and subvertical, planar to undulating, rough. Rare	20.05 gypsum 60 _ degree _			
	100 3					fissures at 40-60 degree infilled with off white extremely weak gypsum.	20.30-20.34 very - weak thinly -	(2.10)		
	15	-		07/12/17	1630	(MERCIA MUDSTONE - Class C)	laminated mudstone band			- Y /
20.80 - 20.88		NA -	SPTC 50 (25 for 30mm/50	15.30	3.70		20.60 gypsum 40 degree			
			for 45mm)	08/12/17 15.30	0730 1.80		_ degree _			
							-			
	100					Vancuusali thinly hadded greenish gray leadly	21.30-21.31 off - white fibrous -	21.40 -8.70		1/
20.80 - 22.30	50 15		Flush: 13.30 - 29.80 Water 100%			Very weak thinly bedded greenish grey, locally calcareous, MUDSTONE, locally tending to clay	gypsum = 21.40-21.70 reddish = 21.40-21.70			
	15		100%			with gravel size mudstone lithorelics. Fractures are subhorizontal and subvertical, very closely to	brown locally mottled greenish			
			00.47			closely spaced, planar, occasionally undulating,	grey			
22.08 - 22.21			CS 17			smooth. (MERCIA MUDSTONE - Class B)	subvertical undulating rough			
		1					fracture			//
22.55 - 22.65		NI 50					-	(2.50)		
		150					-	1 1		
22.30 - 23.80	100 27							7		1/
	0									
							23.30-23.33 off - white fibrous -			
							gypsum -			
23.80 - 23.90		-	SPTC 50 (25 for 35mm/50	15.30	0.80		23.80-23.87 cream -			1/
23.80 - 23.87			for 60mm) CS 19			Stiff fissured reddish brown, locally mottled greenish grey, slightly sandy slightly gravelly	fibrous gypsum -	23.90 -11.20	, <u> </u>	//
						CLAY. Gravel is subangular to subrounded fine to	-			
	100					medium of extremely weak mudstone and very stiff clay lithorelics. Fissures are subhorizontal to				
23.80 - 25.30	9					subvertical, planar, smooth, locally infilled with	-			
						gypsum. (MERCIA MUDSTONE - Class C)	-			
							25.27-25.30 off			
		1					white fibrous			
							gypsum _			//
							-			
25.30 - 26.80	100 7	- NA						(4.30)		
	0	-					26.15-26.17 extremely weak			
							thinly laminated _ mudstone band _			
							26.55-26.58 _ extremely weak _			
26.80 - 26.86		-	SPTC 50 (25 for 30mm/50	15.30	0.80		thinly laminated -			
			for 35mm)				mudstone band -			
							27.25-27.28 fine to			
	100						medium gravel of gypsum and	1		// ,
26.80 - 28.30	7 0						mudstone _ 27.53-27.58 fine to _			
							medium gravel of - gypsum and -			1/
							mudstone	1		1//
						Very stiff indistinctly fissured greenish grey	-	28.20 -15.5		
						gravelly to very gravelly CLAY. Gravel is	-	1		
						subangular to subrounded fine to coarse of extremely weak mudstone lithorelics. Fissures are				
		_				randomly orientated, extremely closely spaced, planar, smooth.	-	1		1//
28.95 - 29.01 28.30 - 29.80	100 6	NA	CS 20			(MERCIA MUDSTONE - Class C)	28.95-29.01 off_ white fibrous	(1.60)		/.
	0	-					gypsum	1		
							-			
				08/12/17 15.30	1630 0.60		-	1		//
		<u> </u>	_	15.30	0.00	END OF EXPLORATORY HOLE	+	29.80 -17.10		
								+		
di						Parth Balata I Barra		Obj. 111 -		
oundwater Entri Depth Stril		ks		Depth Se	ealed	Depth Related Remarks Depths (m) Remarks		Chiselling Deta Depths (m)	ils Duration (mins) Tools us
• · · ·								' '	,	
es: For explanation	ry Hole Reco	ords. A	II depths and		WE	T BURTON C/D POWER STATION		Borehole		
ced levels in met kets in depth col	tres. Stratum umn.	thickr	less given in Project	No.	A71	02-17			BH103	
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rilled SR	Start	I	Equipment, Methods and Rem	arks			iameter Casing Depth (mm) (m)	Ground Level		13.09 mC	D
ogged DP	11/12/2017	[Comacchio 205. Dynamic sampling and rotary co	re drilling (PV	VF size) u	1.20 30.10	121 15.20	Coordinates (m)		E 480328.	
hecked MS	End	- 1	SPT Hammer ID: SM39, Rod typ	e: NWY.				National Grid	١	N 386217.:	30
pproved	15/12/2017	7				Strata Danawinting					
amples and				Date	Time	Strata Description		Depth, Level	Legend	Backf	11!
Depth	TCR SCR RQD	lf	·	Casing	Water	Main	Detail	(Thickness)	Legenu	Dacki	
			0.00-1.20 Hand excavated inspection pit.			TOPSOIL.				٠.۵	0
								(0.60)		°.	4
0.50 0.50 - 0.60	D 1 B 2					Dark grey, locally grey, slightly sandy SILT.	-	0.60 +12.4			
						(MADE GROUND - Pulverised Fuel Ash)				$ \cdot $	/
1.00 1.00 - 1.20	D 3 B 4						_			\Box	
1.20 - 1.65 1.20 - 2.20	SPTS L 5		N=8 (2,2/2,2,2,2)		Dry		-			\mathcal{A}	/
											/
							-			$I\lambda$	ĺ
										Y_{\perp}	ľ
2.20 - 3.20	L6										/
2.20 0.20										\mathcal{A}	/
							_	(4.10)			
							=	(4.10)		$ \mathbb{I} $	
]		$\perp \perp$	ľ
3.20 - 3.65 3.20 - 4.20	SPTS L 7		N=10 (2,3/3,2,3,2)	3.00	Dry]	1			1
1.20 7.20								1			V
								1		И	
]			
4.20 - 4.90	L 8										١,
+.ZU - 4.9U	Lo]	1			ľ
							-	1		$ \cdot $	ľ
	0		50 (05 () -			Soft to firm reddish brown slightly sandy gravelly	† :	4.70 +8.39		\square	
4.90 - 4.97	SPTC		50 (25 for 45mm/50 for 30mm)		Dry	CLAY. Gravel is angular to subrounded fine to coarse of quartzite and clinker.	/ -	4.90 +8.19	'	\mathcal{A}	
				11/12/17 4.70	1630 0.80	\(\((\text{MADE GROUND}\)\) Dark grey slightly sandy slightly gravelly SILT.	/	(0.40) 5.30 (0.40) +7.79			
5.40 - 5.85 5.40 - 6.10	SPTS L 9		N=5 (1,2/1,1,2,1)	12/12/17	0.80	Gravel is angular to rounded fine to medium of siltstone and concrete.	A =	5.40 (0.10) +7.69			Ĺ
				4.70	0.80	(MADE GROUND) Soft dark reddish brown gravelly CLAY. Gravel is	1 =	(0.30) 5.70 +7.39		\mathbf{I}	
						angular fine to medium of clinker. (MADE GROUND)	-			\mathbb{Z}	
6.10 - 7.10	L 10					Soft reddish brown slightly sandy gravelly CLAY.	1			\square	/
						Gravel is angular to rounded fine to medium of quartzite, brick and clinker.					/
						(MADE GROUND) Dark grey slightly sandy SILT.	-	_			/
						(MADE GROUND - Pulverised Fuel Ash)	-			\mathbf{I}_{A}	,
7.10 - 7.55	SPTS		N=21 (1,3/4,3,6,8)	4.70	Damp		-			\mathbf{I}	
7.18 - 8.00	L 11		14-21 (1,5/4,0,0,0)	14.70	Dump					\mathbb{Z}	/
							-			\mathcal{A}	
8.00 - 9.00	L 12]	1			ļ
							=	1			ĺ
								1		\perp	ĺ
							-	(5.65)		\mathbb{Z}	
											l
9.00 - 9.45 9.00 - 10.00	SPTS L 13		N=10 (2,3/3,2,3,2)	7.00	Damp		9.10-10.00 sandy -	1		И	l
1.13 .0.00	5						-	1			ļ
								1			
							-			$\perp \perp$	ľ
					-					\perp L	ŀ
oundwater Entrie				Donth C	alod	Depth Related Remarks		Chiselling Deta		Tools ::	
. Depth Strik	e Remarks	•		Depth Se	aieū	Depths (m) Remarks		Depths (m)	Duration (mins)	ioois u	5
s: For explanatio	n of symbols a	and a	abbreviations Project		WE	ST BURTON C/D POWER STATION		Borehole			
Key to Explorator ced levels in met	y Hole Record res. Stratum th	ds. Al	I depths and less given in						BH104		
kets in depth colu © Co	pyright SOCO			No. out for		02-17 eck Construction Limited					
ale 1:50		12/01	/2018 09:34:08	Jul IUI	FIRE	CON CONSUMEUNI LIMINEU		ļ.	Sheet 1 of 4		_



	Start	1	uipment, Methods and Rema	rks			iameter Casing Depth (mm) (m)			13.09 mOD
·	11/12/2017	Dvn	nacchio 205. namic sampling and rotary core	e drilling (PW	F size) us	1 20 30 10	121 15.20	Coordinates (m)		E 480328.16
	End	SPI	Γ Hammer ID: SM39, Rod type	e: NWY.				National Grid		N 386217.30
	15/12/2017				1	Strate Decemention		ł		
amples and	TCR			Date	Time	Strata Description		Depth, Level	Legend	Backfill
Depth	SCR RQD	If	Records/Samples	Casing	Water	Main	Detail	(Thickness)		
11.00 - 11.45 11.00 - 12.00	SPTS L 15		N=9 (2,1/2,3,2,2)	10.70	Damp	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash) Thinly laminated light brown, mottled orangish	- -	11.35 +1.74		
12.00 - 13.00	L 16					brown, clayey SILT. (ALLUVIUM) Dark brown, locally dark greyish brown, clayey SILT. (ALLUVIUM)	- - - - - - - - - -	(0.35) - 11.70 +1.39 (1.30)	X X X X X X X X X X X X X X X X X X X	
				12/12/17 13.00	1630 Damp		_		$\begin{pmatrix} \overline{\mathbf{x}} & \overline{\mathbf{x}} & \overline{\mathbf{x}} \\ \mathbf{x} & \overline{\mathbf{x}} & \mathbf{x} \end{pmatrix}$	1#6
13.00 - 13.45 13.00 - 14.50	SPTS L 17		N=26 (3,4/6,6,6,8)	13/12/17 13.00	0730 11.20	Brown, mottled light brown, silty fine to coarse SAND. (ALLUVIUM) Firm, locally stiff, dark reddish brown, locally light bluish grey, CLAY. (MERCIA MUDSTONE - Class Dc)	-	13.00 +0.09 (1.00)	* * * * * * * * * * * * * * * * * * *	
14.50 - 15.20	71 NA NA		-			(WELCOA MODOTONE - Glass Buy	-	(2.45)		
15.20 - 16.60	100 NA NA	NA -	NI			Firm, locally stiff, dark reddish brown, becoming	- - - - -	16.45 -3.36		
16.60 - 16.70 - 16.79 - 16.90 - 16.60 - 18.10	100 27		NI NI SPTS 50 (25 for 50mm/50 for 45mm) CS 18	15.20	0.80	light grey, clayey angular to rounded fine to coarse GRAVEL of very stiff clay and extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C) Extremely weak thinly laminated dark grey MUDSTONE. Fractures are subhorizontal, closely spaced, smooth, undulating.	17.03 10 degree 50mm band of white fibrous gypsum	(0.25) 16.70 -3.61 16.80 -3.71 (0.50) 17.30 -4.21	* * * * * * * * * * * * * * * * * * *	
17.40 - 17.60 18.10 - 18.21	13	NI 60 100	CS 19			(MERCIA MUDSTONE - Class B) Firm to stiff thinly laminated dark reddish brown, locally light bluish grey, slightly gravelly CLAY. Gravel is angular to subrounded fine to medium of very stiff clay and extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	17.70-17.75 angular - fine to medium - gravel of gypsum -	(0.25) 17.55 -4.46 (0.25) 17.80 -4.71 (0.85)		
18.10 - 19.60	100 17 7					Extremely weak to very weak thinly laminated light greenish grey, mottled dark reddish brown, MUDSTONE with very closely spaced subhorizontal (up to 2mm) bands of white fibrous gypsum. Fractures are subhorizontal, closely spaced, rough, undulating. (MERCIA MUDSTONE - Class B) Extremely weak thinly laminated dark reddish	18.60 subhorizontal – 50mm band of white – fibrous gypsum – 19.20-19.30 –	18.65 -5.56 (0.45) 19.10 -6.01	* * * * * * * * * * * * * * * * * * *	
19.60 - 19.71			SPTC 50 (25 for 60mm/50 for 50mm)	15.20	0.60	brown, locally mottled light greenish grey, MUDSTONE. Fractures are randomly orientated, extremely closely spaced, rough, undulating. Extremely weak to very weak thinly to thickly laminated light greenish grey, locally mottled	subhorizontal very closely spaced bands of white fibrous gypsum 19.90 10 degree 5mm band of white fibrous gypsum			
roundwater Entries				l		Depth Related Remarks		Chiselling Detai	ls	
tes: For explanation o key to Exploratory Fluced levels in metres lockets in depth columr © Copyr	of symbols an Hole Records	s. All de ckness	epths and s given in Project N		WES	Depths (m) Remarks ST BURTON C/D POWER STATION 12-17		Depths (m)	Duration (mins)	Tools used
e Key to Exploratory H luced levels in metres ackets in depth column	Hole Records Stratum thin Stratum thin St	cknes	di Si	depths and ss given in Project I	depths and ss given in Project No. AGS Carried out for	depths and ss given in Project No. A710 IK Limited AGS Carried out for Fight	depths and ss given in Project No. A7102-17 IK Limited AGS Carried out for Firherk Construction Limited	depths and ss given in Hroject No. A7102-17 IK Limited AGS Fireck Construction Limited	depths and ss given in Project No. A7102-17 IK Limited AGS Carried out for Firherk Construction Limited	BH104 B Carried out for Firbeck Construction Limited.



rilled SR	Start	Ī,	quipment, Methods and Rema	ırks	_	Depth from to Di	ameter Casing Depth	Ground Level		13.09 mOD
gged DP	11/12/20		omacchio 205.	iiks			(mm) (m) 121 15.20	Coordinates (m)		E 480328.16
	End	D	ynamic sampling and rotary cor PT Hammer ID: SM39, Rod type		/F size) u	sing water flush.	121 15.20			
ecked MS		- 1	PT Hammer ID. SW39, Rou typi	E. INVVT.				National Grid		N 386217.3
proved	15/12/20					<u> </u>				
amples and		•		Date	Time	Strata Description			T	
Depth	TCR SCR RQD	If	Records/Samples	Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfi
						reddish brown, MUDSTONE, locally reduced to	-	(1.90)	* * * * * *	
19.60 - 21.10						clay bound angular fine to coarse gravel size mudstone lithorelicts. Fractures are subhorizontal	20.25-20.30 30 degree 5mm band			$^{\prime}$
19.00 - 21.10	100	- NA				closely spaced, locally non-intact, rough,	of white fibrous _	1		
	7 7	-				undulating. Firm light greenish grey gravelly CLAY. Gravel is	gypsum _ 20.40-20.50 50 _		• • • •	
						angular to subangular fine to medium of very stiff	degree 15mm band - of white fibrous -			Y /
			- NI			clay and extremely weak mudstone lithorelicts. (MERCIA MUDSTONE - Class C)	gypsum—	21.00 -7.91		
		1	60 100			Firm to stiff fissured dark reddish brown, locally	20.90 subhorizontal - 10mm band of white -	(0.30)		
						mottled light greenish grey, slightly gravelly CLAY. Gravel is angular to subangular fine to medium of	fibrous gypsum - 21.00 20 degree -	21.30 -8.21		//
		_				very stiff clay and extremely weak mudstone	20mm band of white -			
	100	NI				lithorelicts. Fissures are randomly orientated, very closely spaced, smooth, planar.	fibrous gypsum	(0.80)		
21.10 - 22.60	15 7	-				(MERCIA MUDSTONE - Class C)]			Y /
22.05 - 22.15	'		CS 21			Extremely weak very thinly bedded dark reddish	22.05-22.10 20 degree bands (up to	22.10 -9.01		
			Flush: 14.50 - 30.10 Water			brown MUDSTONE. Fractures are subhorizontal, closely spaced, rough, undulating.	5mm) of white _			
			100%	13/12/17 15.20	1630 1.80	(MERCIA MUDSTONE - Class B)	fibrous gypsum _ 22.30 subhorizontal _			Y /
22.60 - 22.67		1	SPTC 50 (25 for 30mm/50	14/12/17	0730	Extremely weak very thinly bedded light reddish brown MUDSTONE. locally redcued to clay bound	30mm band of white - fibrous gypsum -			
			for 40mm)	15.20	1.80	angular fine to coarse extremely weak mudstone	22.50 subhorizontal -			
		l				lithorelicts. Fractures are randomly orientated, very closely spaced, smooth, planar.	20mm band of white - fibrous peat			Y /
		NI 60				(MERCIA MUDSTONE - Class B)	22.80 subhorizontal 40mm band of white	(2.15)		
22.60 - 24.10	100 47	200	CS 22			Extremely weak thinly bedded light reddish brown	fibrous gypsum			
23.40 - 23.52	13		C5 22			MUDSTONE, locally tending to clay bound angular to subangular fine to coarse extremely	_			Y /
						weak mudstone lithorelicts. Fractures are				
						subhorizontal, closely spaced, locally non-intact, rough, undulating.				
						(MERCIA MUDSTONE - Class B)	_			/ /
								24.25 -11.1		
						Firm fissured dark reddish brown slightly gravelly CLAY. Gravel is angular to subrounded fine to	24.30-24.35 angular - fine to medium -	-		
		-				coarse of very stiff clay and extremely weak	gravel of gypsum -			/ /
	40	NA				mudstone lithorelicts. Fissures are randomly	24.50 10 degrees - 2mm band of white -	(0.85)		
24.10 - 25.60	0	1				orientated, closely spaced. (MERCIA MUDSTONE - Class C)	fibrous gypsum 24.60 subhorizontal			1/
	"					· ·	band of white	25.10 -12.0	1	//
						Extremely weak thinly bedded dark reddish brown, locally mottled greenish grey,	fibrous gypsum			
						MUDSTONE, locally tending to clay bound tabular	25.40 subhorizontal -			
25.60 - 25.70		NI	SPTC 50 (25 for 60mm/50	15.20	0.80	fine to coarse gravel size mudstone lithorelicts. Fractures are randomly orientated, occasionally	20mm band of white - fibrous gypsum -			//
		10	for 45mm)			10 degree, very closely spaced, smooth, planar.	25.60-25.80 clay	(1.35)		
		30				(MERCIA MUDSTONE - Class B)				1/
	13									//
25.60 - 27.00	7		00.22				-			
26.39 - 26.51	0		CS 23 NI			Extremely weak thinly laminated dark reddish	-	26.45 -13.3	6	1/
			50 100			brown MUDSTONE. Fractures are subhorizontal,]	(0.25) 26.70 -13.6	1	//
						closely spaced, undulating, rough. (MERCIA MUDSTONE - Class B)	/			1/.
		1				Firm dark reddish brown gravelly CLAY. Gravel is	26.95 subhorizontal 40mm band of white	-		1/
						angular to subrounded fine to coarse of very stiff clay and extremely weak mudstone lithorelicts.	fibrous gypsum	(4.00)		//
27.00 - 27.90	100 NA					(MERCIA MUDSTONE - Class C)		(1.20)		
21.00-21.00	NA NA						-	1		$\perp /$
								1		//
		1				Stiff fissured reddish brown, becoming light	-	27.90 -14.8	1	
	100					greenish grey, gravelly CLAY. Gravel is angular to] -	+		1/
27.90 - 28.60	0	NA				subangular fine to coarse of very stiff clay and extremely weak mudstone lithorelicts.	-	1		V /
	"	-				(MERCIA MUDSTONE - Class C)	28.50 subhorizontal -	1		
28.60 - 28.70		1	SPTC 50 (25 for 50mm/50 for 45mm)	15.20	0.60	•	20mm band of white	1		$\perp \!\!\! \perp \!\!\! \perp$
			101 4311111)				fibrous gypsum	(2.00)		$V_{\mathcal{I}}$
								(2.00)		
	100							1		\perp
28.60 - 30.10	9						29.40-29.47 very	1		V)
29.45 - 29.53	"		CS 24				weak mudstone with -	1		
							rounded gypsum inclusions (up to	-		$\perp \!\!\! \perp \!\!\! \perp$
		<u> </u>	N/A	14/12/17	1630		10mm) = 29.70-29.77 very	29.90 -16.8	1	V_{i}
			NI N/A	15.20	4.60		25.70 20.77 Very	(0.20)		
roundwater Entrie o. Depth Strik		·ks		Depth Se	aled	Depth Related Remarks Depths (m) Remarks		Chiselling Deta Depths (m)	ils Duration (mins)	Tools us
	· · · · · · · · · · · · · · · · · · · ·	-		_ 00011 00				()	(IIIII)	. 50.0 00
es: For explanation					WE	ST BURTON C/D POWER STATION		Borehole		
Key to Explorator iced levels in met	y Hole Reco res. Stratum	ords. All	depths and ess given in							
kets in depth colu © Co	ımn.		UK Limited AGS			02-17			BH104	
ale 1:50	. , ,		2018 09:34:08 Carried	out for	Firb	eck Construction Limited		I	Sheet 3 of 4	



gged DP ecked MS proved	End Dyi SP 15/12/2017	macchio 205. namic sampling and rotary ct T Hammer ID: SM39, Rod ty	ore drilling (PWF size) pe: NWY.		(mm) (m) 121 15.20	Coordinates (m) National Grid		E 480328.16 N 386217.30
amples and			Date Tim	Strata Description		Depth, Level	Legend	Backfill
Depth	TCR SCR If RQD	Records/Samples	Casing Wat	Main Extremely weak dark reddish brown MUDSTONE	Detail weak mudstone with	(Thickness)		
	1			Fractures are randomly orientated, very closely spaced, smooth planar.	rounded gypsum _ inclusions (up to _	30.10 -17.01	-	
				(MERCIA MUDSTONE - Class B) END OF EXPLORATORY HOLE	10mm) _			
				END OF EXPLORATORY HOLE	-			
					-			
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					=	-		
					-	1		
					-	-		
					=	-		
					_]		
					=	1		
		<u> </u>						
oundwater Entries . Depth Strike	s e Remarks		Depth Sealed	Depth Related Remarks Depths (m) Remarks		Chiselling Detail Depths (m)	ls Duration (mins)	Tools us
Key to Exploratory	of symbols and abb Hole Records. All d	epths and	t W	EST BURTON C/D POWER STATION		Borehole		
key to Exploratory iced levels in metro kets in depth colur	es. Stratum thicknes	s given in	t No. A	102-17			BH104	
Con	yright SOCOTEC U	K Limited AGS		beck Construction Limited		Ι	Sheet 4 of 4	



Drilled SS	Start	Equipment, Methods and R	Remarks		Depth from to	Diameter Casing Depth	Ground Level		13.31 mOD
Logged DP	11/12/2017	Beretta T41. Dynamic sampling followed b	ov rotory ooro dril	ling (DME	(m) (n) 1.20 29.50	(mm) (m) 121 15.00	Coordinates (m)	E	E 480217.44
Checked MS	End	SPT Hammer ID: AR1777, R	od type: NWY.	iiig (FWF	size) using water nusri.		National Grid	١	N 386221.29
Approved	15/12/2017								
Samples an	d Tests				Strata Description				
Depth	TCR SCR RQD	If Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
_	RQD	0.00-1.20 Hand excavat			TOPSOIL.		(**************************************	XXXXX	° , o ·
<u>-</u>		inspection pit.				-	(0.50)		
_							0.50 +12.81		
<u> </u>					Light greyish brown slightly sandy slightly graves SILT. Gravel is angular to subangular fine to	velly _			1717
<u> </u>					coarse of clinker and poorly cemented silt. (MADE GROUND - Pulverised Fuel Ash)				IIII
-					(YIY.
- 1.20 - 1.65 - 1.20 - 1.65	SPTS D 1	N=16 (3,4/4,4,5,3)		Dry					MM
_						_			ИИ
									1414
E									riri
_						=	(3.40)		YIYJ
<u> </u>							(0.40)		MM
-						-	1		
- 2.70 - 3.15 - 2.70 - 3.15	SPTS D 2	N=15 (2,4/3,4,4,4)		Dry		2.80-2.85 clayey -	1		1111
Ė						_	1		YYY
Ė							1		
F						-	1		ИИ
E						=	}		
E							3.90 +9.41		17.17.J
_			11/12/17 3.00	1600 Dry	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		J.30 +9.41		Y Y
- 4.20 - 4.65 - 4.20 - 4.65	SPTS D 3	N=20 (3,4/6,7,3,4)	12/12/17	0800	(4.20-5.30 driller - notes void -			MM
4.20 - 4.03	53		3.00	Dry		-			1414
_									
_									riri
						5.00-5.30 clayey—			V V
_ _ 5.30 - 5.75	SPTS	N=14 (4,2/3,4,3,4)	4.50	Dry		=			ИИ
- 5.30 - 5.75 -	D 4								1414
F						-			1414
	OPTO	00 (4 47/00 40 for 75mm)	D		=			YIY
- 6.00 - 6.30 - 6.00 - 6.30	SPTS D 5	39 (4,17/20,19 for 75mn	n) 6.00	Dry					ИИ
_									144
<u> </u>						_			
<u>-</u>						-			TITI
_							(6.10)		YIY.
_									ИИ
_									$\Box A \Box A$
-						_			1414
E									TITI
<u> </u>						8.00-8.50 slightly—	1		Y Y
_ _ _						gravelly. Gravel is - angular fine to -	1		ИИ
<u> </u>						coarse of poorly cemented silt	1		
_ - 8.70 - 9.15	SPTS	N=13 (5,4/3,3,3,4)	7.50	Dry					TH
- 8.70 - 9.15 -	D 6	- (-,,0,0, .)		2.9			1		Y[Y]
_						-	1		ИИ
<u>-</u>							1		ИИ
_									f f
-							1		TH'
- -						-	1000		V V
_							10.00 +3.31	**************************************	1
Groundwater Entri	es				Depth Related Remarks		Chiselling Detai	ls	
	ke Remarks		Depth Se	aled	Depths (m) Remarks			Duration (mins)	Tools used
Notes: For explanation	on of symbols ar	nd abbreviations Proj	ject	WE	ST BURTON C/D POWER STATION		Borehole		
see Key to Explorato reduced levels in me	tres. Stratum thi	s. All depths and ckness given in			02.47		.	BH105	
brackets in depth col	umn. opyright SOCOT	EC UK Limited AGS	ject No.		02-17		l '		
Scale 1:50		2/01/2018 09:34:08	ried out for	Firb	eck Construction Limited			Sheet 1 of 3	

Borehole Log

Equipment, Methods and Remarks

Drilled SS Start



Diameter Casing Depth Ground Level

ged DP	Start 11/12/201	7 Bei	uipment, Methods and Rema retta T41. namic sampling followed by ro		ing (PWF	(m) (m) 120 29.50	Diameter Casing Depth (mm) (m) 121 15.00	Coordinates (m))	13.31 m E 480217
ecked MS proved	End 15/12/201		T Hammer ID: AR1777, Rod t	/pe: NWY.				National Grid	1	N 386221
amples and						Strata Description				
Depth	TCR SCR RQD	lf	Records/Samples	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Back
						Thinly laminated orangish brown, mottled brownish grey, clayey SILT with rare pockets (up to 5mm) of dark purple silt. (ALLUVIUM) Soft greenish brown, mottled greenish grey, silty		(0.70)		
				12/12/17 10.50	1600 6.50	CLAY with slight organic odour. (ALLUVIUM) Medium dense dark grey silty fine to coarse SAND.		(0.50) 11.20 +2.1		0
11.50 - 11.95 11.50 - 11.95	100		N=12 (2,2/2,3,3,4) D 7	13/12/17 10.50	0800 8.50	(ALLUVIUM) Thinly to thickly laminated orangish brown,	- - - -	(0.85) 12.05 +1.26	× × × × × × × × × × × × × × × × × × ×	
11.50 - 13.00	0 0					mottled brownish grey, clayey SILT. (ALLUVIUM)	- - - - -	(0.95)		0
13.00 - 13.30 13.30 - 13.60 13.30 - 13.60			0 0 0 SPTS 34 (10,19/17,17 for 75mm) D 8	13.00	8.50	Firm reddish brown, mottled greenish grey, slightly gravelly CLAY. Gravel is angular to subangular fine to medium of mudstone. (MERCIA MUDSTONE - Class Dc)	- - - - - - - -	13.00 +0.3 ⁻	1	
13.30 - 14.80	0 0 0			13/12/17	1615	Firm reddish brown, mottled bluish grey, CLAY.		14.50 -1.15		
14.80 - 15.11 14.80 - 16.00	25 0 0		SPTC 37 (6,9 for 14mm/12,10,15 for 75mm)	14.80 14/12/17 14.80	0.50 0800 3.50	(MERCIA MUDSTONE - Class Dc)	-	(1.50)		
16.00 - 17.50	90 8 0					Firm fissured bluish grey, locally mottled reddish brown, slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mudstone. Fissures are randomly orientated, extremely closely spaced, rough undulating. (MERCIA MUDSTONE - Class Dc) Extremely weak thinly laminated light bluish grey MUDSTONE, locally disintegrated to subangular medium to coarse gravel size fragments.	16.20-16.26 subhorizontal 10 degree bands (up to 15mm) of white fibrous gypsum 16.37 subhorizontal 15mm band of white fibrous gypsum 16.69 subhorizontal 16.69 subhorizontal 15mm band of white fibrous gypsum 16.69 subhorizontal 15mm band of white fibrous gypsum 16.69 subhorizontal 15mm band of white fibrous gypsum 16.69 subhorizontal 16.69 subhorizontal 15mm band of white fibrous gypsum 16.69 subhorizontal 15mm band of whit	(0.20) 16.75 -3.44 (0.35)		
17.50 - 17.80 17.50 - 17.64		NI 10 50	- NI 50 130 - SPTC 42 (7,10/19,23 for 75mm)	15.00	3.50	Fractures are subvertical, closely spaced and locally non-intact, smooth, planar. (MERCIA MUDSTONE - Class B) Stiff fissured reddish brown, locally mottled bluish grey, gravelly CLAY. Gravel is subangular to subrounded fine to coarse of very stiff clay and extremely weak mudstone lithorelicts. Fissures	10mm band of white fibrous gypsum 16.75-16.85 10-20 degree bands (up to 10mm) of white fibrous gypsum 17.40-17.50 soft reddish brown,	(0.70) (0.70) 17.80 -4.49		
17.50 - 19.00	100 15 9	NA -	CS 9			are randomly orientated, very closely spaced, smooth, planar. [MERCIA MUDSTONE - Class C) Extremely weak to very weak very thinly bedded reddish brown, mottled greenish grey, MUDSTONE. Fractures are randomly orientated, very closely spaced, undulating, planar, smooth, undulating.	mottled greenish grey, clay 17.50 30 degree 10mm band of fibrous white gypsum 17.73-17.76 reduced to subrounded medium gravel size	(1.10) - 18.90 -5.58		
19.00 - 20.50	100 11 0		20 - 50			[MERCIAMUDSTONE - Class B) Firm fissured greenish grey, becoming reddish brown, gravelly CLAY. Gravel is angular to subrounded fine to coarse of very stiff clay and extremely weak mudstone lithorelicts. Fissures are randomly orientated, very closely spaced, rough, undulating. [MERCIA MUDSTONE - Class C)	fragments in soft clay 17.76-18.00 subhorizontal 40mm band of white fibrous gypsum 18.14 subhorizontal 10mm band of white fibrous gypsum 18.22 10 degree 15mm band of white 51mm band of white 51mm band of white 51mm band of white	(0.20) 19.10 -5.7§		
oundwater Entries						Denth Related Remarks	fibrous gypsum	Chisalling Deta	ils	
undwater Entries Depth Strike		s		Depth Se	aled	Depth Related Remarks Depths (m) Remarks		Chiselling Deta Depths (m)	ills Duration (mins)	Tools
s: For explanation Key to Exploratory ced levels in metre kets in depth colur	Hole Recores. Stratum	rds. All d thicknes	lepths and significant signifi	No.		ST BURTON C/D POWER STATION 32-17		Borehole	BH105	



										_
Drilled SS	Start	E	Equipment, Methods and Ren	narks			ameter Casing Depth	Ground Level		13.31 mOD
Logged DP	11/12/20		Beretta T41.			1.20 29.50	mm) (m) 121 15.00	Coordinates (m)		E 480217.44
Checked MS	End	<u>[</u>	Dynamic sampling followed by BPT Hammer ID: AR1777, Rod	otary core drill type: NWY.	ing (PWF	size) using water flush.		National Grid		N 386221.29
			7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	уро. ттт.				itational Gna		14 00022 1.20
Approved	15/12/20									
Samples and	_	3				Strata Description				
Depth	TCR SCR	If	Records/Samples	Date	Time	Main	Detail	Depth, Level	Legend	Backfill
	RQD			Casing	Water		19.15-19.23 40	(Thickness)	<u> </u>	
-						Extremely weak very thinly bedded dark reddish brown MUDSTONE. Fractures are subhorizontal,	degree and			
_		_				very closely spaced, smooth, undulating.	subhorizontal 10mm _ bands of white _	-		
– 20.50 - 20.95		NA	SPTC N=39	15.00	3.50	(MERCIA MUDSTONE - Class B)	fibrous gypsum _			
-		-	(8,10/10,8,12,9)			Firm to stiff reddish brown, locally mottled greenish grey, gravelly CLAY. Gravel is	19.98 subhorizontal – 15mm band of white –			
-						subangular to subrounded fine to coarse of very	fibrous gypsum -			
- -						stiff clay and extremely weak mudstone	20.30 10 degree - 30mm band of white	20.95 -7.64		
_ 21.08 - 21.28	93		CS 10			lithorelicts. (MERCIA MUDSTONE - Class C)	fibrous gypsum -	-		1/.
20.50 - 22.00	47 30					Extremely weak to very weak very thinly bedded	20.30-20.40 very stiff	1		
-	30		Flush: 13.30 - 29.50 Water 100%	•		reddish brown, becoming light greenish grey,	21.30-21.35 40			1//
- 21.60 - 21.72			CS 11			MUDSTONE. Fractures are subhorizontal to 10	degree 20mm band _ of white fibrous	_		V/
-		l NI				degrees, closely spaced, smooth, stepped. (MERCIA MUDSTONE - Class B)	gypsum			
-		100				(MERCHANIOSOTORE GLOSS S)	21.60-21.65 50 _ degree 5mm band	(1.95)		
- - 22.10 - 22.30		200	CS 12				of white fibrous _			
							gypsum _ 22.00 subhorizontal _	-		
-							30mm band of white -			//
_							fibrous gypsum —			-1/
- - 22.00 - 23.50	100 51						22.20-22.60 - subhorizontal to 20 -	1		\vee
_ 22.00 - 23.30	27						degree bands (up to	22.90 -9.59		
_						Extremely weak light greenish grey MUDSTONE,	5mm) of white fibrous gypsum	-9.59		
-		NI NI				locally tending to claybound tabular subangular to subrounded fine to coarse gravel size mudstone		(0.60)		
-		NI				lithorelicts. Fractures are randomly orientated,	-	(5.55)		$\perp / \prime /$
- - 23.50 - 23.65	<u> </u>		SPTC 25 (20 for 75mm/25	15.00	3.50	extremely closely spaced, smooth, undulating.	23.45 subhorizontal	23.50 -10.19		$V \neq$
-			for 75mm)			(MERCIA MUDSTONE - Class B)	50mm band of white _ fibrous gypsum _	-		
-						No recovery. Red clay/mudstone/gypsum. (Driller's description)	-			Y /
						(Briller & decompact)	_			
-	0	l _					_	1		
23.50 - 25.00	0	NA					=	(1.50)		
-	0	-					-	-	. — . —	
-							_			
				44/40/47	4000		-	-		
				14/12/17 15.00	1600 3.50					
_		1	\dashv	15/12/17	0800	Extremely weak thinly bedded light greenish grey,	-	25.00 -11.69		-V/
		NI 10		15/12/17 15.00	3.50	becoming dark reddish brown, MUDSTONE.		(0.50)		\perp / \rangle
		10 60				Fractures are subhorizontal, very closely spaced,	-	(0.50)		-V/
-		<u> </u>	\dashv			smooth, planar.		25.50 -12.19		$\perp / /$
	100					(MERCIA MUDSTONE - Class B) Extremely weak, locally very weak, very thinly		1		$\perp \!\!\! \perp \!\!\! \perp$
25.00 - 26.50 25.78 - 25.88	42 33		CS 13			bedded dark reddish brown, locally mottled] =	4		-1/-1
	33					greenish grey, MUDSTONE with subhorizontal	_	1		1/.
						bands (up to 5mm) of white fibrous gypsum. Fractures are subhorizontal, very closely spaced,	26.10 10 degree -	1		V /
						smooth, planar and undulating.	15mm band of white - fibrous gypsum -	-		-1//2
-						(MERCIA MUDSTONE - Class B)	26.10-26.40 locally =			
							reduced to claybound tabular			
							fine to coarse gravel			1 / .
							size mudstone _ lithorelicts	+		V /
_	90		00.44				26.25 subhorizontal			
27.16 - 27.31 26.50 - 28.00	80 53		CS 14				50mm band of white _ fibrous gypsum _	1		$Y \neq$
. 22 20.00	26	NI					26.50-26.90 drilling _	-		-1/-2
-		70 90					disturbed firm clay — 26.98-27.15 40 —	(4.00)		1/
		90					degree closely -	-		-V/
							spaced smooth - undulating fractures -	1		\perp / \prime
- 28.00 - 28.30	-	-	SPTC 47 (9,6/20,27 for	15.00			27.35 subhorizontal	1		\vee
28.16 - 28.27			75mm) CS 15				30mm band of white fibrous gypsum	1		$\perp / \prime /$
			100.0				28.30-28.40 locally	1		$Y \neq$
-							tending to	1		
	57						fine to coarse gravel	f		1/.
28.00 - 29.50	35 24						size mudstone	-		V /
_	24						lithorelicts _ 28.35 subhorizontal	1		$\perp / /$
							10mm band of white _	4		$Y \neq$
				15/12/17	1600		fibrous gypsum _ 28.60 subhorizontal _	1		-1/-1
				15.00	.500		10mm band of white -	20.50 10		
						END OF EXPLORATORY HOLE	fibrous gypsum –	29.50 -16.19		
							-	1		
] =	-		
	1									
Groundwater Entries	s					Depth Related Remarks		Chiselling Detai	ls	
No. Depth Strike	e Remar	rks		Depth Se	aled	Depths (m) Remarks		Depths (m)	Duration (mins)	Tools used
								I		
otes: For explanation				t	WES	T BURTON C/D POWER STATION		Borehole		
ee Key to Exploratory educed levels in metro	res. Stratum		ess given in						BH105	
ackets in depth colur		COTEC	UK Limited AGS	t No.	A71	12-17		l '	פטוווט	
Scale 1:50	yrigiit OUC		/2018 09:34:08 Carrie	d out for	Firb	eck Construction Limited			Sheet 3 of 3	
								T		



Drilled DS	Start	Equipment, Metho	ods and Rem	arks			Depth from to	Diameter Casing Depth	Ground Level		13.05 mOD
Logged DP	16/12/2017	Comacchio 305.	fall accord by con-		III (D)A/E	aina) waisa wataa fiya b	(m) (m) 1.20 29.80	(mm) (m) 121 16.00	Coordinates (m)		E 480274.50
Checked MS	End	SPT Hammer ID: A	R1121, Rod t	otary core dri ype: NWY.	lling (PWF	size) using water flush.			National Grid	1	N 386160.19
Approved	19/12/2017										
Samples and	d Tests	•				Strata Description	n		1		
Depth	TCR SCR RQD	If Records	/Samples	Date	Time		ain	Detail	Depth, Level	Legend	Backfill
	RQD	0.00-1.20 Har	•	Casing	Water	TOPSOIL.			(Thickness)	V//XV//X	_
- - 0.20 - 1.20	В 3	inspection pit.	·			Dark grey, locally grey, sl	lightly sandy slightly		0.20 +12.85		
- -						gravelly SILT. Gravel is a	ngular fine to medium	n of			$\perp / /$
— 0.50 —	D 1					clinker and poorly cemen (MADE GROUND - Pulve					\mathbb{Z}/\mathbb{Z}
_						`	,				V/
1.00	D 2										
- - 1.20 - 1.65	SPTS	N=56 (5,10/10	0,15,15,16)		Dry						\perp
- 1.20 - 2.20 - 1.20	L 5 D 4										Y//
_											Y/
_ _											
2.20 - 3.60	L 6										1/2
											Y/
-											
_											1//
_									1		1//
-									1		Y/.
<u>-</u>											V/
- 3.60 - 4.05 - 3.60 - 4.60	SPTS L 8	N=18 (2,3/3,4	,5,6)	3.00	Dry			-	1		1//
3.60 - 4.60	D 7										1//
_								-			YZ
_ _											
_ _											
4.60 - 5.60	L 9										\mathbb{Y}/\mathbb{Z}
_								4.80-4.95 clayey,			Y/
-								mottled brown	(9.55)		
- -											
											\mathbb{Z}/\mathbb{Z}
- 5.60 - 6.05	SPTS	N=14 (3,3/2,3	,4,5)	3.00	Dry						VZ
- 5.60 - 6.20 - 5.60	L 11 D 10										
-								_			
- - 6.20 - 7.70	L 12										Y//
-											
-											
_ _											
_								7.00-7.50 clayey-			Y//
											V/
=											
 - - 7.70 - 8.15	SPTS	N=20 (1,2/1,3	7.0\	6.00	Dry			-	1		$\perp / /$
7.70 - 9.40	L 14	IN-ZU (1,2/1,3	,,,,,,,	0.00	ыy				1		1//
- 7.70 	D 13								1		V/
- -									1		V/
-									1		$\perp / /$
-								-	1		Y//
-									1		V/
								_	1		V/
- - -											I/I
- - 9.40 - 10.40	L 15								1		Y/
-								-	1		V/
_						Dark grey slightly gravell		-	9.75 +3.30		
_	+ -			+		SAND. Gravel is angular	to subrounded fine to	0		*********	
				<u></u>							
Groundwater Entrie				Daniti C	onle d	Depth Related Remarks			Chiselling Detai		Tools
No. Depth Strik	e Remarks			Depth Se	ealed	Depths (m) Remarks			Depths (m)	Duration (mins)	Tools used
Notes: For explanatio see Key to Explorator	y Hole Records	. All depths and	Project		WE	ST BURTON C/D POWER STA	TION		Borehole		
educed levels in met	res. Stratum thic	ckness given in	Project	No.	A71	02-17				BH106	
© Co Scale 1:50	pyright SOCOT	EC UK Limited AG	S Carried			eck Construction Limited				Sheet 1 of 3	
-	12	2/01/2018 09:34:09								-	



Drilled DS	Start	E	Equipment, Methods and Rema	arks			ameter Casing Depth	Ground Level		13.05 mOD
Logged DP	16/12/20		Comacchio 305.		(D)ME	1 20 29 80	(mm) (m) 121 16.00	Coordinates (m)		E 480274.50
Checked MS	End		Dynamic sampling followed by ro SPT Hammer ID: AR1121, Rod ty		ig (PWF	size) using water flush.		National Grid		N 386160.19
Approved	19/12/20)17								
		_				Strata Description		ł		
Samples and	TCR	-		Date	Time	Strata Description		Booth Lovel	Lamand	Backfill
Depth	SCR RQD	If	Records/Samples	Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Dackilli
_						coarse of clinker and slag.	_		********	
 -						(MADE GROUND)	_			
- 10.40 - 10.85	SPTS		N=13 (2,2/3,3,4,3)	10.40	2.10		-	-		
10.40 - 11.00 	L 16] =			1//
_								(1.90)		
11.00 - 12.50	L 17						10.95-11.00 soft_			
11.00 - 12.50	"						dark grey silty clay _	-		
-										
_							_			$\perp / /$
_							11.65 soft dark	11.65 +1.40		\vee
						Orangish brown, mottled brown and grey, clayey SILT.	greenish grey silty			
_						(MADE GROUND)	clay _			
-							-	(0.85)		
							-			
– 12.50 - 12.95	SPTS		N=10 (1,2/1,2,3,4)	12.00	3.00	Madison dans day!		12.50 +0.55		$\perp /$
— 12.50 - 13.70	L 19 D 18		, , , , , , , , ,			Medium dense dark brownish grey gravelly slightly clayey fine to coarse SAND. Gravel is	-	1.50		V/
- 12.50 -	18 ע					angular fine of clinker.		(0.70)		$\perp / /$
_						(MADE GROUND)	12.90-13.00 soft - orangish brown clay	(5 0)		+/
<u> </u>								13.20 -0.15		
<u> </u>						Dark brown thinly laminated clayey SILT.]	(0.20)	$\times \times \times$	$\perp / /$
<u> </u>						(ALLUVIUM) Soft thinly laminated light bluish grey, mottled	1 -	13.40 -0.35	$\times \times $	Y/
– – 13.70 - 15.10	L 20					reddish brown, silty CLAY. Slight organic odour.		(0.30) 13.70 -0.65	$\frac{\times}{\times} \times \frac{\times}{\times} \times \frac{\times}{\times}$	
E						(ALLUVIUM) Dark brown clayey SILT.	/ -	0.00	××××××××××××××××××××××××××××××××××××××	1//
<u> </u>						(ALLUVIUM)] -	(0.65)	××××××××××××××××××××××××××××××××××××××	V/
<u>-</u>						•			$\frac{\hat{\times} \times \hat{\times} \times \hat{\times}}{\hat{\times} \times \hat{\times}}$	
=						O-fi to form and dish harmy and the delicity areas.	-	14.35 -1.30	$\times \bigcirc \times \bigcirc \times$	Y/,
_						Soft to firm reddish brown, mottled bluish grey, CLAY.	_			
_						(MERCIA MUDSTONE - Class Dc)			[-]	\perp / \prime
_								(4.45)	HH	Y/
	0		N. 99 (9 9/5				45 40 45 25 176	(1.15)		
- 15.10 - 15.55 - 15.10 - 16.00	SPTS L 22		N=22 (2,3/5,5,6,6)	15.00	3.00		15.10-15.25 AZCL -	1	├	1//
15.10 	D 21								<u> </u>	\mathbb{Z}/\mathbb{Z}
_						Bluish grey SILT with frequent pockets (up to	-	15.50 -2.45	<u> </u>	-1/-1
F						30mm) of clayey silt.		(0.30)	$\times \times $	$\perp / /$
 -				16/12/17 15.60	1530 0.90	(MERCIA MUDSTONE - Class Dc)	1 :	15.80 -2.75	×××	V/
	-	I		18/12/17	0.90	Stiff fissured bluish grey CLAY. Fissures are randomly orientated, extremely closely spaced,	16.00-16.20 drilling	1	HH	$\perp / /$
16.25 - 16.32			CS 22A	15.60	5.95	undulating, smooth.	disturbed soft bluish - grey clay -	(0.70)		$\perp /$.
10.20 - 10.32	100		OO ZZI			(MERCIA MUDSTONE - Class Dc)	16.25-16.30 = subhorizontal 50mm		├	
16.00 - 17.05	5					Stiff fissured reddish brown CLAY. Fissures are	band of white	16.50 -3.45		1//
_	0					subhorizontal to 10 degree, undulating, rough.	fibrous gypsum 16.70 20 degree	-		YZ
-						(MERCIA MUDSTONE - Class Dc)	10mm band of white	(0.65)		
17.05 - 17.18	-	-	SPTC 50 (25 for 70mm/50	16.00	2.90		fibrous gypsum 17.00 subhorizontal _			1//
L		- NA	for 60mm)			Stiff, locally very stiff, fissured dark reddish brown	15mm band of white _ fibrous gypsum with _	17.15 -4.10		V/
F		- 1				slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse lithorelicts of very stiff	mudstone inclusions -	1		-1/-1
 - -						to extremely weak mudstone. Fissures are	17.40 subhorizontal — 10mm band of white —	1		1//
17.05 40.55	100					randomly orientated, extremely closely spaced,	fibrous gypsum -	1		V/
- 17.05 - 18.55 -	0					planar, smooth. (MERCIA MUDSTONE - Class Da)	17.50-17.68 = subvertical 2mm =	(1.40)		$\perp / /$
_						(MERCOLA MODO FORME - Class Da)	band of white			$\perp \!\!\! \perp \!\!\! \perp$.
<u>-</u>							17.70-18.00 30			-V/
							degree very closely spaced bands (up to	-		-1/2
_	-	1	_			Extremely weak thinly laminated dark reddish	5mm) of white _	18.55 -5.50		
_						brown, locally light greenish grey, MUDSTONE,	fibrous gypsum _ 18.40 subhorizontal _			
18.90 - 19.01		NA				locally reduced to claybound tabular fine to coarse	20mm band of white			
		60 100				gravel size mudstone lithorelicts. Fractures are subhorizontal, very closely spaced, undulating	18.75 subhorizontal _	(0.95)		V/
_ 18.55 - 20.05	100 25	'00				smooth and rough.	10mm band of white - fibrous gypsum -			-1//
5.55 20.05	7					(MERCIA MUDSTONE - Class B)	18.95 subhorizontal -	10.50		$\perp /$.
F						Extremely weak thinly laminated light greenish	20mm band of white — fibrous gypsum with —	19.50 -6.45		
_		NA				grey MUDSTONE. Mainly recovered as a claybound angular to subrounded coarse gravel.	mudstone inclusions =	(0.55)		$\perp / /$
<u>-</u>				L		Fractures are randomly orientated, extremely	fine and medium	<u> </u>		工 / .
						·	gypsum gravel			
Groundweter Fré		1		İ		Donth Boloted Bomonics		Chinalling Bad	lo.	
Groundwater Entrie No. Depth Strik		rks		Depth Sea	led	Depth Related Remarks Depths (m) Remarks		Chiselling Detai Depths (m)	IS Duration (mins)	Tools used
.vo. Deptii strik	. Remar			pehiii 969	iou	Sobrito (iii) iveilidiko		pehrija (ili)	Suracion (IIIIIS)	ioois used
Notes: For explanation	n of symbol	ls and a	abbreviations Project		WES	T BURTON C/D POWER STATION		Borehole		
see Key to Explorator reduced levels in metr	res. Stratum	ords. Al n thickn	ess given in					.	DП406	
brackets in depth colu	umn.		UK Limited AGS	No.	A71	12-17		l '	BH106	
Scale 1:50	PANGUE SOC		/2018 09:34:09 Carried	out for	Firb	eck Construction Limited		<u> </u>	Sheet 2 of 3	
								-	-	_



Drilled DS Logged DP Checked MS	Start 16/12/201 End	TOO Dyr SP	uipment, Methods and Rema macchio 305. namic sampling followed by ro T Hammer ID: AR1121, Rod ty	tary core drilling (P\	VF size) using water flush.		mm) (m) 121 16.00	Ground Level Coordinates (m) National Grid		13.05 mOD E 480274.50 N 386160.19
Approved Samples and	19/12/201	7			Strata Description	l n		-		
Depth	TCR SCR RQD	If	Records/Samples	Date Tin	e	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
20.05 - 20.19	RQD	F0	SPTC 50 (25 for	16.00 3.	closely spaced, planar, s		19.30 30 degree _	20.05 -7.00		
- 20.20 - 20.34 	90 35 19	50 100 140	50mm/32,18 for 15mm) CS 24		grey, mottled reddish bro subhorizontal to 10 degr bands (up to 5mm) of w Fractures are subhorizo spaced, planar and step	nly bedded light greenish own, MUDSTONE with ee very closely spaced nite fibrous gypsum. ntal to 10 degree, closely ped, smooth.	band of white fibrous gypsum	(0.40) 20.45 -7.40		
- - - - - 21.55 - 22.30	100 0 0	-			(MERCIA MUDSTONE - Very stiff fissured thinly) grey, becoming dark red CLAY. Gravel is tabular fine to coarse lithorelicts extremely weak mudsto orientated, very closely (MERCIA MUDSTONE -	aminated light greenish dish brown, gravelly angular to subrounded of very stiff clay to ne. Fissures are randomly spaced, planar, smooth.	mudstone inclusions			
- - 22.30 - 22.42 - - -		NA -	SPTC 50 (25 for 65mm/50 for 55mm)	16.00 3.	00		gypsum - 22.05 subhorizontal - 50mm band of white - fibrous gypsum 22.20-22.30 - Extremely weak - thinly laminated -	(3.45)		
	100 0 0		Flush: 16.00 - 29.80 Water 100%				dark reddish brown			
- - 23.90 - 24.00			- CS 25		Extremely weak thickly I	aminated reddish brown,	fibrous gypsum = 23.90 10 degree	23.90 -10.85		
	100 25	80 80 160			locally mottled light gree with subhorizontal very to 3mm thick) of white fil are subhorizontal, very		10mm band of white fibrous gypsum -	(0.45) 24.35 -11.30		
- 20.90 20.90 	11	- NA -			and planar, smooth. (MERCIA MUDSTONE - Firm indistinctly structur CLAY, locally reduced to subrounded fine to coar to extremely weak muds	ed dark reddish brown claybound tabular and se lithorelicts of very stiff	- - -	(1.05)		
- 25.30 - 25.39 - - - -	100	NI 30 60	SPTC 50 (25 for 40mm/50 for 50mm)	16.00 3.		Class C) minated dark reddish ctures are randomly rizontal, very closely	25.80-25.90 10	25.40 -12.35		
25.30 - 26.80	20 0	- NA -			Stiff, locally very stiff, fis becoming light greenish	sured dark reddish brown, grey, CLAY, locally bular subrounded fine to y stiff clay to extremely as are randomly	subhorizontal bands (up to 10mm) of – white fibrous – gypsum – 26.50 subhorizontal – 30mm band of white – fibrous gypsum –	26.00 -12.95 (0.80)		
27.10 - 27.19			CS 26		(MERCIA MUDSTONE - Dark reddish brown ang coarse GRAVEL of mud (MERCIA MUDSTONE -	Class C) ular to subrounded fine to stone. Class C)		26.80 -13.75 (0.55) 27.35 -14.30		
26.80 - 28.30	70 9 0	- NI		18/12/17 16	extremely closely space Predominantly non-intac	ght greenish grey, are randomly orientated, d, planar, smooth. ct.	27.80 subhorizontal – 60mm band of white – fibrous gypsum	(0.85)		
28.30 - 28.40		-	SPTC 50 (25 for 50mm/50 for 50mm)	16.00 3. 19/12/17 08 16.00 6.	Extremely weak dark red greenish grey, angular to	subrounded fine to stone.	28.12 subhorizontal = 80mm band of white = fibrous gypsum =	28.20 -15.15		
28.30 - 29.80	67 5 0									
29.40 - 29.48		NI NI 80	- CS 27	19/12/17 15 16.00 E	orientated, extremely an planar, smooth. (MERCI	ctures are randomly	29.70 subhorizontal – 40mm band of white – fibrous gypsum –	29.40 -16.35 (0.40) - 29.80 -16.75		
Groundwater Entrie No. Depth Strik		(S		Depth Sealed	Depth Related Remarks Depths (m) Remarks			Chiselling Detai Depths (m)	ls Duration (mins) Tools use
Notes: For explanation see Key to Exploration reduced levels in metroprackets in depth colu © Cop Scale 1:50	y Hole Reco es. Stratum mn.	rds. All d thicknes OTEC U	epths and	No. A	/EST BURTON C/D POWER STA 7102-17 irbeck Construction Limited	ATION		Borehole	BH106 Sheet 3 of 3	



Drilled SS Logged RT Checked MS Approved	Start 18/12/2017 End 20/12/2017	Equipment, Methods and Re Dando 175. Cable percussion boring. SPT Hammer ID: ARI777, Rod		/hitworth.	(m) (m) (n	meter Casing Depth nm) (m) 150 13.50	Ground Level Coordinates (m) National Grid		8.12 mOD E 480231.61 N 386503.03
Samples a	nd Tests		Date	Time	Strata Description		De-th : :	1	P1 500
Depth	Type & No	Records 0.00-1.20 Hand excavate	Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
- 0.30 - 0.50 - 1.00	D1 B2	inspection pit.	d		Grey slightly gravelly sandy SILT. Gravel is subangular fine to medium of clinker and brick. (MADE GROUND - Pulverised Fuel Ash)	- - - - - -			
	UT 4 D 3	42 blows 100% rec	1.20	Dry			-		
1.65 - 1.85 - 1.85 - 2.30 1.85 - 2.30	D 5 SPTS D 6	N=13 (3,3/3,4,3,3)	1.50	Dry 1620		- - - -			
- - - - -			1.50 19/12/17 1.50	0800 Dry		- - -	(4.40)		
- - - 3.00 - 3.45 - -	UT 7	28 blows 100% rec	3.00	Dry					
3.45 - 3.65 3.65 - 4.10 3.65 - 4.10	D 8 SPTS D 9	N=9 (2,3/2,3,2,2)	3.00	Dry		- - - - -			
- - - - - - -	UT 10	37 blows 100% rec	4.50	Dry	Soft to firm grey and greyish brown, mottled orangish brown, slightly sandy silty CLAY with frequent gravel size pockets of black silt. (Possible ALLUVIUM)	- - - -	4.40 +3.72		
4.95 - 5.15 5.15 - 5.60 5.15 - 5.60	D 11 SPTS D 12	N=12 (3,3/3,3,3,3)	4.50	Dry	(scale, les nom,		(1.40)	X - X - X - X - X - X - X - X - X - X -	
5.80 - - - - - - - - - - - - - - - - - - -	D 13 UT 14	23 blows 100% rec	6.00	Damp	Soft to firm orangish brown, mottled dark greyish brown, slightly sandy silty CLAY with frequent pockets (<5mm) of orange sand. Frequent pockets of dark grey silt. (ALLUVIUM)	- - - - -	5.80 +2.32 (0.50) 6.30 +1.82	× 1	× / /
6.45 - 6.65 6.65 - 7.10 6.65 - 7.10	D 15 SPTS D 16	N=8 (2,1/2,2,2,2)	6.00	Damp	Soft brown, mottled grey, slightly sandy SILT with frequent pockets (<1mm) and partings (<2mm) of orange fine sand. (ALLUVIUM)	- - - - -	(1.30)	X X X X X X X X X X X X X X X X X X X	•
- - - 7.50 - 7.95 - -	UT 17	17 blows 100% rec	7.50	Damp	Soft greyish brown slightly sandy SILT. (ALLUVIUM)	- - - - -	7.60 +0.52	$\times \times $	
7.95 - 8.15 8.15 - 8.60 8.15 - 8.60	D 18 SPTS D 19	N=2 (1,0/1,0,1,0)	8.15	2.10		- - - - - -		X X X X X X X X X X X X X X X X X X X	
9.00 - 9.65 - 9.00 - 9.65	UT NR B 20	8 blows No Recovery	9.00	2.00		- - - - -	(2.40)	(
9.65 - 10.10 9.65 - 10.10	SPTS D 21	N=10 (2,2/4,2,2,2)	9.00	3.10		- - - -	10.00 -1.86		
Groundwater Ent No. Depth Stril 1 6.80	(e (m) Remarks) m after 20 minutes.	Depth Sea 12.1		Depth Related Remarks Depths (m) Remarks 8.00 - 12.10 Water added to assist boring.		Hard Boring Depths (m)	Duration (mins)	Tools used
see Key to Explorareduced levels in more depth of the control of t	tion of symbols and tory Hole Records. A etres. Stratum thick olumn. Copyright SOCOTE	All depths and cness given in C UK Limited AGS		A71	ST BURTON C/D POWER STATION 02-17 eck Construction Limited		Borehole	WS101 Sheet 1 of 2	



								50	COTEC
rilled SS	Start	Equipment, Methods and Re	emarks			neter Casing Depth m) (m)	Ground Level		8.12 mOD
ogged RT		Dando 175. Cable percussion boring.			(m) (m) (m 1.20 15.15 1	m) (m) 150 13.50	Coordinates (m)	E	480231.61
ecked MS	End	SPT Hammer ID: ARI777, Roo	type: 54mm W	hitworth.			National Grid	N	1 386503.03
proved	20/12/2017								
amples and	d Tests		Date	Time	Strata Description				
Depth	Type & No	. Records	Casing	Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.50 - 10.95 10.50 - 10.95	SPTS D 22	N=24 (2,3/4,6,6,8)	10.50	4.10	Medium dense reddish brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of flint and poorly cemented mudstone. (RIVER TERRACE DEPOSITS)	- - - - - - - - -	(1.30)	X X X X X X X X X X X X X X X X X X X	
11.40 12.00 - 12.45 12.00 - 12.45	D 23 SPTS D 24	N=10 (2,2/3,3,2,2)	12.00 19/12/17 12.00	3.20 1610 3.20	Greyish brown slightly sandy GRAVEL. Gravel is predominantly angular to subangular fine to coarse of mudstone and occasionally subrounded fine to coarse of sandstone. (RIVER TERRACE DEPOSITS) Soft to firm reddish brown, bluish grey, dark brown and grey, silty CLAY.	- - - - - - - - - -	11.30 -3.18 (0.80)		
13.00	D 25	N 40/00/2000	20/12/17 12.00	0810 6.10	(MEŘCÍÁ MÚDSTONE - Class Dc)	- - - - - - - - - -	(2.60)	X———X X———X X———X X———X	
13.50 - 13.95 13.50 - 13.95	SPTS D 26	N=10 (2,2/2,3,2,3)	13.50	8.80		- - - - - - - -		X	
14.50 14.70 - 15.15 14.70 - 15.15	SPTS D 28	N=49 (3,3/4,9,11,25)	13.50 20/12/17 13.50	9.10 1300 9.10	Firm reddish brown, mottled brownish grey and grey, silty CLAY with frequent powdery white gypsum. (MERCIA MUDSTONE - Class Dc) END OF EXPLORATORY HOLE	- - - - - - - - - - - - - - - - - - -	14.70 -6.58 (0.45) 15.15 -7.03	×x	//
roundwater Entrie o. Depth Strike			Depth Seal	ed (m)	Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins)	Tools us
otes: For explanation e Key to Explorator duced levels in metr ackets in depth colu © Cop Scale 1:50	y Hole Records. A res. Stratum thick Imn. pyright SOCOTEC	All depths and ness given in Proje	ct No.	A71	ST BURTON C/D POWER STATION 02-17 eck Construction Limited		Borehole	WS101 Sheet 2 of 2	



											COTEC
Drilled	d JJ	Start	Equipment, Methods and Rem	narks			Depth from to D (m) (m)	iameter Casing Depth (mm) (m)	Ground Level		7.29 mOD
Logge	ed RT	15/12/2017	Dando 3000. Cable percussion boring.				(m) (m) 1.20 10.88	(mm) (m) 150 8.50	Coordinates (m)		E 480348.04
Check	ked MS	End	SPT Hammer ID: AR932, Rod ty	pe: 54mm Whi	itworth.				National Grid		N 386411.84
Appro	ved	18/12/2017									
San	nples and	d Tests				Strata Description	n				
	Depth	Type & N	o. Records	Date Casing	Time Water	м	ain	Detail	Depth, Level (Thickness)	Legend	Backfill
	0.00 - 0.30	B 1	0.00-1.20 Hand excavated	_		Dark grey slightly sandy		_	, ,		°.a o ·
_	0.30	D 2	inspection pit.			to subangular fine to coa 0.30m.	•	=			بنا ليه
_						(MADE GROUND - Pulve	erised Fuel Ash)				$-\square$
_								_	(1.20)		
_								=			1/1/2
	400 405	SPTS	N 04 (4 4/5 0 0 7)		D			_	1.20 +6.09		Y Y
E	1.20 - 1.65 1.20 - 1.65	D3	N=24 (4,4/5,6,6,7)		Dry	Light brownish grey sligh gravel size pockets of ye] =	1.20 +0.05	'	Y Y
						(MADE GROUND - Pulve	erised Fuel Ash)	_			- MV
								_			1/1/
_								<u> </u>			1///
_								_			TIL.
_								=			Y Y
=								_	(2.80)		ИИ
_								=			
_	3.00 - 3.45 3.00 - 3.45	SPTS D 5	N=4 (1,1/1,1,1,1)	3.00	Dry			1 -			
_	3.00 - 3.45	B 4									TIL.
_								_			Y Y
-								=			$ \square$ \square
_								=			1/1/
_						Soft orangish brown, mot		1 -	4.00 +3.29	×_×_	
_						CLAY with lenses of oran (<1mm) and rare black ro		=		$\boxed{} \times \boxed{}$	TH.
_	4.50 - 4.95	UT 6	41 blows 100% rec	4.00	Dry	(ALLUVIUM)		_		× ×	-VV
										×——×	
_	4.90 - 5.35 4.90 - 5.35	SPTS D 8	N=25 (4,6/6,6,6,7)	4.50	Dry			_	(2.00)	×x	
-	4.95	D 7						_	(=:)	×	
-								_		×	PIY.
-								_		××	-1/1/
-				15/12/17	1600			=		××	
_	6.00 - 6.45	SPTS	N=3 (0,0/0,1,1,1)	4.50 18/12/17	Dry 0800	Brown slightly sandy SIL	T with occasional gravel	-	6.00 +1.29	× × × × ×	
-	6.00 - 6.45 6.00	D 10 B 9		4.50	Dry	size pockets of orange fil (ALLUVIUM)		=		× × × × ×	
_						(ALLOVION)		_		$\times \times $	ZH.
-								=		:	-VV
_								_		$\times \times \times \times \times$	- M V
_								_		$\times \times $	
-								=	(2.50)	$\times \times $	
-	7.50 - 7.95 7.50 - 7.95	SPTS D 12	N=4 (0,0/1,1,1,1)	7.50	Dry			7.50 reddish brown, — brownish grey with —		$\times \times $	6H
-	7.50	B 11						orange fine sand.		$\times \times $	
_								7.95 dark greyish		$\times \times \times \times$	
-								brown silt _		× × × ×	\bot \vdash
-								_		(
-	8.50	D 13				Firm reddish brown, mott		1 -	8.50 -1.21	× ×	
-						CLAY with lenses of bluis and occasional bluish gre	ey veins. Rare angular	=		× _ ×	
_	9.00 - 9.45	SPTS	N=50 (5,6/9,12,14,15)	9.00	Dry	coarse gravel size fragm mudstone.	ents of bluish grey			<u>×</u> <u>×</u>	
-	9.00 - 9.45	D 14				(MERCIA MUDSTONE -	Class Db)	=		×x	
_] =		<u>×</u> — <u>×</u>	1,41°
-								=	(2.38)	<u> </u>	
-								=		××	
										. × .	
	ındwater Entri					Depth Related Remarks			Hard Boring		
No.	Depth Strike	(m) Remarks		Depth Seale	ed (m)	Depths (m) Remarks 0.00 - 10.88 No groundwa	ater encountered during drilling	ı.	Depths (m)	Duration (mins)	Tools used
		on of symbols and ry Hole Records.		i	WE	ST BURTON C/D POWER STA	TION		Borehole		
reduce	ed levels in met ets in depth colu	tres. Stratum thic umn.	kness given in Project	No.	A71	02-17			,	WS102	
Scale	© Co e 1:50	pyright SOCOTE	EC UK Limited AGS //01/2018 10:38:53 Carried	out for	Firb	eck Construction Limited			I	Sheet 1 of 2	



Drilled JJ	Start Eq	uipment, Methods and Rema	ırks		Depth from to	Diameter	Casing Denth	Ground Level		7.29 mOD
Logged RT	15/12/2017 Da	ndo 3000.			(m) (m) 1.20 10.88	(mm) 150	(m) 8.50	Coordinates (m)) E	480348.04
Checked MS	Ca End SP	ble percussion boring. T Hammer ID: AR932, Rod typ	e: 54mm Wh	itworth.				National Grid		I 386411.84
approved	18/12/2017									
Samples and	Tests				Strata Description					
Depth	Type & No.	Records	Date	Time	Main		Detail	Depth, Level (Thickness)	Legend	Backfill
-	, , , , , , , , , , , , , , , , , , ,		Casing	Water	Firm reddish brown, mottled bluish grey, silty			(Inickness)		10H
					CLAY with lenses of bluish grey relict mudstone and occasional bluish grey veins. Rare angular		=		× ×	lŏ₽c
- 10.50 - 10.88	SPTS	50 (6,7/9,15,26 for 75mm)		Dry	coarse gravel size fragments of bluish grey		_		××	<u>L</u> H
10.50 - 10.88	D 16 B 15	66 (6,776,16,26 161 7611111)	18/12/17	1600	mudstone. (MERCIA MUDSTONE - Class Db)		-		×x	I//
-	5.0		8.50	Dry	END OF EXPLORATORY HOLE			10.88 -3.59	IX	//
-					END OF EXPLORATORY HOLE		-			
							-			
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Groundwater Entries No. Depth Strike (Depth Seal	ed (m)	Depth Related Remarks Depths (m) Remarks			Hard Boring Depths (m)	Duration (mins)	Tools used
op ouine (,		p ooan	(***)				(111)	(mind)	
lotes: For explanation	of symbols and abl	breviations Project		WE	ST BURTON C/D POWER STATION			Borehole		
ee Key to Exploratory	es. Stratum thicknes	ss given in	No	A 74	02-17			,	WS102	
ackets in depth colur © Cop	yright SOCOTEC U				uz-17 eck Construction Limited					
Scale 1:50		018 10:38:53 Carried	υαι 10Γ	rirb	eck construction Entitled				Sheet 2 of 2	



lled JJ gged RT/DP	13/12/2017 Da	quipment, Methods and Rema	rks		(m) (m) (n	meter Casing Depth nm) (m) 150 13.50	Ground Level Coordinates (m)		13.22 mO = 480254.2
ecked MS proved	Ca	able percussion boring. PT Hammer ID: AR932, Rod typ	e: 54mm Wh	itworth.			National Grid		N 386326.5
amples and					Strata Description		<u> </u>		
Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfi
0.00 - 0.80	B 2	0.00-1.20 Hand excavated inspection pit.			Soft to firm reddish brown slightly sandy CLAY with frequent rootlets to 0.20m.	-			· A
0.40	D 1				(MADE GROUND)	-	(0.80)		A
						-			\mathbf{I}_{A}
0.80 - 1.20	B 4				Soft to firm dark brownish grey silty CLAY with	-	0.80 +12.4	12	
1.00 1.20 - 1.65	D 3 SPTS	N=4 /4 4/4 4 4 4)	1.20	Dry	frequent rootlets and occasional roots (<10mm). (MADE GROUND)	-			
1.20 - 1.65	D 5	N=4 (1,1/1,1,1,1)	1.20	Ыy		-	(1.00)		\mathbb{Z}
						-			
					Dark grey slightly sandy SILT.	- -	1.80 +11.4	12	A
					(MADE GROUND - Pulverised Fuel Ash)	-			
						-			
						-			
						=			
3.00 - 3.50	UT 6	87 blows 100% rec	3.00	Dry			1		
						-	1		
3.50 - 3.78 3.50	SPTS D7	50 (15,15/25,25 for 50mm)	3.00	Dry		- -			\mathbf{I}
3.50 - 3.95	D 8					-			
						-			A
						-			A
4.50 - 5.00	UT 9	36 blows 100% rec	4.50	Dry		_			И
						-			
5.00 - 5.45	SPTS	N=13 (2,3/3,3,3,4)	5.00	Dry		_			
5.00 5.00 - 5.45	D 10 D 11			í		-			\mathbf{I}
						-			
						-			
6.00 - 6.50	UT 12	14 blows 100% rec	6.00	Dry					
0.00 - 0.50	01 12	14 blows 100 % fec	0.00	ыу			(8.50)		
6.50, 6.05	ente	N=47 (2 2/2 4 5 5)	6.00	Des		-			
6.50 - 6.95 6.50 6.50 - 6.95	SPTS D 13 D 14	N=17 (2,2/3,4,5,5)	6.00 13/12/17	Dry		- - - -			A
			6.00	1630 Dry		-			И
			14/12/17 6.00	0800 Dry					
						- -			
7.50 - 8.00	UT 15	87 blows 100% rec	7.50	Dry		-			
						-			$\mathbf{I}_{\mathbf{A}}$
8.00 - 8.45 8.00	SPTS D 16 D 17	N=24 (9,9/7,7,5,5)	8.00	Dry		_			\mathbf{I}
8.00 - 8.45	D 17					-			\mathbf{I}
						-	1		
						- - -			
9.00 - 9.50	B 18					-	‡		\square
						-	1		A
9.50 - 9.95 9.50 - 10.00	SPTS D 19	N=13 (3,3/3,3,4,3)	9.00	Dry		-	‡		
						-			\mathcal{A}
								<u> </u>	_L_L
undwater Entrie			Depth Seal	ed (m)	Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins)	Tools u
				•	0.00 - 15.00 No water encountered during drilling.			. ,	
Key to Explorator	n of symbols and ab y Hole Records. All	depths and		WE	ST BURTON C/D POWER STATION		Borehole		
ced levels in metr cets in depth colu	res. Stratum thickne ımn.	ss given in Project I	No.	A71	02-17		,	WS103	
© Co _l le 1:50	pyright SOCOTEC I	JK Limited AGS 2018 10:38:54 Carried	out for	Firb	eck Construction Limited			Sheet 1 of 2	



Drilled JJ Logged RT/DP Checked MS	13/12/2017 Da Ca End SF	quipment, Methods and Rem ando 3000. able percussion boring. PT Hammer ID: AR932, Rod ty		itworth.		iameter Casing Depth (mm) (m) 150 13.50	Ground Level Coordinates (m) National Grid		13.22 mOD E 480254.22 N 386326.59
Samples and	14/12/2017 Tests				Strata Description		1		
Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
- - - - 10.50 - 11.00 - 10.50 - 11.00	UT NR B 20	19 blows No Recovery	10.50	Dry	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash) Orangish brown, mottled light brown, SILT. (ALLUVIUM)		- 10.30 +2.92	× × × × × × × × × × × × × × × × × × ×	
- - - - - - - - - - - - - - - - - - -	SPTS D 21	N=13 (2,3/3,3,3,4)	10.50	Dry		11.00-11.45 slightly— sandy - - - -	(1.70)	×××× ×××× ×××× ×××× ××××	
- - - - - - - - - - - - - - - - - - -	UT NR B 22	23 blows No Recovery	12.00	Dry	Dark grey, mottled orangish brown, slightly sandy SILT. (ALLUVIUM)	<u>-</u>	12.00 +1.22		
- 12.50 - 12.95 - 12.50 - 12.95 - 12.60 - 12.95	SPTS D 23	N=14 (2,2/3,3,4,4)	12.00	Dry		12.50-14.50 no — mottling — — —	(2.50)	X X X X X X X X X X X X X X X X X X X	
- - - 13.50 - 14.00 - - -	UT NR B 24	31 blows No Recovery	13.50	Dry		- - - -		× × × × × × × × × × × × × × × ×	
	SPTS D 25	N=28 (3,3/3,7,9,9)	13.50	Dry	Firm to atiff raddish brown matted light bluich	- - - - -	14.50 -1.28		
- - - - -			14/12/17 13.50	1630 Dry	Firm to stiff reddish brown, mottled light bluish grey, silty CLAY. (MERCIA MUDSTONE - Class Dc) END OF EXPLORATORY HOLE	-	(0.50) 15.00 -1.78	XX	
Groundwater Entries	s				Depth Related Remarks		Hard Boring		
Groundwater Entrie No. Depth Strike			Depth Seale	ed (m)	Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins	Tools used
Notes: For explanation see Key to Exploration reduced levels in metri brackets in depth colu © Cop Scale 1:50	y Hole Records. All es. Stratum thickne mn. byright SOCOTEC U	depths and ss given in		A71	ST BURTON C/D POWER STATION 02-17 ack Construction Limited		Borehole	WS103 Sheet 2 of 2	



- 0.30	D1 B2 D3 UT 5 B4 SPTS D6 D7 D8 UT 9 D10 UT 12 SPTS D13 D14	Dando 175. Cable percussion boring. SPT Hammer ID: AR1777, Rod 1 . Records 0.00-1.20 Hand excavated inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	Date Casing	Dry Dry Dry Dry 0830 Dry 1600 Dry	Strata Description Main Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail Detail	Coordinates (m) National Grid Depth, Level (Thickness) (0.50) 0.50 +12.2	Legend	E 480272.49 N 386292.43 Backfill C A O .
Approved 15/12/20 Samples and Tests Depth Type	D1 B2 D3 UT 5 B4 SPTS D6 D7 D8 UT 9 D10 UT 12 SPTS D13 D14	. Records 0.00-1.20 Hand excavated inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.20 1.50 2.70 1.4/12/17 2.50	Dry Dry 0830 Dry 1600	Strata Description Main Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail	Depth, Level (Thickness)	Legend	Backfill
Depth Type 0.30	D1 B2 D3 UT5 B4 SPTS D6 D7 D8 UT9 D10 UT 12 SPTS D13 D14	0.00-1.20 Hand excavated inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.20 1.50 2.70 2.70	Dry Dry 0830 Dry 1600	Main Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail	(0.50)		
Depth Type 0.30	D1 B2 D3 UT 5 B4 SPTS D6 D7 D8 UT 9 D10 UT 12 SPTS D13 D14	0.00-1.20 Hand excavated inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.20 1.50 2.70 2.70	Dry Dry 0830 Dry 1600	Main Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail	(0.50)		
0.30	D 1 B 2 D 3 UT 5 B 4 SPTS D 6 D 7 D 8 UT 9 D 10 UT 12 SPTS D 13 D 14	0.00-1.20 Hand excavated inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.20 1.50 2.70 2.70	Dry Dry 1600	Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	Detail	(0.50)		
- 1.00	D 3 UT 5 B 4 SPTS D 6 D 7 D 8 UT 9 UT 12 SPTS D 13 D 14	inspection pit. 60 blows 89% rec N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.20 1.50 2.70 2.70 13/12/17 2.50	Dry Dry 0830 Dry 1600	Gravel is angular to subrounded fine to coarse of brick, concrete and sandstone. (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)			19	
1.20 - 1.65	UT 5 B 4 SPTS D 6 D 7 D 8 UT 9 D 10 UT 12 SPTS D 13 D 14	N=21 (2,4/5,4,5,7) 70 blows 100% rec 40 blows 100% rec	1.50 2.70 14/12/17 2.50	Dry Dry 0830 Dry 1600					
1.70 - 2.15 1.70 1.70 1.70 1.70 1.70 1.70 1.70 1.70	SPTS D 6 D 7 D 8 UT 9 D 10 UT 12 SPTS D 13 D 14	70 blows 100% rec 40 blows 100% rec	2.70 14/12/17 2.50 13/12/17 2.50	0830 Dry 1600					
2.20 E 2.70 - 3.15 U 3.20 D 4.20 - 4.65 U 4.70 - 5.15 SF 4.70 D 5.20 D 5.70 - 6.15 U 7.20 - 7.65 U 7.20 - 7.65 U 7.70 D 8.20 D	D 8 UT 9 D 10 UT 12 SPTS D 13 D 14	40 blows 100% rec	14/12/17 2.50 13/12/17 2.50	0830 Dry 1600					
- 3.20 D - 4.20 - 4.65 UT - 4.70 - 5.15 SF - 4.70 D - 5.20 D - 5.70 - 6.15 UT - 6.20 - 6.65 SF - 6.20 D - 6.20 D - 7.20 - 7.65 UT - 7.70 - 8.15 SF - 7.70 D - 7.70 D - 8.20 D	D 10 UT 12 SPTS D 13 D 14	40 blows 100% rec	14/12/17 2.50 13/12/17 2.50	0830 Dry 1600		- - - - - - - - - - - - - - - - - - -			
- 4.20 - 4.65 UT 4.70 - 5.15 SF 4.70 D 5.20 D 5.70 - 6.15 UT - 6.20 - 6.65 SF 6.20 D 6.70 D - 7.20 - 7.65 UT - 7.70 - 8.15 SF 7.70 D 8.20 D	UT 12 SPTS D 13 D 14		2.50 13/12/17 2.50	Dry 1600		- - - - - - - - - -			
4.70 - 5.15	SPTS D 13 D 14		2.50 13/12/17 2.50	Dry 1600		= = = = = = = = = = = = = = = = = = = =			
- 4.70 - 5.15 SF 4.70 D - 4.70 D - 5.20 D - 5.70 - 6.15 UT - 6.20 - 6.65 SF 6.20 D - 6.20 D - 7.20 - 7.65 UT - 7.70 - 8.15 SF 7.70 D - 7.70 D - 8.20 D - 7.70 D - 7.7	SPTS D 13 D 14			,		_	1	ISSSSSSSSSS	
- 4.70 D 5.20 D 5.20 D 5.70 - 6.15 U1 - 6.20 - 6.65 6.20 D 6.20 D 6.70 D - 7.20 - 7.65 U1 - 7.70 - 8.15 SF 7.70 D 7.70 D 8.20 D	D 14			Dry		<u>-</u> -			
- 6.20 - 6.65 SF 6.20 D C C C C C C C C C C C C C C C C C C	D 15					<u>-</u>			
6.20 D D D D D D D D D D D D D D D D D D D	UT 16	30 blows 100% rec	5.70	Dry		_ - - -			
7.20 - 7.65 UT 7.70 - 8.15 SF 7.70 D 7.70 D 8.20 D	SPTS D 17 D 18	N=39 (4,9/10,9,10,10)	6.00	Dry					
7.70 - 8.15 SF 7.70 D 7.70 D - 8.20 D	D 19					- - -	(12.50)		
7.70 D 7.70 D	UT 20	60 blows 100% rec	7.20	Dry		- - - -			
	SPTS D 21 D 22	N=34 (7,7/7,9,9,9)	7.50	Dry					
8.70 - 9.15 UT	D 23					=		1	<u> </u>
-	UT 24	20 blows 100% rec	8.70	8.40				1	
9.20 D	SPTS D 25 D 26	N=15 (2,3/2,4,4,5) No sample	9.00	Damp		= - -			
9.70 D	D 27								
Proundwater Entries					Donth Polated Remarks		Hord Barter		
Groundwater Entries No. Depth Strike (m) Remai 1 8.70 Rose t inflow		m after 20 minutes. Medium	Depth Sea 8.5		Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins) Tools used
otes: For explanation of symbol see Key to Exploratory Hole Rec educed levels in metres. Stratun rackets in depth column. © Copyright SOO	se to 8.40	abbreviations Project	t t No.		ST BURTON C/D POWER STATION		Borehole	WS104	



Drill	ed LM	Start	Equipment, Methods and R	omarke		Depth from to Di	ameter Casing Depth	Ground Lovel		12.79 mOD
1			Dando 175.	emarks		(m) (m) (m) (1.20 15.00	(mm) (m) 150 14.50			
Log		13/12/2017	Cable percussion boring.			1.20 15.00	150 14.50	Coordinates (m)		E 480272.49
	cked MS	End	SPT Hammer ID: AR1777, R	od type: 54mm V	Vhitworth.			National Grid		N 386292.43
_	roved	15/12/2017						1		
Sa	mples and	Tests				Strata Description				
	Depth	Type & N	o. Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
<u> </u>		1		Jasily	vvaler	Dark grey slightly sandy SILT.	_	,	XXXXXXXX	он,
F						(MADE GROUND - Pulverised Fuel Ash)	=	-		
F							_	1		H
F							_	1		ΙΟЩΟ
Ė	10.70 - 11.15 10.70	SPTS D 28	N=15 (2,2/3,3,3,6)	10.50	Damp			1		-1 H_{\circ}
L							_			
E	11.20	D 29					_	1		loH d
F	11.20	D 29					_	-		
F							_	-		H
F								4		
F							=	1		lНo
							_			
E	12.20 - 12.65	UT 30	20 blows 100% rec	12.00	Damp		_			
E							-	<u> </u>		
F	10.70 10.00	0070	N=0 /4 0/0 0 4 4 2 0 1 1	E0 40.00	_		_			loH a
F	12.70 - 13.30 12.70	SPTS D 31	N=2 (1,0/0,0,1,1) SW=1	14/12/17	Dry 1600		_	1		$ ^{\circ}$ $^{\circ}$
L	12.70	D 32		12.00	Dry	Firm dark raddish been as the 12 11111		13.00 -0.21		₫′∘
Ė				15/12/17 12.00	0800 12.20	Firm dark reddish brown, mottled light bluish grey, silty CLAY.			×_ × =	
F				12.00	12.20	(MERCIA MUDSTONE - Class Dc)	_	_		
F	13.50	D 33					_	-	×——×	loHo
F								-	××	ЮΠο
F							_	1	×_×_×	_ H~
F							_	(2.00)	$\frac{1}{2}$ \times $\frac{1}{2}$	<u> </u>
Ė	14.20 - 14.65	UT 34	60 blows 100% rec	14.20	Damp		_	1	^—×	- IºH (
E							_	<u> </u>	××	
F	44.70 45.45	OPTO	N 44 (0 0 (0 4 4 4)	44.50	D		_	-	××	I/I
F	14.70 - 15.15	SPTS	N=14 (2,2/2,4,4,4)	14.50 15/12/17	Damp 1225			4	$\overline{} \times \overline{}$	
L				14.50	Damp	END OF EVEN OBATORY HOLE		15.00 -2.21	^X	
Ė						END OF EXPLORATORY HOLE	_			
E							_	•		
\vdash							_	-		
F							_	-		
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Gro	undwater Entrie	s				Depth Related Remarks		Hard Boring		
No.				Depth Sea	led (m)	Depths (m) Remarks			Duration (mins) Tools used
								1		
								1		
<u> </u>	_		 					<u> </u>		
see	s: For explanatior Key to Exploratory	Hole Records.	All depths and	ect	WES	T BURTON C/D POWER STATION		Borehole		
redu	ced levels in metr	es. Stratum thic	kness given in	ect No.	A71	2-17		١ ١	NS104	
ł	© Cop ale 1:50	yright SOCOTE	C UK Limited AGS	ied out for		ck Construction Limited		1	Sheet 2 of 2	
	are 1.50	44	/01/2018 10:38:54		, ,,,			•	SHEEL 2 OT 2	



Drilled JJ Logged RT Checked MS Approved	11/12/2017	Equipment, Methods and Rema Dando 3000. Cable percussion boring. SPT Hammer ID: AR932, Rod typ		th.		mmeter Casing Depth (mm) (m) 150 13.00	Ground Level Coordinates (m) National Grid		13.13 mOD E 480251.34 N 386272.33
Samples an					Strata Description				
Depth	Type & No.	Records		'ime /ater	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
-		0.00-1.20 Hand excavated inspection pit.			Firm brown slightly sandy CLAY. (MADE GROUND) Soft dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	0.00-0.30 frequent rootlets -	(0.80) 0.80 +12.3	3	
- 1.20 - 1.65 - 1.20 - 1.65 	SPTS D1	N=7 (2,2/1,2,2,2)	1.20	Dry		- - - - - - - - - - - - - - - - - - -			
- - 3.00 - 3.45 - -	UT 2	41 blows 100% rec	3.00	Dry					
	D 4 SPTS D 3	N=7 (2,2/1,2,2,2)	3.45	Dry		- - - - - - -			
- - 4.50 - 4.80 -	UT 5	20 blows 100% rec	11/12/17 1	Dry 700 Dry		4.50 occasional — pockets (<2mm) of — black silt —			
- 4.90 - 5.35 - 4.90 - 5.35 	SPTS D 6	N=3 (0,0/0,1,1,1))800 Dry					
- 6.00 - 6.45 - -	UT 7	21 blows 80% rec	6.00	Dry			(10.10)		
6.45 - 6.90 6.45	SPTS D 8	N=27 (3,4/5,6,8,8)	6.45	Dry		- - - - - -			
- 7.50 - 7.95 - 7.50 - 7.95 - 7.50 - 7.50 - 7.50	SPTS UT NR D 9 B 11	N=3 (0,0/0,1,1,1) 15 blows No Recovery	7.50 7.50	Dry Dry		- - - - - - - - - -			
9.00 - 9.45 9.00 9.00 - 9.45	SPTS D 10 D 15	N=8 (0,0/0,2,3,3)	9.00	Dry		9.00-9.45 rare subangular fine gravel of ash — — —			
Groundwater Entri No. Depth Strike	es (m) Remarks		Depth Sealed (n	n)	Depth Related Remarks Depths (m) Remarks 0.00 - 15.45 No groundwater encountered during drilling.		Hard Boring Depths (m)	Duration (mins)	Tools use
Notes: For explanationsee Key to Explorator reduced levels in metal.	ry Hole Records. A tres. Stratum thickr	all depths and ness given in			ST BURTON C/D POWER STATION		Borehole	WS105	
orackets in depth colo © Co Scale 1:50	pyright SOCOTEC	C UK Limited AGS Carried			02-17 eck Construction Limited			Sheet 1 of 2	



Drilled JJ	Start	Equipment, Methods and	Remarks		Depth from to Dia	ameter Casing Depth	Ground Level		13.13 mOD
Logged RT	11/12/2017	Dando 3000.			(m) (m) (1.20 15.45	mm) (m) 150 13.00	Coordinates (m)		E 480251.34
Checked MS	End	Cable percussion boring. SPT Hammer ID: AR932, R	Rod type: 54mm Wh	nitworth.			National Grid		N 386272.33
Approved	12/12/2017								
Samples and	Tests				Strata Description				
Depth	Type & No	o. Records	Date	Time	Main	Detail	Depth, Level	Legend	Backfill
		1111111111	Casing	Water	Soft dark grey slightly sandy SILT.		(Thickness)	*************	
_					(MADE GROUND - Pulverised Fuel Ash)	=			
40.50 40.05	UT 16	51 blows 100% rec	10.50	D		=			
— 10.50 - 10.95 —	01.16	51 blows 100% rec	10.50	Dry		=			
_ _ 10.90 - 11.35	SPTS	N=25 (4,4/5,5,7,8)	10.90	Dry		10.80-10.90	10.90 +2.23		
10.90 - 11.35 - 10.90 - 11.35	D 17 D 18	14-25 (4,4/5,5,7,6)	10.90	Diy	Firm dark greyish brown, mottled reddish brown, silty CLAY with rare black silt veins (1x10mm) and	occasional gravel – size pockets of grey	10.90 +2.23	××	
10.90 - 11.35	D 16				rare pockets (<2mm) of lignite. Slight organic	fine sand, rare black silt and rare reddish		X	
_					odour. (ALLUVIUM)	brown fine sand			
						_	(1.60)	^x	
_						_	()	××	
12.00 - 12.45 - 12.00 - 12.45	UT NR D 20	40 blows No Recover	ry 12.00	Dry		_		××	
- 12.00 - 12.45 -	B 21					=		××	-1//
_					Soft dark brown slightly sandy SILT.	<u>-</u>	12.50 +0.63	X	/_/
F					(ALLUVIUM)	=		× × × × ×	-V/1
F						=		*	-V//
-						-	(1.30)	××××	- //
E						=		$\times \times \times \times$	1//
- - 13.50 - 13.95	SPTS	N=34 (6,6/8,8,9,9)	13.00	Dry Dry				$\times \times $	-Y/J
- 13.50 - 13.50 - 13.95	UT NR D 24 B 23	21 blows No Recover	ry 13.00	⊔ry] =	13.80 -0.67	$\times \times \times \times$	
13.50 - 13.95	В 23				Firm reddish brown, mottled dark brown and greyish blue, silty CLAY.] =	10.00 -0.07	××	-1///
<u>-</u>					(MERCIA MUDSTONE - Class Dc)	=		××	
_						_		×_×_	
_						_	(1.65)	$\overline{\times}$	
E						_	(1.05)	x	
_ 15.00 - 15.45	SPTS	N=29 (6,6/5,8,8,8)	13.00	Dry		_		××	
- 15.00 - 15.45 -	D 25		12/12/17	1700		=		××	
_			13.00	Dry		=	15.45 -2.32	<u>×</u> ×	
F					END OF EXPLORATORY HOLE	_	10.10		
_						=			
_									
E]			
E] =			
_						_			
_						_			
_						_			
E						_			
Ė									
F						=			
F						=			
F						-			
E						=			
F] =			
E] = =			
E] =			
E]			
Ė						=			
_						=			
Ė						=			
-						_			
Groundwater Entrie		·		-1/:	Depth Related Remarks		Hard Boring	D	·
No. Depth Strike (m) Remarks		Depth Seal	ea (m)	Depths (m) Remarks		Depths (m)	ouration (min	s) Tools used
Notes 5		Labban dati	-14		AT PURTON OUR POWER CONTROL		D :		
Notes: For explanation see Key to Exploratory	Hole Records.	All depths and	oject	WES	ST BURTON C/D POWER STATION		Borehole		
reduced levels in metro brackets in depth colu	mn	I Pr	oject No.	A71	02-17		\	VS105	
Scale 1:50		C UK Limited AGS 01/2018 10:38:55	arried out for	Firb	eck Construction Limited			Sheet 2 of 2	



rilled DD ogged RT	11/12/2017 Da	quipment, Methods and Rem ando 175. able percussion boring.				ameter Casing Depth (mm) (m) 150 15.00	Ground Level Coordinates (m) E	13.20 mO E 480244.2
pecked MS proved amples and	12/12/2017	PT Hammer ID: ESG01, Rod t	ype: 54mm W	/hitworth.	Strata Deceriation		National Grid	١	N 386241.6
Depth	Type & No.	Records	Date	Time	Strata Description	Detail	Depth, Level	Legend	Backfi
Бериг	Type a No.	0.00-1.20 Hand excavated	Casing	Water	Firm brown slightly sandy CLAY with rare	- Detail	(Thickness)		•]
0.20	D1	inspection pit.			subangular fine to medium gravel size fragments of ash and brick. Frequent rootlets to 0.20m. (MADE GROUND)		(0.60)		
0.60 0.60 - 1.00	D 2 B 3				Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	0.60-1.00 rare - subangular to - subrounded fine to - medium gravel of - ash/clinker	0.60 +12.6		
1.20 - 1.65 1.20	SPTS D 4	N=16 (5,6/6,4,3,3)	1.20	Dry		-			
						=			
						= = = = = = = = = = = = = = = = = = = =			
3.00 - 3.45	UT 5	17 blows 100% rec	3.00	Dry		=======================================			
3.50 - 3.95 3.50	SPTS D6	N=14 (4,9/4,4,3,3)	3.50	Dry		3.90-3.95 firm - reddish brown			
4.50 - 4.95 4.50 - 5.00	UT NR B 7	23 blows No Recovery	4.50	Damp		slightly gravelly clay. — Gravel is — Subangular fine to — medium of — sandstone			
5.00 - 5.45 5.00	SPTS D8	N=14 (4,4/4,3,3,4)	5.00	Damp		- - -			
5.50	D 9		11/12/17 5.00 12/12/17 5.00	1731 Damp 0752 Damp		5.50 firm reddish — brown slightly — gravelly clay. Gravel —	(9.60)		
5.90 6.00 - 6.45	D 10 UT 11	24 blows 100% rec	6.00	Dry		is subangular fine to medium of sandstone			
6.50 - 6.95 6.50 6.50	SPTS D 12 D 13	N=15 (2,2/3,3,4,5)	6.50	Dry					
7.50 - 7.95	UT 14	27 blows 100% rec	7.50	Dry		= = = = = = = = = = = = = = = = = = =		1 -	
8.00 - 8.45 8.00 8.00	SPTS D 15 D 16	N=17 (2,3/4,4,4,5)	8.00	Dry		- - - - -			
9.00 - 9.45 9.00 - 9.50 9.10	UT NR B 18 D 17	52 blows No Recovery	9.00	Dry		9.10-9.50 dark grey gravelly silty fine to coarse sand. Gravel		1 5	• 0
9.50 - 9.95 9.50	SPTS D 19	N=15 (4,4/4,4,4,3)	9.50	8.90		coarse sand. Gravel is subangular fine to medium of clinker			
oundwater Entries					Doub Polated Double		Hand Parker		
oundwater Entries b. Depth Strike (9.10	m) Remarks	after 20 minutes. Medium	Depth Sea 9.10		Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins)	Tools u
Key to Exploratory	of symbols and ab Hole Records. All Holes. Stratum thickne	depths and			ST BURTON C/D POWER STATION		Borehole	WS106	



		•						so	COTEC
Drilled DD	Start	Equipment, Methods and Re	emarks			ameter Casing Depth	Ground Level		13.20 mOD
ogged RT	11/12/2017	Dando 175. Cable percussion boring.			(m) (m) 1.20 15.00	(mm) (m) 150 15.00	Coordinates (m)	E 480244.24
necked MS	End	SPT Hammer ID: ESG01, Roo	d type: 54mm W	hitworth.			National Grid		N 386241.68
proved	12/12/2017								
amples and	d Tests				Strata Description				
Depth	Type & No	. Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
			Casing	vvater	Dark grey slightly sandy SILT.		(Tillekiless)	XXXXXXX	он
10.20	D 20				(MADE GROUND - Pulverised Fuel Ash) Soft reddish brown slightly sandy slightly clayey	1 :	10.20 +3.0		
10.50 - 10.95	UT 21	37 blows 100% rec	10.50	Dry	SILT.	_		$\times \times \times \times$	L H
10.00 10.00	0.2.	0.5.0.00.100%.100	10.00	5.,	(ALLUVIUM)			$\times \times $	
								$\times \times \times \times$	\times
- 11.00 - 11.45 11.00	SPTS D 22	N=7 (1,1/1,2,2,2)	11.00	Dry		10.95 very soft_ reddish brown	(1.80)	$\times \times \times \times$	
						mottled grey silty _ clay _	1 ` ′	(//
						_		(-1/2
						-		× × × ×	\perp
						-		$\langle \overline{\times} \times \overline{\times} \rangle$	\mathbb{Z}
12.00 - 12.45	UT 23	37 blows 100% rec	12.00	Dry	Soft to firm dark brown, mottled reddish brown,	† -	12.00 +1.2	0 × × ×	//
					silty CLAY with frequent lenses of reddish brown silt.			×x	
12.50 - 12.95	SPTS	N=28 (3,3/5,7,8,8)	12.50	Dry	(MERCIA MUDSTONE - Class Dc)	_		×——×	1/2
12.50 12.50	D 24 D 25							××	Y/
								×_ ×	//
								\times \times $\hat{\Box}$	
						-		×	
13.50 - 13.95	UT 26	89 blows 56% rec	13.50	Dry		-	(3.00)	× ×	\perp
								×——×	\mathbb{Z}
14.00 - 14.45	SPTS	N=26 (3,3/4,7,7,8)	14.00	Dry				××	//
14.00	D 27			-				×— —×	
						-		××	
						_		× ×	$\mathbb{Z}/$
			12/12/17	1707				× × =	//
			15.00	Dry	END OF EXPLORATORY HOLE	-	15.00 -1.80		+
					END OF EXPEDITION HOLE	-			
]			
						_			
						-			
						_			
						_			
						-			
						_			
						-			
						=			
						-	1		
							1		
							-		
							-		
							-		
							1		
							-		
roundwater Entrie	s				Depth Related Remarks		Hard Boring		
o. Depth Strike	(m) Remarks		Depth Sea	led (m)	Depths (m) Remarks		Depths (m)	Duration (mins)	Tools use
tes: For explanation	n of symbols and	abbreviations Proje	ect	WE	ST BURTON C/D POWER STATION		Borehole		
Key to Explorator uced levels in metro ckets in depth colu	y Hole Records. A es. Stratum thick	All depths and ness given in	ect No.		02-17			WS106	
© Cop cale 1:50	pyright SOCOTE	C UK Limited AGS	ed out for		eck Construction Limited			Sheet 2 of 2	
	11/0	7112010 10.30.33							



_										OCOTEC
Drille	ed SS	Start	Equipment, Methods and Rem	arks		Depth from to D	iameter Casing Depth (mm) (m)	Ground Level		13.16 mOD
Logg	jed RT	05/12/2017	Dando 175. Cable percussion boring.			(m) (m) 1.20 15.45	(mm) (m) 150 14.20	Coordinates (m)		E 480327.97
Chec	ked MS	End	SPT Hammer ID: ARI777, Rod ty	/pe: 54mm W	Vhitworth.			National Grid		N 386173.12
Appr	oved	06/12/2017								
Saı	mples an	d Tests				Strata Description				
	Depth	Type & N	o. Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
┢			0.00-1.20 Hand excavated inspection pit.			Soft dark grey slightly gravelly SILT. Gravel is				
F			inspection pit.			subangular fine to coarse of concrete. Occasional soft dark brown clay pockets (<25mm).	-	(0.50)		YZ
Ė	0.50	D 1				(MADE GROUND) Dark greyish brown, locally mottled orangish	_ =	0.50 +12.66	; 	
Ė						brown, slightly sandy SILT.				
Ė						(MADE GROUND)				1//
F	1.00	D 2						(1.15)		_///
-	1.20 - 1.65	UT 3	100 blows 100% rec	1.20	Dry				1	7//
Ė							_			
Ė	1.65 - 1.85	D 4				Dark grey slightly sandy SILT.		1.65 +11.51		
Ė	1.85 - 2.14 1.85 - 2.15	SPTS D 5	34 (7,10/12,22 for 70mm)	1.50	Dry	(MADE GROUND - Pulverised Fuel Ash)	_			
F	1.00 - 2.10	53					_			
Ė										
F							_	1		
F							=			
F							=			V
F	3.00 - 3.45	UT 6	32 blows 100% rec	3.00	Dry			(2.75)		$\square / /$
F							_			
F	3.45 - 3.65	D 7					_			
F	3.65 - 4.10 3.65 - 4.10	SPTS D 8	N=16 (3,4/4,4,4,4)	3.00	Dry					
F	0.00 1.10						-			
_										
F							-	Ī		IV./.
F	4.40 4.50 - 4.95	D 9 UT 10	34 blows 100% rec	4.50	Dry	Firm reddish brown, mottled dark brown, slightly		4.40 +8.76		
F						sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone and]	(0.55)		\square / \nearrow
F	4.95 - 5.15	D 11				clinker. (MADE GROUND)	500 5 15 5	4.95 +8.21		
E	5.15 - 5.60	SPTS	N=20 (3,4/5,5,6,4)	4.50	Dry	Dark grey slightly sandy SILT.	5.00-5.15 rare fine to medium gravel of -			IY / .
E	5.15 - 5.60	D 12			[(MADE GROUND - Pulverised Fuel Ash)	clinker -			
F							-			
Ŀ				05/12/17	1600		-	_		$ /\rangle$
L	6.00 - 6.45	UT 13	52 blows 100% rec	6.00	Dry] =			IY / .
Ŀ	5.00 - 0.40	01 13	32 DIOWS 100 // 180	06/12/17 6.00	0750 Dry			_		V
L				0.00	ыy					
F	6.45 - 6.65	D 14					6.45-6.65 _ occasional pockets _ (<10mm) of soft _	1		$\square / /$
F	6.65 - 7.10 6.65 - 7.10	SPTS D 15	N=12 (5,3/3,3,3,3)	6.00	Dry		(<10mm) of soft _ reddish brown clay _			Y /
L										V
L										
L										$ /\rangle$
F	7.50 - 7.95	UT 16	28 blows 100% rec	7.50	Dry		_	1		
Ė										
L	7.95 - 8.10	D 17								
ļ.	8.10 - 8.55 8.10 - 8.55	SPTS D 18	N=12 (4,3/3,3,3,3)	7.50	Dry			1		H/Z
ļ		2.3					=	(6.75)		' /
F							-			
F										
L	9.00 - 9.45	UT 19	48 blows 100% rec	9.00	Damp		9.00-9.45 rare	1		$\square / /$
Ė					p		subangular fine to - medium gravel of -	1		IY / ,
Ė	0.45 0.55	5.55					lignite -			V
F	9.45 - 9.65	D 20	N=17 /4 0/E 4 5 0	0.00	4.00		_		1	. //
ļ	9.65 - 10.10 9.65 - 10.10	SPTS D 21	N=17 (4,3/5,4,5,3)	9.00	1.20			1		
<u> </u>				1						$\perp \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$
	undwater Entri		l			Depth Related Remarks		Hard Boring		
No. 1	Depth Strike 9.60	(m) Remarks Rose to 1.2	0 m after 20 minutes.	Depth Sea 12.2		Depths (m) Remarks		Depths (m)	Duration (mins	Tools used
l [']	3.00			. 2.2						
Notes	s: For explanation	on of symbols and ry Hole Records.	d abbreviations All depths and		WE	ST BURTON C/D POWER STATION		Borehole		
reduc	ced levels in met tets in depth col	tres. Stratum thic	kness given in Project	No.	A71	02-17		1	WS107	
	© Co ile 1:50	pyright SOCOTE	Carried AGS			eck Construction Limited		I	Sheet 1 of 2	
Jua	1.00	11	/01/2018 10:38:55	-	•	***			J.1001 1 01 Z	

Borehole Log

Equipment, Methods and Remarks

Drilled SS Start



Diameter Casing Depth Ground Level

Drilled SS		Equipment, Methods and Re	emarks		(m) (m)	iameter Casing Depth (mm) (m)			13.16 mOD
	***************************************	Cable percussion boring.			1.20 15.45	150 14.20		E	480327.97
Checked MS	End	SPT Hammer ID: ARI777, Roo	type: 54mm Wi	hitworth.			National Grid	١	N 386173.12
Approved	06/12/2017						1		
Samples and	Tests				Strata Description				
Depth	Type & No	. Records	1		Main	Detail	Depth, Level	Legend	Backfill
Checked MS Approved Samples and	End 06/12/2017 Tests	SPT Hammer ID: ARI777, Roo	Date Casing 10.50 12.00 12.00 14.20 06/12/17 14.20	Time Water Damp	Strata Description	150 14.20	11.70 +1.46 (0.30) 12.00 +1.16	Legend 2 7	Backfili
<u>-</u>] =	-		
-						=	-		
Groundwater Entries	<u> </u>				Depth Related Remarks		Hard Boring		
No. Depth Strike (2 13.10	m) Remarks	5 m after 20 minutes.	Depth Seal 13.70		Depths (m) Remarks		Depths (m)	Duration (mins)	Tools used
Notes: For explanation see Key to Exploratory reduced levels in metro brackets in depth colur © Cop	Hole Records. A es. Stratum thick nn. yright SOCOTEC	All depths and ness given in Proje	ct No. ed out for	A71	T BURTON C/D POWER STATION 12-17 eck Construction Limited		Borehole	WS107 Sheet 2 of 2	



									OCOTE
rilled SS	Start	Equipment, Methods and Ren	narks			iameter Casing Depth (mm) (m)	Ground Level		13.48 mC
gged RT	07/12/2017	Dando 175. Cable percussion boring.			(m) (m) 0.00 14.60	150 13.50	Coordinates (m)		E 480245.6
ecked MS		SPT Hammer ID: ARI777, Rod	type: 54mm V	Whitworth.			National Grid		N 386190.3
proved	07/12/2017				Otracta Daga selection				
amples an	d lests		Date	Time	Strata Description	1	Depth, Level	Legend	Backf
Depth	Type & No		Casing	Water	Main	Detail	(Thickness)	Legend	Backi
0.00 - 0.50	B 1	0.00-1.20 Hand excavated inspection pit.			TOPSOIL.		(0.20) - 0.20 +13.2		۵.۵
					Firm brown slightly sandy CLAY with frequent rootlets.	-	(0.40)		P
0.50 - 1.00	B 2				(MADE GROUND)	0.50-1.00 — occasional pockets	0.60 +12.8	,	H
					Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)	(<2mm) of soft =	-		
1.20 - 1.65	UT 3	98 blows 100% rec	1.20	Dry		=			
						-			
1.65 - 1.85	D 4					1.65-1.85 slightly			
1.85 - 2.30	SPTS	N=36 (5,7/8,9,11,8)	1.20	Dry		gravelly. Gravel is _ subangular fine of _			A
1.85 - 2.30	D 5					pulverised fuel ash			
						_	-		$ \Gamma$ \perp \parallel
] =	=		
							1		М
3.00 - 3.45	UT 6	22 blows 100% rec	3.00	Dry					
3.45 - 3.65	D 7					-			$ \Gamma$ \perp
3.65 - 4.10 3.65 - 4.10	SPTS D 8	N=13 (3,3/4,3,3,3)	3.00	Dry					
									$-\square$
						_			
						-			
4.50 - 4.95	UT 9	15 blows 100% rec	4.50	Dry		-	-		
4.95 - 5.15	D 10					4.95-5.15 firm_ reddish brown			
5.15 - 5.60 5.15 - 5.60	SPTS D 11	N=42 (4,5/5,5,10,22)	4.50	Dry		slightly sandy _ slightly gravelly clay			
						Gravel is angular to _ subangular fine to _			
						medium of – sandstone. –			
						Occasional gravel - size pockets of light -			
6.00 - 6.45	UT 12	88 blows 100% rec	6.00	Dry		grey silt.— 5.15-5.60 firm grey	(10.90)		
						slightly sandy silty = clay. Occasional =	-		
6.45 - 6.65	D 13					gravel size pockets of grey and greenish			
6.65 - 7.10 6.65 - 7.10	SPTS D 14	N=31 (5,5/7,8,9,7)	6.00	Dry		grey fine sand/silt. Rare fine gravel size			
						fragments of brick _ 6.45-6.65			
						occasional coarse _ gravel size _			
						fragments of slightly - cemented slightly -	_		
7.50 - 8.15	UT NR	10 blows No Recovery	7.50	Damp		sandy silt —			
= 00						=			- $ $ $ $ $ $
7.90	D 15					_			
8.15 - 8.60	SPTS	N=1 (1,0/0,0,1,0)	8.15	Damp		-			
8.50	D 16] =	_		
0.00	5 10								
									$\ \ \ $
9.00 - 9.45 9.00 - 9.45	SPTS D 17	N=10 (1,2/2,3,3,2)	9.00	Damp		_	1		
						-			
]			
] =			
roundwater Entri o. Depth Strike			Depth Sea	aled (m)	Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (min	s) Tools
о. Берш этике	(iii) ixeilidiks		թգիլյյ 96	ureu (III)	Sopolo (III) Incidento		Depuis (III)	Jurativii (IIIIN	o, roois u
Key to Explorato	on of symbols and ry Hole Records.	All depths and	t	WE	ST BURTON C/D POWER STATION		Borehole		
iced levels in me kets in depth col	tres. Stratum thick umn.	ness given in Projec	t No.	A71	02-17		· ·	WS108	}
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Logged RT		Equipment, Methods and R Dando 175.	telliaiks		(m) (m)	tiameter Casing Depth (mm) (m) 150 13.50	Ground Level Coordinates (m)		13.48 mOD E 480245.66
Checked MS	***********	Cable percussion boring. SPT Hammer ID: ARI777, Ro	od type: 54mm W	hitworth.	0.00 14.60	150 13.50	National Grid		N 386190.35
Approved	07/12/2017								
Samples ar	nd Tests				Strata Description				
Depth	Type & No	. Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
10.50 - 10.95 - 10.50 - 10.95 - 10.50 - 10.95	SPTS D 18	N=7 (1,0/2,1,2,2) 15 blows 100% rec	10.50	8.70	Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash) Very soft reddish brown, mottled grey, clayey SILT with occasional pockets of orange fine sand. (ALLUVIUM)		11.50 +1.98		* 0000000000000000000000000000000000000
12.45 - 12.65 12.65 - 13.10 12.65 - 13.10	D 21 SPTS D 22	N=18 (3,3/3,5,5,5) 9 blows 100% rec	12.00	Damp	Firm reddish brown, mottled blush grey silty CLAY. (MERCIA MUDSTONE - Class Dc)		12.90 +0.58	X X X X X X X X X X X X X X X X X X X	
13.50 - 13.95 - 13.95 - 14.10 - 14.10 - 14.55 - 14.10 - 14.60	D 24 SPTS D 25	9 blows 100% rec N=13 (2,2/3,2,3,5)	13.50 13.50 07/12/17 13.50	Damp 1630 Damp			(1.70)	X—————————————————————————————————————	
Groundwater Entr No. Depth Strik 1 10.40	e (m) Remarks	m after 20 minutes.	Depth Sea 12.00		Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins,	Tools used
Notes: For explanat see Key to Explorat reduced levels in m brackets in depth co © C Scale 1:50	ory Hole Records. A etres. Stratum thick Jumn. opyright SOCOTE	All depths and these given in C UK Limited AGS	ect ect No. ried out for	A71	ST BURTON C/D POWER STATION 02-17 eck Construction Limited		Borehole	WS108 Sheet 2 of 2	



illed KP	Start Ed	quipment, Methods and Rer	narks		Depth from to D	iameter Casing Depth	Ground Level	30	13.38 mOD
gged RT		ando 175. able percussion boring.			(m) (m) 1.20 15.45	(mm) (m) 150 15.00	Coordinates (m)	E 480283.38
necked MS	End SF	PT Hammer ID: ESG01, Rod	type: 54mm W	hitworth.			National Grid	ı	N 386135.14
amples and	08/12/2017				Strata Description		1		
Depth	Type & No.	Records	Date	Time	Main	Detail	Depth, Level	Legend	Backfill
Бери	турс и но.	0.00-1.20 Hand excavated	Casing	Water	TOPSOIL.	- Detail	(Thickness)	X///X/X	° , 1 o
		inspection pit.				=	(0.40)		اً ا
0.50 0.50 - 1.00	D 1 B 2				Dark grey slightly sandy SILT with occasional pockets (<10mm) of soft reddish brown slightly] -	0.40 +12.9	98	
0.30 - 1.00	52				sandy clay to 1.00m. (MADE GROUND - Pulverised Fuel Ash)				1/1/
1.00	D 3				(A
1.20 - 1.65 1.20	SPTS D 4	N=30 (3,4/4,8,10,8)	1.20	Dry					\square
						-			\mathbb{Z}
						_			$ \cdot $
									ТH
3.00 - 3.45	SPTS	N=18 (2,4/4,4,5,5)	3.00	Dry		3.00-3.45 rare			$ \cdot $
3.00	D 5	, , , , , ,		•		gravel size lenses of slightly gravelly fine			4
						to coarse sand. Gravel is subangular fine of			A
						clinker			-1/1
						=			
4.50 4.05	UT 6	E4 blows 1000/ rec	4.50	Dev		-			
4.50 - 4.95	UT 6	54 blows 100% rec	4.50	Dry		-			$\mathbf{I}\lambda$
						=			K
5.05 - 5.50 5.05	SPTS D 7	N=23 (3,4/5,6,6,6)	5.05	Dry					
5.05	D 8								
						-			
						=			A
6.00 - 6.65	UT 9	70 blows 100% rec	6.00	Dry		-			A
							(12.00)		
6.55 - 7.00 6.55	SPTS D 10	N=13 (4,4/3,3,4,3)	6.55	Dry		-			
6.55	D 11								
						-			
7.50 - 7.95	UT 12	25 blows 100% rec	7.50	Dry		-			
									\mathbf{I}
8.05 - 8.50 8.05	SPTS D 13	N=38 (8,10/11,9,9,9)	8.05	Dry		_			
8.05	D 14					-			
						-			
9.00 - 9.45	UT 15	15 blows 100% rec	9.00	Damp		-	1		6
									1 /=
9.65 - 10.10	SPTS	N=47 (7,9/9,10,15,13)	9.65	Damp		-	1		
9.65 9.65	D 16 D 17	14-47 (7,373,10,13,13)	07/12/17	1630					
			10.10	Damp					⊐∽Н
oundwater Entrie					Depth Related Remarks		Hard Boring		
. Depth Strike (m) Remarks		Depth Sea	led (m)	Depths (m) Remarks		Depths (m)	Duration (mins)	Tools us
Key to Exploratory	n of symbols and ab Hole Records. All es. Stratum thickne	depths and	et	WE	ST BURTON C/D POWER STATION		Borehole	14/0400	
kets in depth colui © Cor	es. Stratum trickne mn. byright SOCOTEC t	JK Limited AGS			02-17			WS109	
ale 1:50		2018 10:38:56 Carrie	d out for	Firb	eck Construction Limited			Sheet 1 of 2	



									COTEC
Drilled KP	Start	Equipment, Methods and Re	marks		Depth from to Diameter	Casing Depth	Ground Level		13.38 mOD
Logged RT	07/12/2017	Dando 175. Cable percussion boring.			(m) (m) (mm) 1.20 15.45 150	(m) 15.00	Coordinates (m)	Γ	E 480283.38
Checked MS	End	SPT Hammer ID: ESG01, Rod	type: 54mm W	hitworth.			National Grid	1	N 386135.14
Approved	08/12/2017								
Samples and	d Tests				Strata Description		İ		
		o. Records	Date	Time		Detail	Depth, Level	Legend	Backfill
Depth	Type & No	D. Records	Casing	Water		etali	(Thickness)	××××××××	
<u>-</u>			08/12/17	0800	Dark grey slightly sandy SILT with occasional pockets (<10mm) of soft reddish brown slightly	-	<u>.</u> -		
-			10.10	Damp	sandy clay to 1.00m. (MADE GROUND - Pulverised Fuel Ash)	-	-		1ºHº
— 10.50 - 10.95 – 10.50	SPTS D 18	N=7 (1,2/2,1,2,2)	10.50	7.00	(WIBE GROOMS Talvelloca Facilities)	_	<u>.</u>		-IOH o
Ė						_	-		1 A c
<u>-</u>						_	1		
-						_			ЮH, 1
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 -						_	-		$ $ $_{0}$ $ $ $_{0}$
<u> </u>						-	- -		\bot \vdash \bot
12.00 - 12.45	UT 19	72 blows 67% rec	12.00	Damp		_			1,¶ °
						-			
Ė						-	12.40 +0.98		
 					Dark brownish grey slightly sandy SILT.	_		XXXX	l _a H
Ė						=	1	$\times \times $	
<u>L</u>						_	(1.00)	$\times \times \times \times$	₽,
Ė						-	1	$\times \times $	
– – 13.40	D 20				Firm raddish braum pro-Wood over and	-	13.40 -0.02	XXXX	ୢୣ୷ୣୄ୷ୢ
— 13.50 - 13.95 —	UT 21	45 blows 100% rec	13.50	Damp	Firm reddish brown, mottled grey and brown, slightly sandy silty CLAY.	_	1	^X	1949
Ė					(MERCIA MUDSTONE - Class Dc)	_	-	×—×	Y/.
	ODTO	N 40 (0.0 (0.0 0.0)	44.05	D		_		××	
14.05 - 14.50 14.05	SPTS D 22	N=10 (3,3/2,2,3,3)	14.05	Damp		-		<u>×</u> ×	
_ 14.05 _	D 23					_	(2.05)	XX	1//
						-	(2.03)	$\overline{\mathbf{x}} = \hat{\mathbf{x}}$	Y/
E							_	X—x X	V/
15.00 - 15.45	SPTS	N=16 (4,3/4,3,4,5)	15.00	Damp		_	-	<u>×</u> x	1/2
15.00 - 15.43 - 15.00	D 24	(.,5,7,0,7,0)		·		=	_	×— —×	Y/
Ė			08/12/17 15.45	1600 Damp			45.45	 X—x	/ /
F					END OF EXPLORATORY HOLE		15.45 -2.07		
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Groundwater Entrie			<u> </u>	l-d ()	Depth Related Remarks		Hard Boring	Donate ()	T
No. Depth Strike ((m) Kemarks		Depth Seal	iea (m)	Depths (m) Remarks		Depths (m)	Duration (mins)	lools used
Notes: For explanation			ct	WES	T BURTON C/D POWER STATION		Borehole		
see Key to Exploratory reduced levels in metr	y Hole Records. res. Stratum thicl	All depths and kness given in						N S109	
brackets in depth colu © Cop	ımn. pyright SOCOTE	C UK Limited AGS	ct No.		12-17		1 '		
Scale 1:50		01/2018 10:38:56 Carrie	ed out for	Firb	ck Construction Limited		<u></u>	Sheet 2 of 2	



ged RT/DP 13/12/2017 Dando 175. Cable percussion boring. (m) (m) (m) (m) Coordinates (m) Coordinates (m) E 480341 cked MS End SPT Hammer ID: ESG01, Rod type: 54mm Whitworth. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth. National Grid N 386305			•						S	OCOTE
20 10 10 10 10 10 10 10	illed DD	Start	Equipment, Methods and Ren	narks				Ground Level		11.58 mO
March Marc	gged RT/DP	13/12/2017				(m) (m) 1.20 15.00	150 15.00	Coordinates (m	1)	E 480341.8
Page 2	ecked MS	End		type: 54mm V	Vhitworth.			National Grid		N 386305.0
Page Page	proved							1		
Total Tota	amples an	d Tests		Dete	Time	Strata Description				
Department of the control of the c	Depth	Type & No	o. Records			Main	Detail		Legend	Backfi
Section Sect				i i				(0.20)	38	· A
1.00	0.20	02				subrounded fine to medium of flint, brick and	0.40 plactic		"	
1.20 1.60 1.70	0.60 - 1.00	В 3				(MADE GROUND)	geotextile mesh -	- ' '	98	
130 146 D							subangular to			
129 1-02						sandstone and concrete. Occasional rootlets.	medium gravel of	_		
3.56 - 3.45 UT 5 73 blass 89% mc 3.10 Cry			N=23 (2,4/4,5,5,9)	1.20	Dry	Dark grey slightly sandy SILT.]			
3.56 - 3.66	1.20	D 4				(MADE GROUND - Pulverised Fuel ASII)]			
3.56 - 3.66							:			-KJI
3.56 - 3.66										
3.56 - 3.66										A
1,50 - 3,35										
1,50 - 3,35							-			
3.50 - 3.95										
3.50 D 6 4.50 - 4.35 UT 7 7 88 blows 100% rec 5.00 - 5.45 SPTS 5.00 D 9 5.00 - 5.45 UT 10 48 blows 100% rec 5.00 D 9 6.00 - 6.45 UT 10 48 blows 100% rec 5.00 D 9 6.00 - 6.45 UT 10 48 blows 100% rec 5.00 D 9 6.00 - 6.45 UT 10 48 blows 100% rec 5.00 D 9 7.50 - 7.65 D 11 6.50 D 12 7.50 - 7.65 D 12 7.60 D 12 7.50 - 7.65 D 12 7.60 D 12 7.50 - 7.65 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 7.60 D 12 8.60 3.00 - 3.45	UT 5	79 blows 89% rec	3.00	Dry						
3.50 D6 4.50 - 4.35 UT 7 68 blows 100% rec: 4.50 Dry 5.00 - 5.46 SPTS S							:			
3.50 D6 4.50 - 4.95 UT 7	3.50 - 3.95	SPTS	N=37 (4.6/8.9.10.10)	3,50	Dry]	1		A
4.50 - 4.95 UT 7 88 blows 100% rec			(1,512,5,12,12,12)		,]			
4.50 - 4.55										
4.50 - 4.95 UT 7 68 blows 100% rec										
5.00 - 5.45 SBTS N-30 (4.55.7.8.9) 5.00 Dy 13112/17 1708 5.00 Dy 14112/17 00000 5.00 Dy 14112/17 0000 5.00 Dy							-	(7.40)		
131/217 1708 131/217 1708 141/217 14	4.50 - 4.95	UT 7	68 blows 100% rec	4.50	Dry		-			
131/217 1708 131/217 1708 141/217 14										A
137/217 7786 500			N=30 (4,5/5,7,9,9)	5.00	Dry					
### ### ##############################										
6.00 - 6.45				-			_			
6.50 - 6.95 SPTS							:			
6.50 - 6.95 SPTS	600 645	LIT 10	49 blown 100% roo	6.00	Dn					
6.50 D 11 D 12 D 11 D 12 D 11 D 12 D 12 D 1	0.00 - 0.43	0110	40 blows 100 /6 fec	0.00	Diy					
6.50 D 11 D 12 D 11 D 12 D 11 D 12 D 12 D 1							:			4
7.50 - 7.95 UT NR 7.50 - 7.95 B 13 8.00 - 8.45 8.00 D 14 8.20 D 15 8.00 D 15 SPTS 8.20 D 16 8.20 D 17 Dark greyish brown, mottled orangish brown, slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. (ALLUVIUM) 9.00 - 9.45 UT 18 39 blows 89% rec 9.00 Damp Dark greyish brown, mottled orangish brown, slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. (ALLUVIUM) 9.00 - 9.45 UT 18 39 blows 89% rec 9.00 Damp Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) 9.50 - 9.95 9.50 D 17 9.50 D 17 9.50 D 18 N=12 (2,3/3,3,3,3) Depth Sealed (m) Depth Related Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Script of the Records All depths and debtreviations eavy to Exploratory Hole Records All depths and elevels in meters. Stratum thickness given in attain depth column. Project No. A7102-17 Carried out for Eithest Construction Limited.	6.50	D 11	N=25 (4,5/5,6,6,8)	6.50	Dry		-			A
7.50 - 7.96 UT NR 7.50 - 8.00 B 13 37 blows No Recovery 7.50 Damp 8.00 - 8.45 SPTS 8.00 D 14 8.20 D 15 N=18 (4.4/4,4.5.5) B .00 Damp 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.50 - 9.95 D 17 D 18 N=12 (2.3/3,3.3.3) 9.50 D 19 D 19 D 19 D 19 D 19 D 19 D 19 D 1	6.50	D 12								
8.00 - 8.45 SPTS 8.00 D15 N=18 (4.4/4.4.5.5) 8.00 Damp Dark greyish brown, motified orangish brown, slightly sandy SiLT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp Dark greyish brown slightly sandy SiLT with rare relict rootlets. (ALLUVIUM) 9.50 - 9.95 SPTS 9.50 D17 9.50 D18 N=12 (2.3/3,3.3.3) 9.50 Dry Dark greyish brown slightly sandy SiLT with rare relict rootlets. (ALLUVIUM) 1. Dark greyish brown slightly sandy SiLT with rare relict rootlets. (ALLUVIUM) 2. For explanation of symbols and abbreviations eye to Exploratory Hole Records. All depths and elevels in metres. Stratum thickness give in each of the construction Limited and strain the construction Limited. 2. For explanation of symbols and abbreviations eye to Exploratory Hole Records. All depths and elevels in metres. Stratum thickness give in each of the construction Limited. 2. For explanation of symbols and abbreviations explorately the first of the construction Limited. 3. Project No. A7102-17 Explorately Hole Springht SOCOTEC UK Limited. 3. Septiment of the construction Limited.										
7.50 - 8.00 B 13 8.00 - 8.45 SPTS 8.00 D 14 8.20 D 15 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.50 - 9.95 SPTS 9.50 D 17 9.50 D 18 9.50 D 18 9.50 D 18 Dark greyish brown, motited orangish brown, slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. (ALLUVIUM) 9.10 - 9.45 UT 16 SPTS 9.50 D 17 9.50 D 17 9.50 D 18 Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Project No. A7102-17 WS110 Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Brown and abbreviations of symbols and abbreviations explored the specific structure of the										
8.00 8.45 SPTS N=18 (4,4/4,4,5,5) 8.00 Damp Oark greyish brown, mottled orangish brown, slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp Oark greyish brown slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. 9.50 - 9.95 SPTS 9.50 D 17 9.50 D 17 9.50 D 18 Depth Sealed (m) Depth Series (ALLUVIUM) Depth Related Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depth sim Remarks Depth sim Remarks Depth sim Remarks Depth Sealed (m) Project WEST BURTON C/D POWER STATION Project No. A7102-17 Extract out for sealed out fo			37 blows No Recovery	7.50	Damp		-			
8.00 8.20 D14 B20 B30 B30 B30 B30 B30 B30 B30 B30 B30 B3	7.00 0.00	3.0								
slightly sandy SILT with rare relict rootlets. Rare pockets (<10mm) of dark orange fine sand. 9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.50 - 9.95 9.50 D17 9.50 D18 Popth Strike (m) Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depth Strike (m) Remarks Depth Sealed (m) Project WEST BURTON C/D POWER STATION WS110 WS110 WS110 Error explanation of symbols and abbreviations et levels in metres. Stratum thickness given in earlier strikes and et levels in metres. Stratum thickness given in earlier strikes and et levels in metres. Stratum thickness given in earlier strikes and et levels in metres. Stratum thickness given in earlier strikes and earlier st			N=18 (4,4/4,4,5,5)	8.00	Damp	Dark grevish brown mottled grangish brown		8.00 +3.5	58 XXXX	
9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.50 - 9.95 SPTS D 17 Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Indiwater Entries Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depth Sealed (m) Depth Remarks Depth Sealed (m) Project WEST BURTON C/D POWER STATION Project No. A7102-17 Eitherk Construction Limited Served out for a Single Construction Limited Project No. Carried out for a Single Construction Limited Carried out for a Single Construction Limited Carried out for a Single Construction Limited Carried out for a Single Construction Limited Carried out for a Single Construction Limited Carried out for a Single Construction Limited Carried out for a Single Construction Limited						slightly sandy SILT with rare relict rootlets. Rare			$\times \times \times \times$	$-\square$
9.00 - 9.45 UT 16 39 blows 89% rec 9.00 Damp 9.50 - 9.95 SPTS 9.50 D 17 Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Indwater Entries Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depths (m) Remarks Depth Sealed (m) Depths (m) Duration (mins) Tools of the strike of the							_		$\times \times \times \times$	
9.00 - 9.45 9.50 - 9.95 9.50 9.50 9.50 9.50 9.50 9.50 Dory Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Depth Related Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Seal							:	(1.50)	$\times \times \times \times$	
9.50 - 9.95 9.50 9.50 9.50 9.50 9.50 9.50 9.50	0.00 0.45	UT 40	30 blows 909/	9.00	Demo]		$\times \times \times \times$	$ \cdot $
9.50 - 9.95 9.50 9.50 9.50 D17 Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Depth Sealed (m) Depth Related Remarks Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Sealed (m) Depth Sealed	a.uu - 9.45	01 16	39 DIOWS 0970 FEC	9.00	⊔amp		-	1	$\times \times \times \times$	Y)
Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Dark greyish brown slightly sandy SILT with rare relict rootlets. (ALLUVIUM) Depth Related Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depths (m) Depths (m) Depths (m) Duration (mins) Depths (m) Depths (m) Depths (m) Depths (m) Duration (mins) Depths (m) Depths (m) Duration (mins) Depths (m) Dept							:	1	$\times \times \times \times$	
Undwater Entries Depth Strike (m) Remarks Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depths (m) Remarks Depths (m) Duration (mins) Depths (m) Duration (mins) Depths (m) Duration (mins) Depths (m) Duration (mins) Tools to the service of the	9.50	D 17	N=12 (2,3/3,3,3,3)	9.50	Dry		7 -	9.50 +2.0	$\times \times \times \times$	- $ $ $ $ $ $
Depth Strike (m) Remarks Depth Sealed (m) Depth Related Remarks Depth Sealed (m) Depth Remarks Depth Remark	9.50	18 ט						1	$\times \times \times \times$	
Depth Strike (m) Remarks Depth Sealed (m) Depths (m) Remarks Depths (m) Duration (mins) Tools uses: For explanation of symbols and abbreviations (ey to Exploratory Hole Records. All depths and red levels in metres. Stratum thickness given in each of every language of the column. Project WEST BURTON C/D POWER STATION WS110 Carried out for Surpost No. A7102-17 Carried out for Surpost No. A7102-17 Carried out for Surpost No. Surp										
Depth Strike (m) Remarks Depth Sealed (m) Depths (m) Depths (m) Depths (m) Depths (m) Depths (m) Depths (m) Duration (mins) Tools u Depths (m) Duration (mins) Tools u Borehole West Burton C/D Power Station Wy S110 West 10 Company to the control of the control	undwater Entri	ies				Depth Related Remarks		Hard Boring		
key to Exploratory Hole Records. All depths and sed levels in metres. Stratum thickness given in tests in depth column. © Copyright SOCOTEC UK Limited © Copyright SOCOTEC UK Limited Project No. A7102-17 Carried out for Fither's Construction Limited				Depth Sea	aled (m)				Duration (mins)	Tools u
ley to Exploratory Hole Records. All depths and ed levels in metres. Stratum thickness given in ets in depth column. © Copyright SOCOTEC UK Limited © Copyright SOCOTEC UK Limited Carried out for Firberk Construction Limited Construction Limited										
ey to Exploratory Hole Records. All depths and ded levels in metres. Stratum thickness given in ste in depth column. © Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited Copyright SOCOTEC UK Limited										
ets in depth column. © Copyright SOCOTEC UK Limited Carried out for Firherk Construction Limited Carried out for Firherk Construction Limited	ey to Explorato	ry Hole Records.	All depths and	t	WE	ST BURTON C/D POWER STATION				
	ets in depth col	umn.	rness given in	t No.	A71	02-17			WS110	
	© Co e 1:50			d out for	Firb	eck Construction Limited			Sheet 1 of 2	



	.0.0	_09							sc	COTEC
rilled DD		uipment, Methods and Re	emarks		Depth from (m)	to D	Diameter Casing Depth (mm) (m)	Ground Level		11.58 mOD
gged RT/DP	Ca	ando 175. able percussion boring.			(m) 1.20	(m) 15.00	(mm) (m) 150 15.00	Coordinates (m		E 480341.80
ecked MS		PT Hammer ID: ESG01, Roo	d type: 54mm W	hitworth.				National Grid	ı	N 386305.04
proved amples and	14/12/2017				Strata Description			1		
		B	Date	Time			D-4-II	Depth, Level	Legend	Backfill
Depth	Type & No.	Records	Casing	Water	Main Dark greyish brown slightly sandy SIL	T with rare	Detail	(Thickness)	× × × ×	
					relict rootlets. (ALLUVIUM)	.i wiai iaic	-	(1.50)	$\times \times \times \times$	A
10.50 - 10.95	UT 19	34 blows 100% rec	10.50	Dry	(ALLOVIONI)				$\times \times $	A
				,					$\times \times $	
- 11.00 - 11.45	SPTS	N=16 (2,2/3,3,4,6)	11.00	Dev				11.00 +0.5	××××	141
11.00 - 11.45 11.00 11.00	D 20 D 21	14-10 (2,2/3,3,4,0)	11.00	Dry	Firm to stiff dark reddish brown silty C occasional pockets of light bluish grey	LAY with clayey SILT		11.00 +0.5	× × ×	III
11.30	D 22				(<10mm). (MERCIA MUDSTONE - Class Dc)		-	-	××	Y Y
					(××	Y
							-		××	I
12.00 - 12.45	UT 23	84 blows 100% rec	12.00	Dry			_	-	××	TH.
									××	
12.50 - 12.95 12.50	SPTS D 24	N=24 (3,3/5,6,6,7)	12.50	Dry			_	-	××	I_H
12.50	D 25						-	-	×x	ᆙ
-							_	(4.00)	×x	
							=	-	×x	ЫЩ
13.50 - 13.95	UT 26	87 blows 100% rec	13.50	Dry				-	×x	
									×	ΙοΗ
- 14.00 - 14.45	SPTS	N=25 (4,5/5,7,7,6)	14.00	Dry			_		×x	$\perp \mathbb{P}$
14.00 14.00	D 27 D 28						-	-	×x	$ \Box$
							_		×x	
							-		×x	
- 15.00	D 29		14/12/17 15.00	1748 Dry				15.00 -3.4	×—×	
10.00	3 20				END OF EXPLORATORY H	IOLE	-	-		
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roundwater Entries		_			Depth Related Remarks			Hard Boring		
lo. Depth Strike (I	m) Remarks		Depth Sea	led (m)	Depths (m) Remarks			Depths (m)	Duration (mins)	Tools us
otes: For explanation			ect	WE	ST BURTON C/D POWER STATION			Borehole		
e Key to Exploratory duced levels in metre ackets in depth column	es. Stratum thickne	ss given in	ect No.	Δ71	02-17				WS110	
© Cop cale 1:50	yright SOCOTEC U	JK Limited AGS	ed out for		eck Construction Limited				Sheet 2 of 2	
1.00	11/01/2	018 10:38:57							OTICULE UI E	



		09						So	COTEC
illed KP		quipment, Methods and Re	emarks		Depth from to D (m) (m)	iameter Casing Depth (mm) (m)			13.41 mOE
gged RT ecked MS	Ca	ando 175. able percussion boring. PT Hammer ID: ESG01, Roo	d type: E4mm W	hitworth	(m) (m) 0.00 15.60	(mm) (m) 150 15.60	Coordinates (m National Grid		480324.7
proved	End SF 06/12/2017	71 Hallillel ID. ESGUT, RO	u type. 54mm vv	mitworth.			National Grid	r	I 386100.72
amples and					Strata Description		1		
Depth	Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfi
0.50 - 1.00	B 1	0.00-1.20 Hand excavate inspection pit.			Soft to firm dark reddish brown and dark grey silty CLAY. Occasional subangular to subrounded fine to coarse gravel of sandstone. (MADE GROUND) Dark grey, frequently slightly sandy, SILT. (MADE GROUND - Pulverised Fuel Ash)	-	(0.40)	01	å .
1.00 1.00 1.20 - 1.65 1.20	D 2 D 3 SPTS D 4	N=17 (4,4/3,5,4,5)	1.20	Dry	(MADE GROUND - Fullerised Full Ash)	-			
2.70 - 3.15 2.70	SPTS D5	N=26 (7,7/6,5,8,7)	2.70	Dry					
4.20 - 4.65 4.20	SPTS D6	N=7 (2,1/2,1,2,2)	4.65	Dry					
5.60 5.70 - 6.15 6.25 - 6.70 6.25 6.25	D 7 UT 8 SPTS D 10 D 9	60 blows 100% rec N=14 (3,4/3,4,3,4)	5.70 6.25	Dry Damp			(11.30)		
7.65 - 8.10 7.65	SPTS D 12	N=13 (4,2/2,3,2,6)	7.65 05/12/17 8.15 06/12/17 8.15	Damp 1630 Damp 0800 Damp					
8.70 - 9.15	SPTS	N=18 (2,3/4,3,5,6)	8.70	Dry					
									<u> </u>
oundwater Entries			P	lad (Depth Related Remarks		Hard Boring	Dungther ()	Terri
o. Depth Strike (m) Kemarks		Depth Sea	iea (m)	Depths (m) Remarks		Depths (m)	Duration (mins)	Iools
es: For explanation	of symbols and ab	obreviations Proje	ect	WE	ST BURTON C/D POWER STATION		Borehole		
Key to Exploratory iced levels in metre	Hole Records. All es. Stratum thickne	depths and						WS111	
kets in denth colur	mn	JK Limited AGS	ect No.	A71	02-17 eck Construction Limited			VVJIII	



Drilled KP Logged RT Checked MS Approved	05 E n	5/12/2017	Equipment, Methods and Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, F		nitworth.	Depth from to Diam (m) (m) (m) 0.00 15.60 15		Ground Level Coordinates (m) National Grid		13.41 mOD E 480324.71 N 386100.72
Samples						Strata Description				
Depth		Type & No.	Records	Date Casing	Time Water	Main	Detail	Depth, Level (Thickness)	Legend	Backfill
		UT NR B 14	31 blows No Recover		Damp	Dark grey, frequently slightly sandy, SILT. (MADE GROUND - Pulverised Fuel Ash)	=	(Tilexiless)		
- 10.80 		D 15								
- 11.70 - 12. - 11.70 - 11.70 	15	SPTS D 16	N=8 (1,1/2,3,1,2)	11.70	Damp	Reddish brown, mottled light grey and grey, slightly sandy clayey SILT. (ALLUVIUM)	- - - - - - - - - - - - - - - - - - -	11.70 +1.71		
	35	SPTS D 17	N=9 (1,1/1,2,2,4)	13.20	Damp	Soft to firm, mottled greyish brown and reddish brown, silty CLAY. (MERCIA MUDSTONE - Class Dc)	13.20-13.65 slightly — organic odour —	13.20 +0.21	X X X X X X X X X X X X X X X X X X X X	
13.65 - 14.	10	UT 18	44 blows 100% rec	13.65	Damp				XX XX	
- 14.20 		D 19					=	(2.40)	X——X X——X X——X	
15.00 - 15. - - -	45	UT 20	31 blows 100% rec	15.00 06/12/17	Damp 1600				X——X X——X	
- 15.60		D 21		Depth Seale	ed (m)	Depth Related Remarks Depths (m) Remarks		Hard Boring Depths (m)	Duration (mins	s) Tools used
see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in					WES	T BURTON C/D POWER STATION		Borehole	NO444	
brackets in depth column. © Convright SOCOTEC LIK Limited AGS Project No. A7102-						2-17 ck Construction Limited		'	NS111 Sheet 2 of 2	



Logged DP/RT 15/12/2017 End 15/12/2017 End 18/12/2017 Rammer ID: ESG01, Rod type: 54mm Whitworth. Dando 175. Cable percussion boring. SPT Hammer ID: ESG01, Rod type: 54mm Whitworth. Samples and Tests Strata Description									S	OCOTE
September Sept	rilled DD			arks				Ground Level		9.42 mOI
Manual M	••	10/12/2017	Cable percussion boring.			1.20 15.00	150 14.50)	E 480186.5
Strata Description Strata Description Strata Description Death			SPT Hammer ID: ESG01, Rod t	ype: 54mm W	hitworth.			National Grid		N 386432.1
Type Type						Strata Description		ł		
1.00				Date	Time		5	Depth, Level	Legend	Backfi
and feecular pocked or (50mm) of soft recides boront style processor					Water		Detail		×××××××××	
AAADE GROUND	0.10					and frequent pockets (<50mm) of soft reddish	-			ا ام
1,00	0.50 1.00	P 2						(1.00)		
129 128	0.50 - 1.00	62						(1.00)		- [] [
120 120										- KJI
170 D14 D15 D15 D15 D15 D15 D15 D15 D15 D15 D15							<u>-</u>	1.00 +8.42	2	
CAMADE GROUND CAMADE GROUN			50 (7,12/24,26 for 70mm)	1.20	Dry		-	(0.70)		-1/1
Day December Day						(MADE GROUND)	-			
Calculate Calc	1.70	D 5				Dark grey slightly gravelly sandy SILT. Gravel is	1.70 clayey	1.70 +7.72	2	
1.00 3.46										
3.00 - 3.45										
Superior Comments agency signify gravity gra								(1.30)		
Superior Comments agency signify gravity gra							-			-1/1
Superior Comments agency signify gravity gra]	1		
A 50 - 8 95 SPTS N=6 (1,272,2.1.1) 3.50 Dry	3.00 - 3.45	UT 6	24 blows 89% rec	3.00	Dry		† - <u>-</u>	3.00 +6.42	2	
3.50 3.50 D B 4.50 - 4.95 UT B 19 blows 100% rec 4.50 Dry 151/21/7 1754 4.50 Dry 181/21/7 0x0 5.00 - 5.45 SPTS 5.00 D 10 N=7 (2,2/2,2,2,1) SPTS 8.00 D 10 N=7 (1,2/2,2,1) SPTS 8.00 D 10 N=8 (1,1/1,2,3)) SPTS 8.00 D 1						SILI. Gravel is angular fine of clinker/slag. (MADE GROUND - Pulverised Fuel Ash)		1		-
4.50 - 4.95			N=6 (1,2/2,2,1,1)	3.50	Dry	,	3.50-3.95 some —	1		-Y]
4.50 - 4.96							gravel size nodules	}		
15/12/17 1734 450 Dry 18/12/17 0400 4.50 Dry 18/12/17 0400 0500										- A
15/12/17 1734 450 Dry 18/12/17 0400 4.50 Dry 18/12/17 0400 0500							-			
15/12/17 17/14 15/12/17 17/14 15/12/17 17/14 15/12/17 16/12/1							-			- [] []
15/21/7 173	4.50 - 4.95	UT 9	19 blows 100% rec				-	(3.30)		
Solid D 10 Solid Sol										
Size pockets of black sit Size pockets of black sit			N=7 (2,2/2,2,2,1)							
6.50 - 6.95 SPTS				4.50	Dry		size pockets of			- A
6.50 - 6.95 SPTS 6.50 D 12 C 6.50 D 13 SPTS 8.00 D 13 SPTS 8.00 D 15 D 15 D 16 D 16 D 16 D 16 D 16 D 16							_			
6.50 - 6.95 SPTS 6.50 D 12 6.50 D 13										
6.50 - 6.95 SPTS 6.50 D 12 6.50 D 13	- 6.00 - 6.45	UT 11	30 blows 100% rec	6.00	Dry					- KJI
6.50 - 6.95					í					
6.50	0.50 0.05	OPTO	N 7 (4 0/0 0 0 4)	0.50	D		7 :	6.30 +3.12	$\times \times \times \times$	
7.50 - 7.95 UT 14 26 blows 100% rec 7.50 Dry	6.50	D 12	N=7 (1,2/2,2,2,1)	6.50	Dry		-		$\times \times \times \times$	-1/1
7.50 - 7.95	6.50	D 13					-			
7.50 - 7.95							_			[]
7.50 - 7.95							=	1	$\times \times \times \times$	
8.00 - 8.45 SPTS D 15 D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 16 SPTS D 18 D 19 SPTS D 18 D 18 D 19 SPTS D 18 D 19 SPTS D 18 D 18 D 19 SPTS D 18 D 18 D 19 SPTS D 18 D 18	7.50 - 7.95	UT 14	26 blows 100% rec	7.50	Dry			}	$\times \times \times \times$	
8.00 - 8.45 SPTS								1	$\times \times \times \times$	
8.00 D 15			N=8 (1,1/1,2,2,3)	8.00	Dry		8.00-9.30 orangish	(3.40)	$\times \times \times \times$	- A
9.00 - 9.45							brown mottled, - occasional gravel -	1	$\times \times \times \times$	
9.00 - 9.45							size pockets of angular fine sand	}	$\times \times \times \times$	
9.00 - 9.45								1	$\times \times \times \times$	
9.50 - 9.95 9.50 D 18 D 19 Loose reddish brown SAND and GRAVEL with lenses of soft brownish grey clay (<50mm). Gravel Depth Related Remarks Hard Boring								1	$\times \times \times \times$	-YJ
9.50 - 9.95 9.50 D 18 D 19 Loose reddish brown SAND and GRAVEL with lenses of soft brownish grey clay (<50mm). Gravel Depth Related Remarks Hard Boring	9.00 - 9.45	UT 17	17 blows 100% rec	9.00	Dry			1		
9.50 - 9.95 9.50 D18 D 19 Depth Related Remarks Psp Sept Satisfies Sept Satisfie							-]	$\times \times \times \times$	- A
Loose reddish brown SAND and GRAVEL with lenses of soft brownish grey clay (<50mm). Gravel -9.70 -0.28			N=6 (1,1/1,2,2,1)	9.50	Dry		-	1	$\times \times \times \times$	
iroundwater Entries Depth Related Remarks Hard Boring								9.70 -0.28		-[A]
				1		ienses or soπ brownish grey clay (<50mm). Gravel		1	1	
	roundwater Ent	ne e				Donth Polated Pomarka		Hard Posine		
				Depth Seal	led (m)	-			Duration (mins	i) Tools us
tes: For explanation of symbols and abbreviations	es: For explanation	n of symbols and	abbreviations Project	1	WF	ST BURTON C/D POWER STATION		Borehole		
very to Exploratory Hole Records. All depths and luced levels in metres. Stratum thickness given in	Key to Explorator uced levels in metr	y Hole Records. A res. Stratum thick	all depths and ness given in						WS112	
ckets in depth column. © Copyright SOCOTEC UK Limited Carlied 01:50 11/01/2018 10:38:58 10:20 15:00 11/01/2018 10:38:58 15:00 11/01/2018 10:38:50 11/	© Co	pyright SOCOTEO	C UK Limited AGS							



									30	COTEC
Drilled DD	Start	Equipment, Methods	s and Remarks			Depth from to Dia	ameter Casing Depth	Ground Level		9.42 mOD
Logged DP/RT	15/12/2017					(m) (m) ((mm) (m) 150 14.50	Coordinates (m)		E 480186.50
		Cable percussion bori	ing.	N/hita-ra		1.20 15.00	130 14.50			
Checked MS	End	1	G01, Rod type: 54mm V	vnitwortn.				National Grid	ſ	N 386432.19
Approved	18/12/2017							ı		
Samples a	nd Tests				Strata Description	1				
Depth	Type & I	No. Record	Date	Time	м	ain	Detail	Depth, Level	Legend	Backfill
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Casing	Water	is subangular to rounded			(Thickness)	. 4 14 9 4 34 1	
_					mudstone and sandstone		_	1		$\Box AV$
					(RIVER TERRACE DEPO	OSTS)	_	(1.40)		11/
- 10.50 - 10.95			ecovery 10.50	Dry			_	1 (1.40)		VIV
- 10.50 - 11.00 -	B 20							4		141/
_							_	1		
— 11.00 - 11.45 - 11.00	SPTS D 21		4) 11.00	Dry			_	- - 11.10 -1.68	1	₹ {
11.00 - 11.50					Medium dense reddish b SAND with rare subangu		-	1		_ ∪□
					coarse gravel of mudstor	ne and sandstone.		-		IOH O
_					(RIVER TERRACE DEPO	OSITS)	_	1		lo A o
							_			_ H~
							_	(1.80)		
F							_	(1.00)		-1°H
								1		_ ° \$_•
_ — 12.50 - 12.95	SPTS	S N=12 (4,2/2,2,4,	(4) 12.50	7.90				1		IOH O
- 12.50	D 0						-	1		lo#o
12.50 - 13.00							-	10.00		$\Box H$
- 12.90 	D 24				Soft to firm reddish brown	n, mottled bluish grey,] _	12.90 -3.48	×—x	
_					slightly sandy silty CLAY. (MERCIA MUDSTONE -	Class Dc)	_	1	×_×	H
_					(MERON MODOTORE	Sidoo Boj	_	•		
_							_	-	××	IOHO
								1	×-^×	loHa
							_	(0.40)	×_×	
<u> </u>	UT 25	72 blows 100%	rec 14.00	Dry			14.00-15.00 bluish—	(2.10)	- × *	- 1/-
<u> </u>							grey and light grey, - mottled reddish -	1	×	
_							brown, slightly = gravelly. Gravel is =	1	×_×_×	
— 14.50 - 14.95 – 14.50	SPTS D 26		5) 14.50	Dry			subangular to -	1	[D 区]	YZ
14.50	D 27		40/40/47	4707			subrounded fine to coarse of poorly	1	^- <u>-</u> -×	
_			18/12/17 14.50	1737 Dry			cemented grey mudstone.	1	X—x	1//
-					END OF EXPLO	RATORY HOLE	Abundant gravel _	15.00 -5.58		
_							size pockets of dark _ grey silt _	1		
-							-	-		
_							_	-		
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Groundwater En	rios				Depth Related Remarks			Hard Boring		_
	re (m) Remarks		Depth Sea	aled (m)	Depths (m) Remarks			Depths (m)	Duration (mins)	Tools used
1 11.10	Rose to 9.	.90 m after 20 minutes. M								2000
	inflow							1		
Notes: For explana see Key to Explora	tion of symbols ar	nd abbreviations	Project	WE	ST BURTON C/D POWER STA	rion		Borehole		
reduced levels in m	etres. Stratum thi	ickness given in	Brois of No.		02 47			'	WS112	
brackets in depth c	olumn. Copyright SOCOT	TEC UK Limited AGS	Project No.		02-17			1		
Scale 1:50		11/01/2018 10:38:58	Carried out for	Firb	eck Construction Limited				Sheet 2 of 2	



	gged DP	Start	Equipment, Methods and Re	marks	Dimension and Orientation		Ground Level		4.47 mOD
ı	ecked MS	14/12/2017	360 tracked excavator. Machine excavated.		Width 0.60 m		Coordinates (m)		E 480408.46
		End	ividonine excavated.		Length 2.70 m	B 🗪 290 (Deg)	National Grid		N 386336.14
	roved	14/12/2017			C C				
Sa	mples an	d Tests		Strata Description					
	Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend	Backfill
┢╾			-	Dark brown slightly sandy slightly gravelly SIL	Г.	_		***************************************	
E				(MADE GROUND - Pulverised Fuel Ash)		_	1		
E						_	_		
L						_	(0.60)		
L						_			
F	0.50	D1	-			_			
F				Soft to firm reddish brown slightly sandy grave to subrounded fine to coarse of brick and cond	elly CLAY. Gravel is angular	-	0.60 +3.87		
L				to subrounded fine to coarse of brick and cond (MADE GROUND)	crete.	_	(0.30)		
F				(== ==,		=			
Ė				Soft to firm light brown slightly sandy silty CLA	Y.	=	0.90 +3.57	××××××××××××××××××××××××××××××××××××××	
F	1.00	D2	-	(ALLUVIUM)		_	1	<u>×</u> ×	
Ė						_		X—X	
Þ						_		××	
F						_	(0.90)	$\times \times \times$	
F						_		= $=$ $=$	
F	1.50	D3	-			_		X	
F						_		××	
F						=		<u>×</u> ×	
F				Light brown, mottled orangish brown, slightly s (ALLUVIUM)	sandy clayey SILT.] =	1.80 +2.67	X X X X	
F		5.4		(ALLOVIONI)		_		$\times \times \times \times$	
F	2.00	D4				_	1	$\times \times $	
E						_	}	$\begin{array}{c} \overline{\times} \times \overline{\times} \\ \overline{\times} \times \overline{\times} \end{array}$	
E]		×××× ××××	
E]	(1.20)	$\times \times \times \times$	
L	2.50	D5				2.50-3.00 wet —	(1.20)	$\times \times \times \times$	1 🗷
E	2.50	D3				2.50 5.50 Wet		$\times \times \times \times$	
Ŀ						_		$\times \times \times \times$	
L			14/12/17			_		<u> </u>	
F						=		X X X X X X X X X X X X X X X X X X X	
<u> </u>	3.00	D6		END OF EXPLORATOR	/ IIOI E	=	3.00 +1.47	<u> </u>	
F				END OF EXPLORATOR	I HOLE	_			
F						_			
F						=			
F						=			
F						_			
F						_			
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F						=			
Gro	undwater Entri	98		Remarks					
No.		(m) Remarks		Depth (m) Remarks			Stability Uns	table	
1	2.50	Wet		3.00 Trial pit terminated due to collapse.			Shoring Non	ie.	
Ī							Shoring Non Weather Ove	ercast	
Note	s: For explanation	n of symbols and	abbreviations	Project WEST BURTON C/D POWER STA	TION		Trial Pit	10001	
see h	Key to Explorator	ry Hole Records.	All depths and	I SOLITON OF TOTAL OF	*****			TD4 00	
brack	kets in depth colu	res. Stratum trick umn. opyright SOCOTE		Project No. A7102-17			1	ГР102	
Sca	© Co ale 1:25	opyrigitt SUCUTE	O OK LIIIIIleu AGO	Carried out for Firbeck Construction Limited			I	Sheet 1 of 1	



Logged DP	Start	Equipment, Methods and Rer	narks	Dimension and Orientation		Ground Level		3.87 mOD
Checked MS	14/12/2017	360 tracked excavator. Machine excavated.		Width 0.60 m		Coordinates (m)		E 480453.61
Approved	End				105 (Deg)	National Grid		N 386316.81
	14/12/2017		Strate Description	Č				
Samples and			Strata Description			Depth. Level	Leaend	Backfill
Depth	Type & No.	Records	Main		Detail	(Thickness)	Logenu	Dackilli
Depth	Type & No. D1 D2 D3	Records	Main Black organic SILT with abundant rootlets. (TOPSOIL) Soft light brown, mottled orangish brown, slight rare relict rootlets. (ALLUVIUM) Light brown, mottled orange, slightly sandy classifications (ALLUVIUM)	iyey SILT.	Detail	(0.50) 0.50 +3.37 (0.70) 1.20 +2.67	Legend	Backfill
	D5		Dark grey clayey SILT with abundant relict roo Frequent bands of fine dark grey sand (up to 3 (ALLUVIUM)	ts. Strong organic odour. 30mm).		(1.50)		
	D7	14/12/17 3.50	END OF EXPLORATOR	Y HOLE	- - - - -	3.50 +0.37	X X X X X X X X X X X X X X X X X X X	V
Groundwater Entries	15		Remarks					
No. Depth Strike 1 3.50	(m) Remarks Fast inflow		Depth (m) Remarks	TON.				
Notes: For explanation see Key to Explorator reduced levels in metrorackets in depth colusion (© Co. Scale 1:25	y Hole Records. A res. Stratum thick	All depths and kness given in	Project WEST BURTON C/D POWER STAY Project No. A7102-17 Carried out for Firbeck Construction Limited	HUN			TP103	



Logged DP	Start	Equipment, Methods and Ren	Remarks Dimension and Orientation			Ground Level	13.09 mC	DC
Checked MS	13/12/2017	360 tracked excavator. Machine excavated.		Width 0.60 m		Coordinates (m)	E 480252.	
Approved	End			Length 2.80 m	140 (Deg)	National Grid	N 386159.	36
	13/12/2017		Strate December	0				
Samples and			Strata Description			Depth, Level	Legend Back	fill
Depth	Type & No.	Records	Main	0.6	Detail	(Thickness)	AAAAAXXX	
- -			Soft brown slightly sandy CLAY with abundant (TOPSOIL)	rootlets.	= =	(0.20)		
- -			Dark grey slightly sandy SILT.		- -	0.20 +12.89		
-			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		_			
-					0.40-0.60 soft - brown silty clay - lenses -			
	D1	-			lenses — (80x30mm) =			
- -					, ,			
-					=	(1.00)		
_					_			
- 1.00	D2							
-	52				_			
-			Dark grey slightly sandy slightly gravelly SILT.	Gravel is angular to	-	1.20 +11.89		
- -			subangular fine to coarse of extremely weak s	iltstone. Rare angular	- -			
			cobbles of siltstone. (MADE GROUND - Pulverised Fuel Ash)		_			
— 1.50 –	D3				_			
- -					_			
- -					=	(1.10)		
-					_			
2.00	D4				_			
	D4				_			
- -					=			
-			Dark grov slightly sandy SILT		_	2.30 +10.79		
- -			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		_			
	D5	-			_			
					_			
					=			
-					-			
- -					- -			
3.00 _	D6				_	(1.40)		
_					=			
_					_			
-					-			
_ — 3.50	D7	13/12/17 Dry			_			
-					=			
			END OF EXPLORATOR	/ HOLE	_	3.70 +9.39		
_					_			
_					=			
 -					_			
_					=			
_					_			
_					=			
- -					_			
- -					- -			
					_			
					=			
_					_ _			
Groundwater Entrie	•		Remarks					_
No. Depth Strike			Depth (m) Remarks			Stability Stat	ble	
			0.00 - 3.70 No groundwater encountered during ex	cavation.		Shoring Non	e	
							rcast	
Notes: For explanation of symbols and abbreviations Project			Project WEST BURTON C/D POWER STAT	ΓΙΟΝ		Trial Pit		\dashv
see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in					TP104			
brackets in depth column. © Copyright SOCOTEC UK Limited AGS			Project No. A7102-17					
Scale 1:25			Carried out for Firbeck Construction Limited				Sheet 1 of 1	



Logged DP		Equipment, Methods and Ren	marks Dimension and Orientation			Ground Level	13.44 mC	
Checked MS		360 tracked excavator. Machine excavated.		Width 2.80 m		Coordinates (m)	E 480285.	
Approved	End			Length 0.60 m	150 (Deg)	National Grid	N 386122.	80
	12/12/2017							
Samples and	d Tests		Strata Description					_
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend Backt	ill
				tly sandy SILT with rare,	Detail O.30 rare angular coarse gravel of brick in Face D	Depth, Level (Thickness) (0.30) 0.30 +13.14	Legend Back!	
2.50 - 2.50 - 3.00	D5 D6	12/12/17 Dry						
	D7				_	3.50 +9.94		
Groundwater Entrice	es		END OF EXPLORATORY	/HOLE		Stability Stab	le le	
No. Depth Strike (m) Remarks			Depth (m) Remarks 0.00 - 3.50 No groundwater encountered during ex	xcavation.		GLADIIILY STAIR	nie	
						Shoring None Weather Overcast		
see Key to Exploratory Hole Records. All depths and			Project WEST BURTON C/D POWER STATION			Trial Pit		
educed levels in metres. Stratum thickness given in		ness given in	Project No. A7102-17			TP105		
Scale 1:25 © Co		C UK Limited AGS 01/2018 11:06:06	Carried out for Firbeck Construction Limited		Sheet 1 of 1			



Logged DP		Equipment, Methods and Ren	narks	Dimension and Orientation		Ground Level		0 mOD
Checked MS		360 tracked excavator. Machine excavated.		Width 0.60 m		Coordinates (m)		0340.80
Approved	End			Length 2.70 m	120 (Deg)	National Grid	N 386	6082.01
	12/12/2017		Strata Description	Ů				
Samples and			Strata Description			Denth Level	Legend F	Backfill
Depth	Type & No.	Records			Detail	(Thickness)	Legena	Jackiiii
	Type & No. D1 D2 D3 D4 D5	Records 12/12/17 Dry	Brown slightly sandy CLAY with abundant root (TOPSOIL) Light brown silty angular to subrounded fine to and sandstone. (MADE GROUND) Dark grey, becoming light brownish grey, slight (MADE GROUND - Pulverised Fuel Ash)	tty sandy SILT.	0.40 2mm black geomembrane = 1.70-2.00 frequent roots (<40x150mm) = 2.00 rubber—(150x80mm) = 6.00x20mm) of brown sandy clay = 1.00x20mm sandy clay = 1.00x20mm) of brown sandy clay = 1.00x20mm sandy clay = 1	Depth, Level (Thickness) (0.40) 0.40 +12.70 0.50 (0.10) +12.60 (3.00)	Legend	Backfill
Groundwater Entrie	os.		Remarks					
No. Depth Strike			Depth (m) Remarks 0.00 - 3.50 No groundwater encountered during ex	xcavation.		Stability Stab Shoring Non- Weather Over		
Notes: For explanatio	n of symbols and a	abbreviations	Project WEST BURTON C/D POWER STAT	TION		Trial Pit		
see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. © Copyright SOCOTEC UK Limited Scale 1:25 11/01/2018 11:06:06 Project No. A7102-17 Carried out for Firbeck Construction Limited							TP106 Sheet 1 of 1	



	Start	Equipment, Methods and Rer	marks	Dimension and Orientation		Ground Level	12.45 m	nOD	
Logged RT	20/12/2017			A		Coordinates (m)	E 480379	9.49	
Checked MS	End	Hand excavated.		Width 0.40 m	90 (Deg)	National Grid	N 385939	9.43	
Approved	20/12/2017			Length 0.40 m	(= -3)				
Samples and			Strata Description					ı	
		T .				Depth, Level	Legend Back	kfill	
Depth	Type & No.	Records			Detail	(Thickness)	-		
Depth	Type & No. D1 B2	Records	Strata Description Main Firm dark brownish grey slightly sandy slightly subangular to subrounded fine to coarse of flir glass. (MADE GROUND) Firm dark grey slightly sandy slightly gravelly S pockets of firm orangish brown clay with low cosubangular to subrounded fine to coarse of flir Cobbles are subangular of concrete 100x90x9 (MADE GROUND - Pulverised Fuel Ash) END OF EXPLORATORY END OF EXPLORATORY	siLT with occasional obble content. Gravel is t, sandstone and brick.	Detail	Depth, Level (Thickness) 0.10 (0.10) +12.35 (1.10) +11.25	Legend Back	KfIII	
_					=				
-					- =				
					_				
Groundwater Entire	ne .		Domarke						
Groundwater Entries Remarks No. Depth Strike (m) Remarks Depth (m) Remarks						Stability Stab	le		
No. Depth Strike (m) Remarks Depth (m) Remarks 0.00 - 1.20 No possible asbestos containing material identified.				ial identified.					
						Shoring None	e		
							rcast		
Notes: For explanation of symbols and abbreviations see Key to Exploratory Hole Records. All depths and						Trial Pit		\neg	
see Key to Explorator	y Hole Records. A	All depths and ness given in							
reduced levels in metres. Stratum thickness given in brackets in depth column. © Copyright SOCOTEC UK Limited Project No. A7102-17 Fisher's Construction Limited							TP107		
Scale 1:25		C UK Limited AGS	Carried out for Firbeck Construction Limited				Sheet 1 of 1	İ	



Logged DP	14/12/2017	360 tracked excavator.	marks	Dimension and Orientation		Coordinates (m)		12.16 MOD E 480348.08
Checked MS	End	Machine excavated.		Width 0.60 m	B - 210 (Deg)	National Grid		N 385895.45
Approved	14/12/2017			Length 2.80 m C] (5)			
Samples an	d Tests		Strata Description					
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend	Backfill
- - - - - - - 0.50	D1		Brown slightly sandy gravelly SILT with abund angular to subrounded fine to coarse of brick (MADE GROUND) Firm brown slightly sandy slightly gravelly CL subrounded fine to coarse of brick and ceram (MADE GROUND)	and ceramics. AY. Gravel is angular to	0.10-0.20 – orangish brown – gravelly silt. Gravel is angular to subangular fine – to medium of brick (Face B) 0.30 80x110mm copper pipe fragment	(0.40)		
- - - - - - - - - - - - - - - - - - -	D2		Dark grey slightly sandy slightly gravelly SILT subangular fine to coarse of poorly cemented (MADE GROUND - Pulverised Fuel Ash)	. Gravel is angular to silt.	- - - - - - - - - - - - - - - - - - -	1.00 +11.16		
- 1.50 	D3							
	D5				-	(2.50)		
- - - - - - - - - - - -	D6	14/12/17 Dry			- - - - - - - -			
_		14/12/17 Dry			-			
3.50	D 7		END OF EXPLORATOR	Y HOLE		3.50 +8.66		
Groundwater Entri No. Depth Strike			Remarks Depth (m) Remarks			Stability Stat	ole	
Notes: For explanation see Key to Explorato reduced levels in me brackets in depth col	on of symbols and ry Hole Records. A tres. Stratum thick	All depths and kness given in	Project WEST BURTON C/D POWER STA	ATION		Trial Pit	rcast FP108	
© C Scale 1:25	opyright SOCOTE	EC UK Limited AGS	Carried out for Firbeck Construction Limited				Sheet 1 of 1	



Logged RT		Equipment, Methods and Rer	narks	Dimension and Orientation		Ground Level	4.40 mOD	
Checked MS	20/12/2017	Hand excavated.		Width 0.40 m	_	Coordinates (m)	E 480443.30	
Approved	End			Length 0.40 m	90 (Deg)	National Grid	N 385913.17	
	20/12/2017			- 0				
Samples and	d Tests	<u> </u>	Strata Description					
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend Backfill	
- 0.30 - 0.50 - 1.00	D1 B2		Dark grey slightly sandy subangular to subrou GRAVEL of ash and clinker with frequent root (MADE GROUND - Pulverised Fuel Ash) Dark grey slightly sandy slightly gravelly SILT. subrounded fine to coarse of brick and clinker. (MADE GROUND - Pulverised Fuel Ash)	ets. Gravel is subangular to	- - - - - - - - - - - - - - - - - - -	(0.15) 0.15 +4.25 (1.05)		
- - - - - - - - - - - - - - - - - - -	D3		END OF EXPLORATOR	Y HOLE	- - - - - - - - - - - - - - - - - - -	1.20 +3.20		
					- - - - - - - - - - - - - - - - - - -			
-								
- - - - - - - - - - -					- - - - - - - - - - - - - - - - - - -			
-					- - - - - - - - - - - - - - - - - - -			
					- - - - - - - - -			
-								
-								
Groundwater Entries No. Depth Strike (m) Remarks			Remarks Depth (m) Remarks 0.00 - 1.20 No possible asbestos containing material identified.			Stability Stable Shoring None Weather Overcast		
see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. © Copyright SOCOTEC UK Limited AGS			Project WEST BURTON C/D POWER STA' Project No. A7102-17 Carried out for Firbeck Construction Limited	rion			ГР110 Sheet 1 of 1	



		Start	Equipment, Methods and Re		Dimension and Orientation	_	Ground Level		4.80 mOD
Log	ged DP			and No	Dimension and Orientation				
Chec	ked MS	14/12/2017	360 tracked excavator. Machine excavated.		Width 0.60 m	_	Coordinates (m)	E 480507.00
		End			Longth 3.70 m	120 (Deg)	National Grid		N 385914.62
Appro	oved	14/12/2017			Length 2.70 m C				
San	nples an	d Tests		Strata Description			1		
-							Depth, Level	Legend	Backfill
	Depth	Type & No.	Records	Main		Detail	(Thickness)	2090	240
F				Soft brown, becoming light brown, silty CLAY.	Frequent rootlets. Rare	_		×_^	
Ė				subrounded medium gravel of siltstone.		-		$\overline{\times}$	
-				(ALLUVIUM)		_		×—×	
								×_^	
-						-	-	$\overline{\times}$	
F						_	1	X	
	0.50	D1	-			_		××	
F						-	(4.20)	× ×	
F						_	(1.30)	× ×	
						_		××	
E						_		×_×_	
H						-	-	$\overline{\times}$	
_	1.00	D2	-			_		××	
L						_		××	
-						-	-	× ×	
F				Coff light brown silty CLAV with frequent valid	reetlete	_	1.30 +3.5		
L				Soft light brown silty CLAY with frequent relict (ALLUVIUM)	rootiets.	_		×——×	
-	1.50	D3				-	-	×	
F	1.50	D3				-		$\equiv \overline{\times}$	
_						_		××	
						_		××	
F						-	1	× ×	
F						_		$ \times$ $$	
_	2.00	D4				_		×——×	
_	2.00]				-		××	
F						=	(1.70)	\times	
_						_		^×	
Ŀ						_		××	
F						_		$\overline{\times}$	
	2.50	D5				_		× ×	
L						_		××	
-						-	-	×_×_	
-						_		$\equiv \overline{\times}$	
						_		××	
F						-	+	××	
Ē.	3.00	D6	-	Dark grey SILT with frequent relict rootlets.			3.00 +1.8		1 🗷
_				(ALLUVIUM)		_		k××××	
E				,		_	_	×××× ××××	
F						_	(0.50)	XXXX	
F			14/12/17			-	1	KXXXX	
E						_		×××× ××××	
	3.50	D7		END OF EXPLORATOR	Y HOLE		3.50 +1.3	0 ××××	
F				END OF EM EDITORIO	THOLE	_	1		
Ė						_	-		
Ŀ						=			
-						_			
-						_			
						_			
F						-	+		
F						_			
Ė						_			
Ŀ						_			
-						-	_		
						_			
Ė						_			
-						-	1		
F						_			
						_			
						_			
	indwater Entri			Remarks			Stability St	able	
No. 1	Depth Strike 3.00	(m) Remarks Wet		Depth (m) Remarks			Cabinty Si		
Ι΄	3.00	AAGI					Shoring N	one	
								unny	
Notes	· For cyploneti-	on of symbols and	abbreviations	Project WEST BURTON C/D POWER STA	ATION		Trial Pit	,	
see Ke	ey to Explorator	ry Hole Records. A	All depths and	WEST BURTON O/D POWER STA	ATION .				
reduce bracke	ed levels in met ets in depth colu	tres. Stratum thick umn.	ness given in	Project No. A7102-17			I	TP111	
		opyright SOCOTE	C UK Limited AGS	1 *** *					



Logged DP		Equipment, Methods and Re	marks	Dimension and Orientation		Ground Level		7.01 mOD
Checked MS Machine excavated.		360 tracked excavator. Machine excavated.		Width 0.60 m		Coordinates (E 480499.87
End Approved				Length 2.80 m	155 (Deg)	National Grid		N 385841.23
			Otrocto Borondintion	ű				
Samples and	d lests	_	Strata Description			Donath Love	al lamand	Dealdill
Depth	Type & No.	Records	Main		Detail	(Thickness)	ei Legena	Васктііі
Samples and		Records 14/12/17 Dry	Strata Description Main Soft brown slightly sandy CLAY with abundan odour. (TOPSOIL) Dark brown slightly sandy gravelly SILT. Gravifine to coarse of brick. (MADE GROUND) Stiff reddish brown, mottled light bluish grey, spockets (up to 50mm) of light grey silt. (Reworked MERCIA MUDSTONE) Dark greyish brown SILT. (ALLUVIUM)	t rootlets. Strong organic el is angular to subrounded iilty CLAY with frequent	2.50 subangular to subrounded fine to coarse gravel of mudstone	(0.15) (0.35) (0.35) (0.50) (2.50)	6.86	Backfill
Groundwater Entrie	es		Remarks					
Groundwater Entrie No. Depth Strike			Remarks Depth (m) Remarks			Stability	Stable	
Deput (III) Remains						Shoring	None	
							None	
Notes E			Desired Property of the Control of t	TION			Overcase	
Notes: For explanation see Key to Explorator	y Hole Records. A	All depths and	Project WEST BURTON C/D POWER STA	HON		Trial Pit		
reduced levels in met brackets in depth colu	res. Stratum thick	ness given in	Project No. A7102-17				TP112	2
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_00.0 1.20	11/0	01/2018 11:06:07					556() 61 1	



	Start	Equipment, Methods and Re	marks	Dimension and Orientation		Ground Level		13.01 mOD
Logged DP	13/12/2017	360 tracked excavator.		A		Coordinates (m)		E 480293.20
Checked MS	End	Machine excavated.		Width 2.90 m	55 (Deg)	National Grid		N 386304.89
Approved	13/12/2017			Length 0.60 m	. 3/			
Samples an	d Tests		Strata Description					
Depth	Type & No.	Records	Main		Detail	Depth, Leve (Thickness)	l Legend	Backfill
_			Soft to firm brown, mottled orangish brown, sli	ghtly sandy CLAY with	_	(THICKHESS)	**********	
_			frequent rootlets. Rare angular coarse gravel (MADE GROUND)	of brick.	_			
Ŀ			(MADE GROUND)		_			
_					_			
_ _					_	(0.80)		
0.50	D1	-			_			
_					_			
_					_			
- -			Firm dark grey slightly sandy silty CLAY. Stron	g organic odour.	-	0.80 +12	.21	
- -			(MADE GROUND)		=			
1.00 _	D2	-			_			
<u>-</u>					_			
-					_			
F					=	(1.00)		
F					1.40-1.50 roots - (<30x600mm) in -			
1.50 	D3				centre of Face B	1		
E								
E					_	1.80	21	
E			Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)			1.80 +11		
_ 	D4		(iiii iii ii		_			
_ _ _	D4				_			
- -					_			
-					_			
Ė					_			
_ 	D5	-			_			
= -					=			
-					_	(1.70)		
-					_			
F					=	1		
3.00	D6	-						
E								
E					=			
_		13/12/17 Dry			-			
_					_			
3.50	D7		END OF EXPLORATOR	Y HOLE	_	3.50 +9.	51	
_					_	-		
_					=	-		
F					-			
E					_			
E					-	1		
E					-			
E						1		
E					_	1		
 					_	1		
<u> </u>					-	1		
<u> </u>					_			
ļ.					_	1		
-						1		
Groundwater Entri		-	Remarks			Stability S	Stable	
No. Depth Strike	(m) Remarks		Depth (m) Remarks 0.00 - 3.50 No groundwater encountered during e	xcavation.		Clability S	, work	
			1			Shoring N	lone	
							Overcast	
Notes: For explanation see Key to Explorator	ry Hole Records. A	III depths and	Project WEST BURTON C/D POWER STA	TION		Trial Pit		
see Key to Exploratory Hole Records. All depths and reduced levels in metres. Stratum thickness given in brackets in depth column. Project No. A7102-17							TP113	
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	11/0	1/2010 11.00.0/						



Logged DP		Equipment, Methods and Rei	marks	Dimension and Orientation		Ground Level	13.05 mOD
Checked MS	13/12/2017	360 tracked excavator. Machine excavated.	Width 0.60 m		Coordinates (m)	E 480277.31	
Approved	End		Length 2.80 m D S 36 (Deg) N		National Grid	N 386312.39	
	13/12/2017		· ·				
Samples and	d Tests	_	Strata Description				
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend Backfill
Depth		Records	Soft to firm brown, mottled orangish brown, slightly abundant rootlets. (TOPSOIL) Firm dark grey slightly sandy silty CLAY with a (MADE GROUND) Dark grey slightly sandy SILT. (MADE GROUND - Pulverised Fuel Ash)		Detail 1.20-1.40 firm orangish brown slightly gravelly clay Gravel is angular to subangular fine to coarse of brick (Face D)	Depth, Level (Thickness) (1.00) 1.00 +12.05 (0.65) 1.65 +11.40	Legend Backfill
3.00 - - - - - - - - - - - - - - - - - -	D6	13/12/17 Dry	END OF EXPLORATOR	YHOLF		3.50 +9.55	
			END OF EXILECTATION	THOLE			
Groundwater Entries Remarks							-
Groundwater Entrie No. Depth Strike			Remarks Depth (m) Remarks 0.00 - 3.50 No groundwater encountered during ex	xcavation.		Stability Stab Shoring Non- Weather Over	
Notes: For explanatio	n of symbols and	abbreviations	Project WEST BURTON C/D POWER STAT	TION		Trial Pit	
see Key to Explorator reduced levels in met brackets in depth colu © Co Scale 1:25	res. Stratum thick ımn. opyright SOCOTE	ness given in				TP114 Sheet 1 of 1	

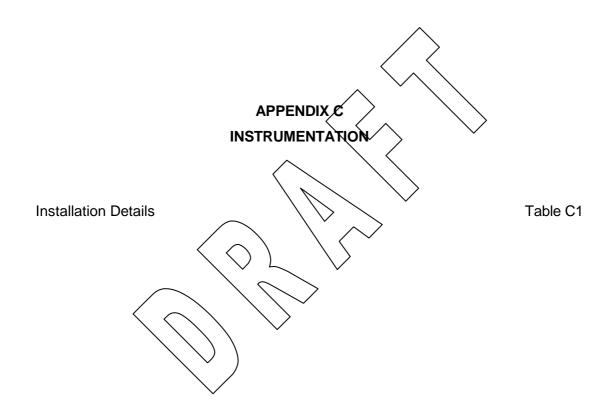


Logged DP	Start	Equipment, Methods and Ren	narks	Dimension and Orientation		Ground Level		9.12 mOD
Logged DP Checked MS	13/12/2017	360 tracked excavator. Machine excavated.	Width 0.60 m				E	E 480216.45
Approved	End			National Grid	N	N 386425.20		
	13/12/2017	· · · · · · · · · · · · · · · · · · ·	(a a	Length 2.70 m C				
Samples and			Strata Description			De-th Lovel	1 around	Backfill
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend	Backiii
0.50	D1		Light yellowish grey silty CLAY with abundant (MADE GROUND) Soft dark brown slightly sandy gravelly CLAY. subrounded fine to coarse of brick and clinker. (MADE GROUND)		-	(0.90)		
- - - - - - - - - - - -	D2		Firm orangish brown gravelly CLAY. Gravel is strick. (MADE GROUND) Light greyish brown slightly sandy gravelly SIL subrounded fine to coarse of clinker/slag. (MADE GROUND - Pulverised Fuel Ash)		- - - - - - - - - - - - - - - - - - -	1.00 +8.12 (0.20) 1.20 +7.92		
- 1.50 - 1.50 	D3				- - - - - - - - - - - - - - - - - - -			
	D4				- - - - - - - - -	(2.30)		
- 2.50 	D6				- - - - - - - -			
- - - - - - - - - - - - - - - - - - -	07	13/12/17 Dry	END OF EXPLORATOR	V HOI E	- - - - - - - -	3.50 +5.62		
			END OF EXPLORATORY	/HOLE				
Groundwater Entrie No. Depth Strike			Remarks Depth (m) Remarks			Stability Stab Shoring Non Weather Rain	е	
Notes: For explanation see Key to Explorator reduced levels in metro brackets in depth colu © Conscience Scale 1:25	y Hole Records. A res. Stratum thick	All depths and kness given in EC UK Limited AGS	Project WEST BURTON C/D POWER STATE Project No. A7102-17 Carried out for Firbeck Construction Limited	TION			TP115 Sheet 1 of 1	



Logged DP	Start	Equipment, Methods and Rei	narks	Dimension and Orientation		Ground Level		13.55 mOD
Checked MS	13/12/2017	360 tracked excavator. Machine excavated.		Width 0.60 m	Coordinates (m)		E 480289.44	
Approved	End			Length 2.90 m	D B 150 (Deg)			N 386467.15
	13/12/2017			· ·				
Samples and			Strata Description			Donth Lovel	Lamand	Daaldill
Depth	Type & No.	Records	Main		Detail	Depth, Level (Thickness)	Legend	Backfill
- - - - - - - - 0.50	D1		Soft to firm reddish brown slightly sandy grave content. Gravel is angular to subrounded fine concrete. Frequent rootlets. Cobbles are suba (MADE GROUND) Dark grey slightly sandy gravelly SILT. Gravel fine to coarse of clinker, brick and concrete. R (MADE GROUND - Pulverised Fuel Ash)	to coarse of brick and ngular of concrete.	-	(0.50) 0.50 +13.05		
1.00	D2				0.80 fabric - sheeting in centre - of Face A -	(0.80)		
- - - - - - - - - -	D3		Firm slightly sandy gravelly CLAY. Gravel is an coarse of brick, clinker and concrete. (MADE GROUND)	ngular to subrounded fine to	- - - - - - - -	1.30 +12.25		
	D4				- - - - - -	2.30 +11.25		
	D5		Dark grey slightly sandy gravelly SILT. Gravel fine to medium of clinker. (MADE GROUND - Pulverised Fuel Ash)	is angular to subrounded	- - - - - - -	2.00		
3.00	D6	13/12/17 Dry			3.30-3.50 -	(1.20)		
_					concrete boulder - with rebar -			
3.50	D7		END OF EXPLORATOR	YHOLE		3.50 +10.05		
No. Depth Strike			Depth (m) Remarks			Stability Sta	ble	
Notes: For explanatio see Key to Explorator	n of symbols and y Hole Records.	abbreviations	Project WEST BURTON C/D POWER STA	TION		Shoring Nor Weather Rai	ning	
reduced levels in met brackets in depth colu	res. Stratum thick	kness given in	Project No. A7102-17			'	TP116	
© Co	ppyright SOCOTE	EC UK Limited AGS	Carried out for Firbeck Construction Limited				Sheet 1 of 1	





January 2018
Issue 1

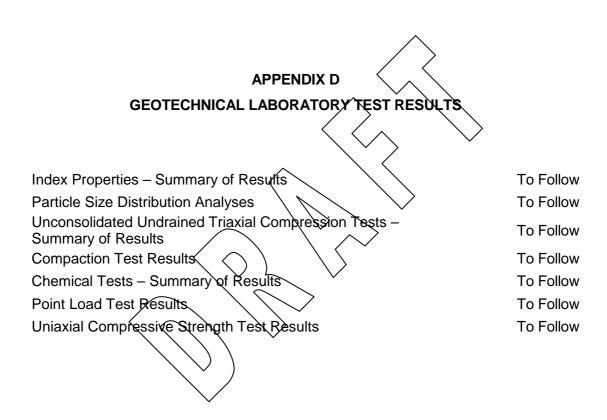
Report No A7102-17
Appendix C

Installation Details



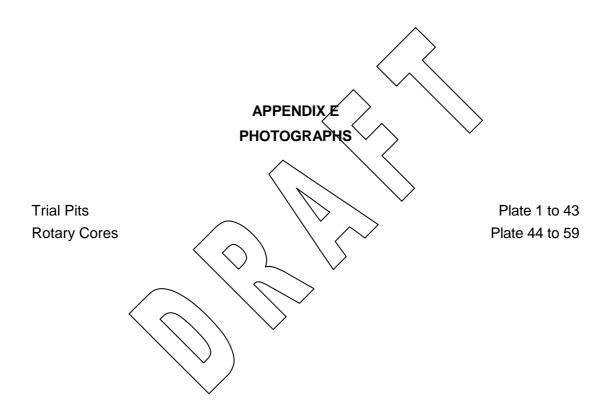
						ı		
Instrument Reference	Instrument Type (See Notes)	Installation Date, dd/mm/yyyy	Pipe Diameter, mm	Instrument Base, mbgl	Response Zone Range, mbgl	Pipe Top Details	Headworks	Remarks
BH101 (1)	SP	15/12/2017	90	30.30		Open	Raised cover	
BH104 (1)	SP	15/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	
BH105 (1)	SP	15/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	
BH107 (1)	SP	18/12/2017	90	28.00		Open	Raised cover	
BH108 (1)	SP	18/12/2017	90	28.00		Open	Raised cover	
WS101 (1)	SP	20/12/2017	50	12.00	9.00 to 12.00	Gas tap	Raised cover	
WS102 (1)	SP	18/12/2017	50	10.50	7.50 to 10.50	Gas tap	Raised cover	
WS103 (1)	SP	14/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS104 (1)	SP	15/12/2017	50	14.50	9.00 to 14.50	Gas tap	Raised cover	
WS106 (1)	SP	13/12/2017	50	10.50	9.00 to 10.50	Gas tap	Raised cover	
WS108 (1)	SP	08/12/2017	50	11.00	11.00 to 14.10	Gas tap	Raised cover	
WS109 (1)	SP	08/12/2017	50	13.50	9.00 to 13.50	Gas tap	Raised cover	
WS110 (1)	SP	15/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS111 (1)	SP	06/12/2017	50	15.00	12.00 to 15.00	Gas tap	Raised cover	
WS112 (1)	SP	19/12/2017	50	14.00	11.00 to 14.00	Gas tap	Raised cover	





January 2018 Report No A7102-17 Issue 1 Appendix D





January 2018
Issue 1

Report No A7102-17
Appendix E



WEST BURTON C AND D GAS TURBINE POWER PLANTS GROUND INVESTIGATION

FACTUAL REPORT ON PRESSUREMETER TESTING

Report No A7104-17

January 2018

Carried out for: Firbeck Construction Limited 7 Lawn Court Lawn Road Industrial Estate Carlton-in-Lindrick Worksop Nottinghamshire S81 9ED

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Report No A7104-17

January 2018

Issue No Date	Status	Prepared by	Checked by	Approved by
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'	Final report	SIGNATURE	SIGNATURE	SIGNATURE
Jan 2018		SIGNATURE	SIGNATURE	SIGNATURE

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APPENDIX A CALIBRATION REGISTERS
APPENDIX B PRESSUREMETER TEST ANALYSES

1 INTRODUCTION

In November 2017 SOCOTEC UK was commissioned by Firbeck Construction Limited, on behalf of EDF Energy to carry out a ground investigation which included pressuremeter testing at West Burton Power Station, Nottinghamshire. The scope of the testing was specified by Sir Robert McAlpine.

This report presents the factual fieldwork records of the pressuremeter testing carried out from 4 to 13 December 2017, together with an interpretation of the test results in terms of material parameters. The data are also presented separately in digital format following AGS (2017). The main investigation works are reported separately under SOCOTEC Report No A7102-17.

2 PRESSUREMETER TESTING

2.1 Pressuremeter Equipment

The testing was undertaken using high pressure, direct strain measuring, borehole dilatometers (HPD) and a self-boring pressuremeter (SBP) manufactured by Cambridge Insitu and PACE Geotechnics. Both pressuremeters comprise a cylindrical instrument, inflated by oil or gas pressure.

The HPD is inserted into a test pocket drilled in the ground using a rotary drilling rig (ie, a prebored type pressuremeter). The SBP has an integral cutter and is drilled into the ground using the rotary rig. During a test, strain is measured across three diameters in the same plane at the centre of the expanding section, and pressure measured by internal pressure transducers. Details of the instruments used are as follows:

SUMMARY OF PRESSUREMETER EQUIPMENT

Instrument	Nominal Diameter (mm)	Strain Capacity (mm)	Pressure Capacity (MPa)	Instrument Details	Remarks	
HPD-95	95	25 (per arm) 20		Cambridge Insitu 6-arm multiplex pressuremeter.	Serial No 081031	



PACE HPD	95	18 (per arm)	20	Pace Geotechnics 6-arm multiplex pressuremeter.	Serial No 1005
SBP-3	88	6 (per arm)	7	Cambridge Insitu 3- arm multiplex self- boring pressuremeter	Serial No 930111

The calibration registers for the instruments are contained in Appendix A. These present calibrations for the displacement and pressure measuring transducers, and corrections assessed for membrane stiffness (ie resistance to inflation in air) and system compliance.

2.2 **Testing Programme**

Ten pressuremeter tests were carried out in two boreholes at depths scheduled by Sir Robert McAlpine, in general accordance with BS 5930 (2015). Details of the test depths, dates, etc are included in the Summary of Pressuremeter Tests, see Table 1.

The tests were carried out in boreholes drilled by SOCOTEC using rotary drilling methods. The holes were drilled by conventional means to approximately 1 m above the scheduled test depth. The sequence of testing commenced with the shallowest test, working downwards.

For HPD tests, a 2 to 3 m long section of hole was then drilled using an H size (99 mm diameter) core barrel to form the test pocket. The HPD was inserted into the test pocket as soon as possible to minimise deterioration of the ground and the test carried out.

For SBP tests, the probe was lowered to the base of the hole and self bored to the required test depth. The cutter position and rate of progress were optimised to achieve minimum disturbance during installation.

The testing was carried out in a stress controlled manner using a manually operated compressed gas control box to pressurise the pressuremeter at an appropriate loading rate for the ground conditions. During the test unload-reload loops were performed. Where considered necessary, in the operator's judgement, a holding period was maintained to allow creep of the ground to reduce before carrying out the unloading stage of the loop.

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Loading was continued until either the strain or pressure capacity of the instrument was achieved or if in the operator's opinion continuation would result in risk of damage to the equipment. The pressuremeter was then unloaded and removed from the hole to allow continuation by rotary coring.

ANALYSIS OF RESULTS 3

Analysis of the pressuremeter test data was carried out using proprietary software developed by Cambridge Insitu and PACE Geotechnics. Interpretation was performed on the average values obtained from all the displacement measuring positions (ie the average of the 6 arms) except where the data from one or more of the 'arms' was judged as unrepresentative. In these cases analysis has been carried out using the most reliable arm combinations.

The pressuremeter tests have been interpreted to provide, where appropriate, estimates of the following parameters:

- in situ cavity pressure after Marsland and Randolph (1977) modified by Hawkins et al (1990)
- undrained shear strength and limit pressure during loading after Gibson and Anderson (1961) modified by Windle and Wroth, 1977
- initial shear modulus from slope of early loading part of test
- shear modulus from linear fit to unload-reload loops after Windle and Wroth (1977)
- shear modulus shear strain relationship (non-linear stiffness response) after Bolton and Whittle (1999)

Plots of total pressure against average arm displacement for each pressuremeter test, together with the results of interpretation of the data, are presented as Figures following the report text.

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REFERENCES

AGS: 2017: Electronic transfer of geotechnical and geoenvironmental data (Edition 4.0.4). Association of Geotechnical and Geoenvironmental Specialists.

Bolton M D and Whittle R W: 1999: A non-linear elastic/perfectly plastic analysis for plane strain undrained expansion tests. Géotechnique 49, No. 1, pp 133-141.

BS 5930 : 2015 : Code of practice for ground investigations. British Standards Institution.

Gibson R E and Anderson W F: 1961: In situ measurement of soil properties with the pressuremeter, Civil Engineering and Public Works Review, Vol. 56, No. 658 May pp 6l5-6l8.

Hawkins P G, Mair R J, Mathieson W G and Muir Wood D:1990: Pressuremeter measurement of total horizontal stress in stiff clay. Proc. ISP.3 Oxford

Marsland A and Randolph M F: 1977: Comparison of the Results from Pressuremeter Tests and Large Insitu Plate Tests in London Clay. Géotechnique 27 No. 2 pp 2l7-243.

Whittle R W: 1999: Using non-linear elasticity to obtain the engineering properties clay - a new solution for the self boring pressuremeter. Ground Engineering, Vol.32, No.5, pp 30-34.

Windle D and Wroth C P: 1977: The Use of a Self-boring Pressuremeter to determine the Undrained Properties of Clays. Ground Engineering, September.

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Summary of Pressuremeter Tests



Borehole No.	Test Reference	Depth (m)	Date	Test Type	Remarks
	B101T1	3.00	11-Dec-17	SBP	Test carried out in PFA
	B101T2	5.00	11-Dec-17	SBP	Test carried out in PFA
BH101	B101T3	16.60	12-Dec-17	HPD	Test carried out in Mercia Mudstone
	B101T4	20.40	13-Dec-17	HPD	Test carried out in Mercia Mudstone
	B101T5	23.40	14-Dec-17	HPD	Test carried out in Mercia Mudstone
	B102T1	3.00	05-Dec-17	SBP	Test carried out in PFA
	B102T2	6.00	06-Dec-17	SBP	Test carried out in PFA
BH102	B102T3	14.70	06-Dec-17	HPD	Test aborted due to uneven arm expansion
	B102T4	16.20	06-Dec-17	HPD	Test carried out in Mercia Mudstone
	B102T5	20.70	07-Dec-17	HPD	Test carried out in Mercia Mudstone

Notes: HPD - High Pressure Dilatometer SBP - Self-Boring Pressuremeter

Project Project No. Carried out for

WEST BURTON C/D POWER STATION A7104-17

Firbeck Construction Limited

Table

1

Notes on Pressuremeter Test Results



KEY TO RESULTS

- Po Pressure corresponding to regeneration of in situ strain.
- c_u Undrained shear strength.
- p_L Limit pressure.
- G_i Initial shear modulus.
- G_{ur} Shear modulus derived from unload-reload loop.
- \mathcal{E}_{c} Cavity strain range over which loop has been performed.
- G_s Shear modulus = $\alpha \gamma^{\beta-1}$ for non-linear stiffness model
- γ Shear strain
- α Shear stress constant = η β
- η Radial stress constant
- β Elastic exponent

NOTES ON RESULTS

- Summary results are presented for the pressuremeter tests carried out at this site as Table 1. Full details of the tests and analysis are presented in Appendix B. Where appropriate, the summary results presented here are based on a graphical average of all three strain axes of the pressuremeter. Use of average readings for strain arms reduces the influence of movement of the pressuremeter relative to the test pocket and may therefore be considered to be a more reliable result. Reference should be made to graphical data and test notes to assess the reliability of individual results.
- 2. The material type quoted is the presumed geological horizon. Reference should be made to borehole records for a full description.
- 3. The depth quoted for the test is the depth of the centre of the expanding section of the pressuremeter, corresponding to the location of the strain arms.
- 4. The test references used are the references assigned by the logging and analysis software. These take the form of BxxTyy, where xx is a two digit abbreviation of the borehole number and yy is a two digit test number, sequential for each borehole.
- 5. In cohesive soils the in situ total horizontal stress (\acute{o}_{ho}) is usually assessed using either the 'lift-off' method or the modified Marsland and Randolph method.
- 6. A pressuremeter test fails the ground in shear and all moduli quoted are shear moduli. Unload-reload loops are performed in tests to provide an estimate of unload-reload shear modulus (G_{ur}). The actual value of G_{ur} is dependant on the magnitude and range of stress and cavity strain.
- 7. It is normal practice to carry out two or more unload-reload loops during a test. Results from these individual loops are presented consecutively (ie G_{ur} for loop 1 is presented above G_{ur} for loop 2). The cavity strain range (ε_c) over which the loop has been performed is presented alongside the relevant G_{ur} value.

Notes:	Project	WEST BURTON C/D/ POWER STATION	Table
	Project No. Carried out for	A7104-17 Firbeck Construction Limited	Key

Notes on Pressuremeter Test Results



8. Shear modulus (G) and Young's Modulus (E) are theoretically related by:

$$E = 2G(1 + V)$$

where v is Poisson's Ratio

Due to the finite stiffness of the equipment and the potential inaccuracies associated with the methods used to assess the compression of the instrument membrane it is not possible to accurately measure shear moduli in excess of about 3000 MPa and in such circumstances the apparent accuracy of the values reported should be regarded with caution.

9. Non-linear stiffness/strain response

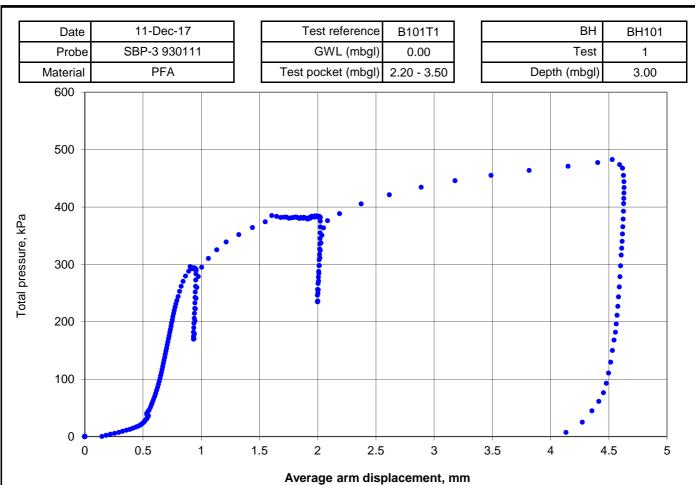
The Windle and Wroth (1977) interpretation is used to derive a value of shear modulus from the whole of an unload-reload loop; this values is quoted along with the corresponding change in strain during the loop. However, the elastic response of a soil is known to be nonlinear and measurements of stiffness are therefore dependent on the magnitude of the corresponding strain. The Bolton and Whittle (1999) analysis extends the interpretation to give a comprehensive description of this non-linear relationship by looking at smaller increments of pressure and strain other than the points at the extreme ends of the loop. The shear modulus can be determined for the individual data points on the reloading part of the unload-reload loop from the increments of pressure and strain relative to an origin which is taken as the minimum values of stress and strain for the loop.

According to Bolton & Whittle (1999) the variation of stiffness (shear modulus, $G_s)$ with strain (cavity strain, $\gamma_c)$ seen during reloading in an unload-reload loop can be expressed as a power law, $G_s=\alpha~\gamma_c^{\beta-1}$. The theory indicates a linear relationship between the log of radial stress and the log of shear strain, defined by a line with gradient β (the elastic exponent) and intercept η (radial stress constant). The shear stress constant α is equal to $\eta\beta$. These values are reported on the test summary sheets.

10. Tests terminated by membrane rupture before the full testing cycle could be completed have been identified as such on the individual test summary.

Notes:	Project	WEST BURTON C/D/ POWER STATION	Table
	Project No. Carried out for	A7104-17 Firbeck Construction Limited	Key





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	110	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	192
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	71	c _{u unloading} (kPa)	70	p _∟ (kPa)	622
φ _{cv} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm)

G _i (MPa)	22
----------------------	----

Unload-reload loop shear modulus (Average arm)

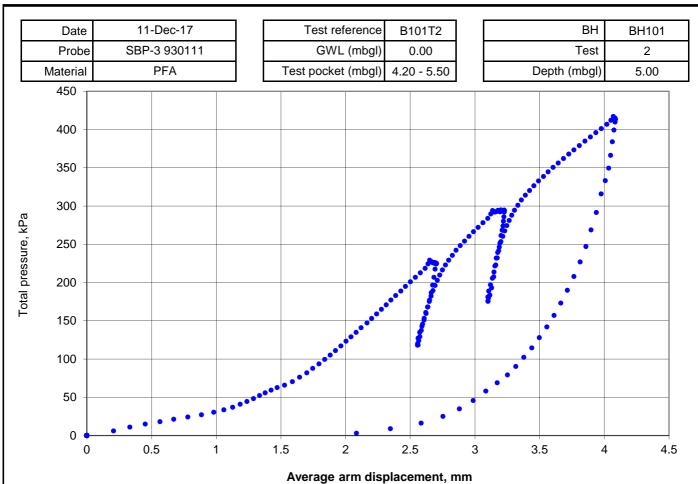
			N	lon linear stiffne	Remarks		
Loop ref	G _{ur} (MPa)	ε _c (%)	Undrained			Drained	
			β	α (МРа)	Gradient	Intercept, MPa	
1	113	0.098	0.746	14.4	NA	NA	
2	113	0.103	0.658	7.0	NA	NA	

Remarks

Max test pressure = 483 kPa. Max av displ = 4.63 mm. Max arm displ = 5.17 mm (Arm1). No of loops = 2 . Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH101 T1
	Carried out for	Firbeck Construction Limited	





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	93	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	93
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	303	c _{u unloading} (kPa)	61	p _i (kPa)	1133
φ _{cv} (deg)	NA	φ (deg)	NA	v (deg)	NA

Initial shear modulus (Average arm)

Unload-reload loop shear modulus (Average arm)

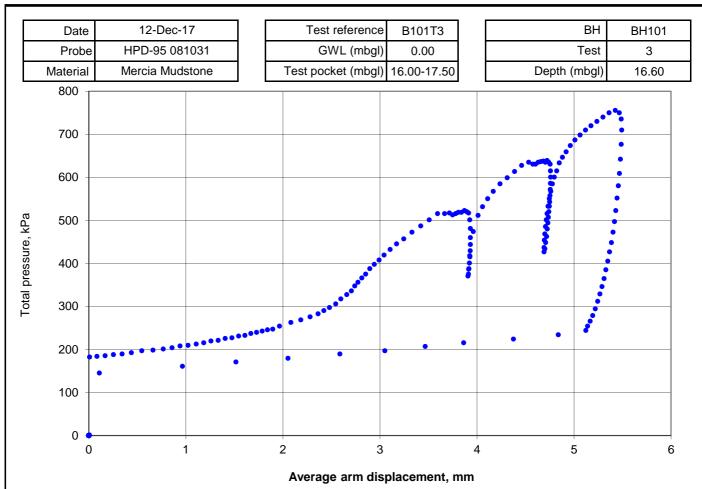
			N	lon linear stiffne			
Loop ref	G _{ur} (MPa)	ε _c (%)	Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	Remains
1	15	0.622	0.611	1.3	NA	NA	
2	20	0.534	0.574	1.2	NA	NA	

Remarks

Max test pressure = 417 kPa. Max av displ = 4.09 mm. Max arm displ = 6.01 mm (Arm1). No of loops = 2 . Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH101 T2
	Carried out for	Firbeck Construction Limited	-





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	251	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	252
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	307	c _{u unloading} (kPa)	85	p _∟ (kPa)	1356
φ _{cv} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm)

G _i (MPa)	6	
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Unload-reload loop shear modulus (Average arm)

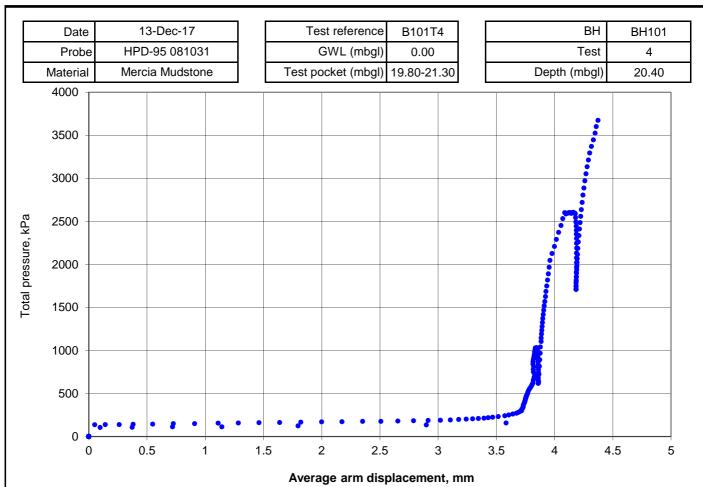
			N	lon linear stiffne			
Loop ref	G _{ur} (MPa)	ε _c (%)	Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	66	0.087	0.823	14.0	NA	NA	
2	54	0.243	0.584	2.6	NA	NA	

Remarks

Max test pressure = 756 kPa. Max av displ = 5.49 mm. Max arm displ = 14.38 mm (Arm5). No of loops = 2 . Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH101 T3
	Carried out for	Firbeck Construction Limited	





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	255	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	637
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

	/				
c _{u loading} (kPa)	NA	c _{u unloading} (kPa)	NA	p _∟ (kPa)	NA
φ _{cv} (deg)	NA	φ (deg)	NA	v (deg)	NA

Initial shear modulus (Average arm)

G _i (MPa)	194

Unload-reload loop shear modulus (Average arm)

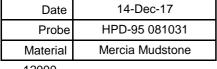
			Non linear stiffness interpretation				
Loop ref	G _{ur} (MPa)	ε _c (%)	Undra	Undrained Drained		ained	Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	566	0.061	1.293	5276.6	NA	NA	
2	1301	0.011	0.675	46.8	NA	NA	

Remarks

Max test pressure = 3674 kPa. Max av displ = 4.37 mm. Max arm displ = 8.44 mm (Arm4). No of loops = 2 . Analysis type: Average arm. Variable arm response noted during test period due to uneven cometance of the test pocket. Test results may not be reliable. Membrane burst during loading phase.

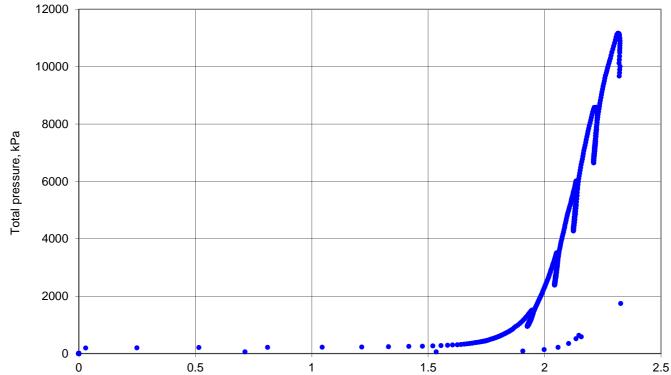
<u> </u>			
Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH101 T4
	Carried out for	Firbeck Construction Limited	





Test reference	B101T5
GWL (mbgl)	0.00
Test pocket (mbgl)	22.80-24.30

ВН	BH101
Test	5
Depth (mbgl)	23.40



Average arm displacement, mm

In situ horizontal stress (Average arm)

P _{o BE} (kPa)	1600	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	NA
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	9295	c _{u unloading} (kPa)	NA	p _∟ (kPa)	50721
φ _{cv} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm)

O ₁ (IVII a)	113	

Unload-reload loop shear modulus (Average arm)

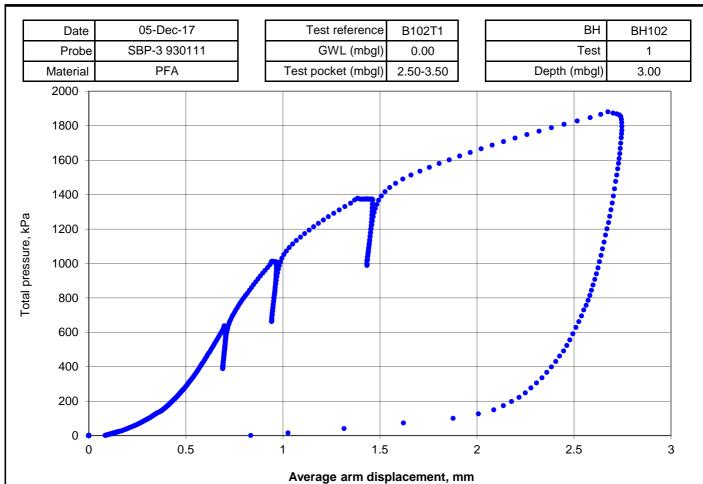
			N	lon linear stiffne	ess interpretation		
Loop ref	G _{ur} (MPa)	ε _c (%)	Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	458	0.112	0.886	186.6	NA	NA	
2	1527	0.062	0.817	315.2	NA	NA	
3	1995	0.076	0.793	361.8	NA	NA	
4	2339	0.057	0.707	183.3	NA	NA	

Remarks

Max test pressure = 11168 kPa. Max av displ = 2.33 mm. Max arm displ = 3.24 mm (Arm1). No of loops = 4 . Analysis type: Average arm. Loop 1 carried out at early stage of test. HPD Membrane burst on unloading phase.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH101 T5
	Carried out for	Firbeck Construction Limited	





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	350	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	350
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

and an angular variable and var						
	c _{u loading} (kPa)	549	c _{u unloading} (kPa)	269	p _∟ (kPa)	3226
	φ _{cv} (deg)	NA	φ (deg)	NA	v (deg)	NA

Initial shear modulus (Average arm)

G _i (MPa)	41
----------------------	----

Unload-reload loop shear modulus (Average arm)

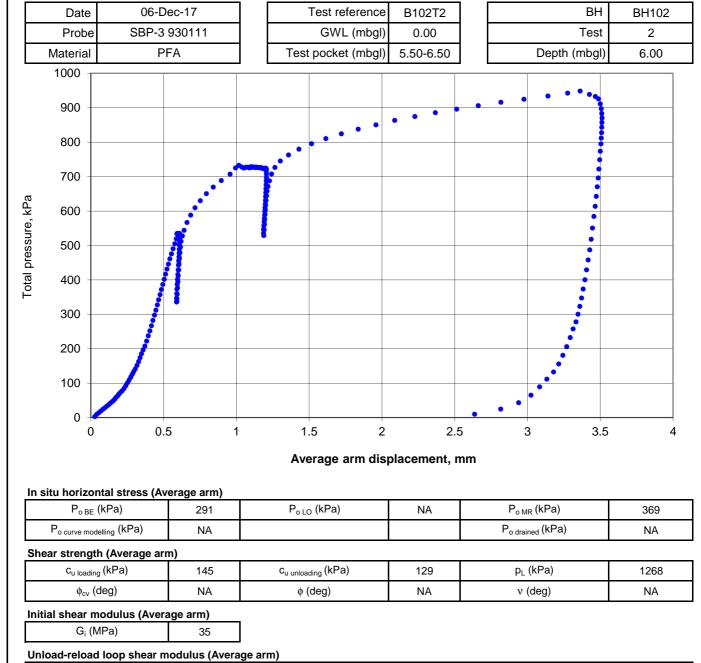
Loop ref	G _{ur} (MPa)	ε _c (%)	Non linear stiffness interpretation				
			Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	278	0.075	0.753	35.7	NA	NA	
2	255	0.110	0.672	18.4	NA	NA	
3	248	0.120	0.663	16.9	NA	NA	

Remarks

Max test pressure = 1881 kPa. Max av displ = 2.75 mm. Max arm displ = 3.57 mm (Arm2). No of loops = 3 . Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH102 T1
	Carried out for	Firbeck Construction Limited	-



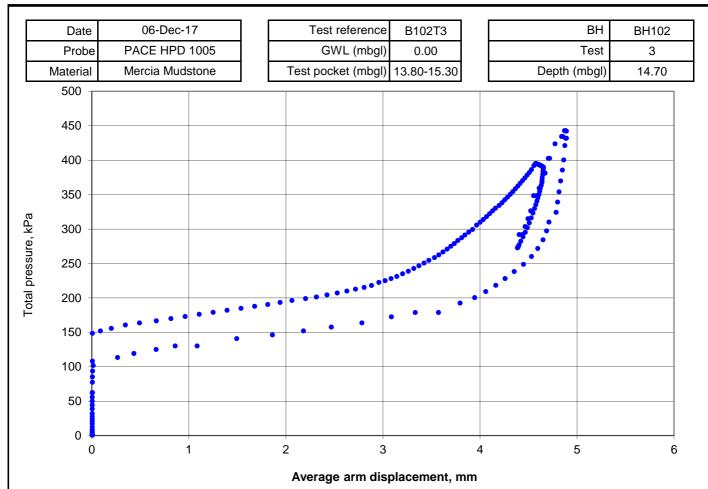


Loop ref			ss interpretation				
	G _{ur} (MPa)		Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	172	0.102	0.734	20.5	NA	NA	
2	165	0.082	0.720	16.3	NA	NA	

Max test pressure = 948 kPa. Max av displ = 3.51 mm. Max arm displ = 3.56 mm (Arm3). No of loops = 2. Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH102 T2
	Carried out for	Firbeck Construction Limited	





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	NA	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	NA
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	NA	c _{u unloading} (kPa)	NA	p _∟ (kPa)	NA
φ _{cν} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm)

G _i (MPa)	0	
----------------------	---	--

Unload-reload loop shear modulus (Average arm)

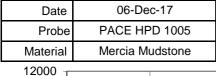
Loop ref		$\varepsilon_{\rm ur}$ (MPa) $\varepsilon_{\rm c}$ (%)	N	Ion linear stiffne			
	G _{ur} (MPa)		Undrained		Drained		Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	NA	NA	NA	NA	NA	NA	

Remarks

Max test pressure = 443 kPa. Max av displ = 4.89 mm. Max arm displ = 12.31 mm (Arm4). No of loops = 1 . Analysis type: Average arm. Variable arm response noted during test period due to uneven competance of the test pocket. Test terminated.

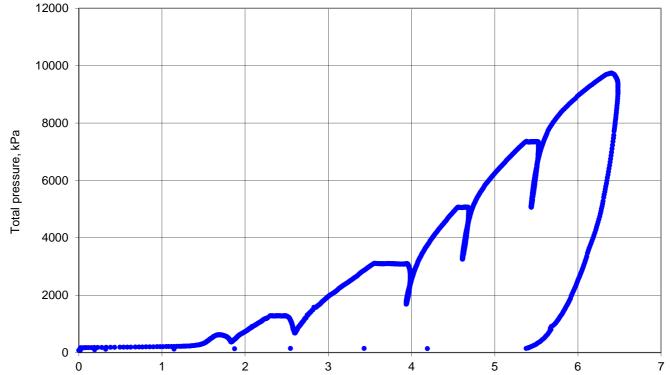
Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH102 T3
	Carried out for	Firbeck Construction Limited	





Test reference	B102T4
GWL (mbgl)	0.00
Test pocket (mbgl)	13.80-16.80

ВН	BH102
Test	4
Depth (mbgl)	16.20



Average arm displacement, mm

In situ horizontal stress (Average arm)

P _{o BE} (kPa)	NA	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	550
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	8085	c _{u unloading} (kPa)	NA	p _∟ (kPa)	27021
φ _{cν} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm) G: (MPa) 68

O ₁ (IVII a)	00	

Unload-reload loop shear modulus (Average arm)

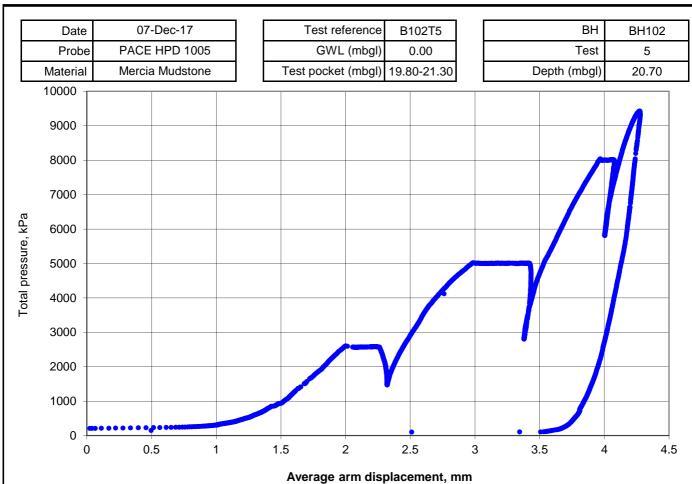
			N	lon linear stiffne			
Loop ref	Loop ref G _{ur} (MPa)		Undra	ained	Dra	ained	Remarks
			β	α (MPa)	Gradient	Intercept, MPa	
1	497	0.071	0.483	9.8	NA	NA	
2	616	0.105	0.559	28.3	NA	NA	
3	711	0.117	0.818	353.9	NA	NA	

Remarks

Max test pressure = 5592 kPa. Max av displ = 4.83 mm. Max arm displ = 6.37 mm (Arm1). No of loops = 3 . Analysis type: Average arm.

Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH102 T4
	Carried out for	Firbeck Construction Limited	





In situ horizontal stress (Average arm)

P _{o BE} (kPa)	NA	P _{o LO} (kPa)	NA	P _{o MR} (kPa)	800
P _{o curve modelling} (kPa)	NA			P _{o drained} (kPa)	NA

Shear strength (Average arm)

c _{u loading} (kPa)	17200	c _{u unloading} (kPa)	NA	p _∟ (kPa)	51440
φ _{cv} (deg)	NA	φ (deg)	NA	ν (deg)	NA

Initial shear modulus (Average arm)

S _i (ivii a)	107	

Unload-reload loop shear modulus (Average arm)

	G_{ur} (MPa) ε_c (%)		N	lon linear stiffne			
Loop ref		Undrained		Drained		Remarks	
				β	α (MPa)	Gradient	Intercept, MPa
1	436	0.130	0.998	786.5	NA	NA	
2	784	0.066	0.694	103.7	NA	NA	
3	960	0.053	0.948	1390.3	NA	NA	

Remarks

Max test pressure = 5020 kPa. Max av displ = 3.48 mm. Max arm displ = 5.3 mm (Arm6). No of loops = 3 . Analysis type: Average arm. Loop 1 open. Interpretation carried out using reloading data.

<u> </u>			
Notes:	Project	WEST BURTON C/D POWER STATION	Figure
	Project No.	A7104-17	BH102 T5
	Carried out for	Firbeck Construction Limited	



APPENDIX A CALIBRATION REGISTER

High Pressure Dilatometer

HPD-95 - 081031 PACE HPD - 1005

Self-Boring Pressuremeter

SBP-3 - 930111

Pressuremeter Calibration Register



Instrument: **Digital High Pressure Dilatometer 95** Serial No. 081031 Arm calibrations Pressure cell calibrations (mV/mm) (mV / MPa) Cable Date Arm 1 Arm 2 Arm 3 Arm 4 Arm 5 Arm 6 TPC A TPC B (m) 16-Jun-16 127.6 126.4 125.5 130.2 123.9 136.0 70.0 06-Sep-16 70.8 70.6 new Arm 1 09-Nov-16 141.3 126.0 137.1 70.3 129.9 132.4 124.7 69.7 127.2 03-Feb-17 140.6 124.5 130.2 124.2 137.1 70.3 70.1 140.7 04-May-17 129 1 125.8 131.8 1243 136.6 70.6 70.3 03-Jul-17 140.8 129.0 126.2 131.8 125.0 136.6 70.6 70.3 05-Oct-17 139.5 126.8 125.5 130.8 123.7 132.3 69.7 69.6 01-Dec-17 138.4 125.1 124.3 136.6 123.0 134.6 **Average** 140 128 125 132 124 136 70 70 Calculated arm zeroes Calculated pressure cell zeroes (mV) (mV) -2538.9 338.5 16-Jun-16 -840.4 -2585.4 -2603.9 -1821.5 -1656.1 06-Sep-16 -2480.1 -275.5 347.2 new Arm 1 09-Nov-16 -2524.7 -2586.9 -2550.7-2470.6-1799.5-1585.2-267.8 353.0 03-Feb-17 -2505.8 -2503.4 -2415.7 -1807.6 -270.3 -2562.7 -1615.2 355.0 04-May-17 -2487.5 -2591.2 -2549.8 -2420.1 -1817.7 -1611.8 -268.9 350.0 03-Jul-17 -2540.1 -2602.4 -2501.1 -2463.3 -1856.7 -1647.6 -268.7 351.3 05-Oct-17 -2528.2 -2535.3 -2381.1 -1803.8 -1653.1 -2591.0 -257.4 350.4 01-Dec-17 -2517.4 -2584.7 -2535.6 -2594.2 -1835.9 -1648.0 Average -2512 -2593 -2544 -2472 -1824 -1636 -268 351 Membrane and system compliance calibrations Date Intercept Slope Compress Cylinder Tests Remarks (mm/GPa) File ref. (kPa) (kPa/mm) (mm/GPa) 29-Apr-16 C95T1 6.1 8.1 7.2 2.7 4.5 to 9.5 MPa 16-Jun-16 C1T1 17.2 6.5 5.4 2.7 09-Nov-16 C1T1 4.6 2.7 4 to 10 MPa 10-Jan-17 C1T1 4 to 8 Mpa 1.8 2.7 03-Feb-17 C1T1 2.7 5 to 10 Mpa 5.4 04-May-17 C1T1 6.2 27 03-Jul-17 C1T1 6.2 2.7 3 to 9MPa 05-Oct-17 C1T1 5.2 2.7 14-Dec-17 C101T1 32.3 12.2 5.3 Average Diameter over probe 94.00 mm Notes: Diameter under membrane 82.00 mm Detachable cable with 6 pin plug Chinese lantern thickness 0.53 mm System compliance calibrations without Christmas Trees fitted Notes Project **Table** Project No. HPD95CAL

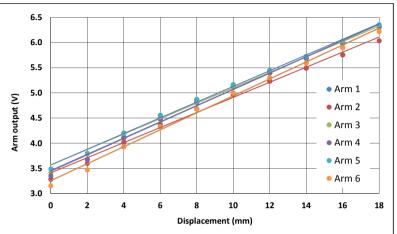
Carried out for

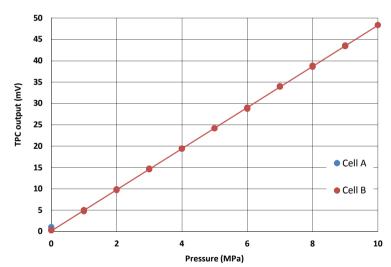
HPD-1005

D		Λ						_	
		1	1			,			
GE	0	T	E	C	H	N	1	C	S

Arms 19/11/2017						
Displacement	Arm 1	Arm 2	Arm 3	Arm 4	Arm 5	Arm 6
mm	mV	mV	mV	mV	mV	mV
0	3.2848	3.2909	3.4197	3.3549	3.4919	3.1541
2	3.6845	3.6004	3.8074	3.6781	3.7906	3.4721
4	4.1127	4.0129	4.2076	4.1093	4.1996	3.9299
6	4.4848	4.3706	4.5531	4.4826	4.5587	4.3277
8	4.8125	4.6849	4.8605	4.8147	4.8746	4.6805
10	5.1134	4.9683	5.1416	5.1182	5.1669	4.9986
12	5.4011	5.2343	5.4139	5.4069	5.4472	5.2988
14	5.6873	5.4926	5.6849	5.6944	5.7294	5.5930
16	5.9878	5.7563	5.9750	5.9954	6.0273	5.8953
18	6.3193	6.0369	6.2971	6.3244	6.3555	6.2197
16	5.9870	5.7596	5.9747	5.9952	6.0262	5.9025
14	5.6863	5.4943	5.6852	5.6954	5.7264	5.5977
12	5.4001	5.2350	5.4120	5.4077	5.4428	5.3083
10	5.1151	4.9705	5.1410	5.1192	5.1625	5.0035
8	4.8171	4.6892	4.8592	4.8148	4.8726	4.6811
6	4.4921	4.3785	4.5529	4.4886	4.5575	4.3280
4	4.1222	4.0219	4.2054	4.1149	4.1999	3.9300
2	3.6903	3.6103	3.8029	3.6847	3.7907	3.4717
0	3.2835	3.2937	3.4258	3.3561	3.4909	3.1543
Slope (mV/mm)	165.4	152.8	156.1	164.1	158.1	171.3
Zero (mV)	3.405	3.376	3.533	3.425	3.542	3.221

Pressure Cells	19/1	1/2017		
Pressure	Co	ell A	Ce	II B
КРа	v	mV	v	mV
0	0.00025	0.25	0.00024	0.24
1	0.00477	4.77	0.00473	4.73
2	0.00972	9.72	0.00966	9.66
3	0.01463	14.63	0.01455	14.55
4	0.01947	19.47	0.01939	19.39
5	0.02434	24.34	0.02414	24.14
6	0.02918	29.18	0.02898	28.98
7	0.03405	34.05	0.03391	33.91
8	0.03893	38.93	0.03882	38.82
9	0.04367	43.67	0.04341	43.41
10	0.04854	48.54	0.04836	48.36
9	0.04367	43.67	0.04357	43.57
8	0.03867	38.67	0.03857	38.57
7	0.03405	34.05	0.03401	34.01
6	0.02898	28.98	0.02873	28.73
5	0.02407	24.07	0.02416	24.16
4	0.01947	19.47	0.01939	19.39
3	0.01482	14.82	0.01471	14.71
2	0.00992	9.92	0.00987	9.87
1	0.00498	4.98	0.00499	4.99
0	0.00025	0.25	0.00024	0.24
Slope (mV/KPa)	0.00483	4.83349	0.00482	4.81715
Zero (mV)	0.000	0.147	0.000	0.129





Pressuremeter Calibration Register



Instrument :		SBP-MPX 3 arm				Se	rial No.		930111	
				Arm calibrations (mV / mm)			Pressure cell calibrations (mV / MPa)			
Date	Arm 1	Arm 2	Arm 3				TPC	PPA	PPB	Remarks
04-Mar-11	316.4	307.8	278.9				657.9	216.0	234.9	After repair
02-May-11	328.6	318.3	293.6				664.3	215.4	236.8	MI1007-11 21-RH07
21-Mar-12	324.7	316.5	302.7				659.6	216.5	236.5	Tacte RN/ITN1-3
08-Jan-13	329.7	305.1	300.7				668.3	227.0	239.2	1
19-Jun-14	316.8	319.1	294.8				661.7	216.7	236.5	A4050-14
05-Aug-14	327.9	319.1	300.1				661.7	210.7	235.8	A4030 14
16-Dec-15	327.9	319.1	300.1					217.2	233.6	
							661.1	2424		
14-Jun-16	327.4	334.7	309.7				657.2	216.1	253.2	
04-Oct-17	315.2	310.5	293.6				658.3	216.5	234.9	
Average	323	318	300				661	219	240	
Date		Calculated arm zeroes (mV)					Calculated pressure cell zeroes (mV)			
04-Mar-11	80.7	-119.2	-94.0				-733.6	445.6	-438.0	
02-May-11	-366.1	544.4	-74.4				-795.8	458.2	-444.5	
21-Mar-12	497.2	-488.3	-89.3				-767.0	386.9	-427.8	
08-Jan-13	-492.2	568.7	-17.0				-788.0	327.5	-423.2	
19-Jun-14			167.5						-423.2 -446.9	-
	-498.8	603.5					-842.4	231.2		
05-Aug-14	-625.0	641.8	180.0				-868.7	238.5	-444.0	
16-Dec-15							-856.5			
14-Jun-16	-636.0	683.4	51.8				-878.4	225.7	-439.4	
04-Oct-17	-625.1	661.8	-26.5				-866.9	225.0	-426.2	
Average	-596	648	93				-863	230	-439	
								I		1
Date	Membrane stiffness and compliance calibrations					rations	Tests			
Date	File ref.	Intercept Slope Complnce Remarks File ref. (kPa) (kPa/mm) (mm/GPa)				Remarks	16313			
03-May-11				4.0						1
04-May-11		20	12							
17-Jun-14	M3T176	24	15		A4050-14					
19-Jun-14	P3T196			8.4						
04-Oct-17				2.1	Cylinder 2.3mm/Gpa					
Average		20	12	4.1						ĺ
OD	88.4 79.1									
ID CHL	0.52									
	0.52		Project						Ιc	al Reg



APPENDIX B PRESSUREMETER TEST ANALYSES

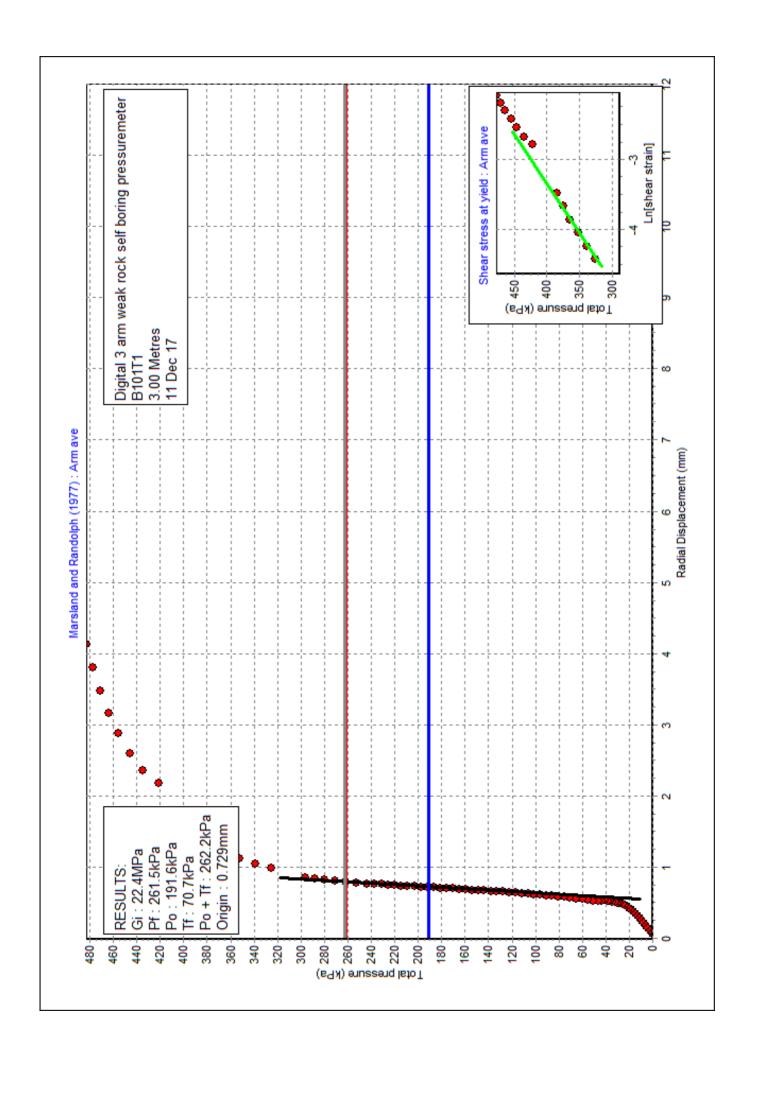
Pressuremeter Analyses

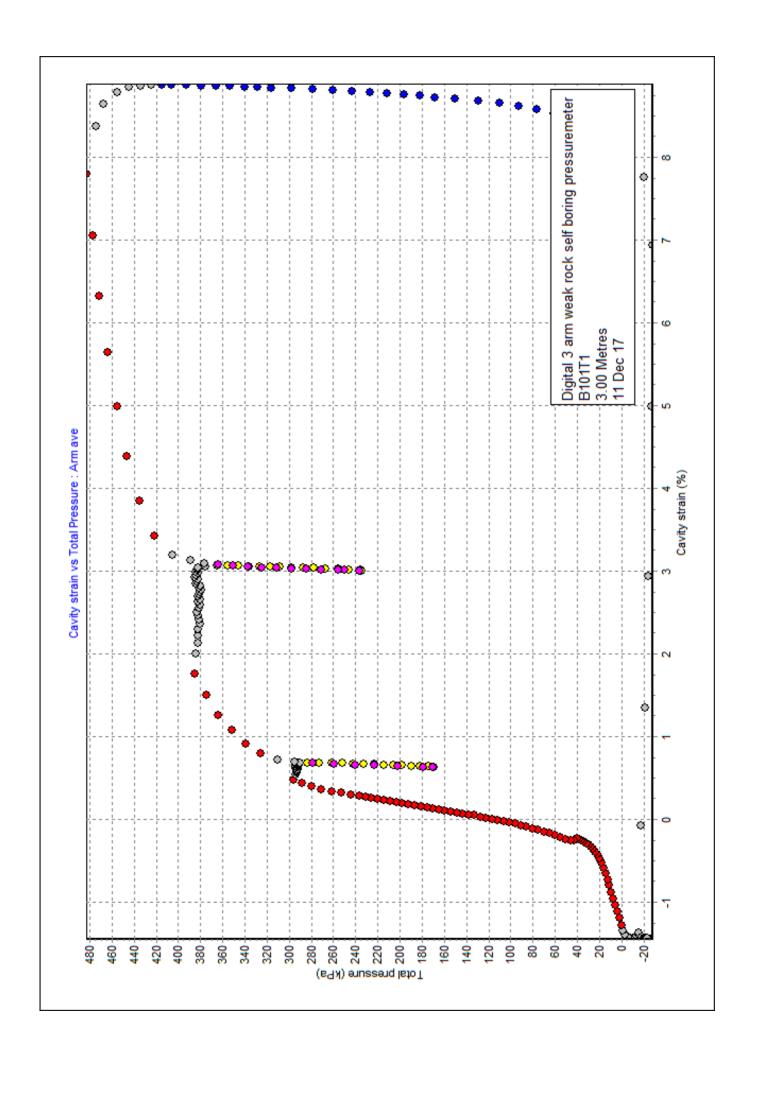
Sheet 1 to 84

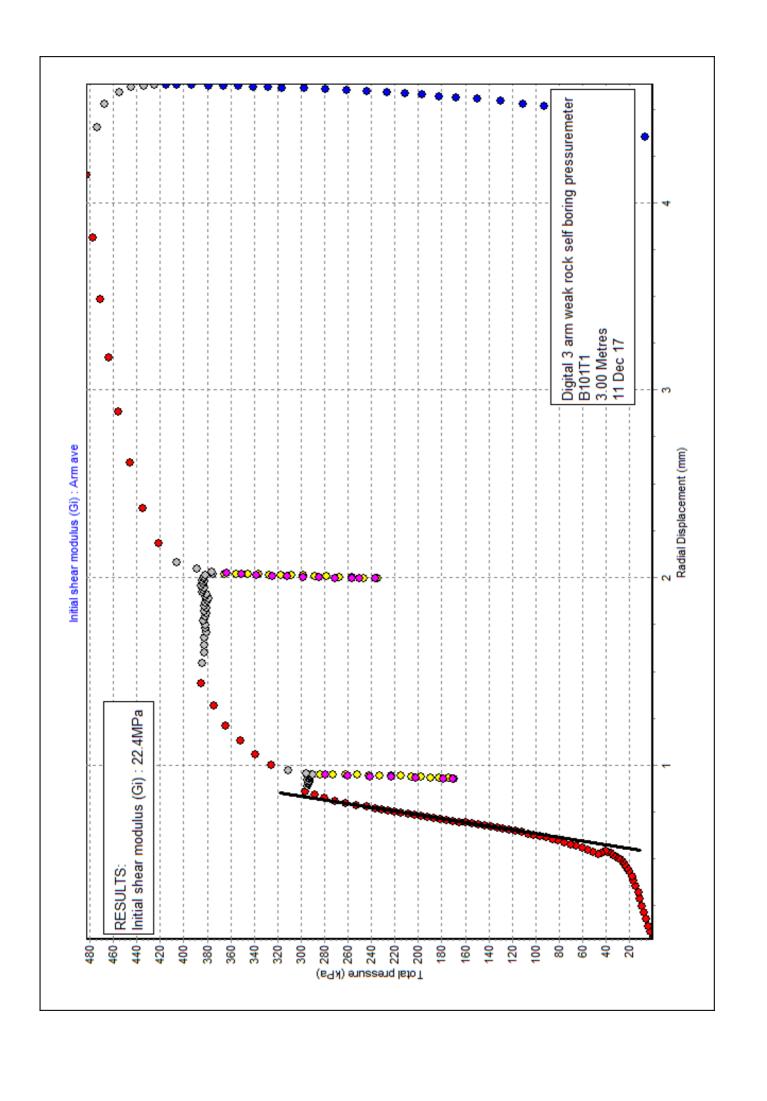
```
B101T1 - SUMMARY OF RESULTS
[File made with WinSitu Version 1.4.1.1]
[DETAILS OF TEST]
                  A7104-17
Project :
                  West Burton CD Power Station
Site
             :
Borehole
                  BH101
              :
Test name
                  B101T1
Test date
              :
                  11 Dec 17
                  3.00 Metres
Test depth
             :
Water table :
                 0.00 Metres
Ambient PWP
             :
                  29.4 kPa
Material
                  PFA
              :
Probe
                  Digital 3 arm weak rock self boring pressuremeter
                 88.4 mm
Diameter
Data analysed using average arm displacement curve
A non-linear analysis of the rebound cycles has been carried out
Analysed by on 12 Dec 17
Remarks: tip at 3.5m self bored from 2.2m
[RESULTS FOR CAVITY REFERENCE PRESSURE]
Strain Origin (mm)
                                  :
                                       "Arm ave=0.644"
Po from Marsland & Randolph (kPa)
                                   :
                                       "Arm ave=191.6"
Best estimate of Po (kPa)
                                       "Arm ave=110.0"
[UNDRAINED STRENGTH PARAMETERS]
Gibson & Anderson 1961 - Cu (kPa) :
                                       "Arm ave=70.9"
Limit pressure (kPa) :
Jefferies 1988 - Cu (kPa) :
                                       "Arm ave=622"
                                       "Arm ave=70.1"
Undrained yield stress (kPa)
                                 : "Arm ave=261.5"
```

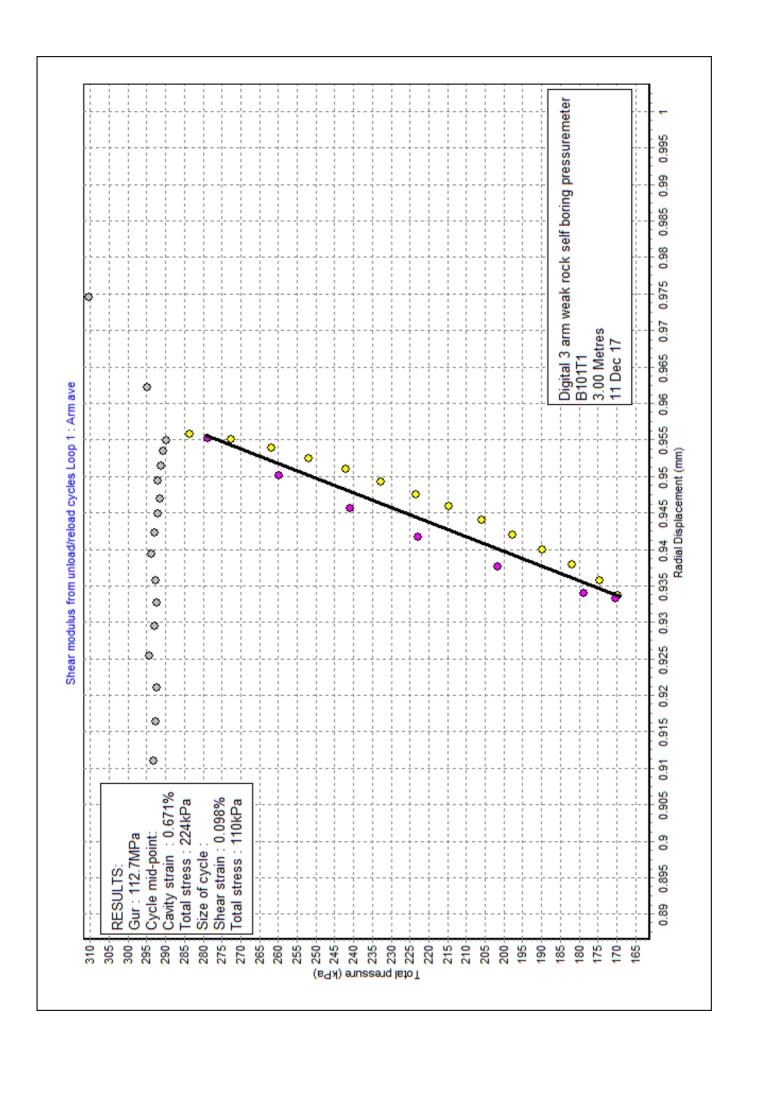
[LINEAR	INTERPRET	TATION OF	SHEAR MODULUS	G]		
Initial	slope she	ear modul	us (MPa) :"Arm	ave=22.4	п	
Axis	Loop	Value	Mean Strain	Mean Pc	dE	dPc
	No	(MPa)	(응)	(kPa)	(응)	(kPa)
Arm ave	1	112.7	0.671	224	0.098	110
Arm ave	2	112.7	3.048	293	0.103	117

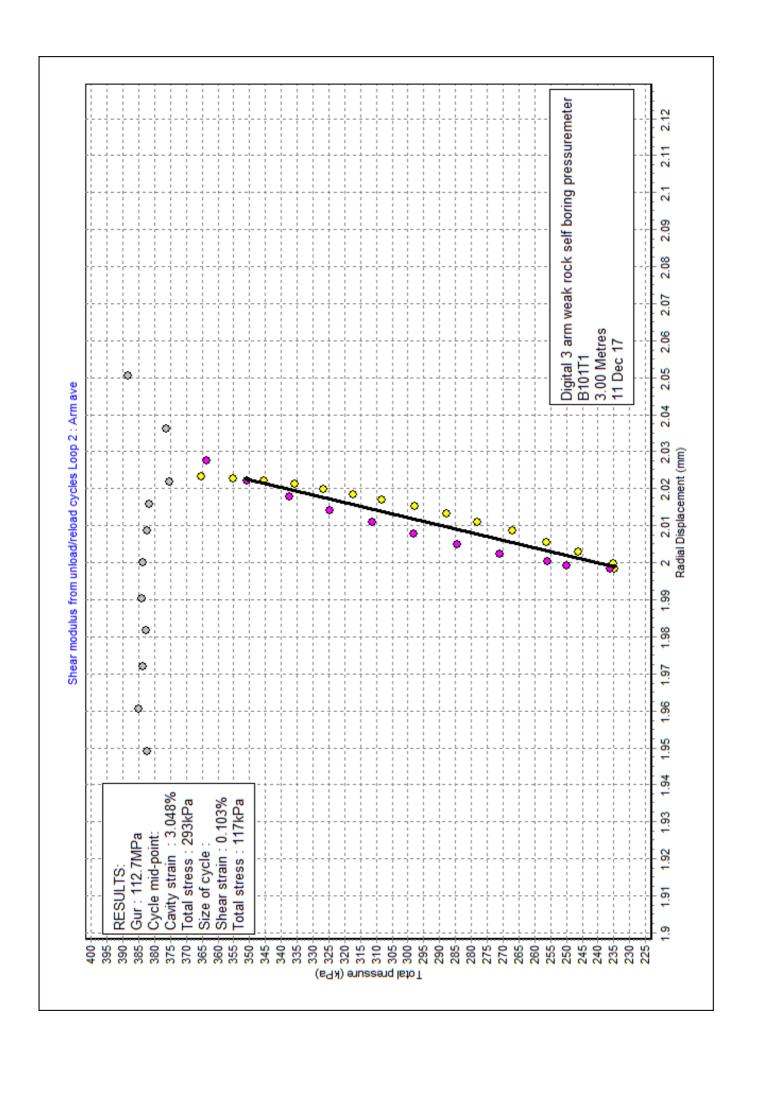
[UNDRAINED	NON LI	NEAR INTERP	RETATION O	F	SECANT SHEAR MODULUS]
Axis	Loop	Intercept	Alpha		Gradient
	No	(MPa)	(MPa)		
Arm ave	1	19.242	14.353		0.746
Arm ave	2	10.589	6.969		0.658

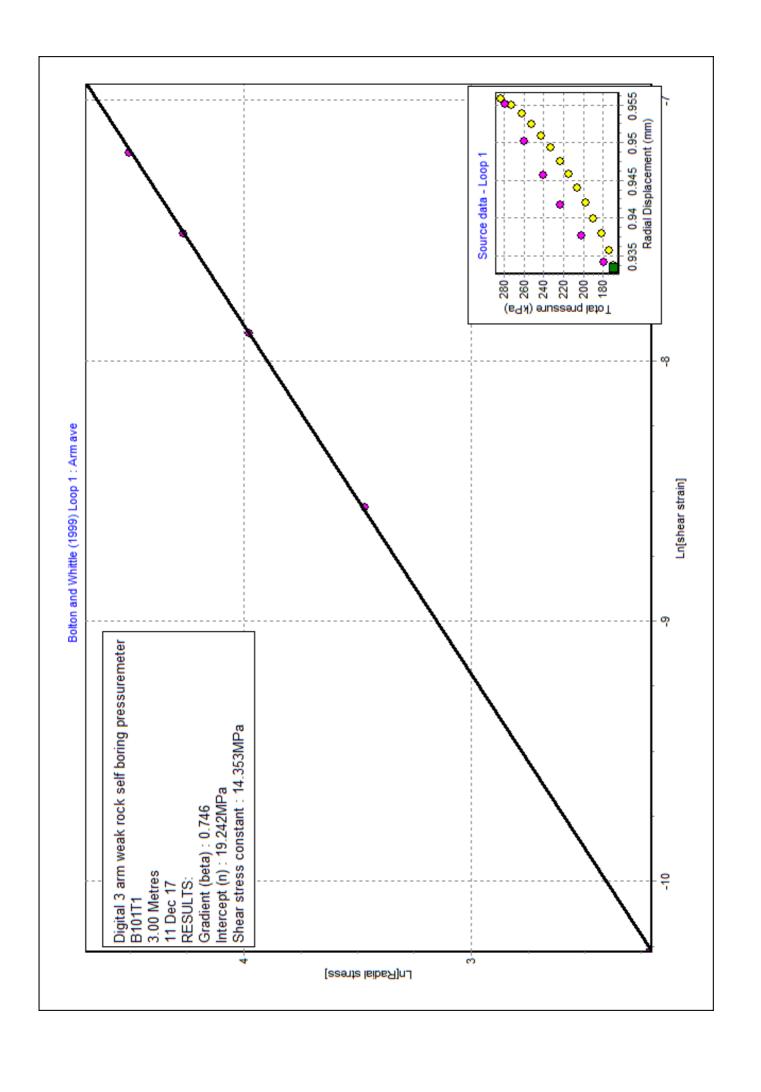


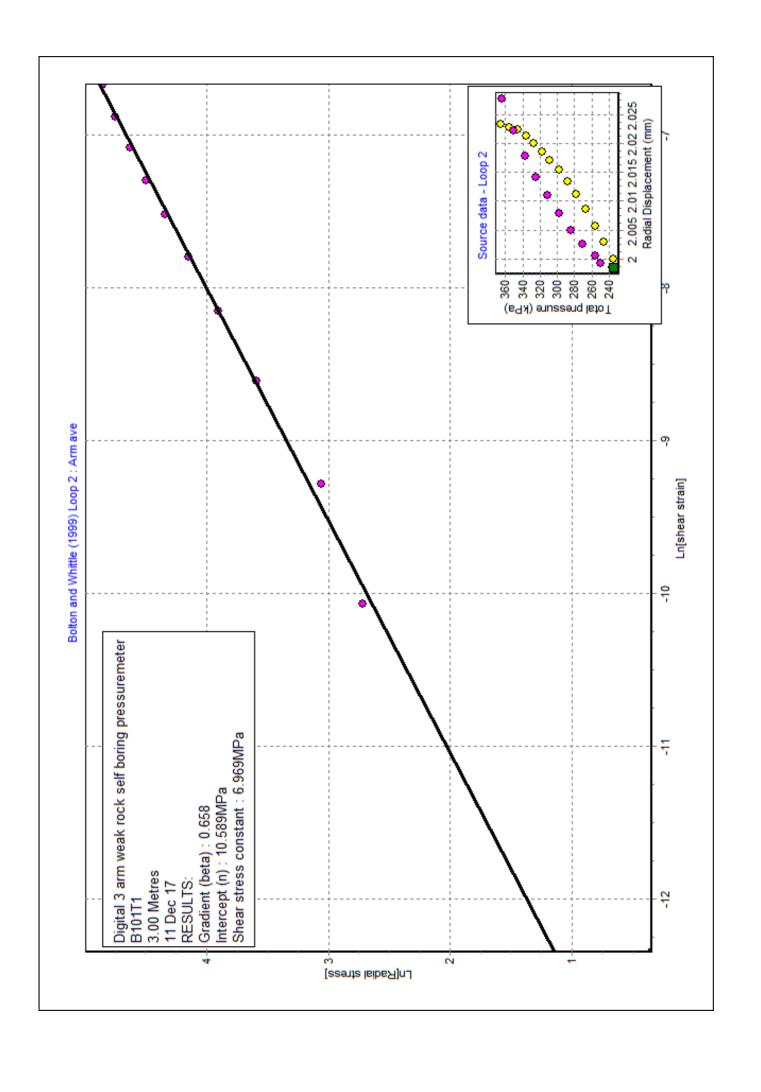


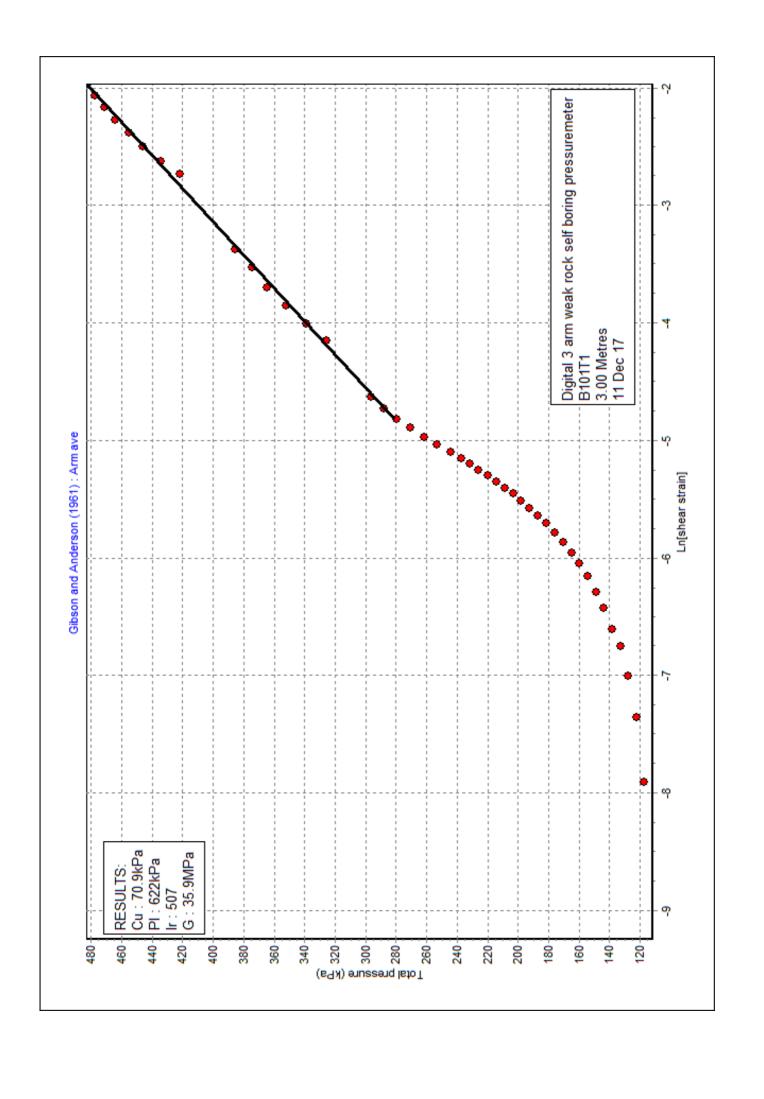


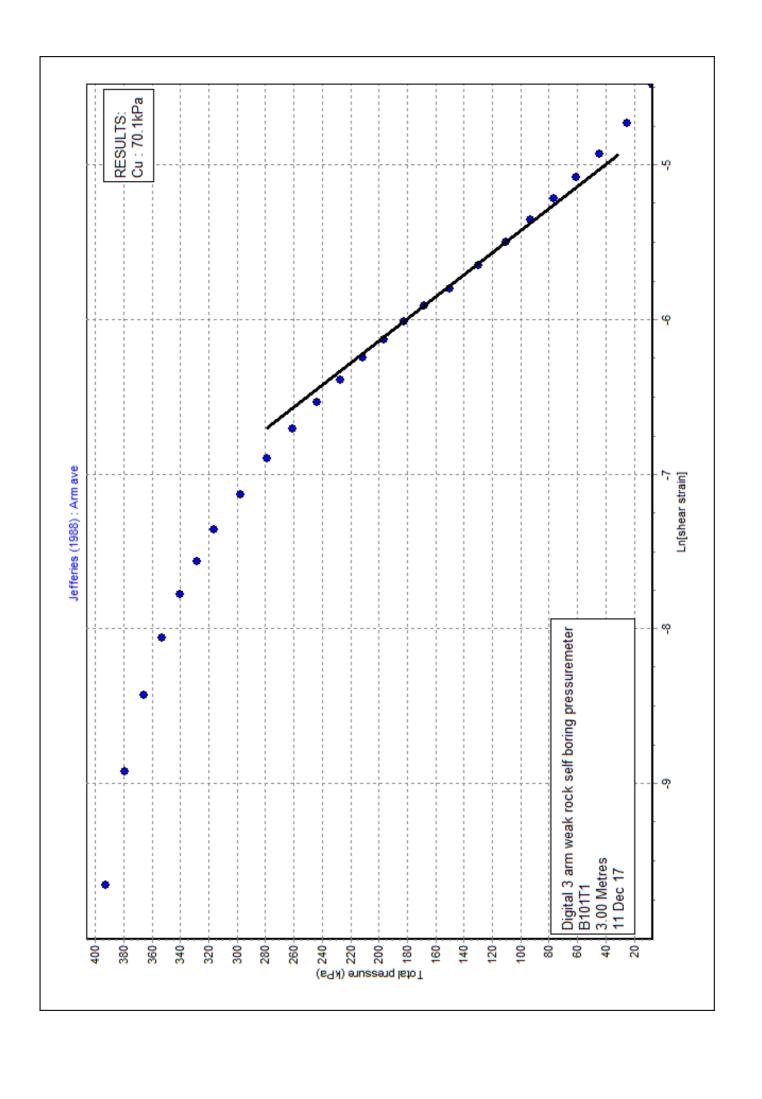












```
B101T2 - SUMMARY OF RESULTS
[File made with WinSitu Version 1.4.1.1]
[DETAILS OF TEST]
                   A7104-17
Project :
Site
                   West Burton CD Power Station
Borehole
              :
                   BH101
Test name
                   B101T2
Test date
              :
                   11 Dec 17
Test depth
              :
                   5.00 Metres
Water table
              :
                  0.00 Metres
Ambient PWP
              :
                  49.0 kPa
Material
                   Reworked Clay
                   Digital 3 arm weak rock self boring pressuremeter
Probe
                  88.4 mm
Diameter
Data analysed using average arm displacement curve
A non-linear analysis of the rebound cycles has been carried out
Analysed by on 12 Dec 17
Remarks: borer will not penetrate further
[RESULTS FOR CAVITY REFERENCE PRESSURE]
Strain Origin (mm)
                                        "Arm ave=1.694"
Po from Marsland & Randolph (kPa)
                                    :
                                        "Arm ave=92.7"
Best estimate of Po (kPa)
                                        "Arm ave=93.0"
[UNDRAINED STRENGTH PARAMETERS]
                                        "Arm ave=302.8"
Gibson & Anderson 1961 - Cu (kPa)
Limit pressure (kPa)
                                        "Arm ave=1133"
Jefferies 1988 - Cu (kPa)
                                        "Arm ave=61.4"
Undrained yield stress (kPa)
                                        "Arm ave=365.8"
[LINEAR INTERPRETATION OF SHEAR MODULUS G]
Initial slope shear modulus (MPa) : "Arm ave=3.4"
```

Mean Strain Mean Pc dE

(kPa)

Gradient

0.611

0.574

166

228

(왕)

0.622

0.534

dPc

95

105

(kPa)

Value

(MPa)

15.2

19.6

(MPa)

2.119

2.124

Loop Intercept Alpha

(응)

2.040

3.200

[UNDRAINED NON LINEAR INTERPRETATION OF SECANT SHEAR MODULUS]

(MPa)

1.293

1.219

Loop

No

1

2

No

1

2

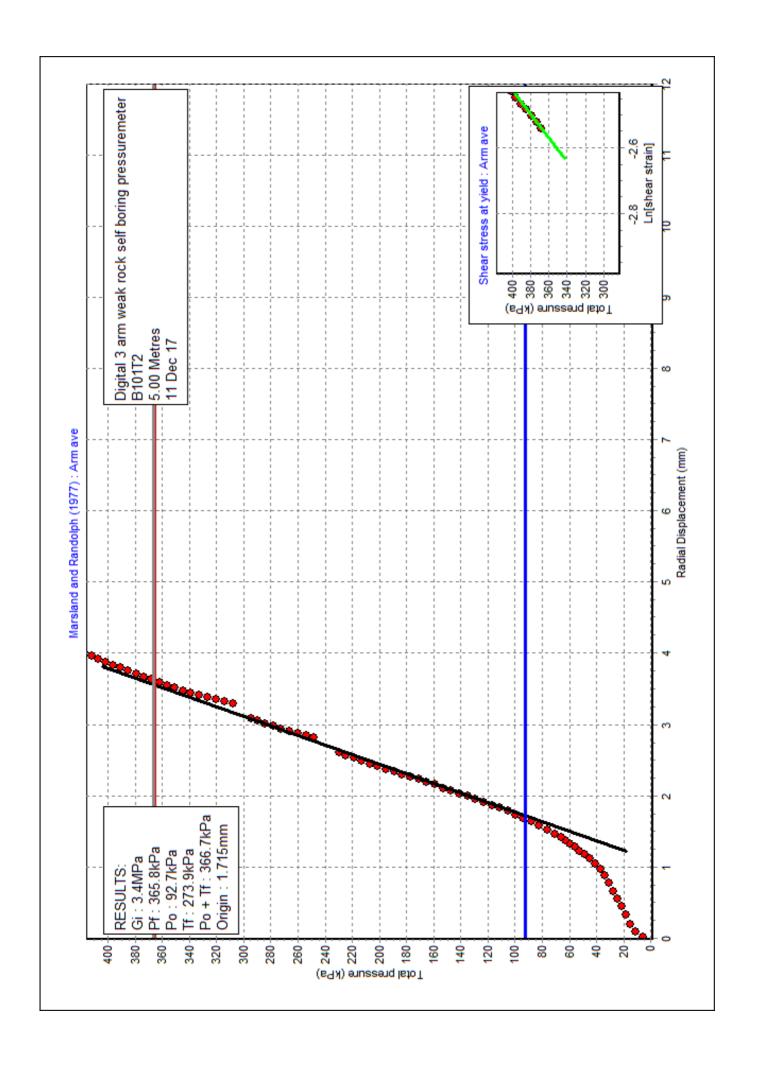
Axis

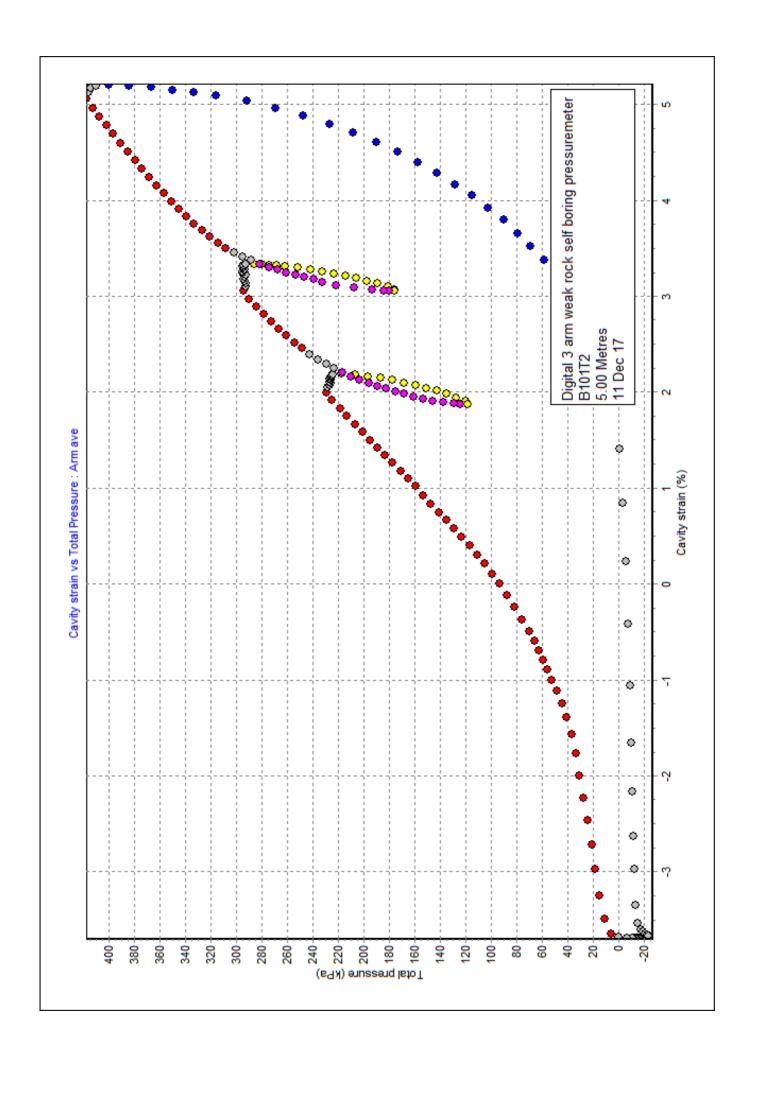
Arm ave

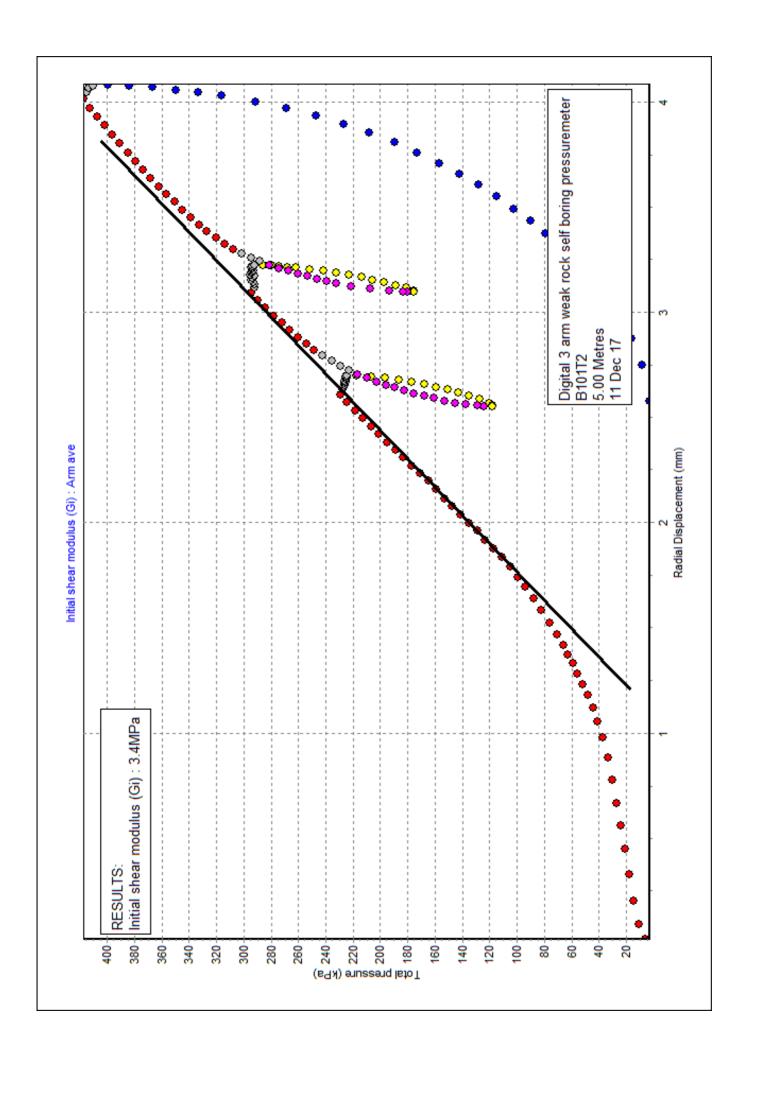
Arm ave

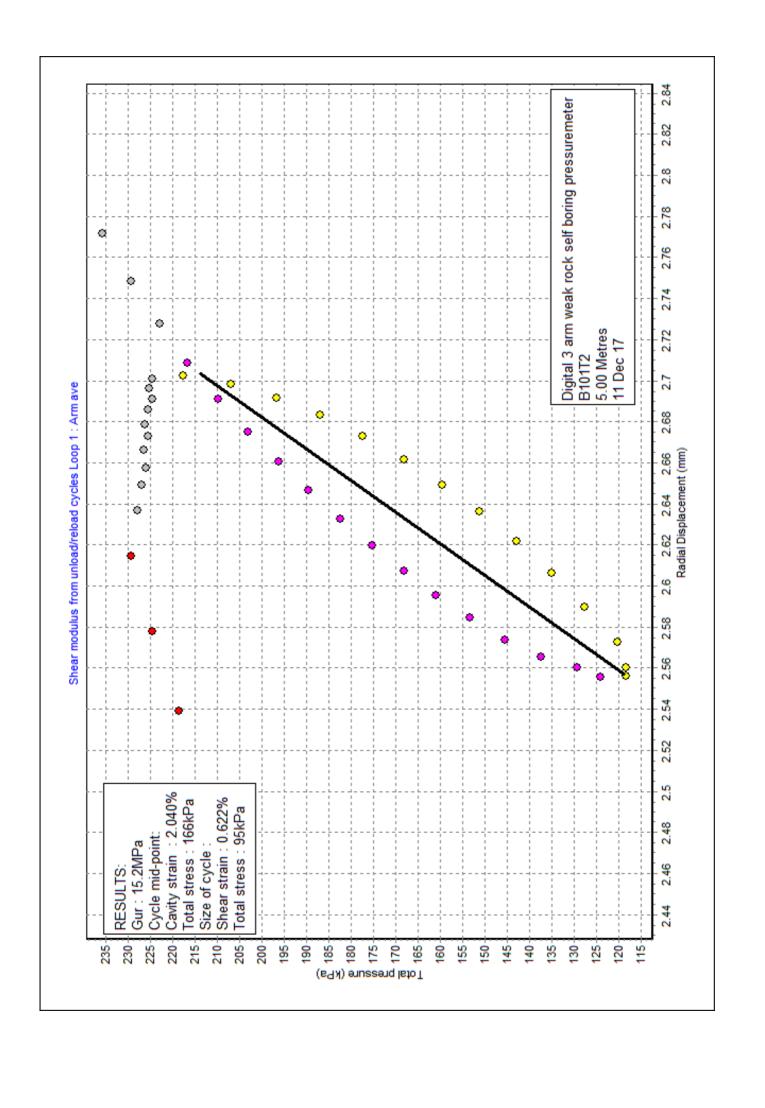
Arm ave

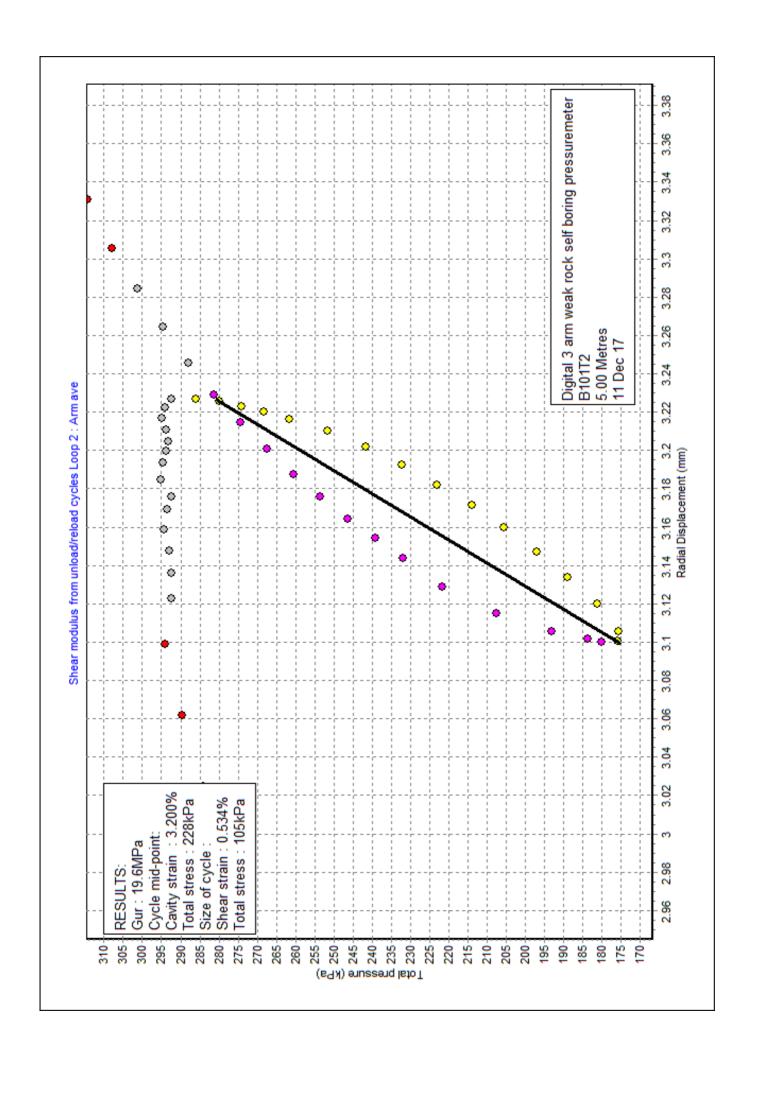
Arm ave

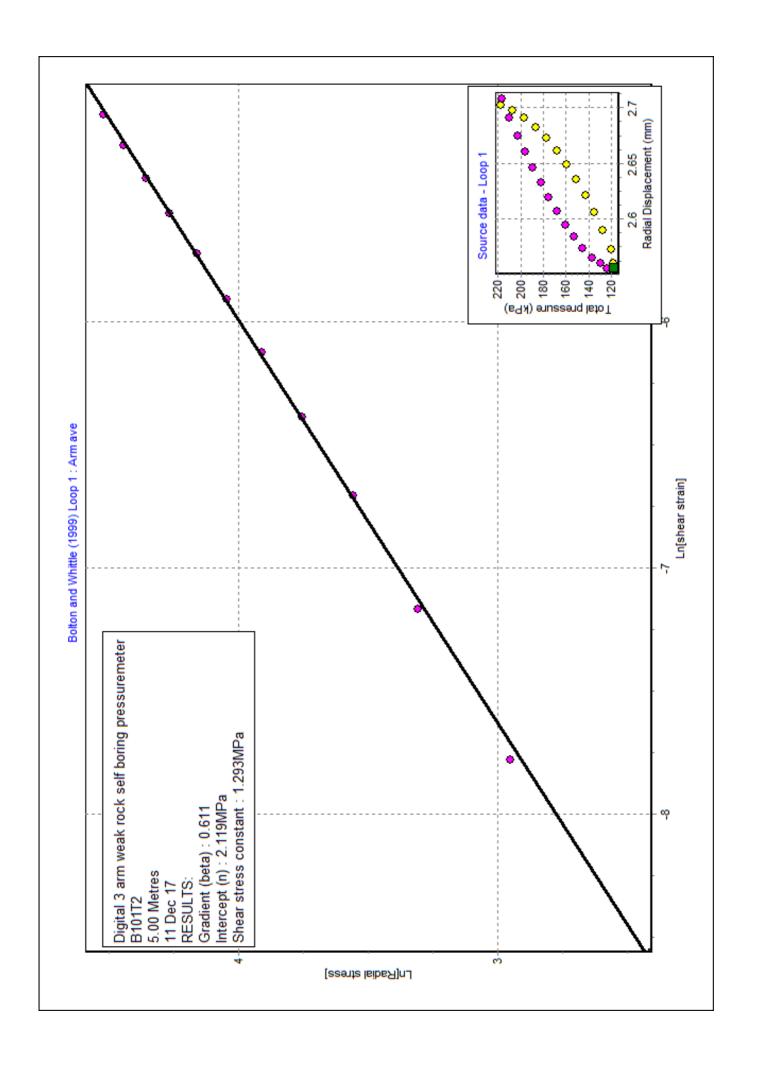


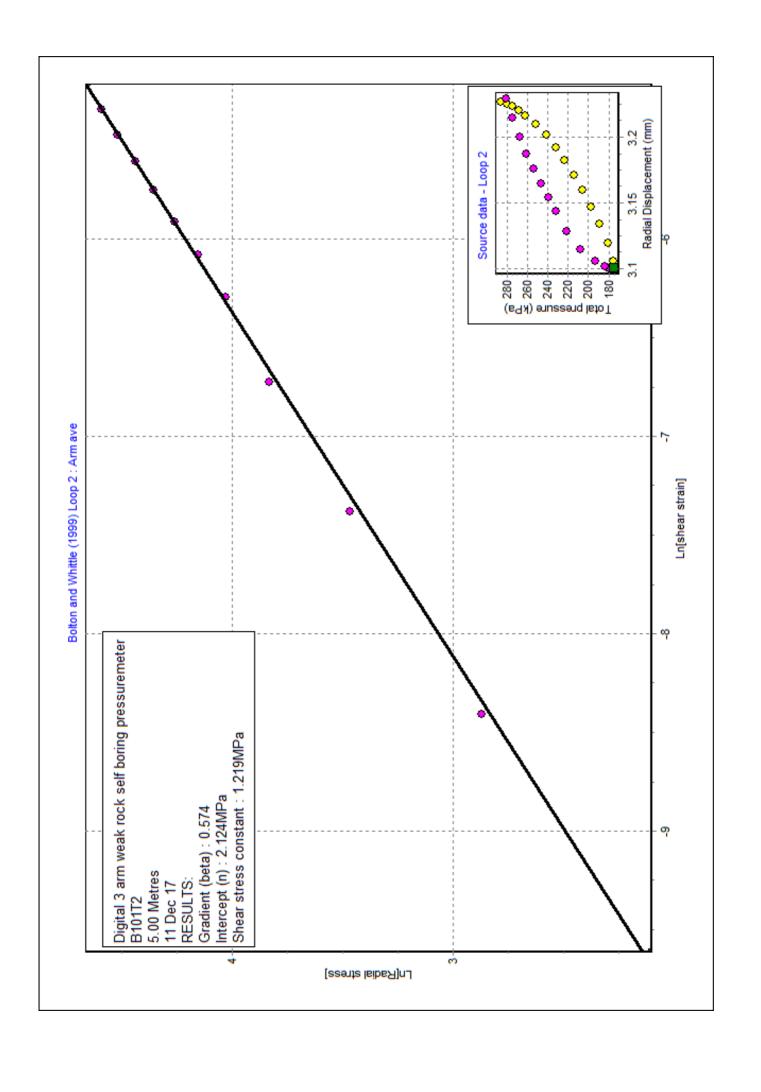


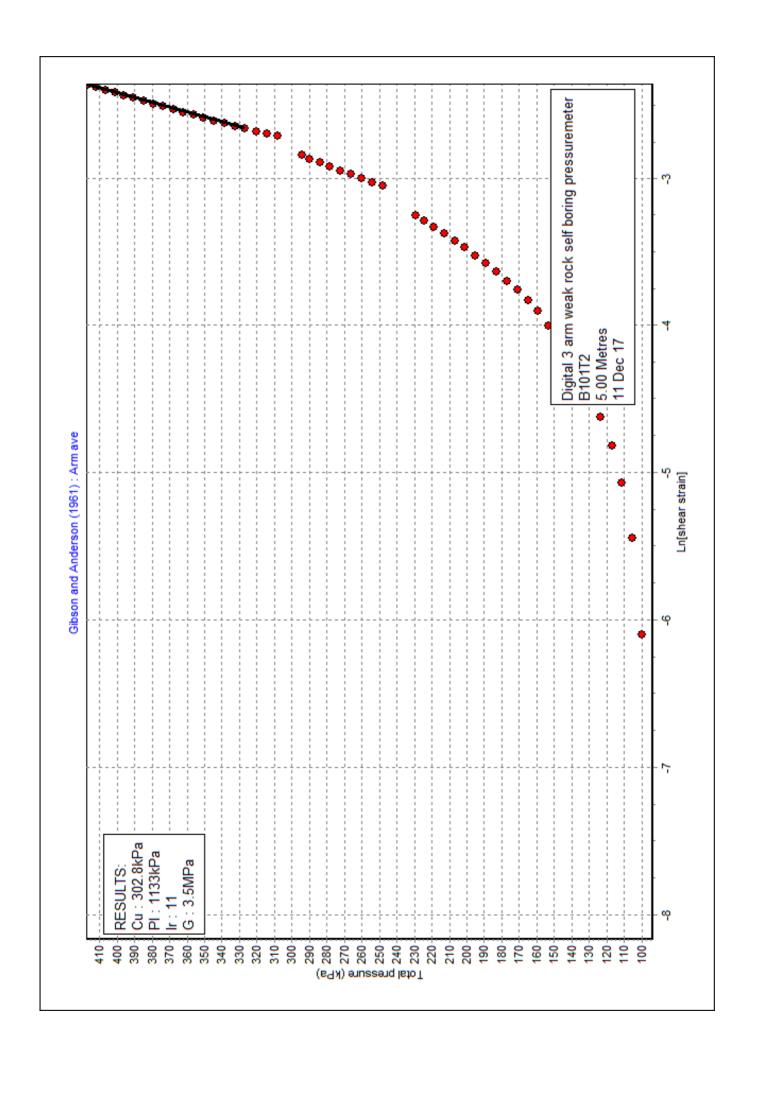


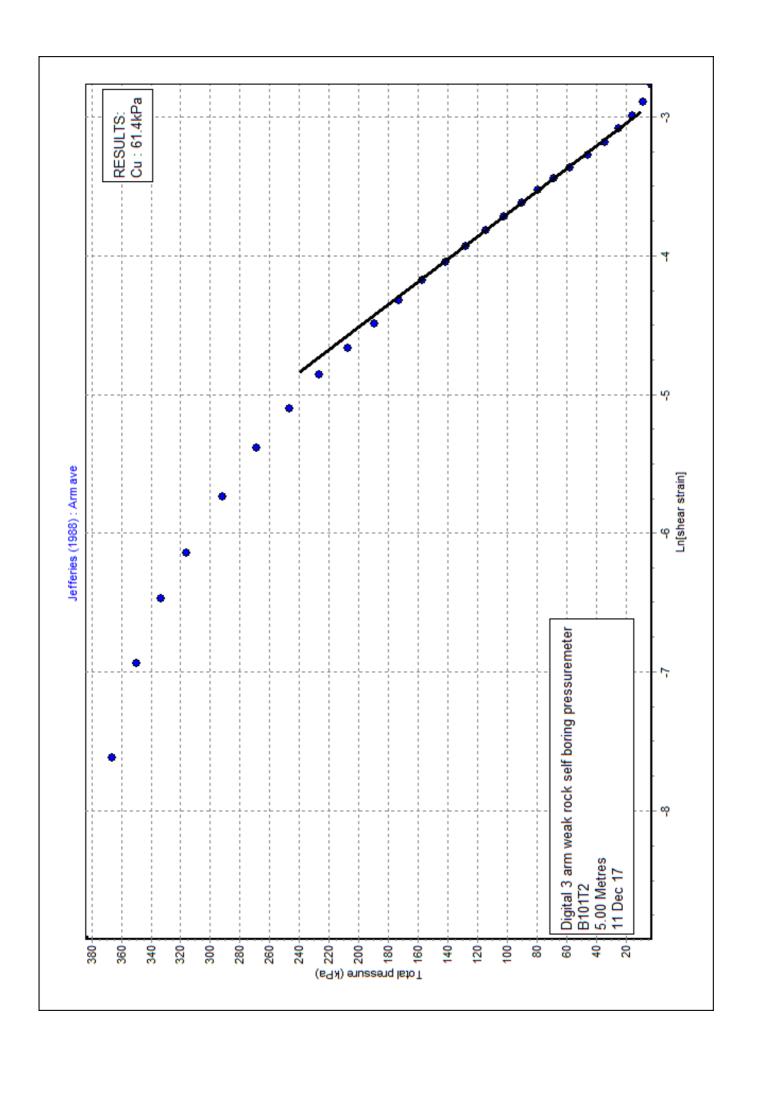












```
B101T3 - SUMMARY OF RESULTS
[File made with WinSitu Version 1.4.1.1]
[DETAILS OF TEST]
Project :
                  A7104-17
                  West Burton CD Power Station
Site
             :
Borehole
                  BH101
              :
Test name
                  B101T3
             :
Test date
                  12 Dec 17
Test depth
             :
                 16.60 Metres
Water table :
                 0.00 Metres
Ambient PWP :
                  162.8 kPa
Material
                  Weathered Mudstone
              :
                  95mm High Pressure Dilatometer
Probe
                 94.0 mm
Diameter
Data analysed using average arm displacement curve
A non-linear analysis of the rebound cycles has been carried out
Analysed by on 13 Dec 17
Remarks: BH at 16m pocket to 17.5m
[RESULTS FOR CAVITY REFERENCE PRESSURE]
Strain Origin (mm)
                                  :
                                       "Arm ave=2.544"
Po from Marsland & Randolph (kPa)
                                   :
                                       "Arm ave=251.5"
Best estimate of Po (kPa)
                                       "Arm ave=251.0"
[UNDRAINED STRENGTH PARAMETERS]
Gibson & Anderson 1961 - Cu (kPa) :
                                       "Arm ave=306.9"
Limit pressure (kPa) :
Jefferies 1988 - Cu (kPa) :
                                       "Arm ave=1356"
                                       "Arm ave=84.5"
Undrained yield stress (kPa) :
                                     "Arm ave=383.5"
```

			SHEAR MODULUS us (MPa) :"Arm		
Axis	Loop	Value	Mean Strain	Mean Pc	dE
	No	(MPa)	(%)	(kPa)	(%)
Arm ave	1	66.4	2.774	331	0.087

Arm ave 2 54.1 4.395

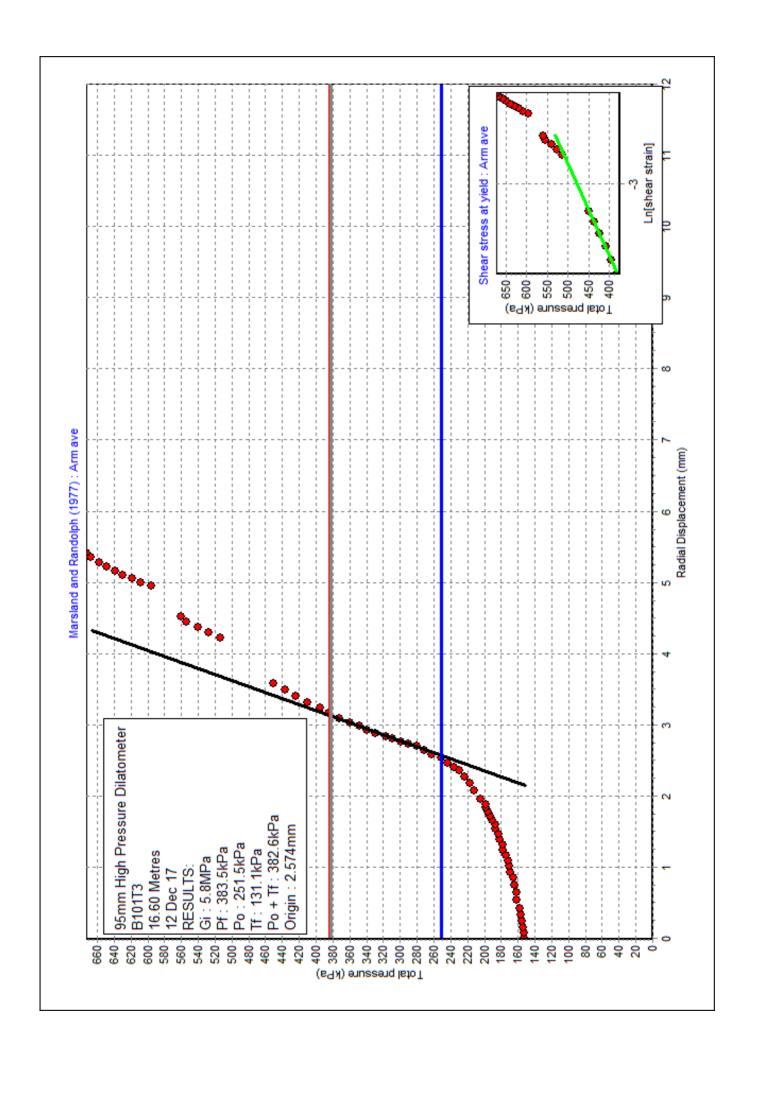
[UNDRAINED	NON LI	NEAR INTERP	RETATION	OF	SECANT SHEAR MODULUS]
Axis	Loop	Intercept	Alpha		Gradient
	No	(MPa)	(MPa)		
Arm ave	1	16.993	13.981		0.823
Arm ave	2	4.457	2.604		0.584

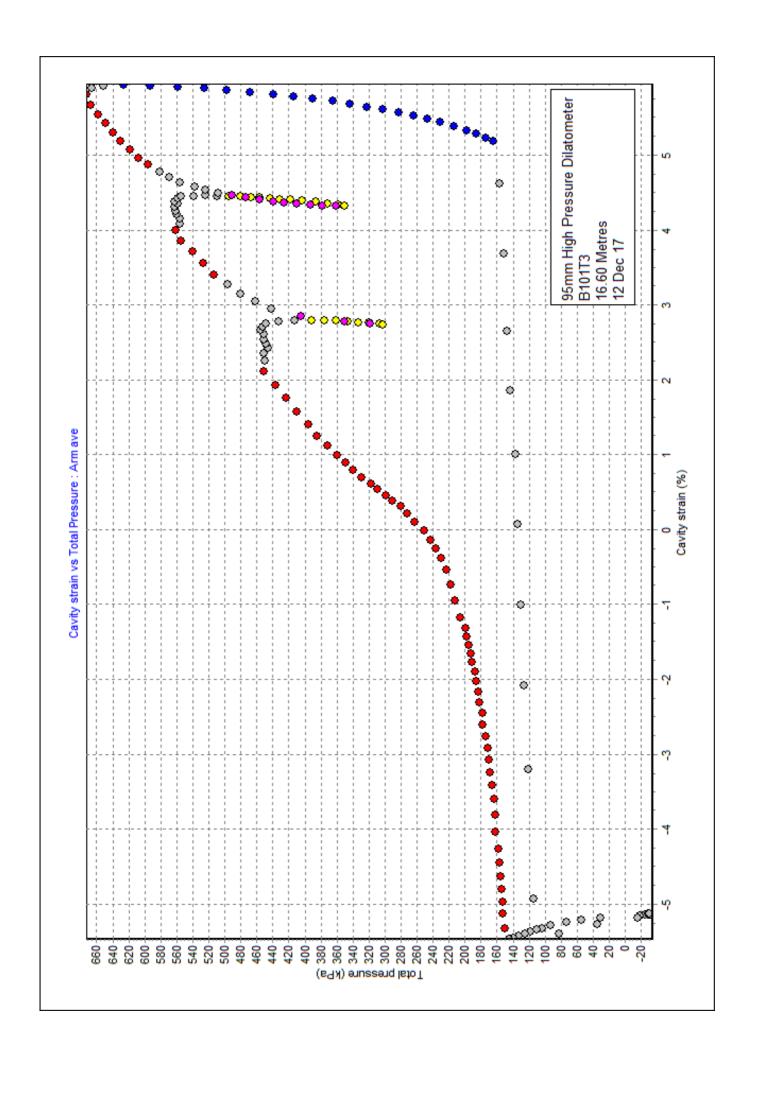
417

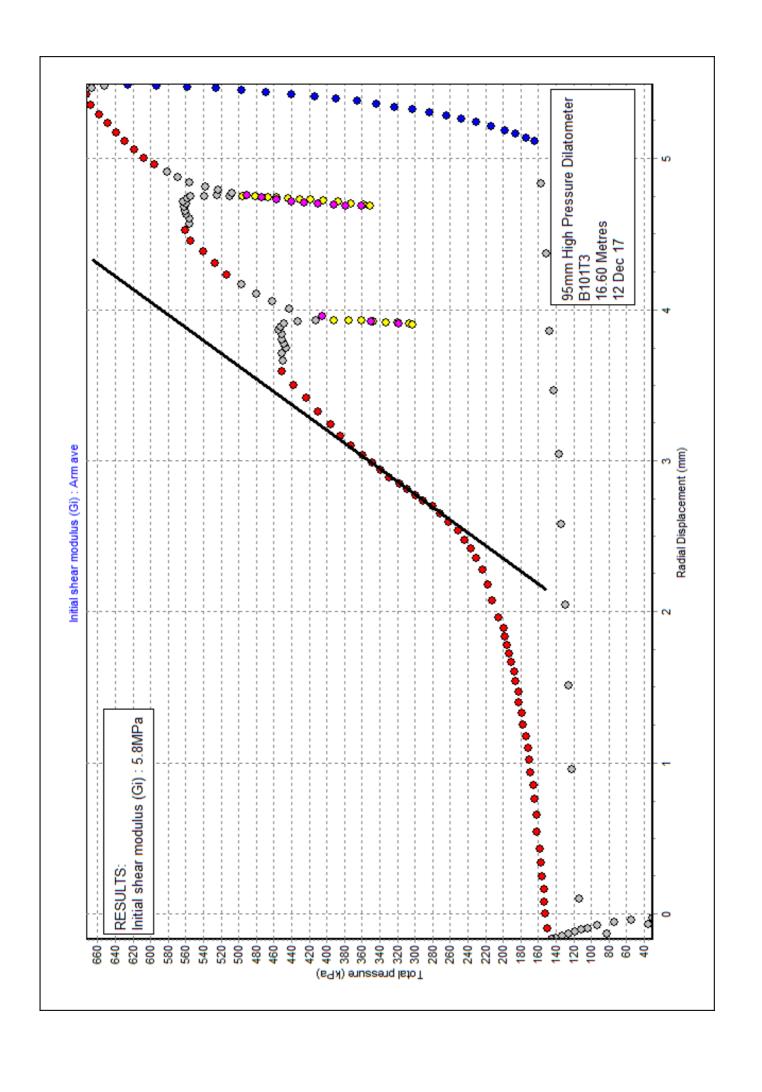
dPc (kPa) 58

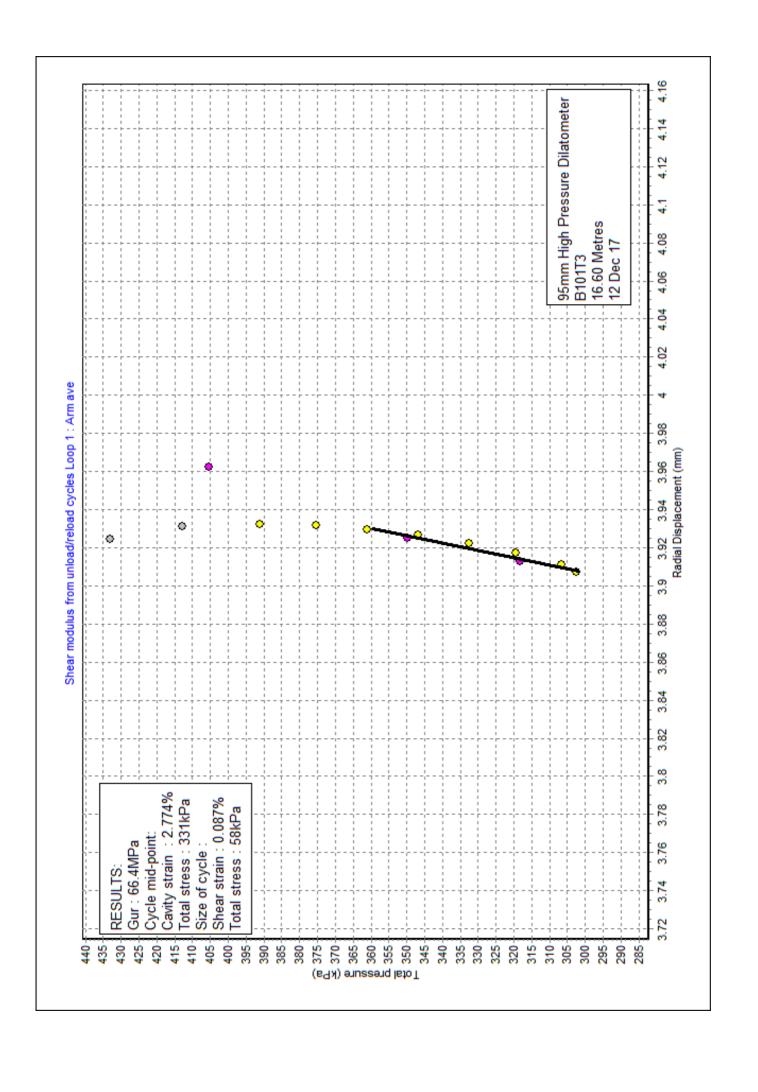
132

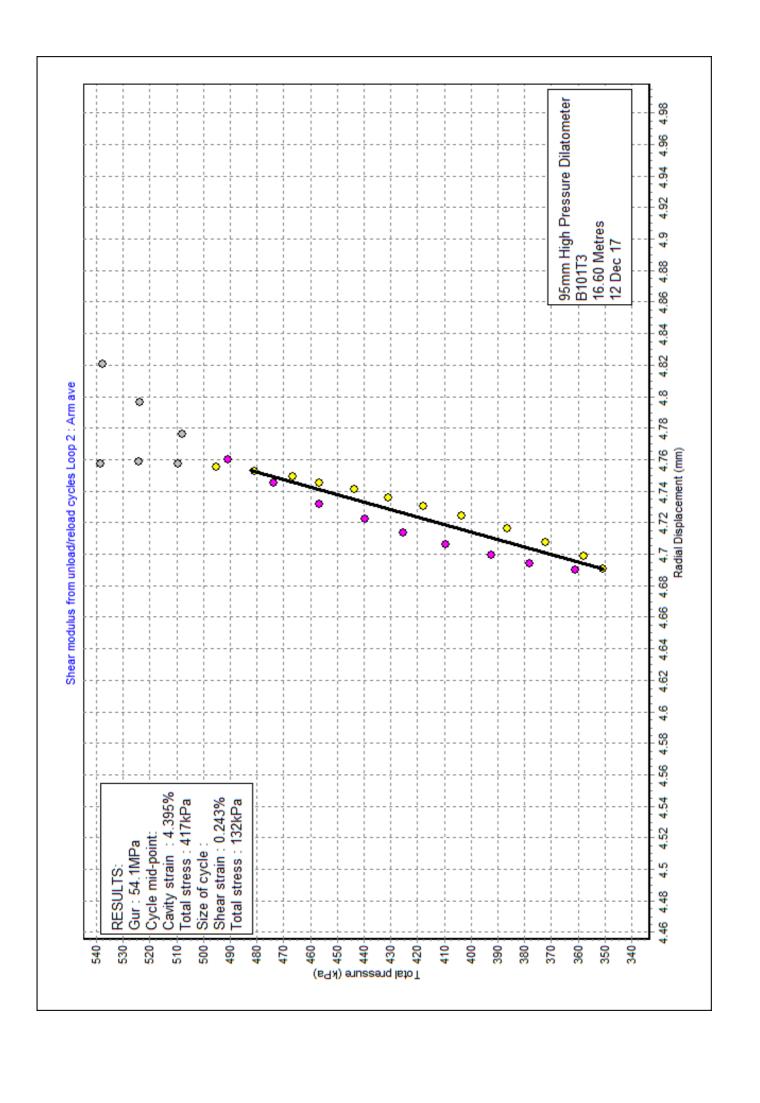
0.243

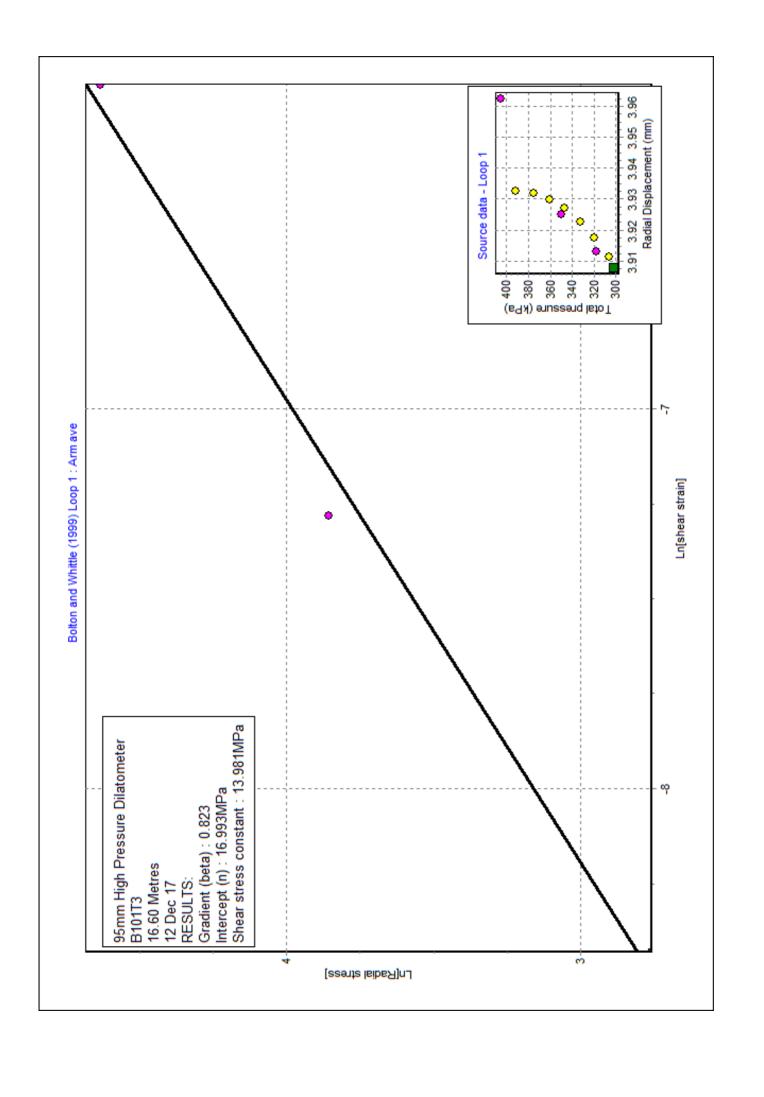


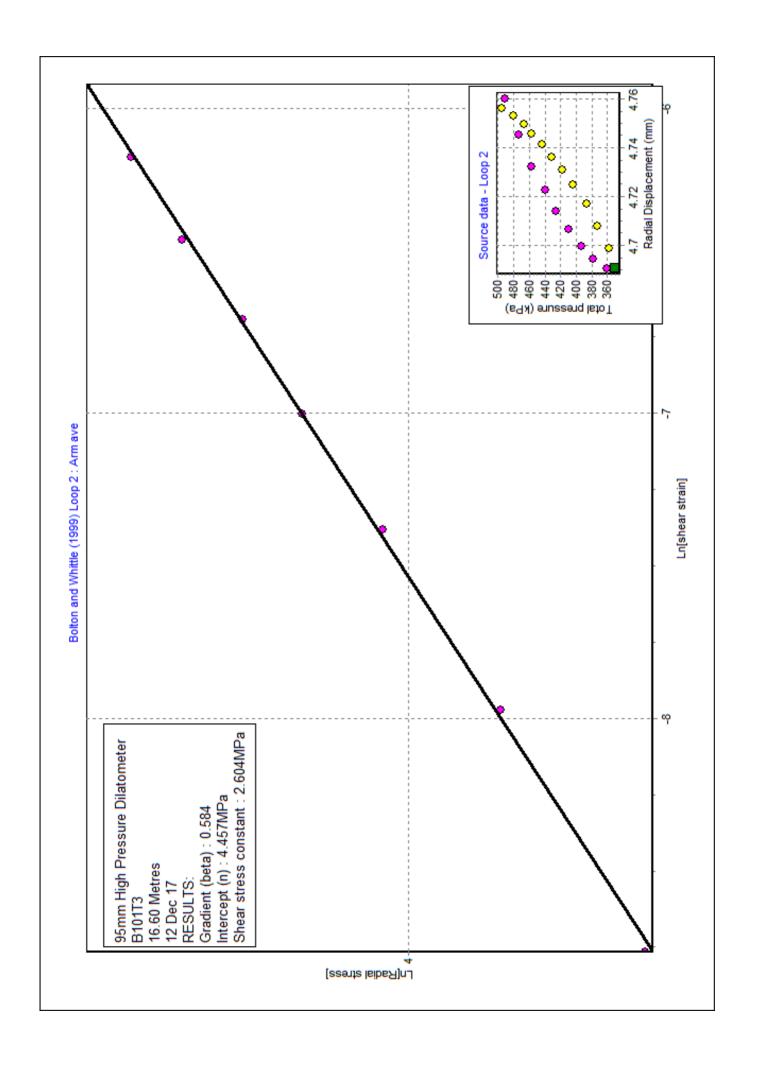


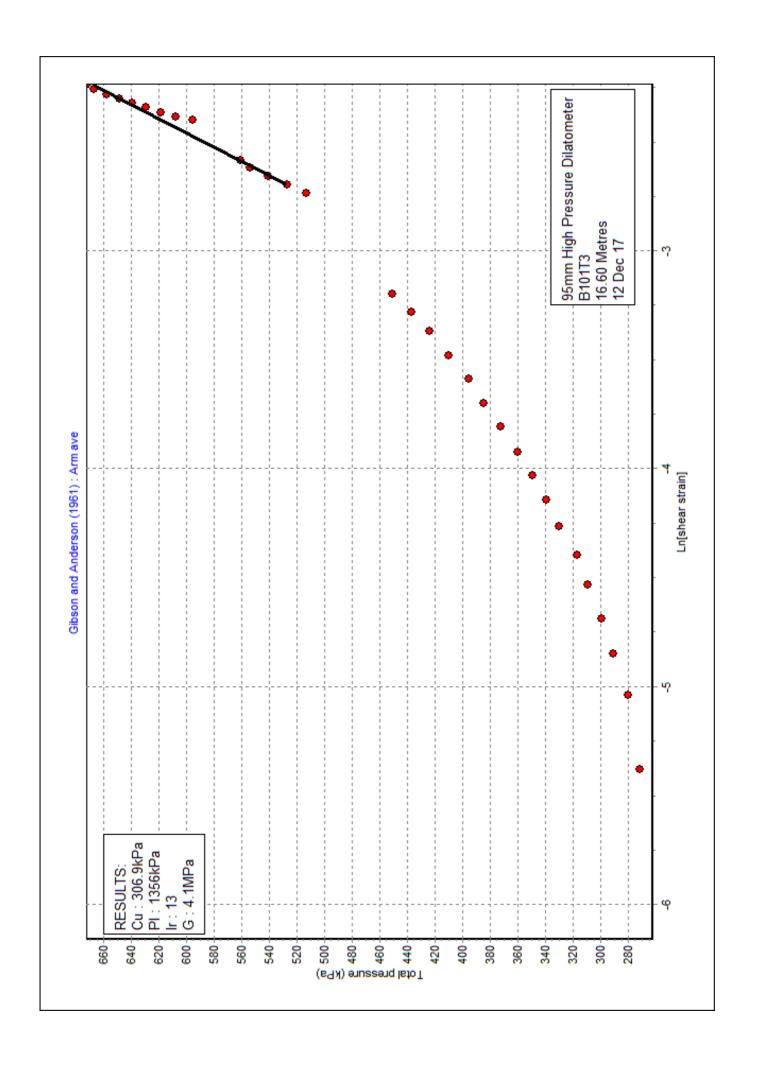


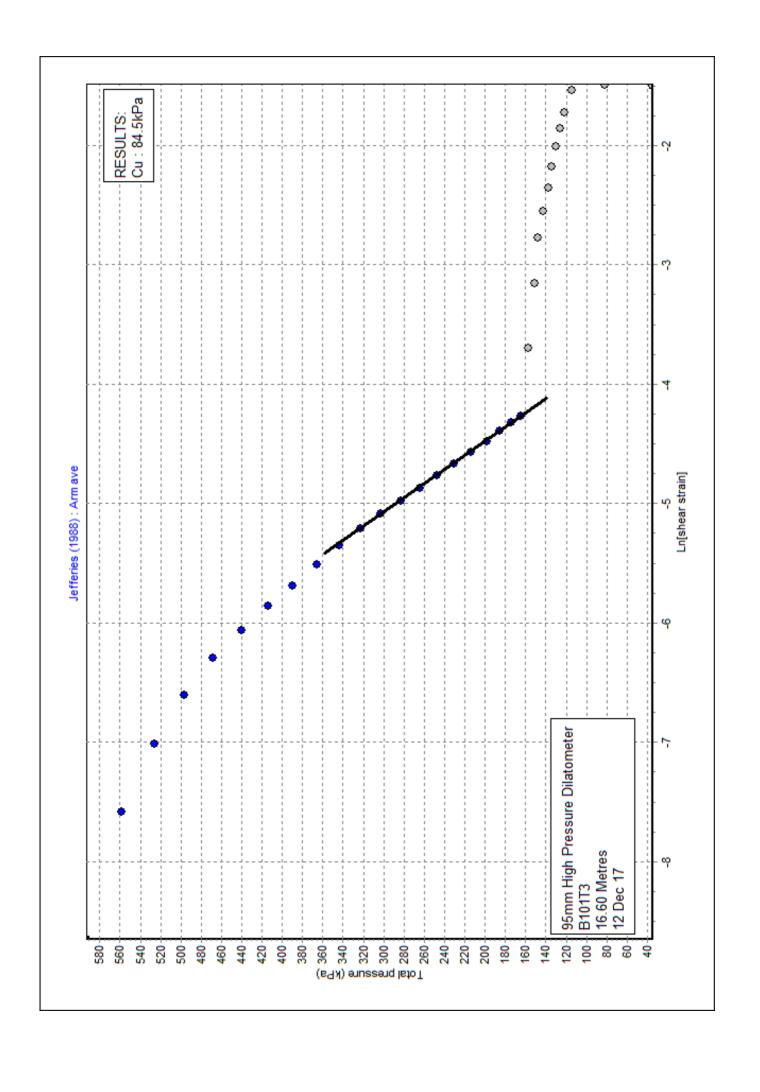












B101T4 - SUMMARY OF RESULTS [File made with WinSitu Version 1.4.1.1] [DETAILS OF TEST] Project : A7104-17

Site West Burton CD Power Station

Borehole : BH101 Test name B101T4 Test date : 13 Dec 17 Test depth : 20.40 Metres Water table : 0.00 Metres Ambient PWP : 200.1 kPa Material Mudstone

95mm High Pressure Dilatometer Probe

94.0 mm Diameter

Data analysed using average arm displacement curve

A non-linear analysis of the rebound cycles has been carried out

Analysed by on 13 Dec 17

Remarks: Pocket 19.8-21.3m. Variable arm response noted during test

period due to uneven competance of test strata and HPD membrane

burst. Test results may not be reliabl

[RESULTS FOR CAVITY REFERENCE PRESSURE]

Strain Origin (mm) "Arm ave=3.721" Po from Marsland & Randolph (kPa) "Arm ave=636.5" Best estimate of Po (kPa) "Arm ave=255.0"

[UNDRAINED STRENGTH PARAMETERS]

Undrained yield stress (kPa) "Arm ave=2053.3"

[LINEAR INTERPRETATION OF SHEAR MODULUS G]

Initial slope shear modulus (MPa) : "Arm ave=193.5"

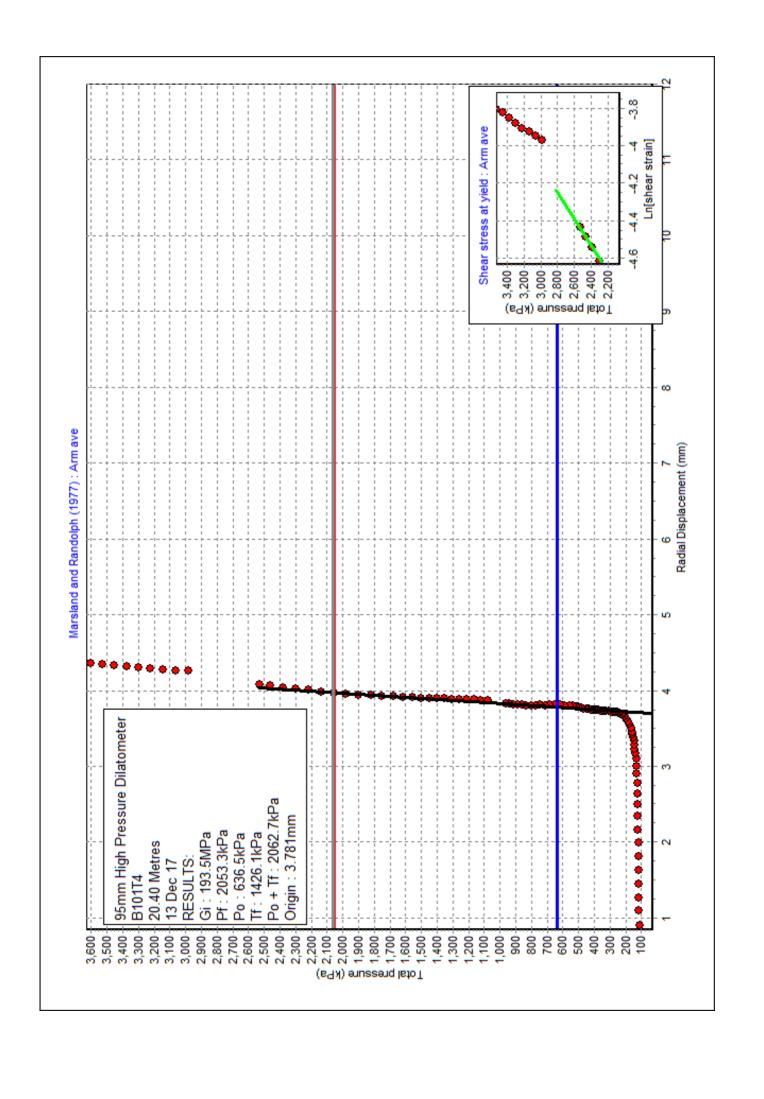
Mean Strain Mean Pc dE Axis Loop Value dPc (MPa) No (응) (kPa) (왕) (kPa) 566.3 0.290 725 0.061 344 Arm ave 1 1300.9 2 1712 0.011 140 Arm ave 0.916

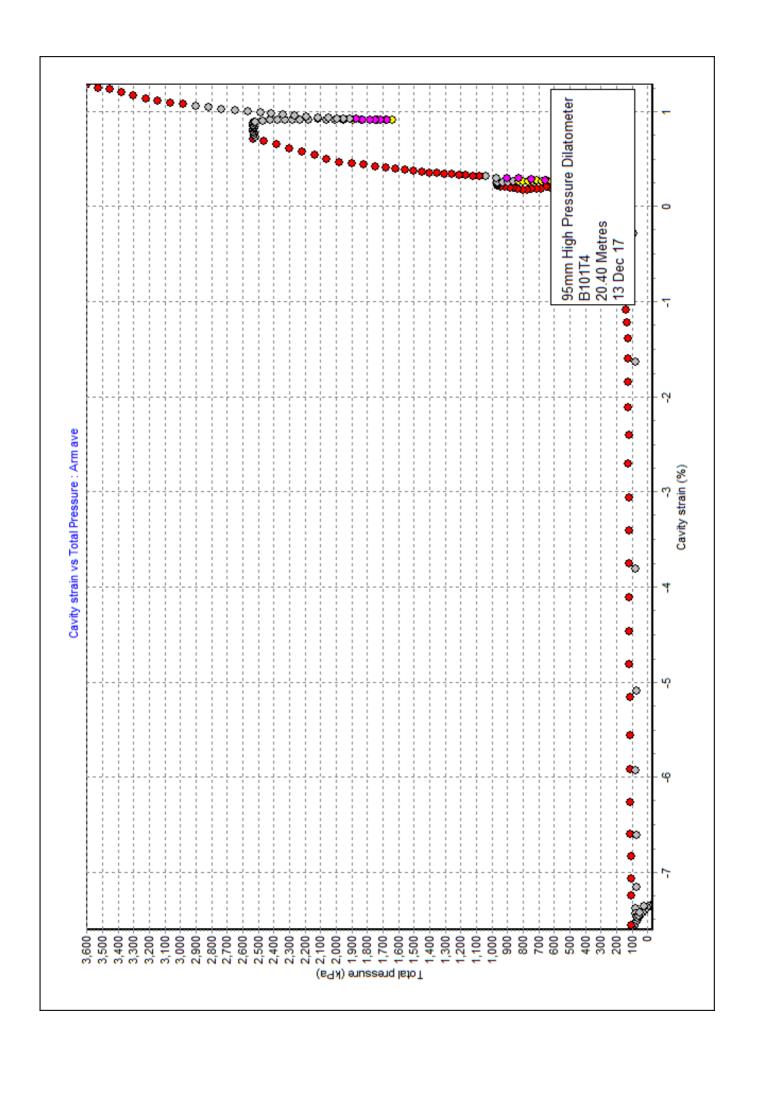
[UNDRAINED NON LINEAR INTERPRETATION OF SECANT SHEAR MODULUS]

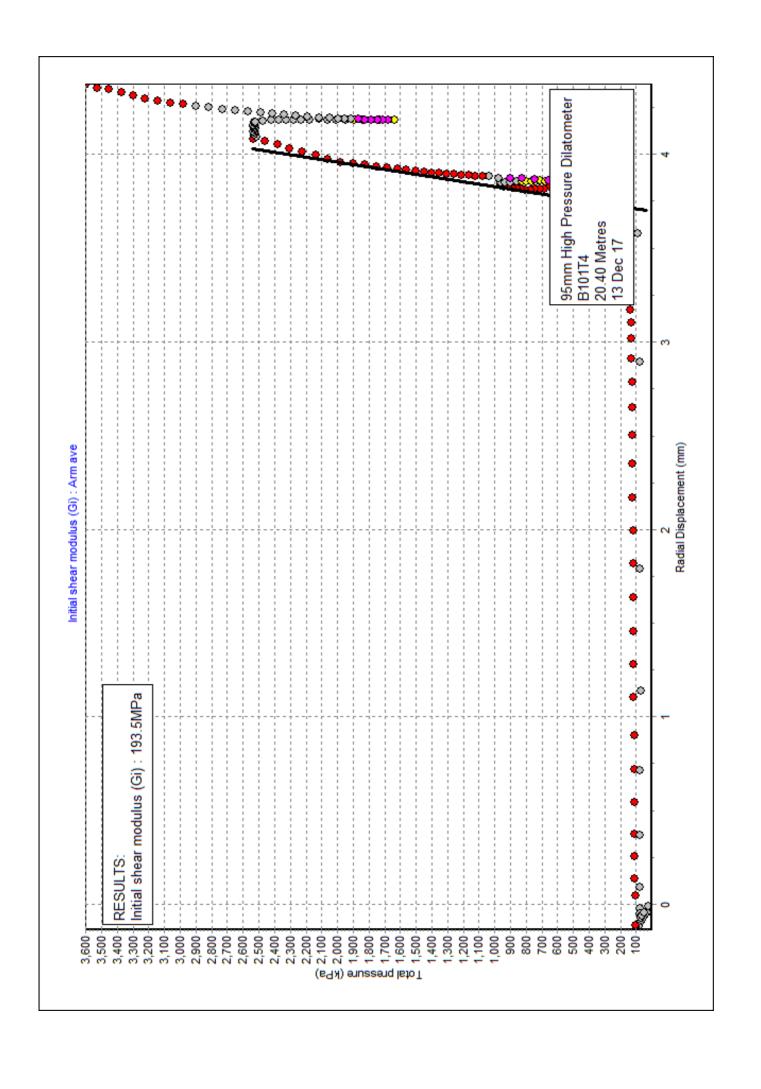
Loop Intercept Alpha Gradient Axis

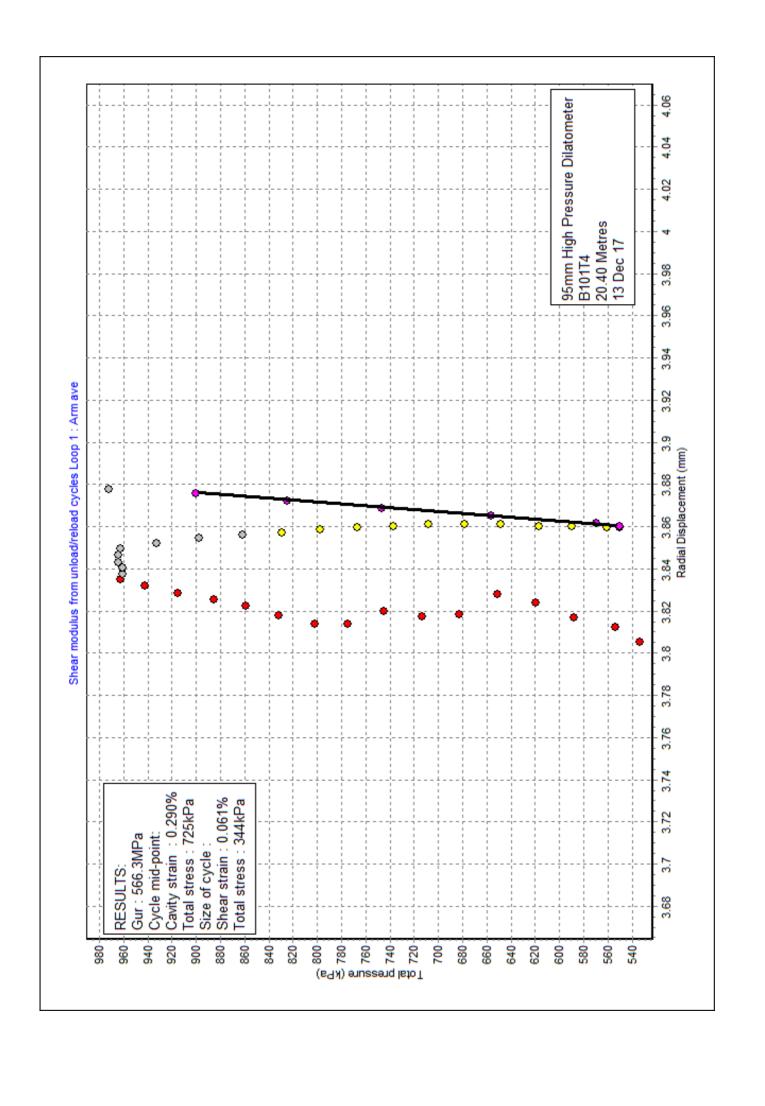
(MPa) (MPa)

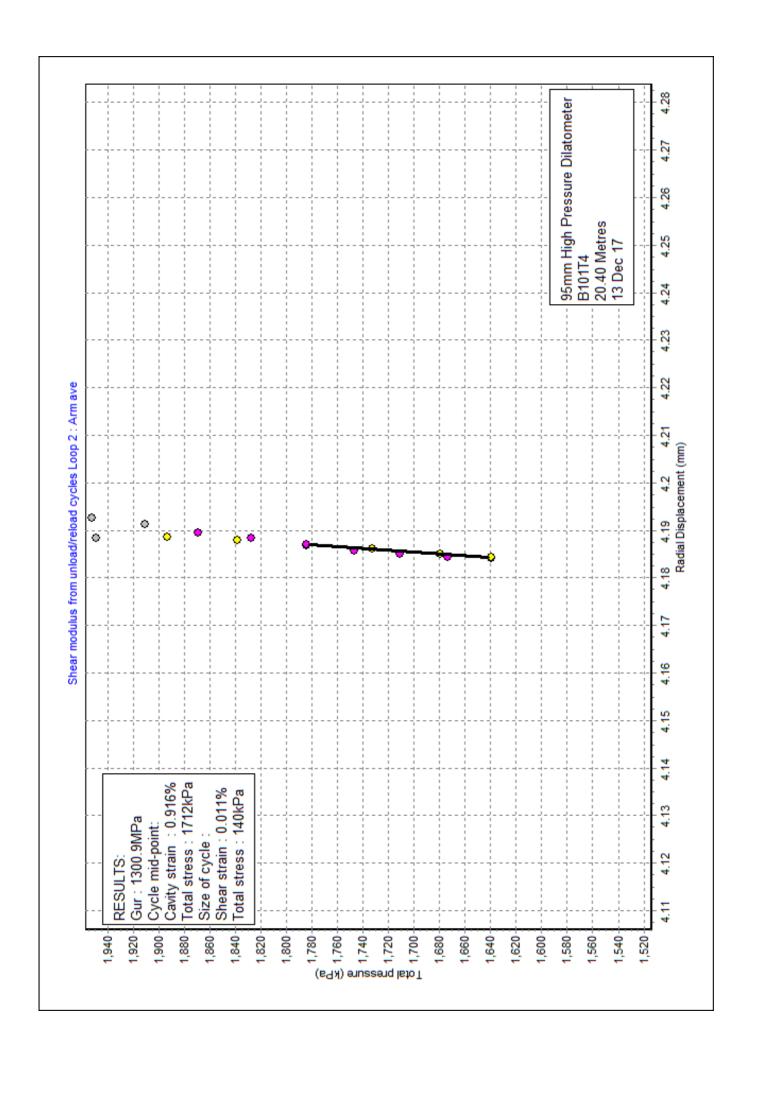
1 4081.026 5276.596 1.293 Arm ave Arm ave 2 69.293 46.804 0.675

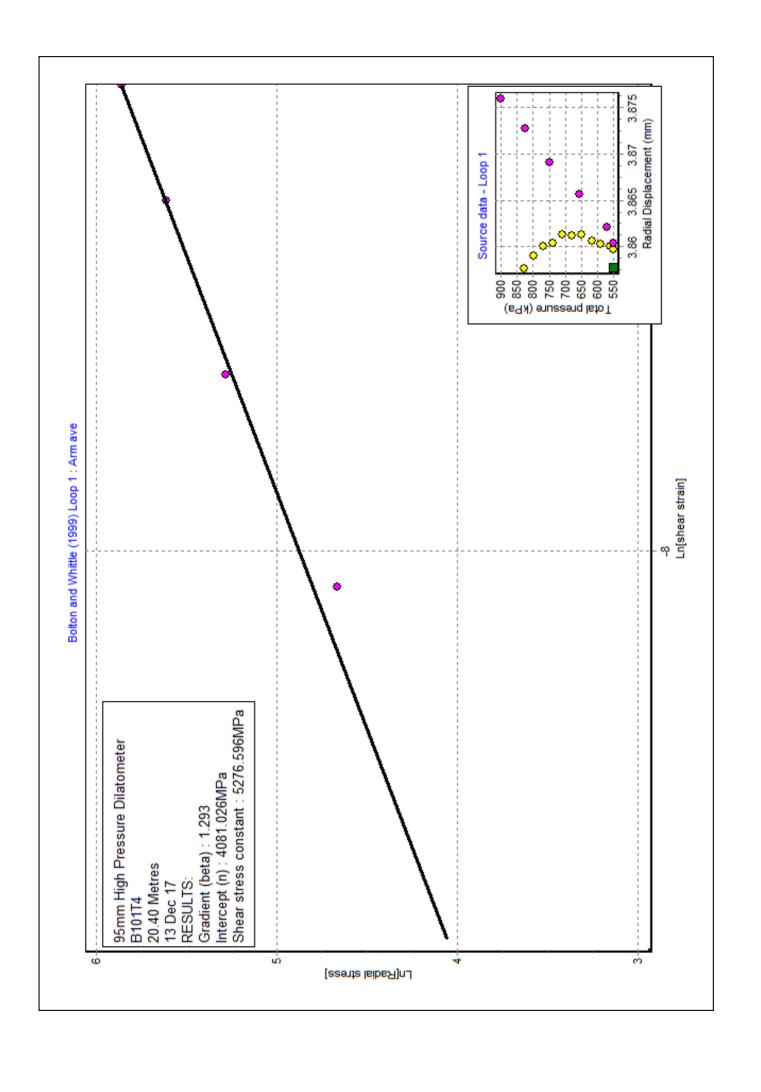


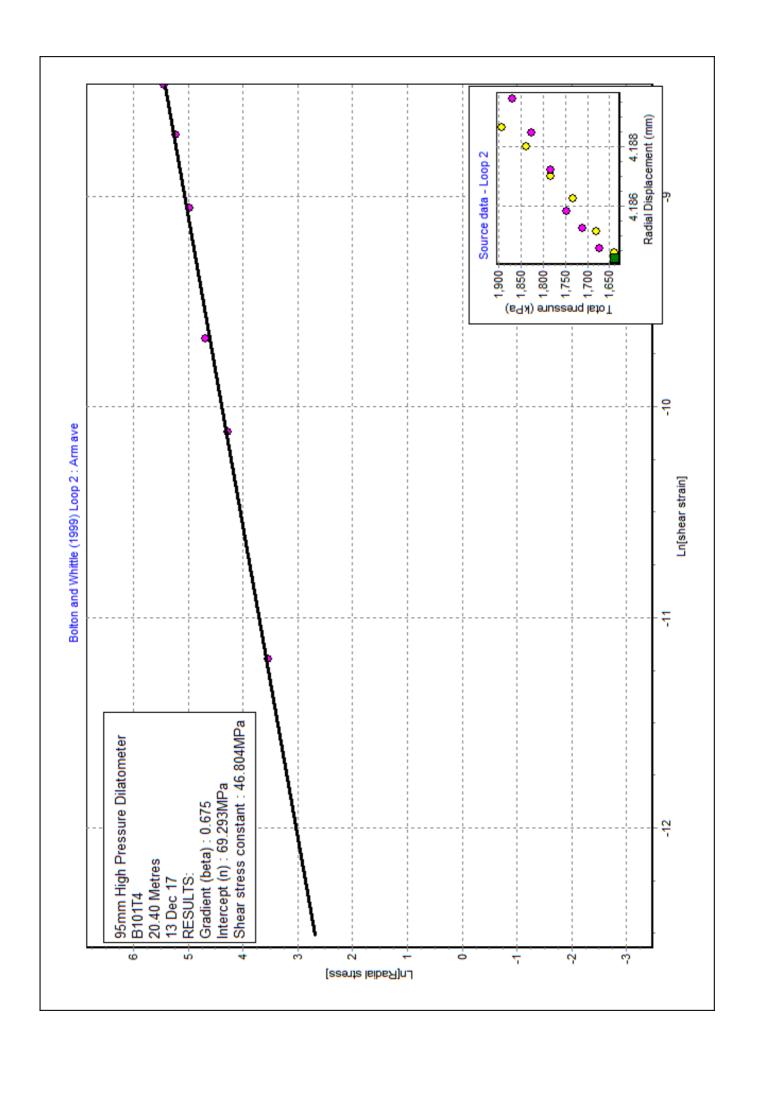












B101T5 - SUMMARY OF RESULTS [File made with WinSitu Version 1.4.1.1]

[DETAILS OF TEST]

Project : A7104-17

Site : West Burton CD Power Station

: Borehole BH101 : Test name B101T5 Test date : 14 Dec 17 Test depth : 23.40 Metres : Water table 0.00 Metres Ambient PWP : 229.6 kPa Material Mudstone

Probe : 95mm High Pressure Dilatometer

Diameter : 94.0 mm

Data analysed using average arm displacement curve

A non-linear analysis of the rebound cycles has been carried out

Analysed by on 14 Dec 17

Remarks: BH at 22.8m pocket to 24.3m. Tip to base. First loop carried out at early stage of test. HPD membrane burst on unload phase of

[RESULTS FOR CAVITY REFERENCE PRESSURE]

Strain Origin (mm) : "Arm ave=1.964"

Best estimate of Po (kPa) : "Arm ave=1600.0"

[UNDRAINED STRENGTH PARAMETERS]

Gibson & Anderson 1961 - Cu (kPa) : "Arm ave=9295.1"
Limit pressure (kPa) : "Arm ave=50721"

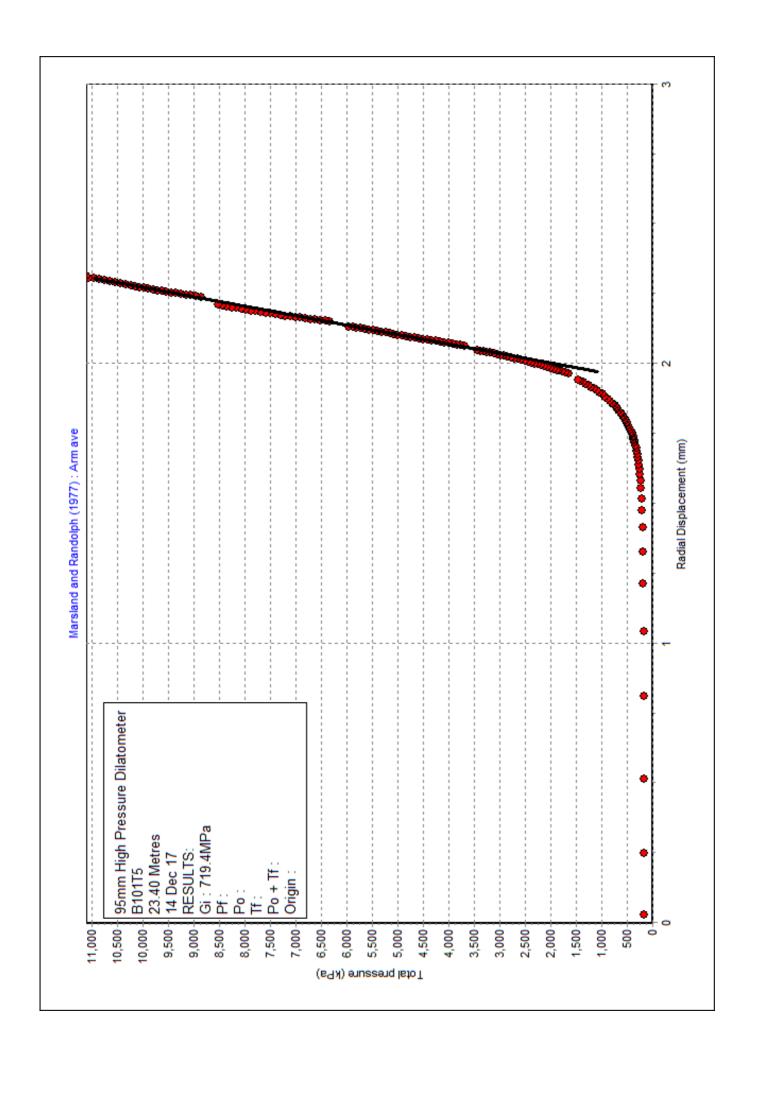
[LINEAR INTERPRETATION OF SHEAR MODULUS G]

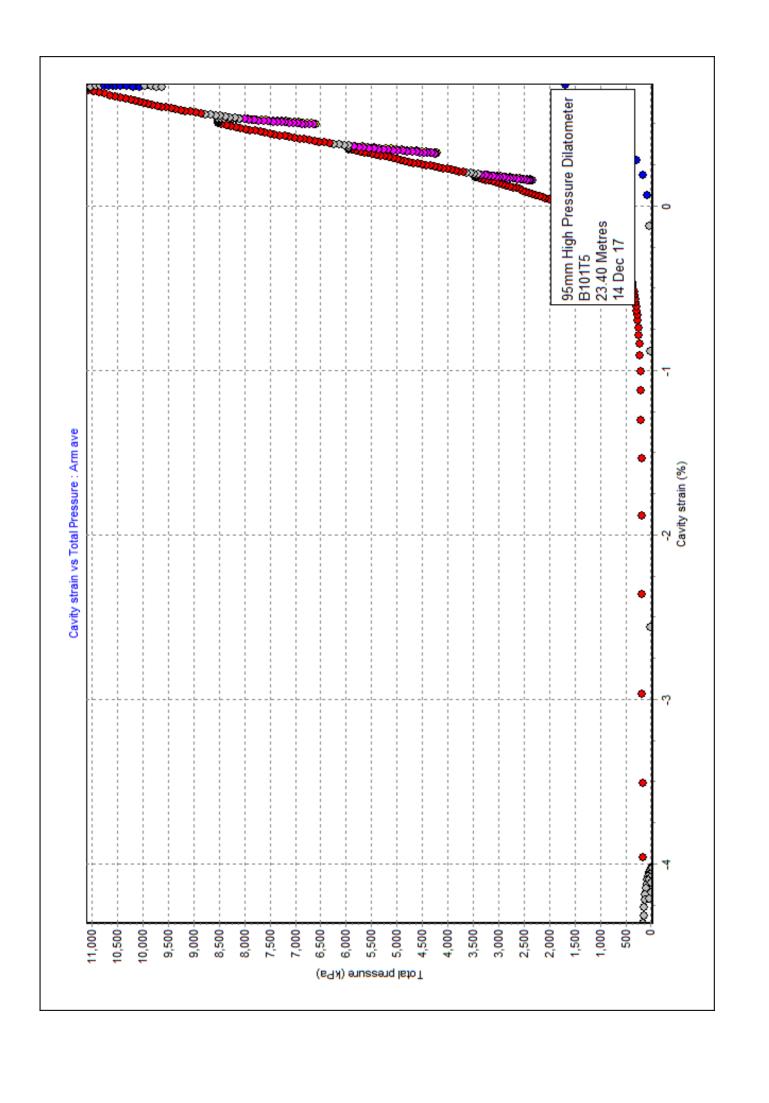
Initial slope shear modulus (MPa) : "Arm ave=719.4"

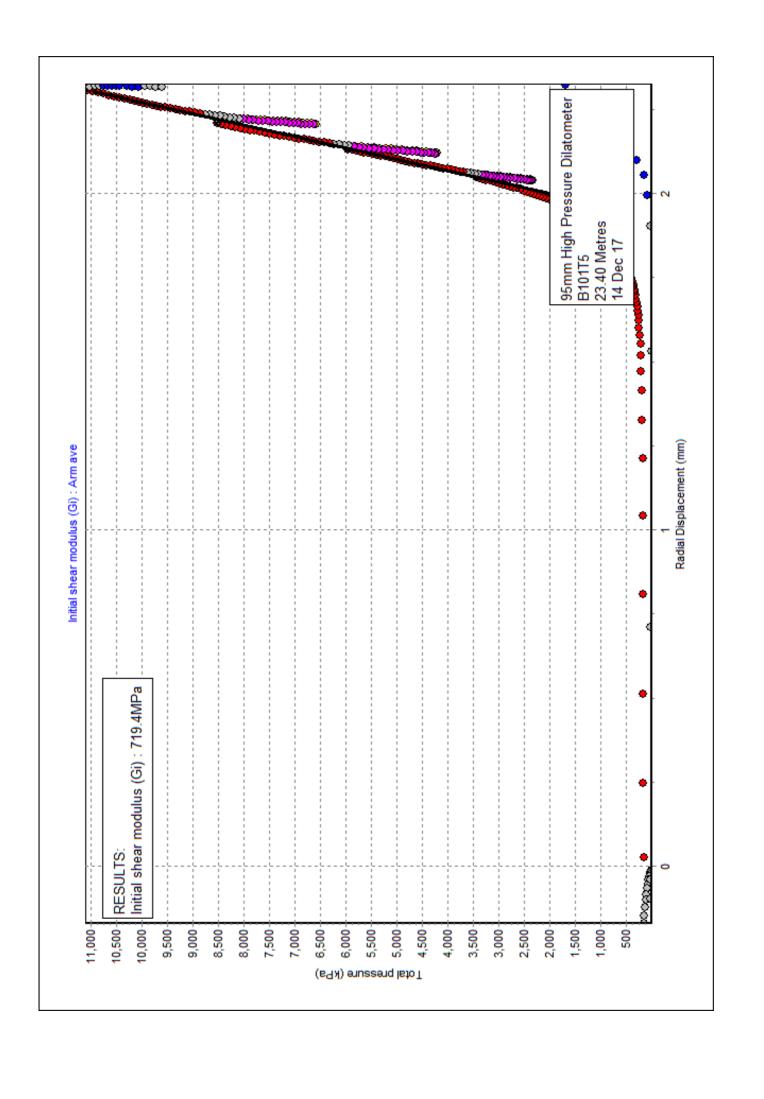
Axis	Loop	Value	Mean Strain	Mean Pc	dE	dPc
	No	(MPa)	(%)	(kPa)	(%)	(kPa)
Arm ave	1	457.8	-0.051	1142	0.112	513
Arm ave	2	1527.1	0.176	2811	0.062	953
Arm ave	3	1995.4	0.344	4977	0.076	1521
Arm ave	4	2338.9	0.517	7258	0.057	1342

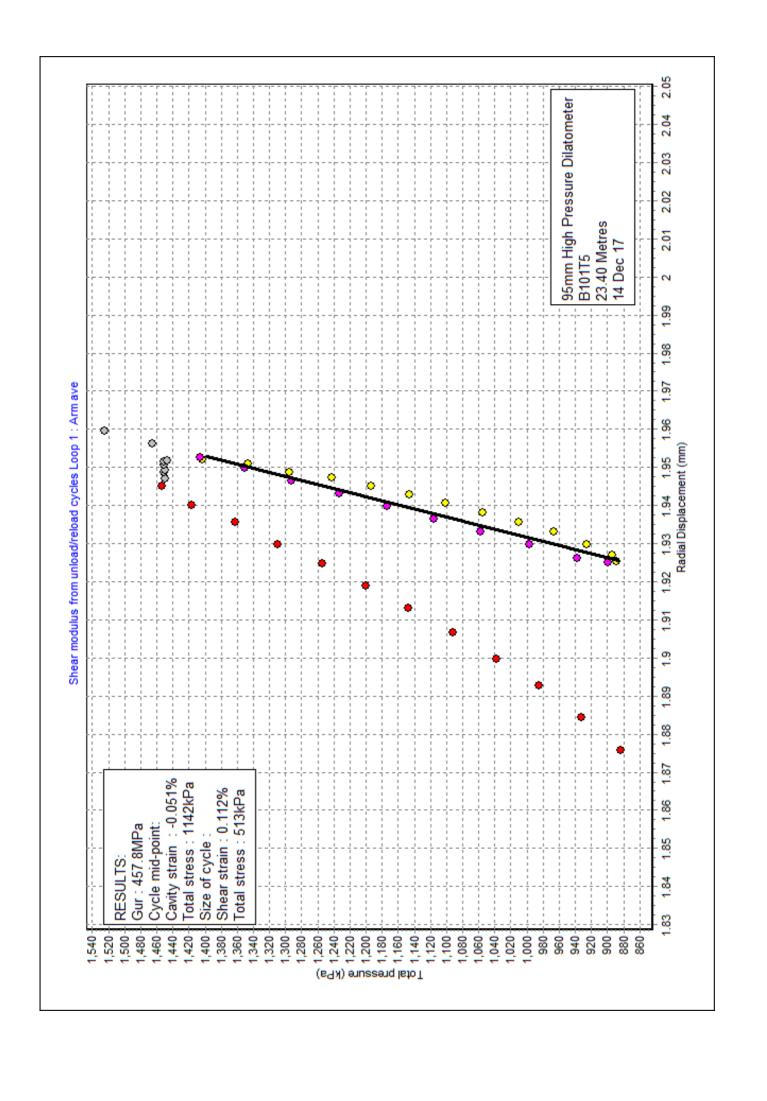
[UNDRAINED NON LINEAR INTERPRETATION OF SECANT SHEAR MODULUS]

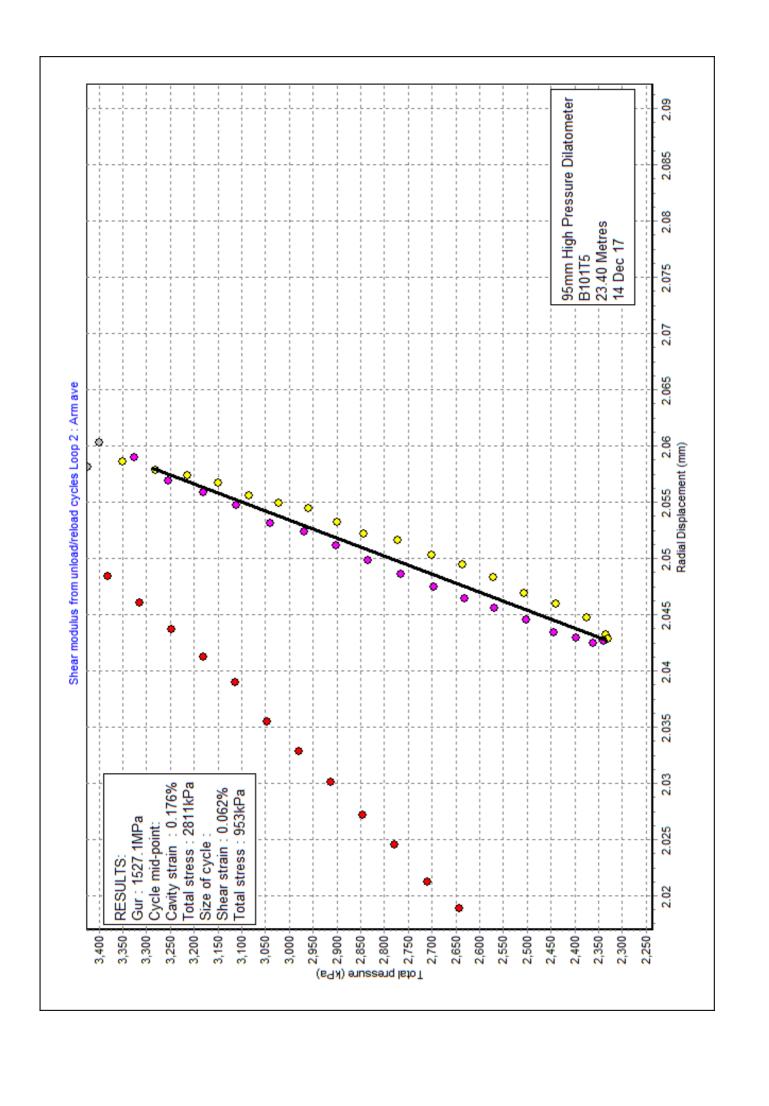
Loop	Intercept	Alpha	Gradien
No	(MPa)	(MPa)	
1	210.493	186.575	0.886
2	385.917	315.158	0.817
3	456.342	361.777	0.793
4	259.369	183.321	0.707
	No 1 2 3	No (MPa) 1 210.493 2 385.917 3 456.342	No (MPa) (MPa) 1 210.493 186.575 2 385.917 315.158 3 456.342 361.777

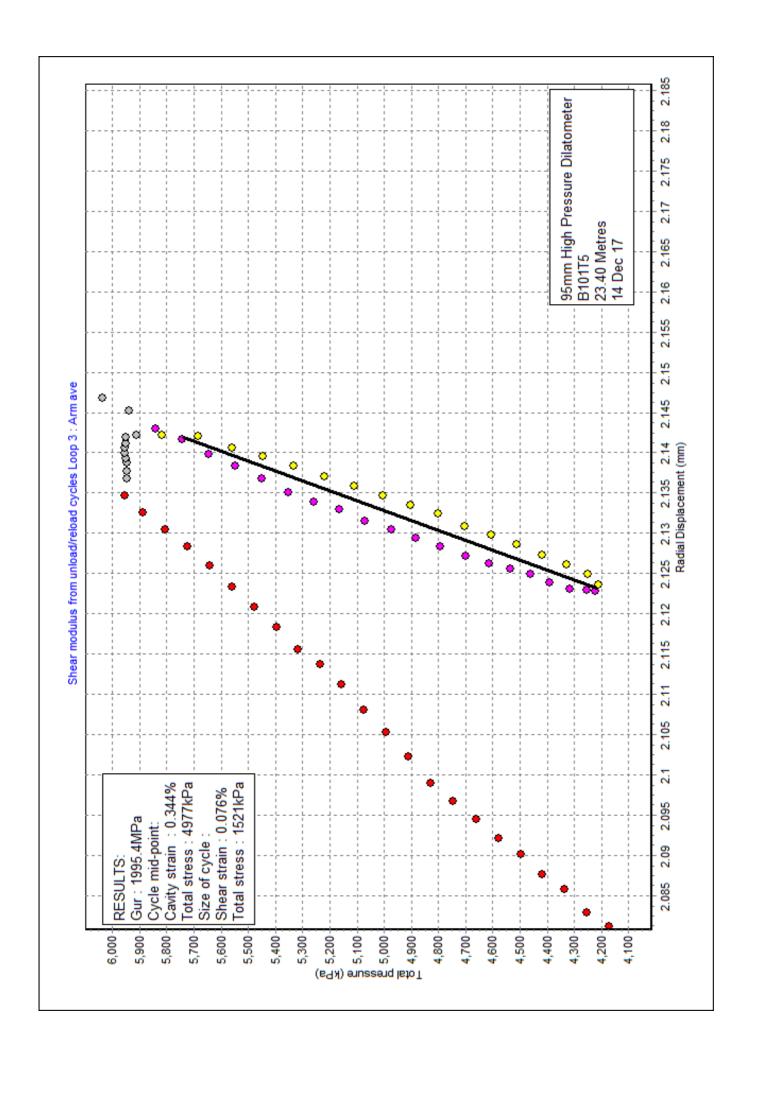


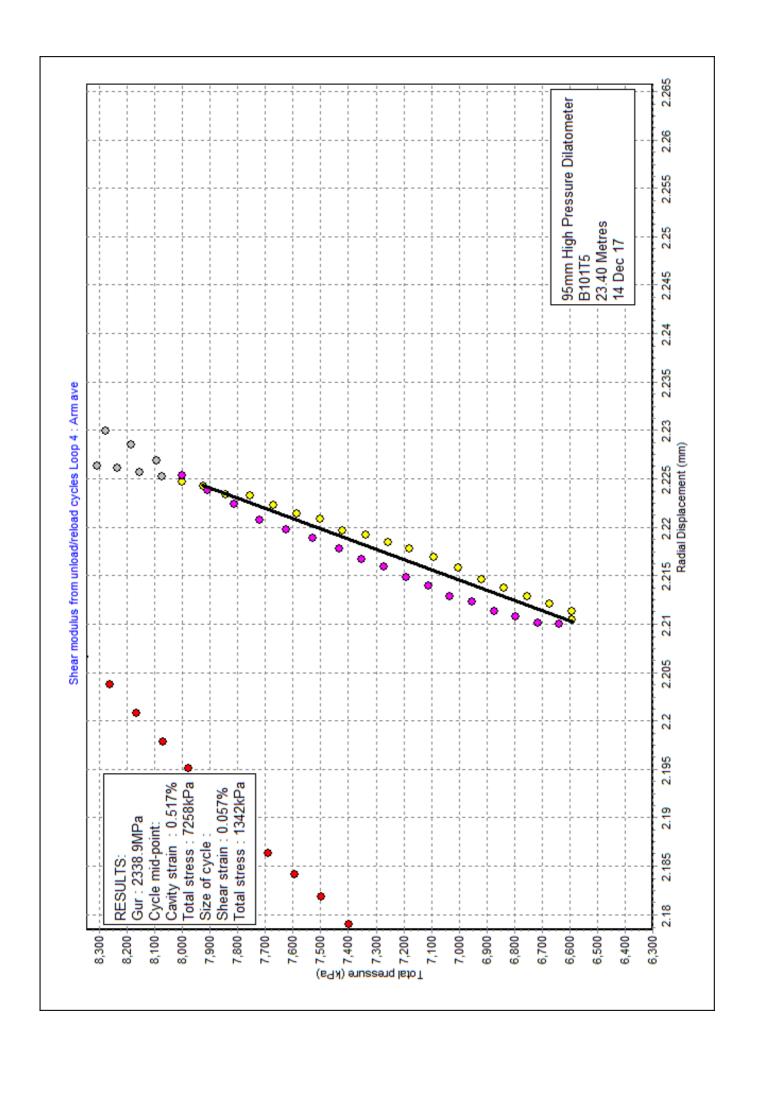


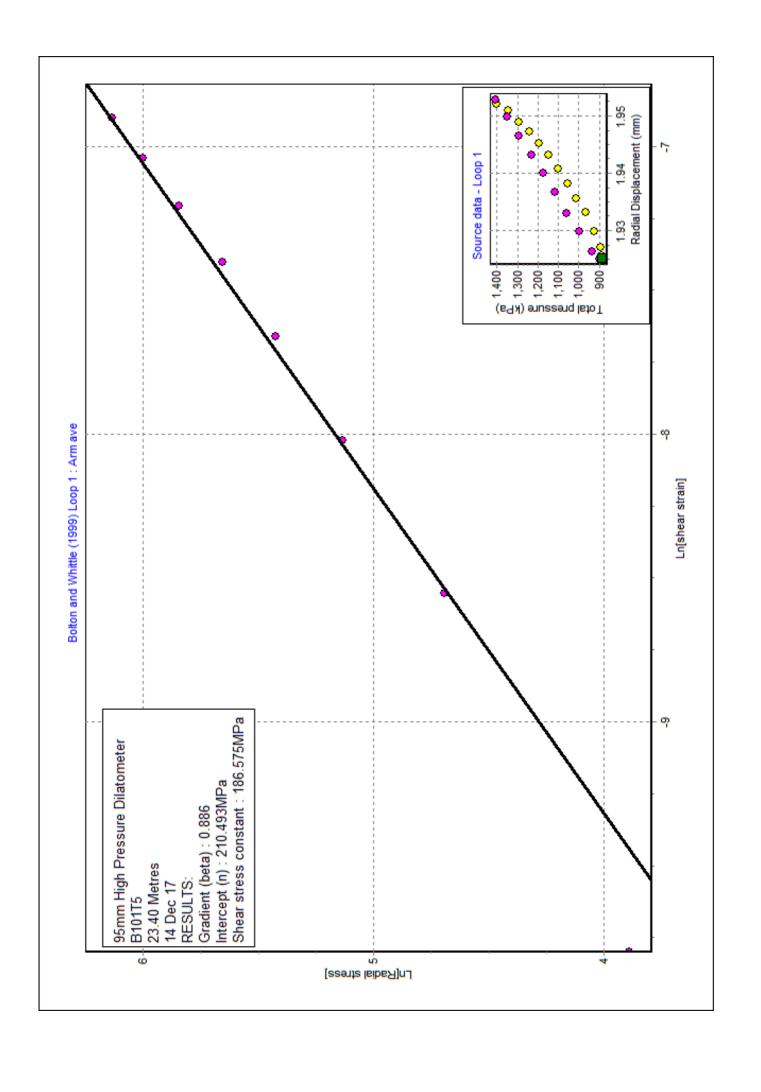


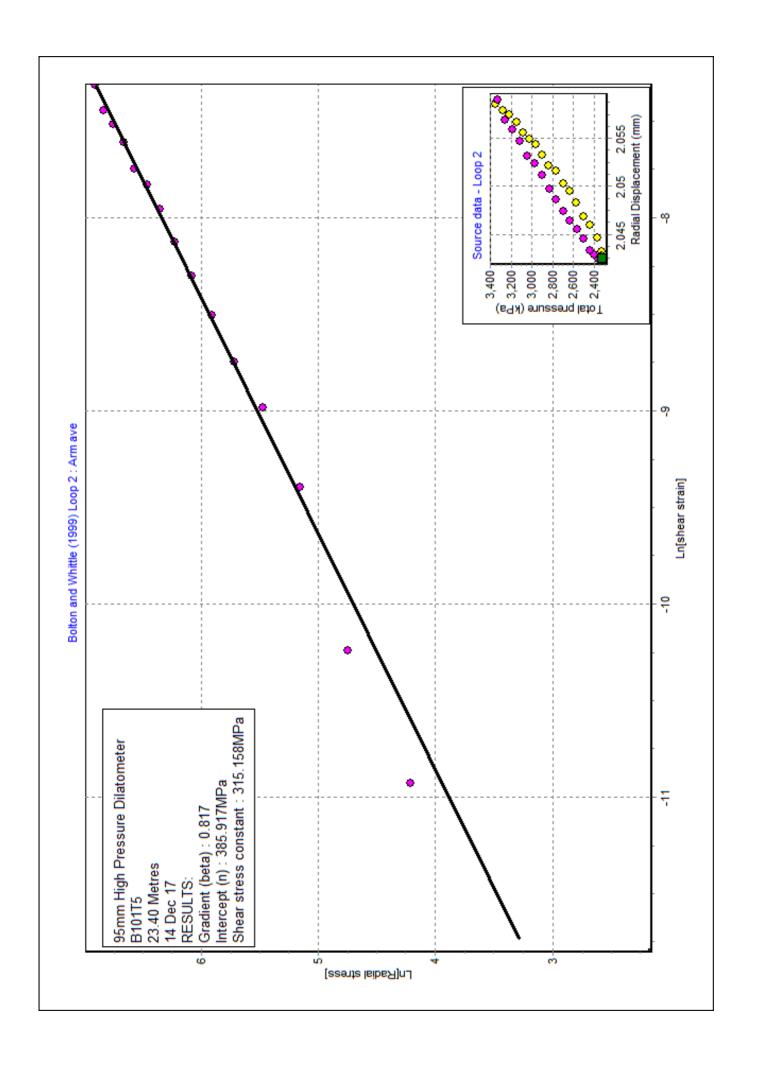


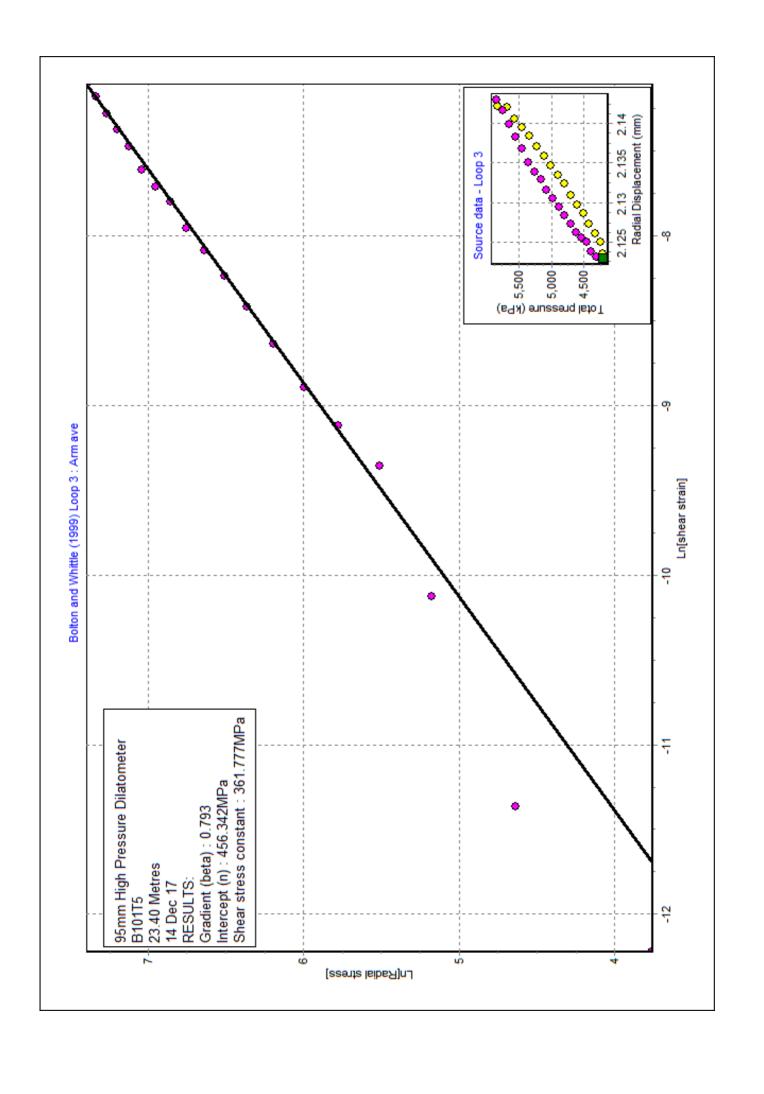


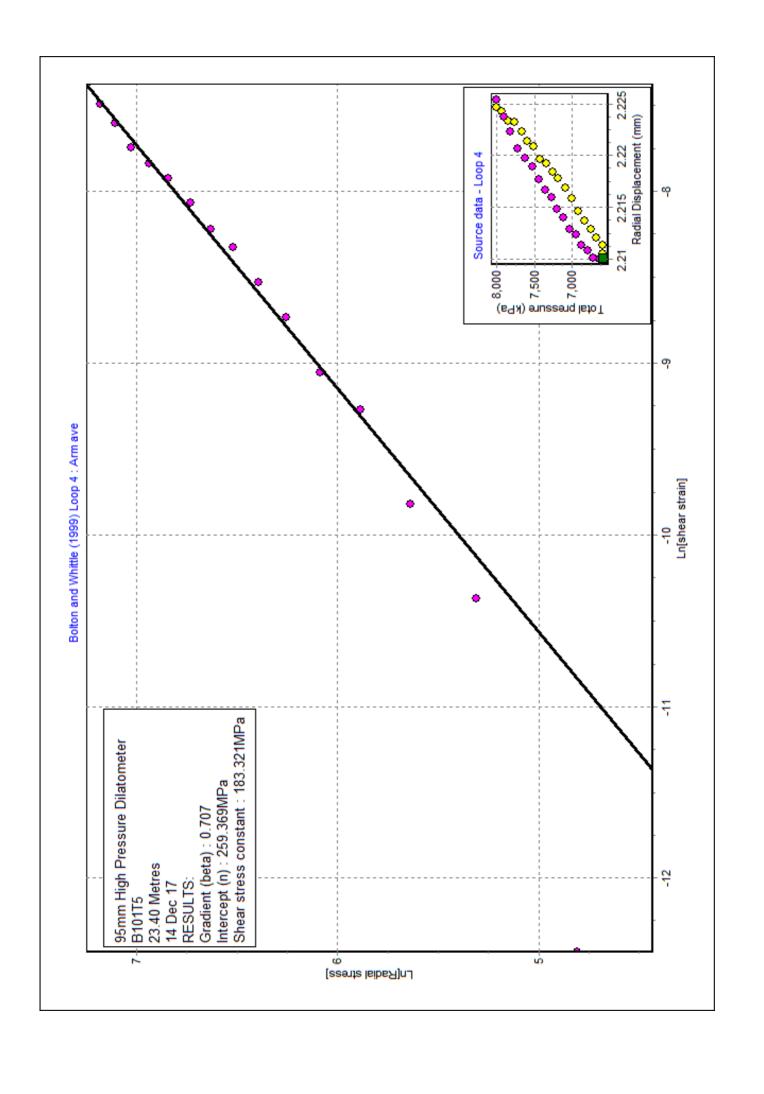


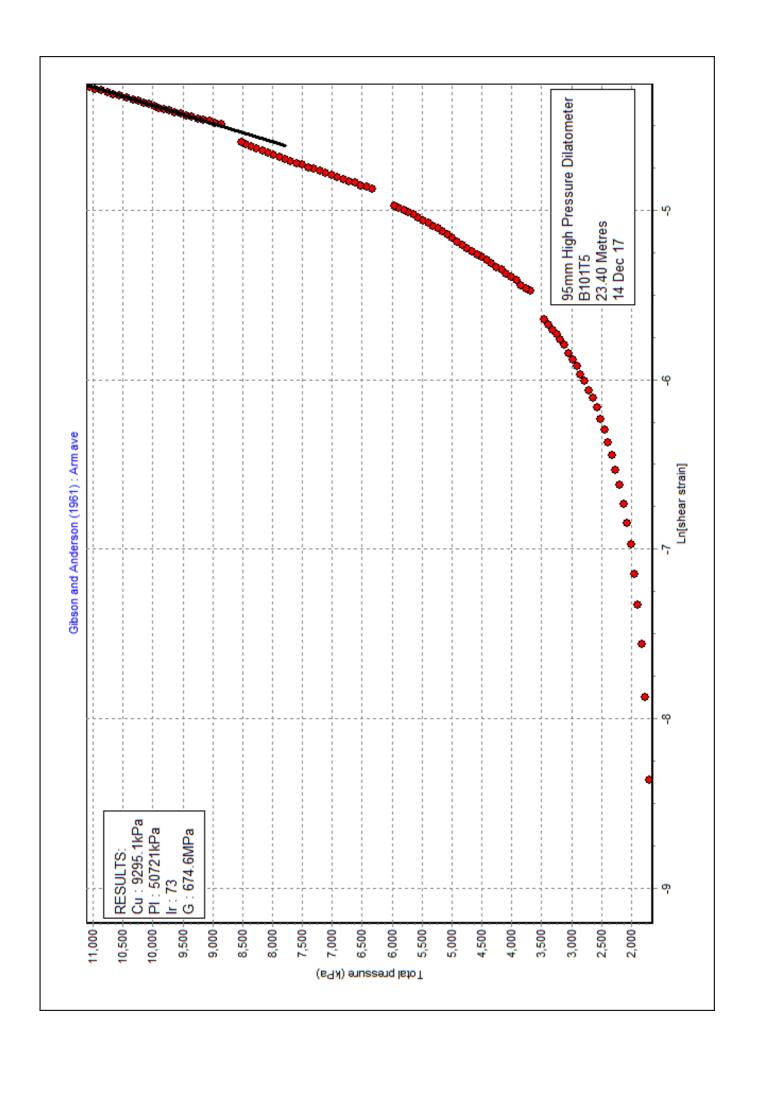












B102T1 - SUMMARY OF RESULTS [File made with WinSitu Version 1.4.1.1] [DETAILS OF TEST] A7102-17 Project : Site : Borehole BH102

West Burton CD Power Station

: Test name B102T1 Test date 5 Dec 17 Test depth : 3.00 Metres
Water table : 0.00 Metres Ambient PWP : 29.4 kPa

Material PFA

Probe : Digital 3 arm weak rock self boring pressuremeter

88.4 mm Diameter

Data analysed using average arm displacement curve

A non-linear analysis of the rebound cycles has been carried out

Analysed by on 5 Dec 17

Remarks:

[RESULTS FOR CAVITY REFERENCE PRESSU	JRE]		
Strain Origin (mm)	:	"Arm	ave=0.534"
Po from Marsland & Randolph (kPa)	:	"Arm	ave=349.6"
Best estimate of Po (kPa)	:	"Arm	ave=350.0"

[UNDRAINED STRENGTH PARAMETERS]

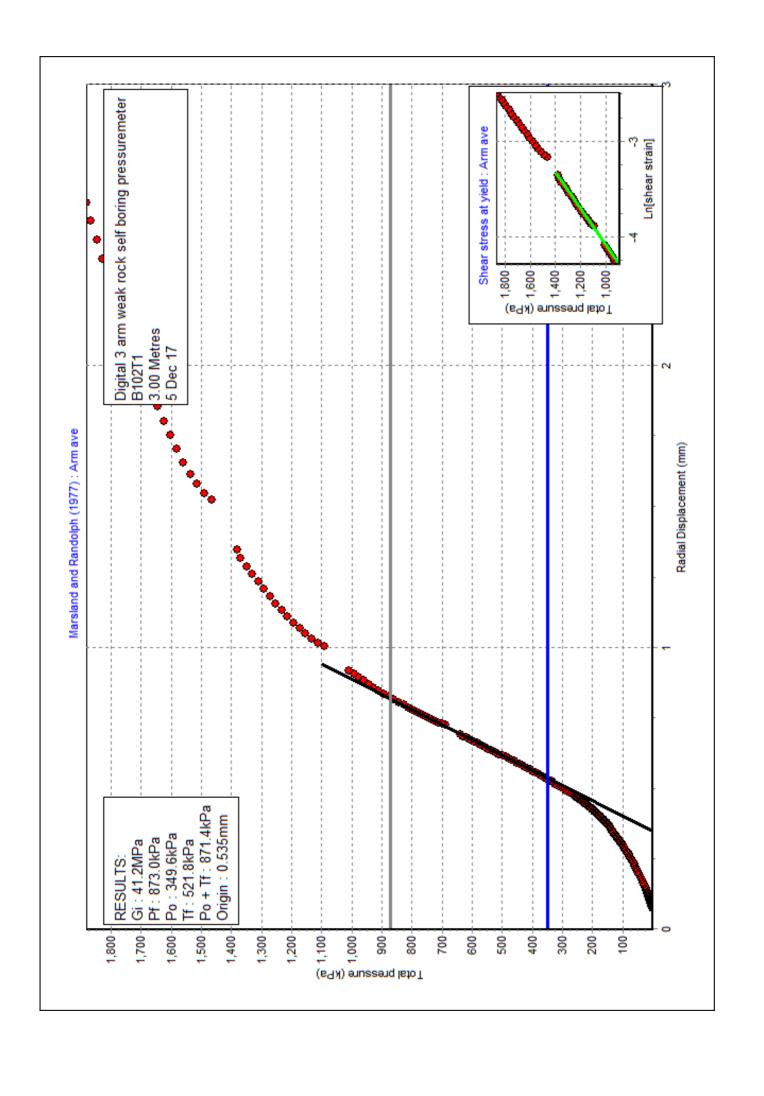
Gibson & Anderson 1961 - Cu (kPa) : "Arm ave=548.7" Jefferies 1988 - Cu (kPa) "Arm ave=3226" "Arm ave=269.2" Undrained yield stress (kPa) "Arm ave=873.0"

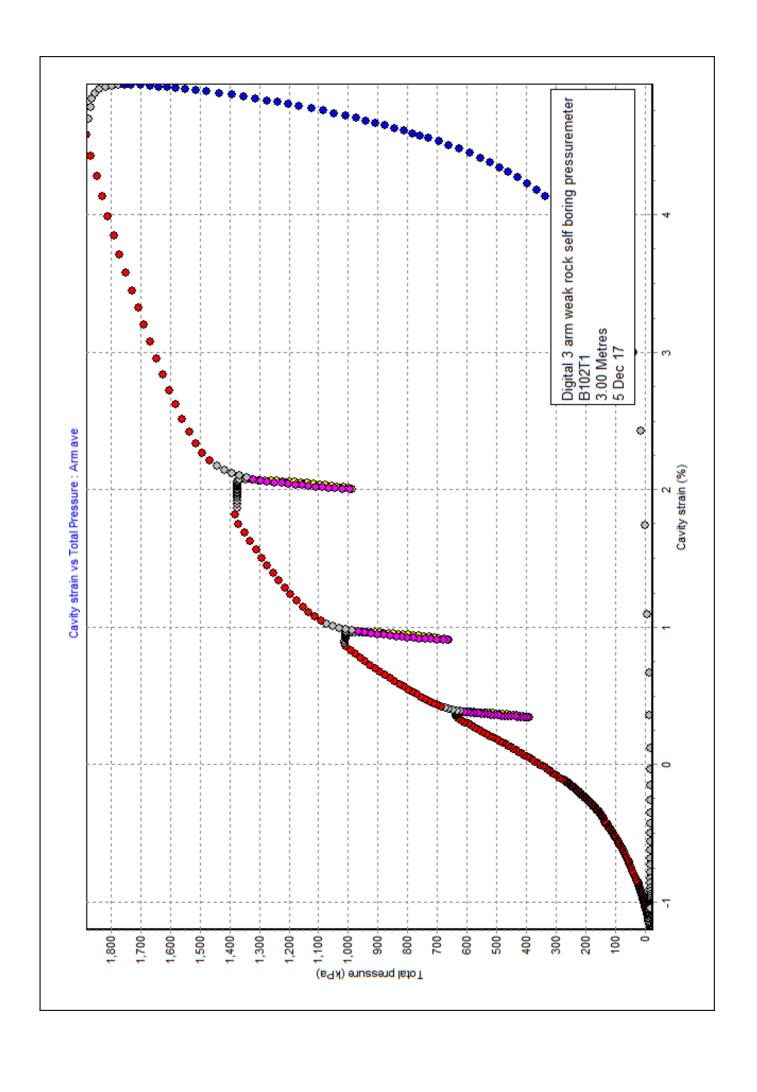
[LINEAR INTERPRETATION OF SHEAR MODULUS G]

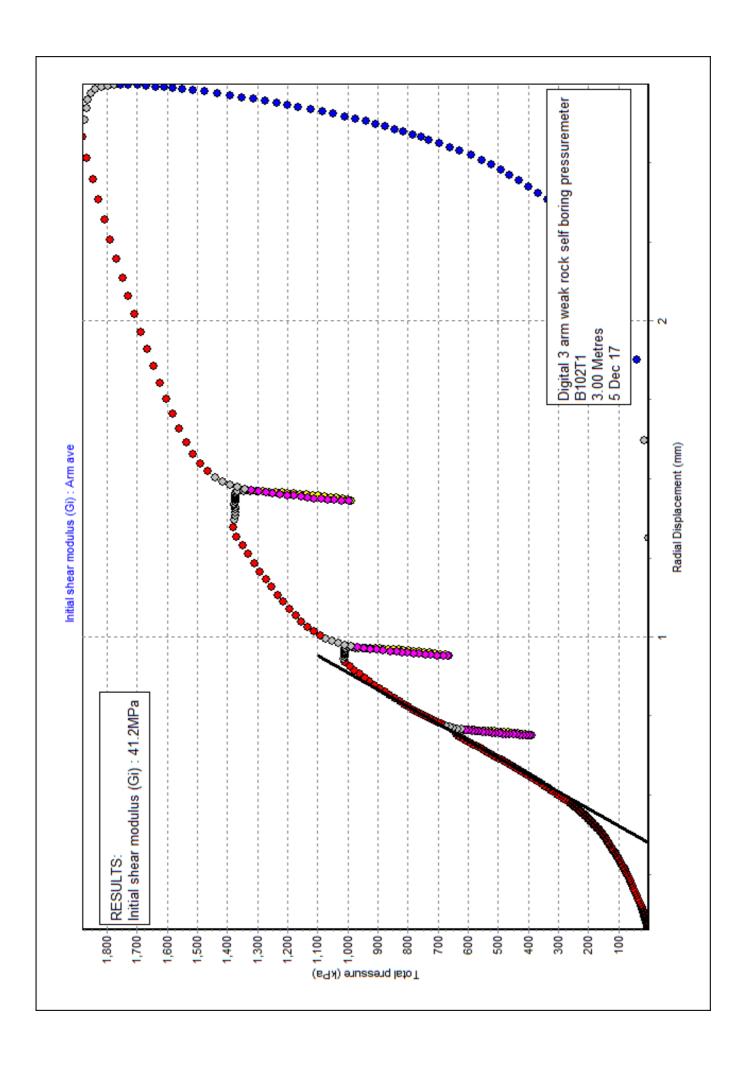
Initial slope shear modulus (MPa) : "Arm ave=41.2" Loop Value Mean Strain Mean Pc dE
No (MPa) (%) (kPa) (%)
1 278.3 0.368 493 0.0
2 254.9 0.940 803 0.1
3 248.4 2.042 1142 0.1 dPc Axis (kPa) (%) 493 0.075 (kPa) 1 2 3 209 Arm ave 0.110 Arm ave 281 25a. 248.4 Arm ave 299

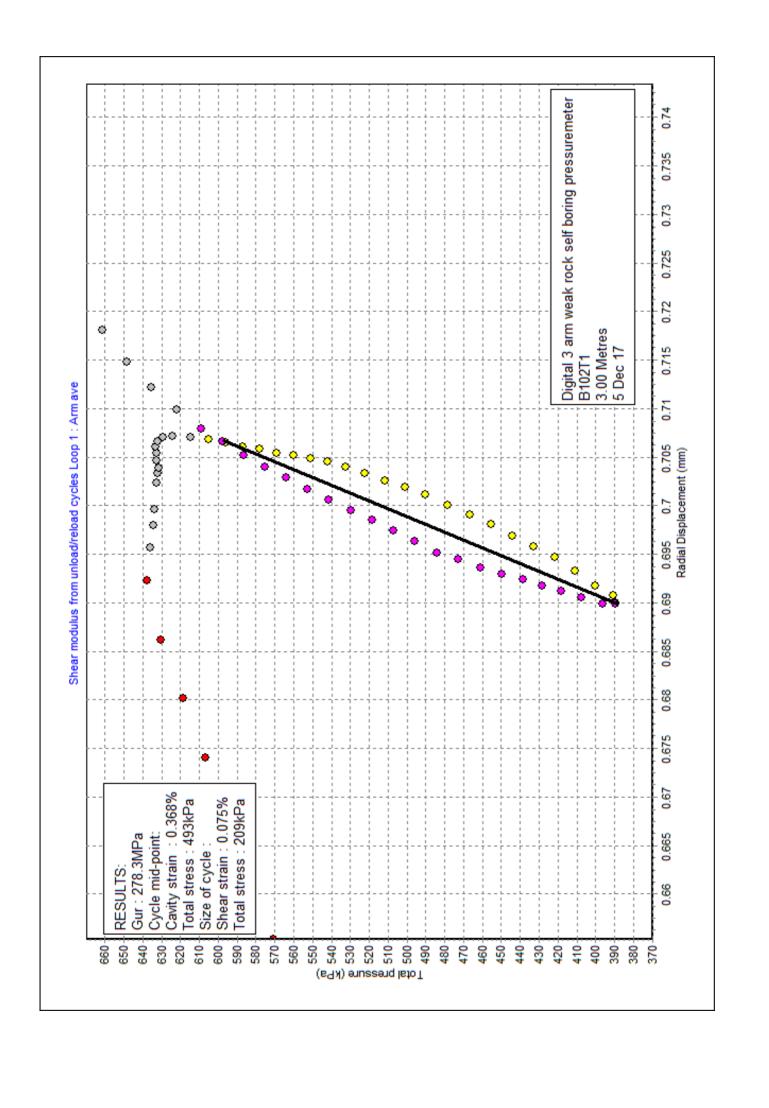
[UNDRAINED	NON	LINEAR	INTERP	RETATION	OF	SECANT	SHEAR	MODULUS]
Axis	Loop	o Inte	ercept	Alpha		Gradier	nt	

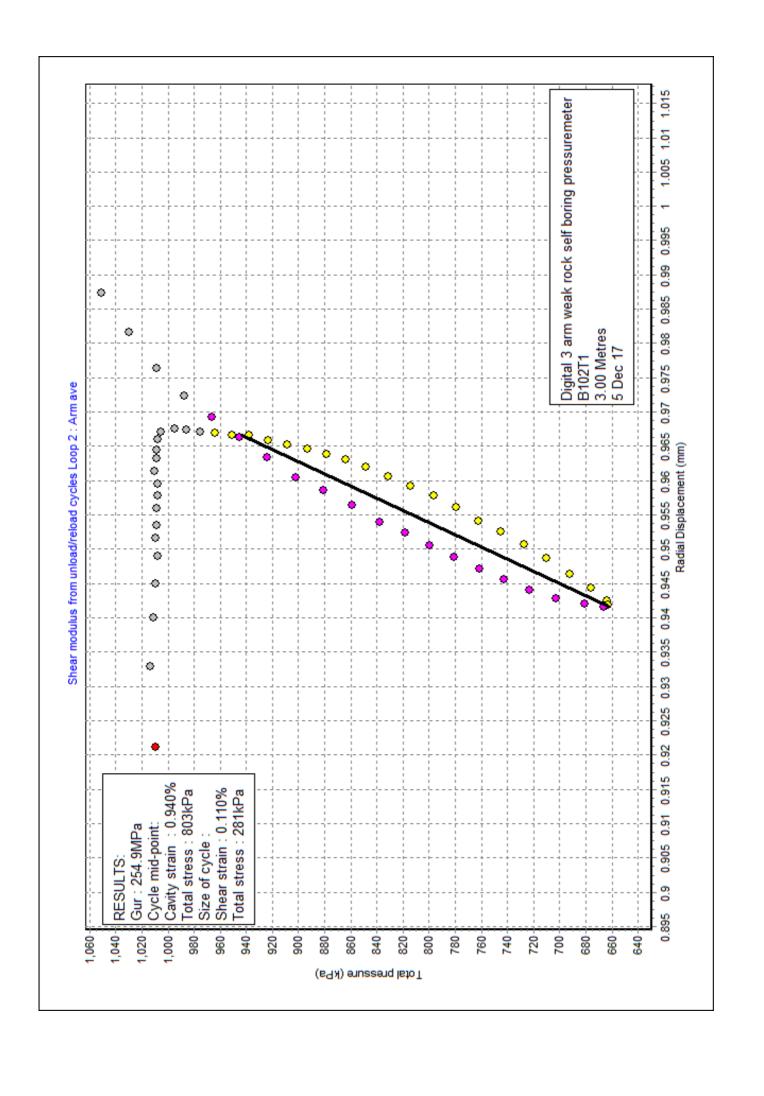
Axıs	Loop	Intercept	Alpha	Gradie
	No	(MPa)	(MPa)	
Arm ave	1	47.444	35.739	0.753
Arm ave	2	27.431	18.447	0.672
Arm ave	3	25.541	16.927	0.663

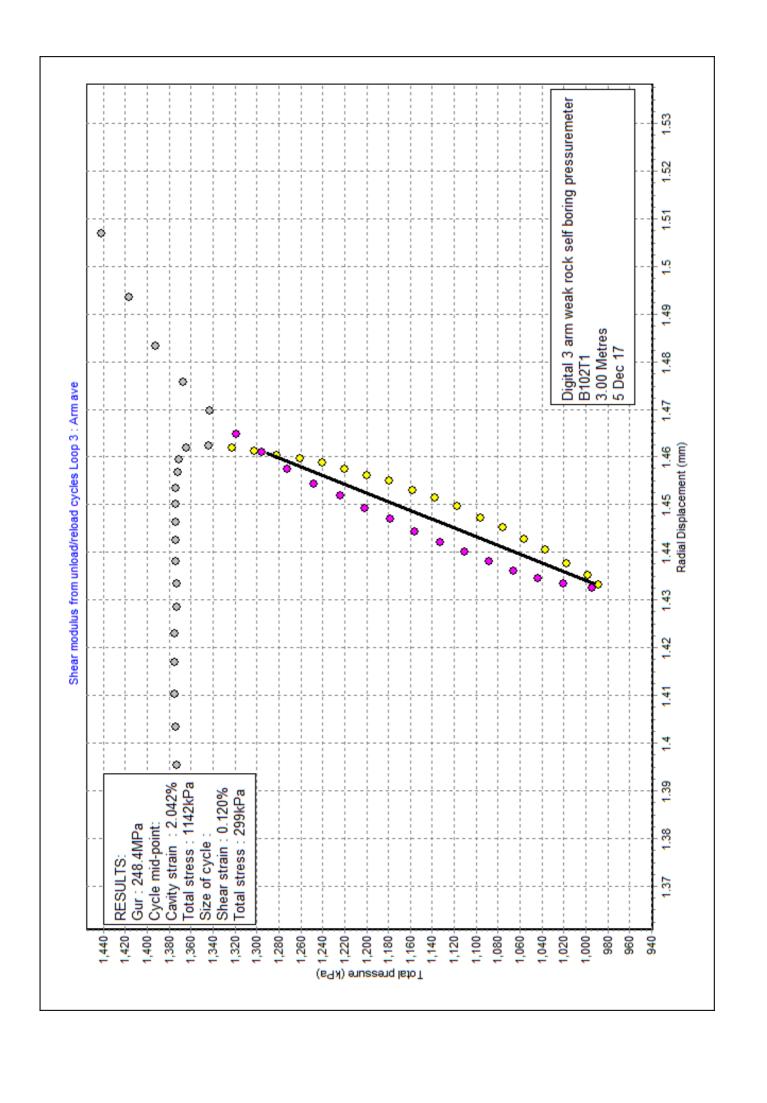


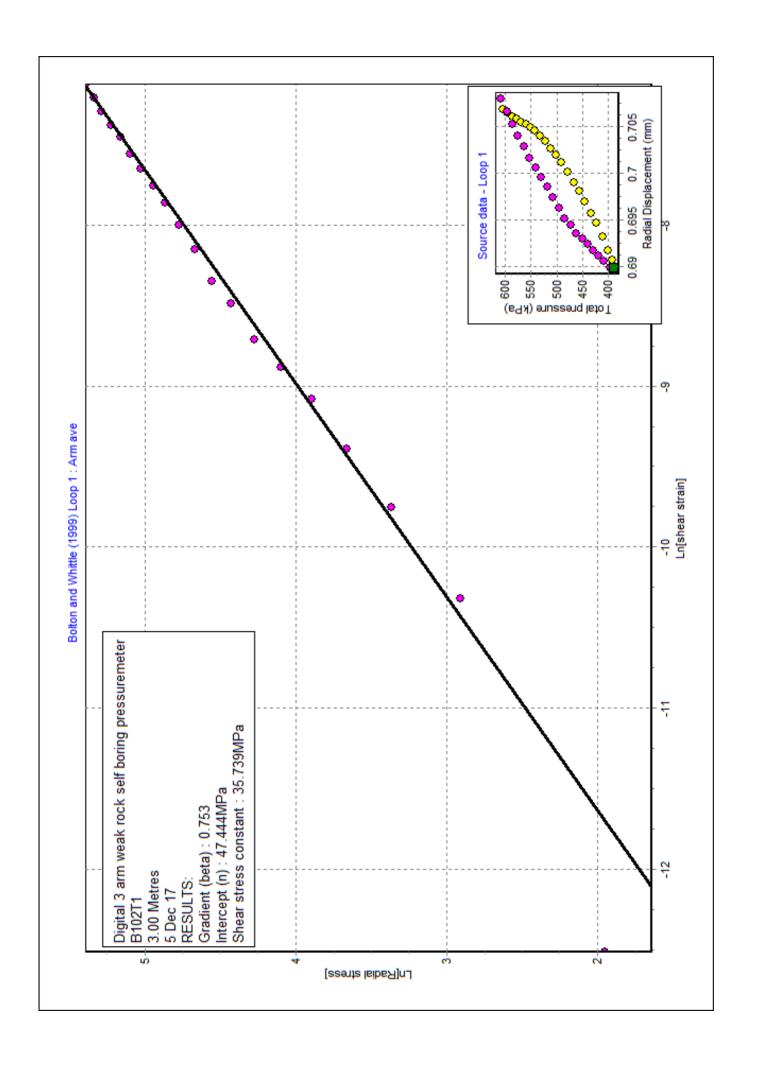


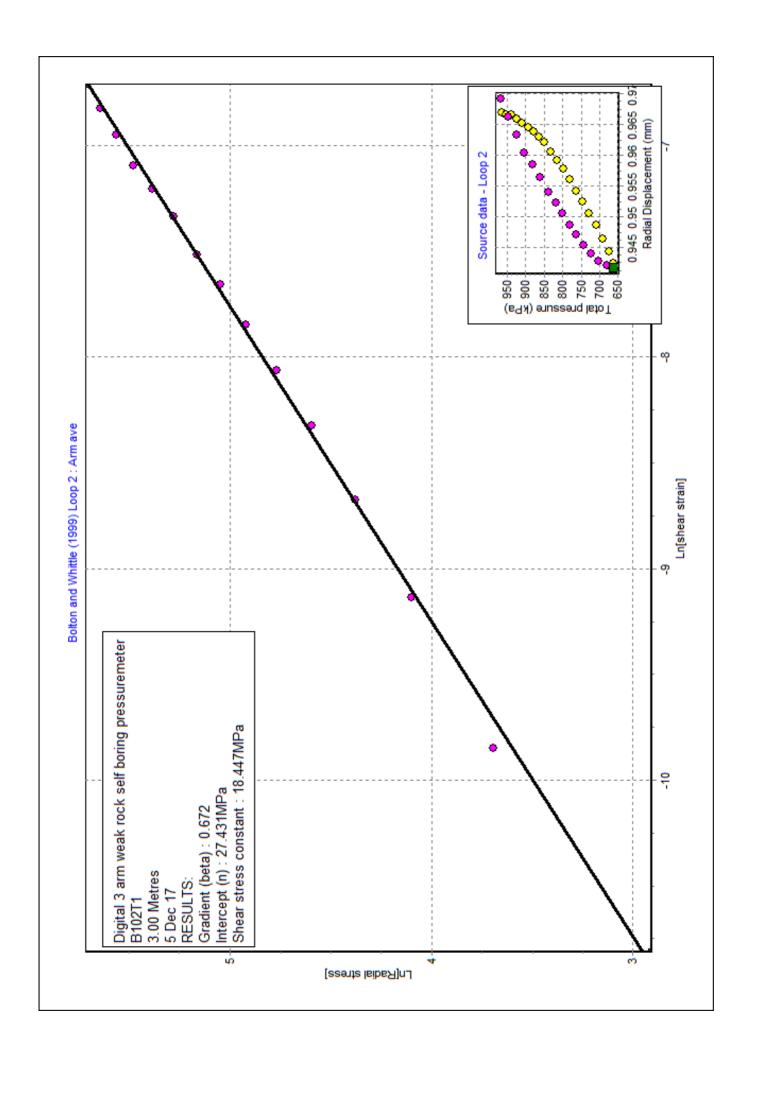


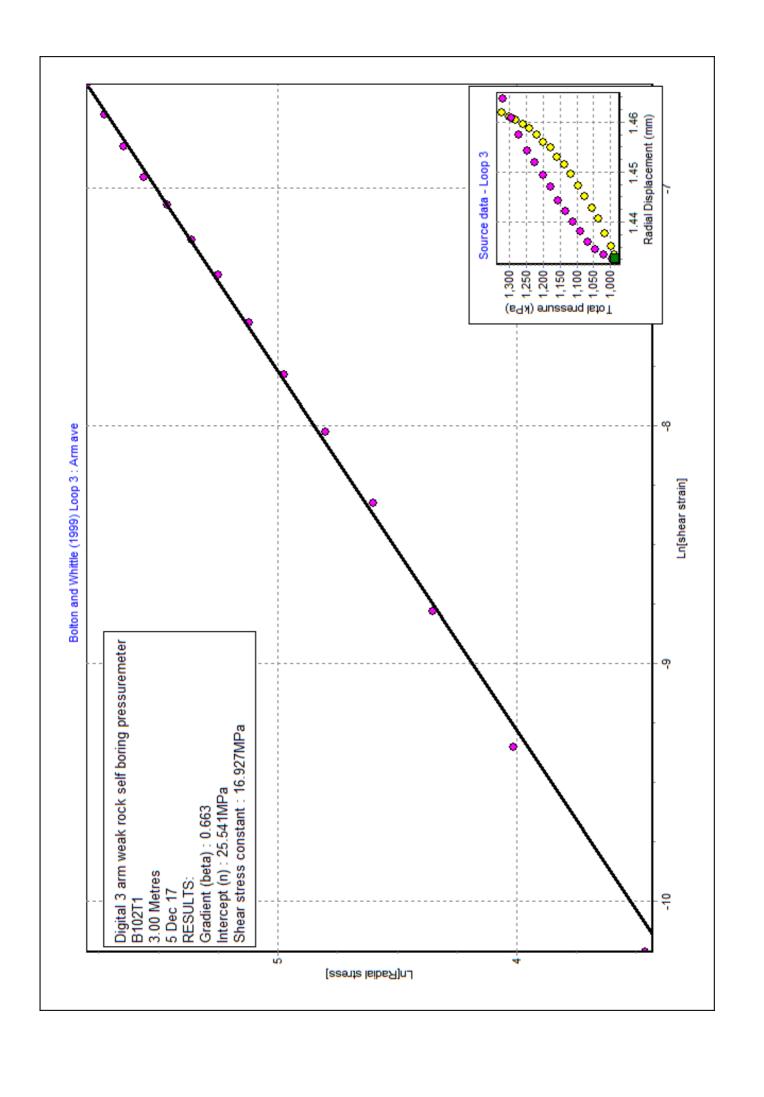


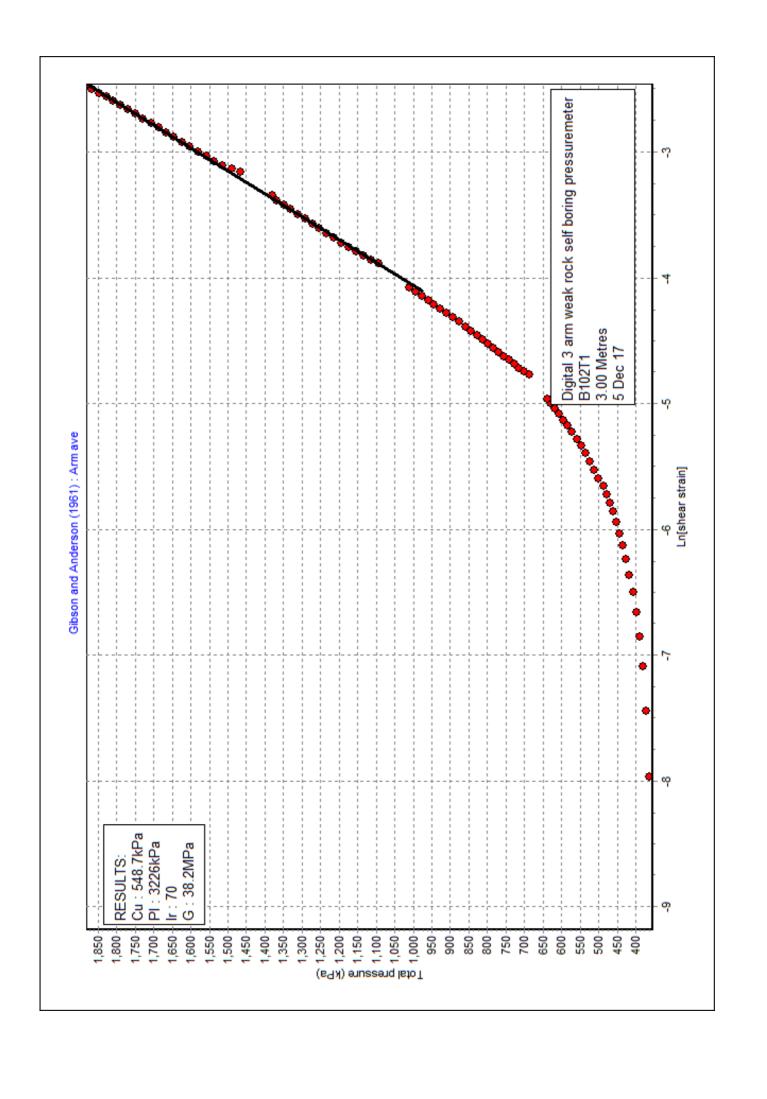


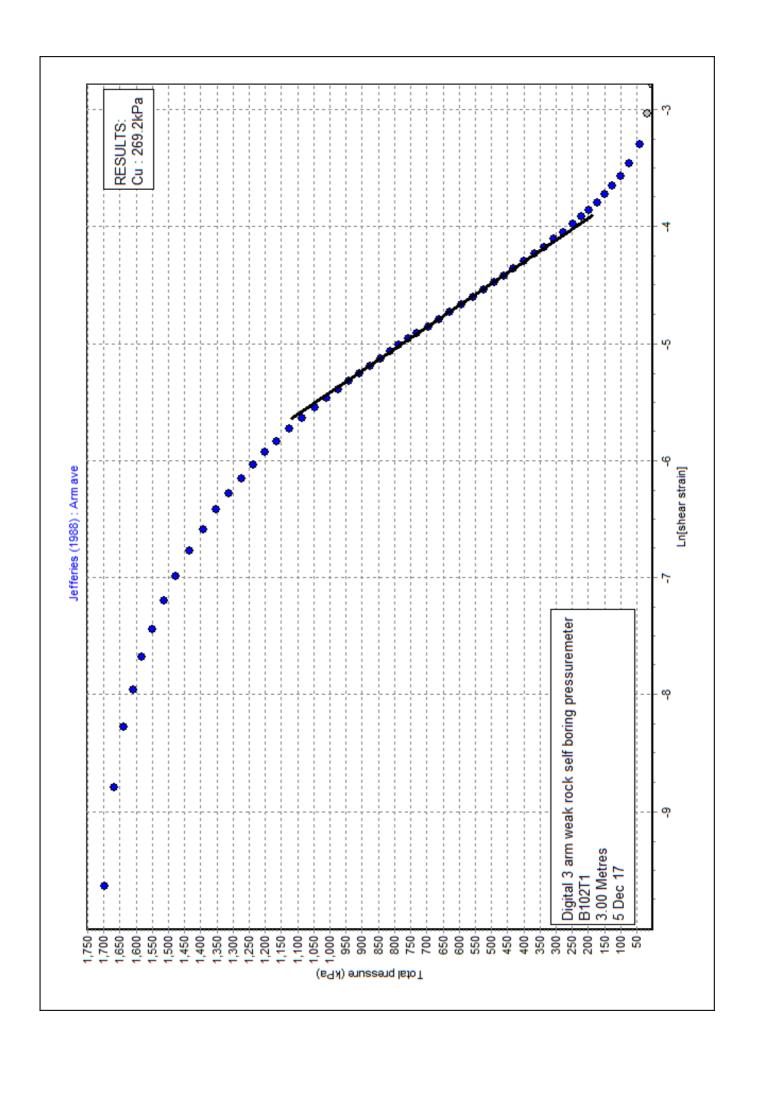












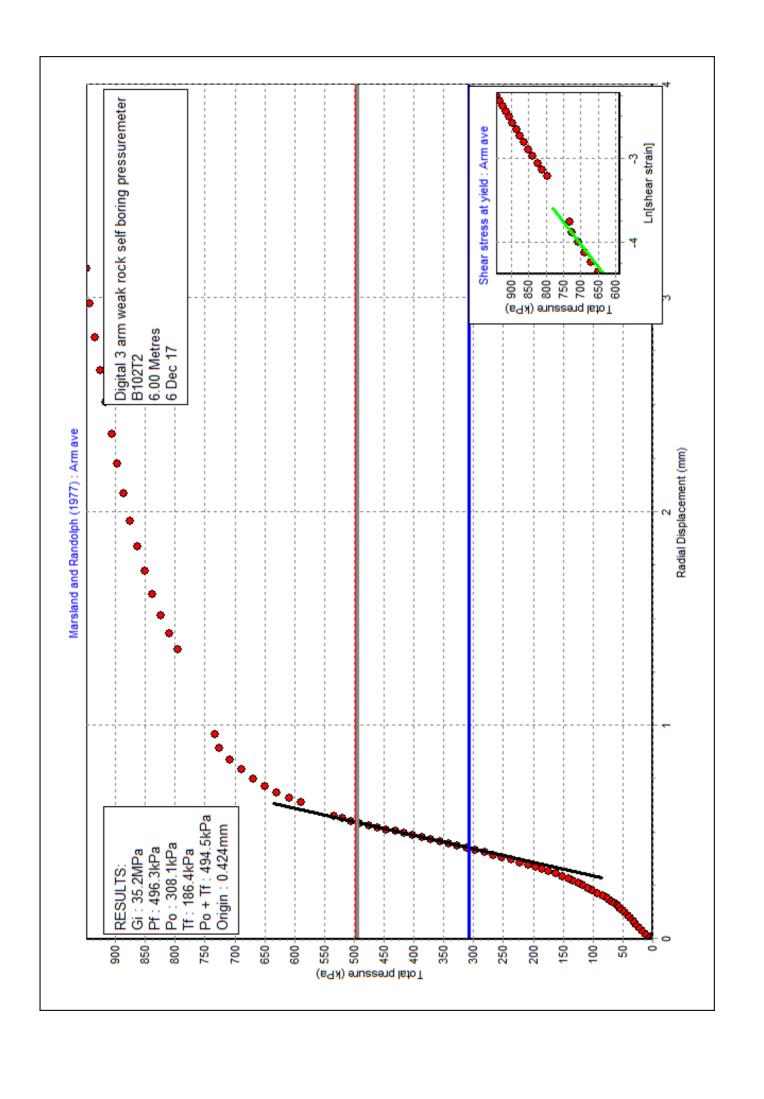
B102T2 - SUMMARY OF RESULTS [File made with WinSitu Version 1.4.1.1] [DETAILS OF TEST] A7102-17 Project : Site West Burton CD Power Station Site : West Burton Borehole : BH102 Test name : B102T2 Test date : 6 Dec 17 Test depth : 6.00 Metres Water table : 0.00 Metres Ambient PWP : 58.9 kPa Material : DFA Material PFA : Digital 3 arm weak rock self boring pressuremeter Probe Probe : Digital Diameter : 88.4 mm Data analysed using average arm displacement curve A non-linear analysis of the rebound cycles has been carried out Analysed by on 6 Dec 17 Remarks: [RESULTS FOR CAVITY REFERENCE PRESSURE] Strain Origin (mm) "Arm ave=0.412" "Arm ave=308.1" Po from Marsland & Randolph (kPa) : Best estimate of Po (kPa) "Arm ave=291.0" [UNDRAINED STRENGTH PARAMETERS] Gibson & Anderson 1961 - Cu (kPa) : "Arm ave=145.4" Jefferies 1988 - Cu (kPa) "Arm ave=1268" "Arm ave=128.8" Undrained yield stress (kPa) "Arm ave=496.3" [LINEAR INTERPRETATION OF SHEAR MODULUS G]

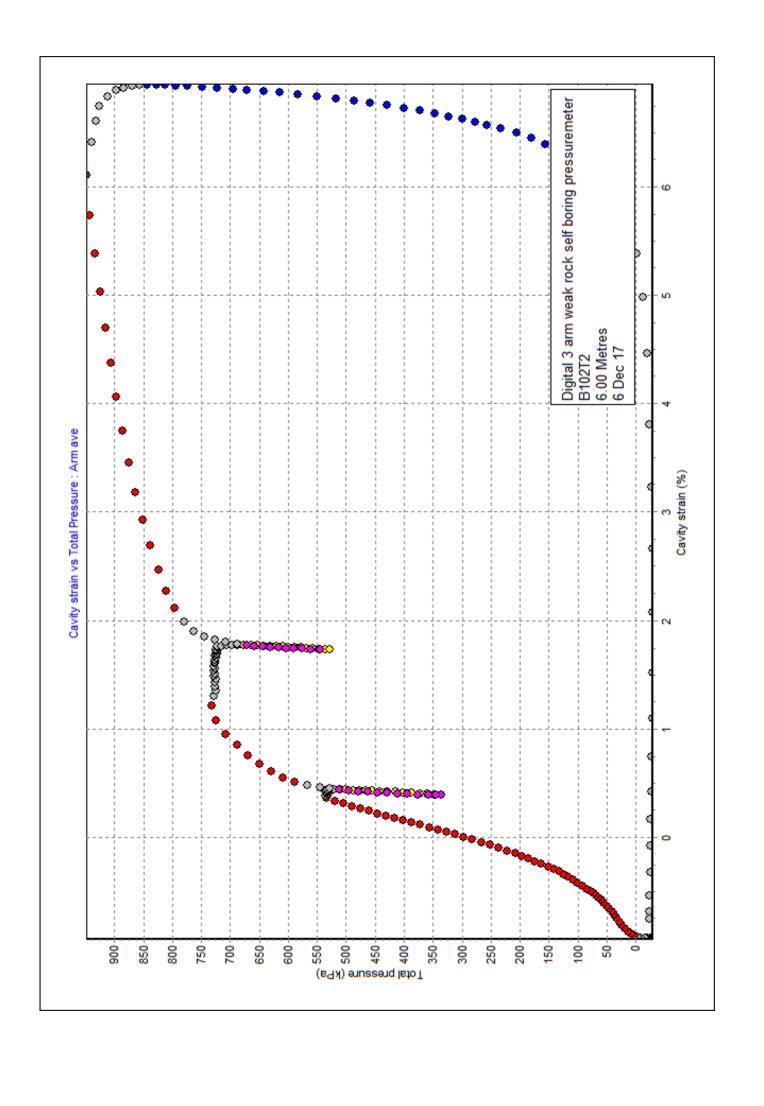
Initial slope shear modulus (MPa) : "Arm ave=35.2"

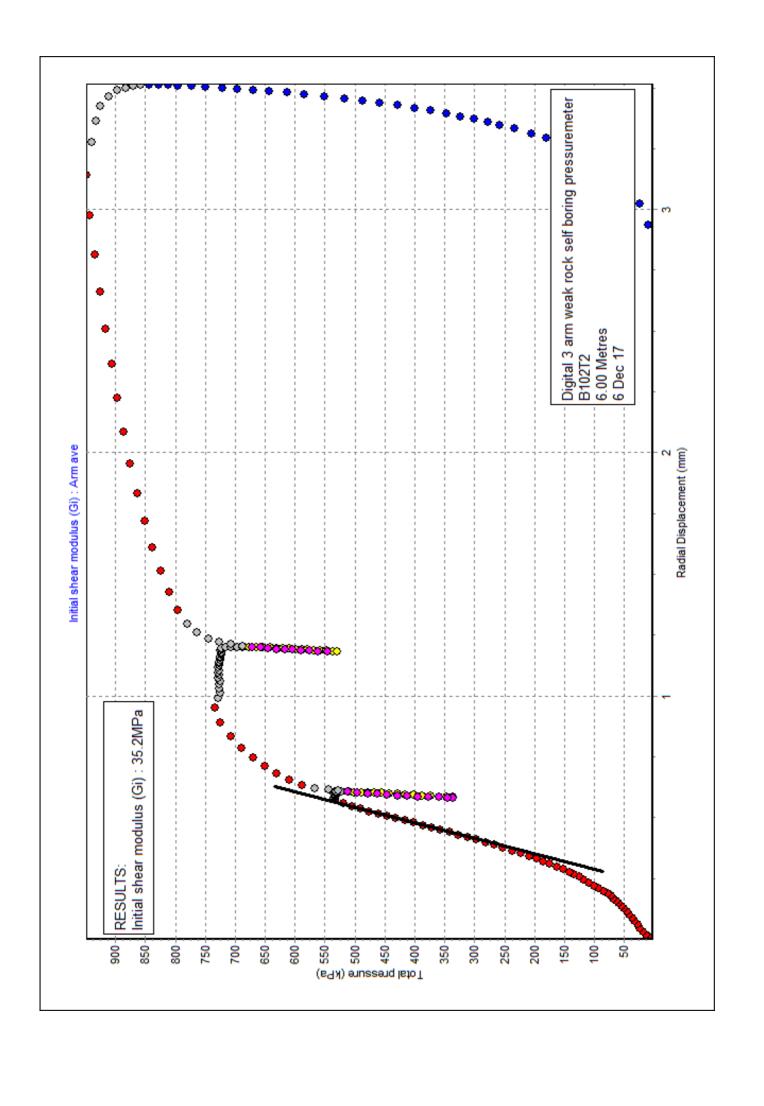
Axis	Loop	Value	Mean Strain	Mean Pc	dE	dPc
	No	(MPa)	(%)	(kPa)	(%)	(kPa)
Arm ave	1	171.5	0.422	423	0.102	175
Arm ave	2	164.9	1.757	597	0.082	136

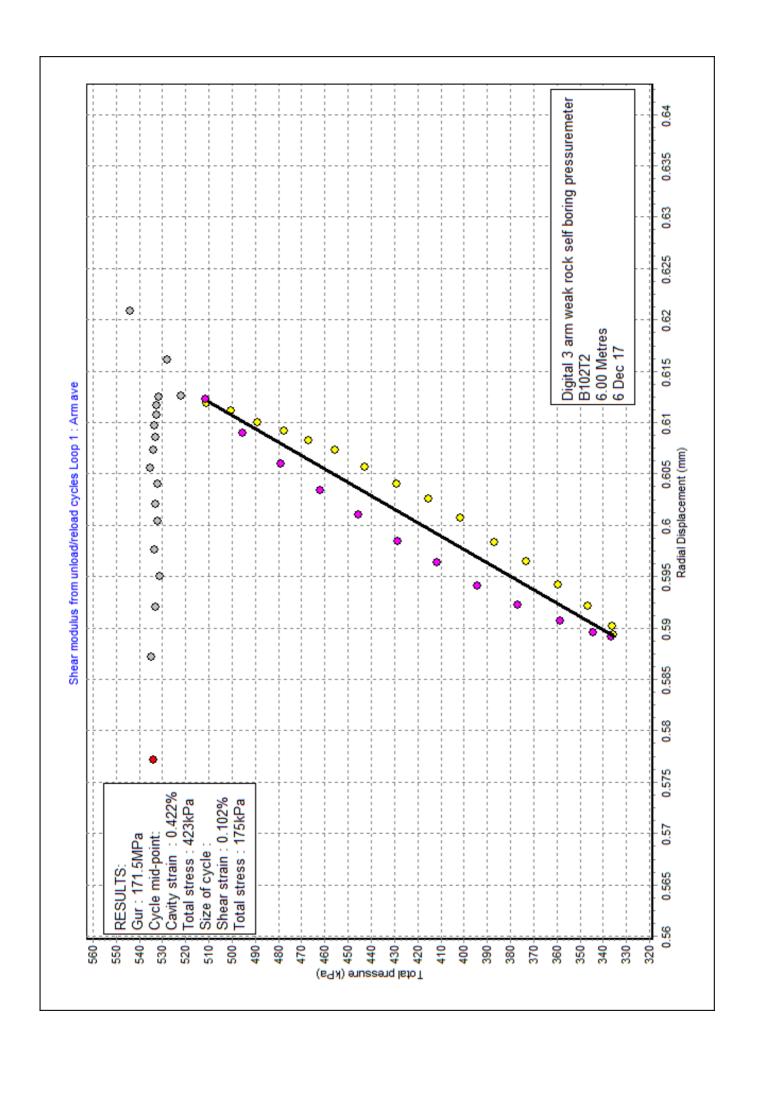
[UNDRAINED NON LINEAR INTERPRETATION OF SECANT SHEAR MODULUS]

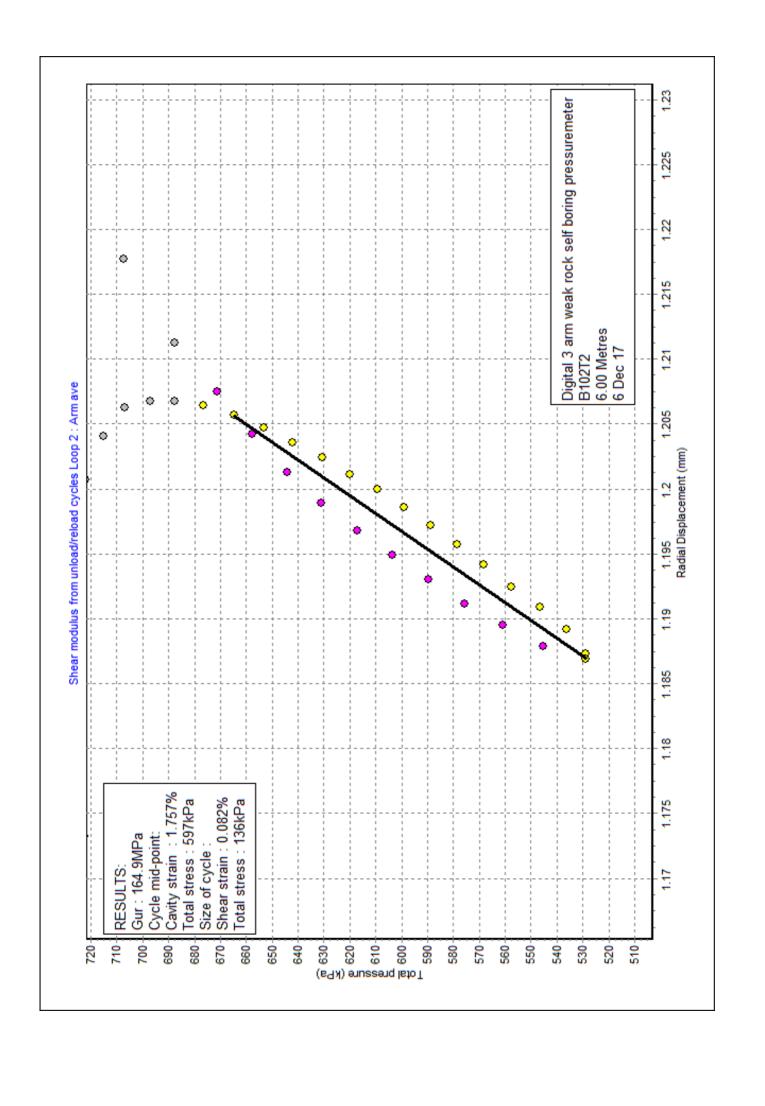
Axis	Loop	Intercept	Alpha	Gradien
	No	(MPa)	(MPa)	
Arm ave	1	27.927	20.502	0.734
Arm ave	2	22.640	16.291	0.720

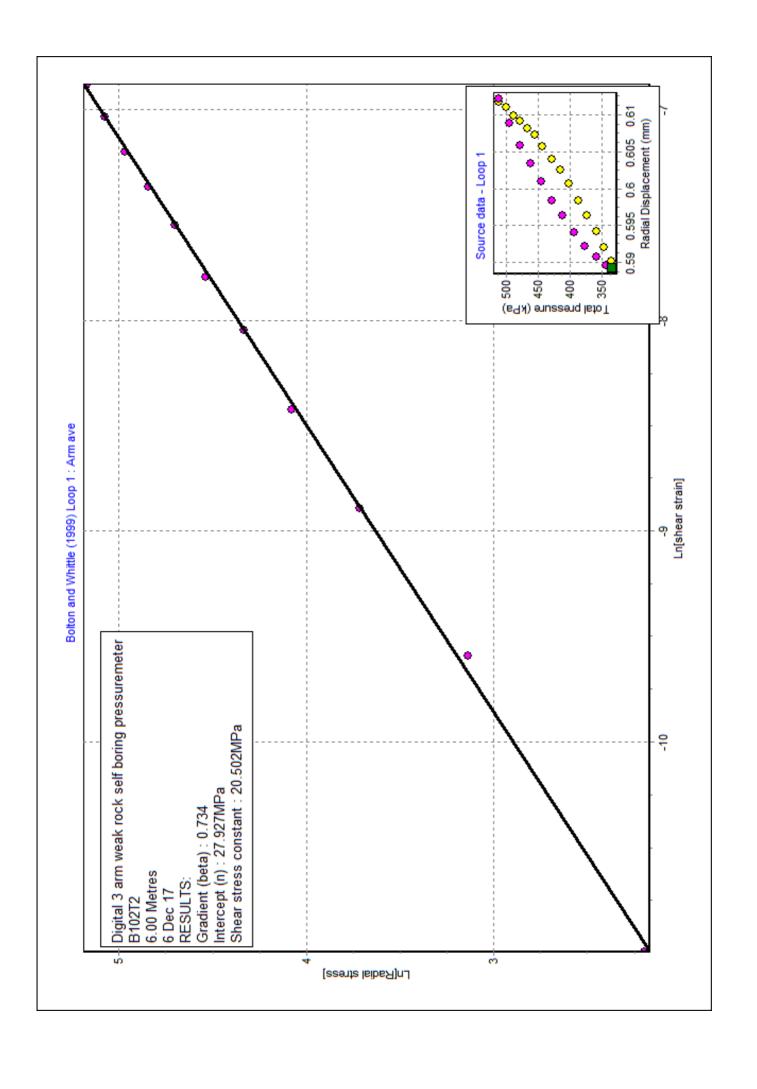


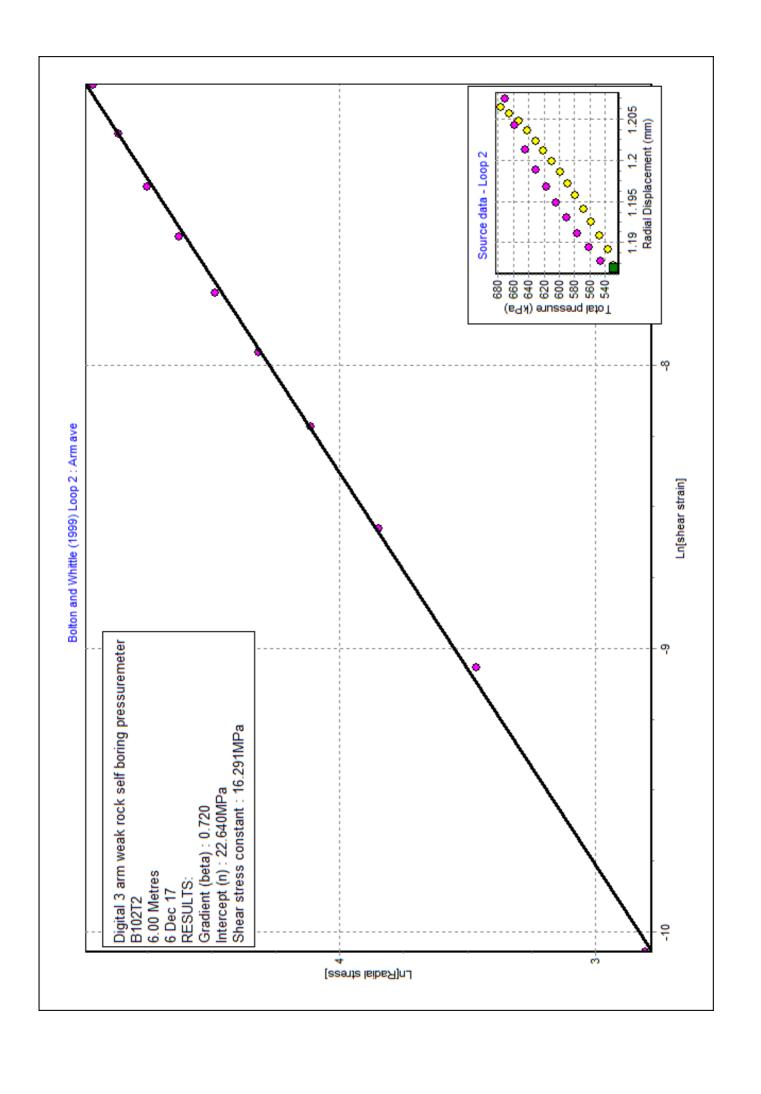


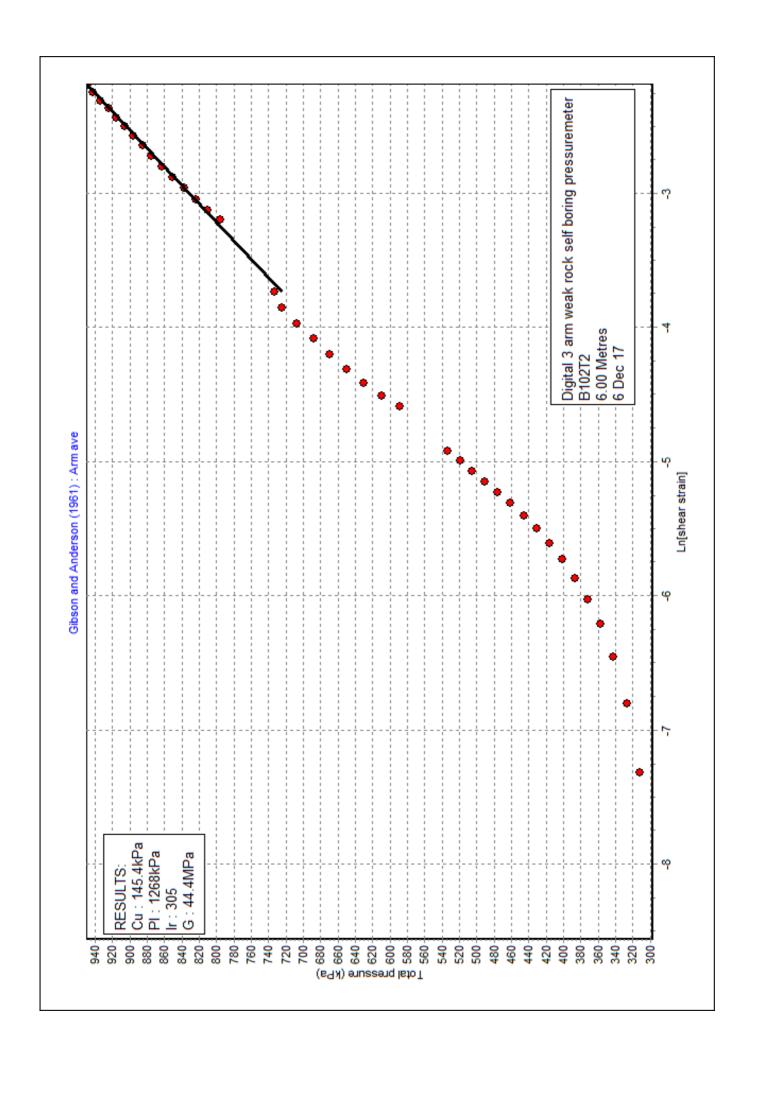


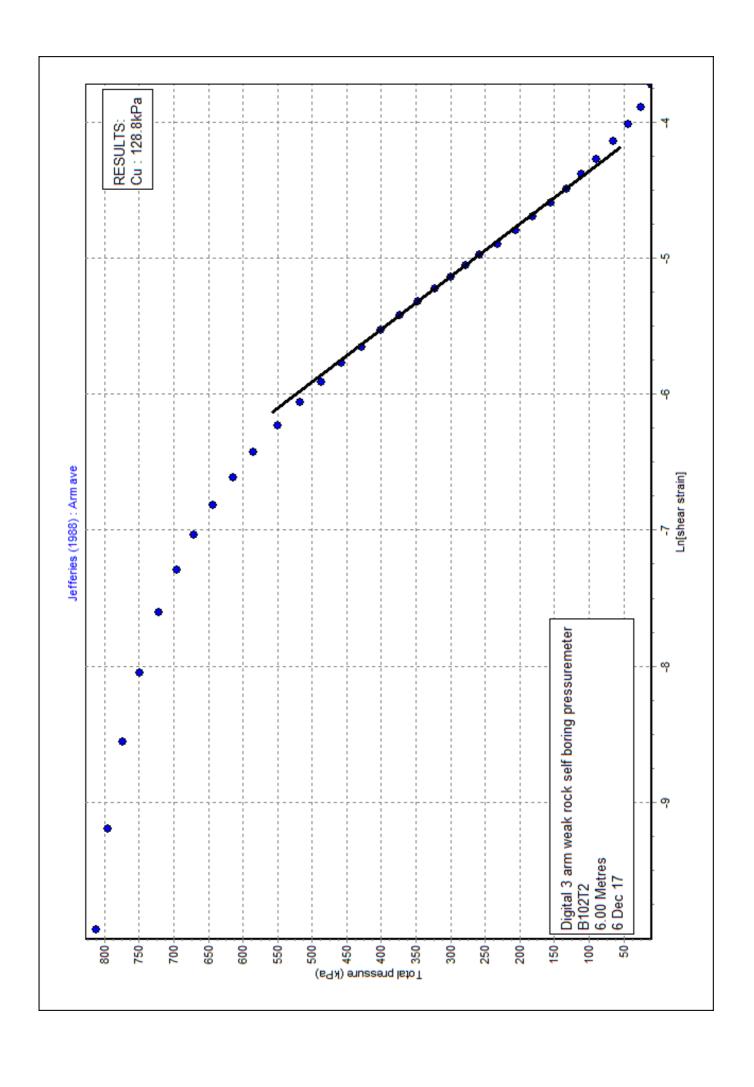










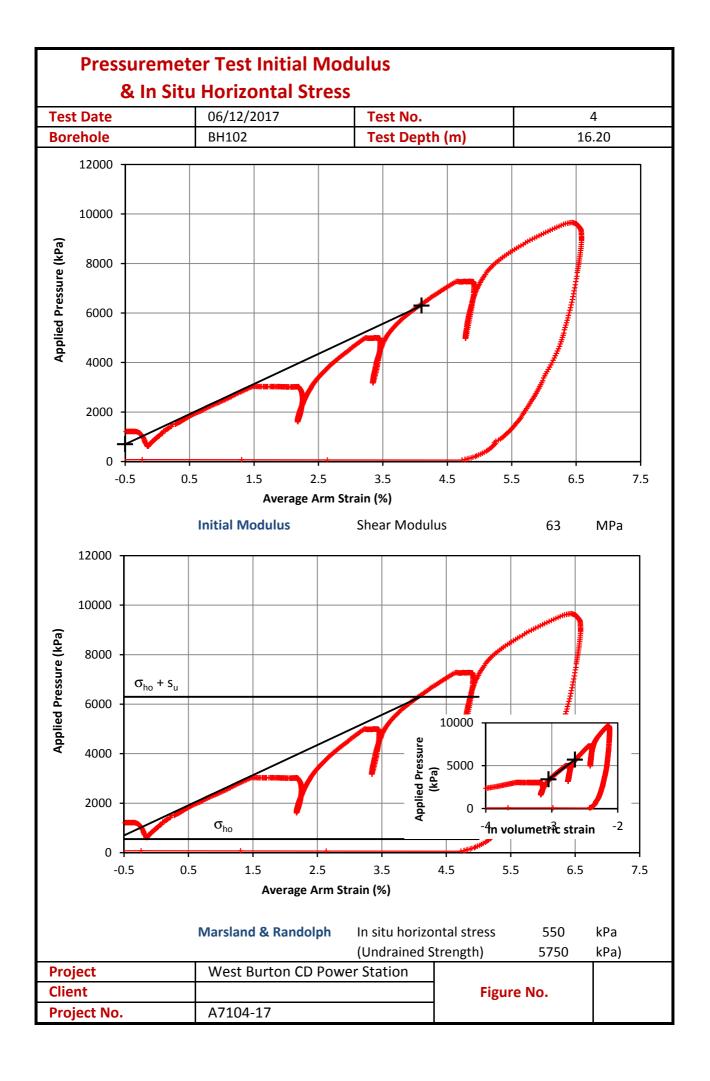


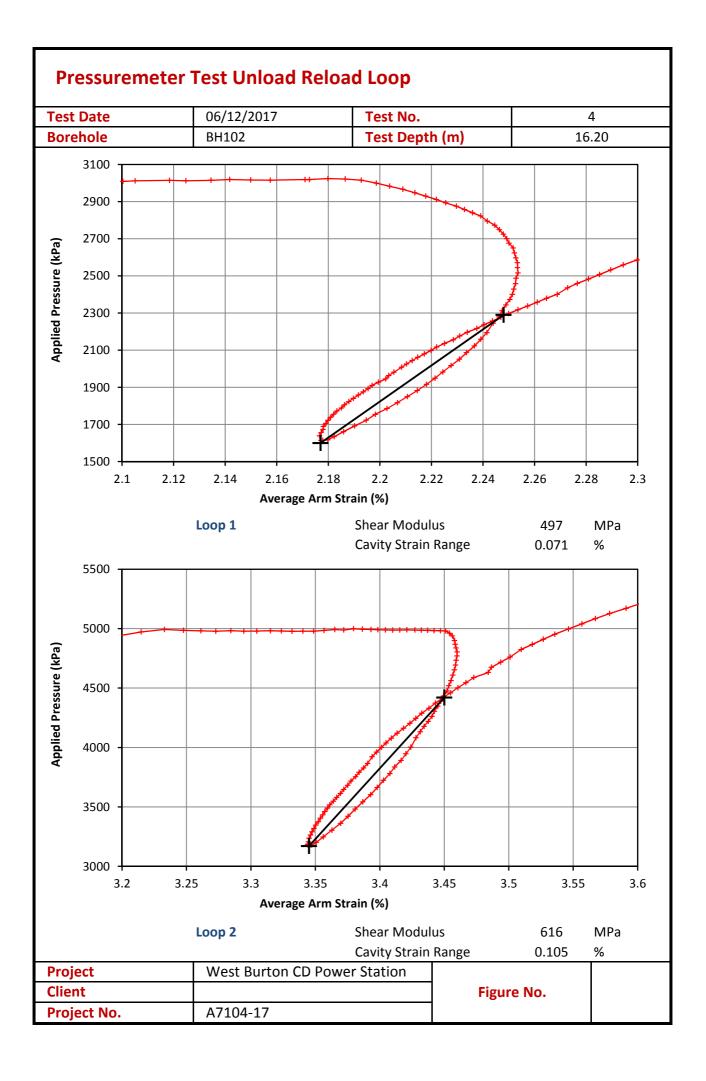
Pressuremeter Test Overview 06/12/2017 **Test Date** Test No. 4 **Borehole** BH102 Test Depth (m) 16.20 12000 Arm 1 10000 -Arm 2 -Arm 3 Applied Pressure (kPa) 8000 — Arm 4 -Arm 5 6000 -Arm 6 4000 2000 0 Arm Displacement (mm) 12000 10000 Applied Pressure (kPa) 8000 6000 4000 2000 0 -2 -6 Average Arm Strain (%)

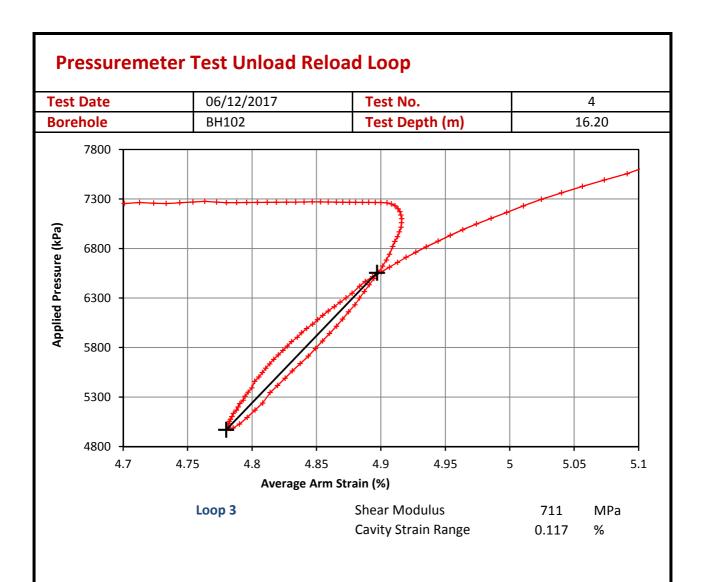
Comments

Marsland & Randolph analysis has been attempted, but concave form of test curve has made this analysis unrelaible and insitu horiz stress is estimated.

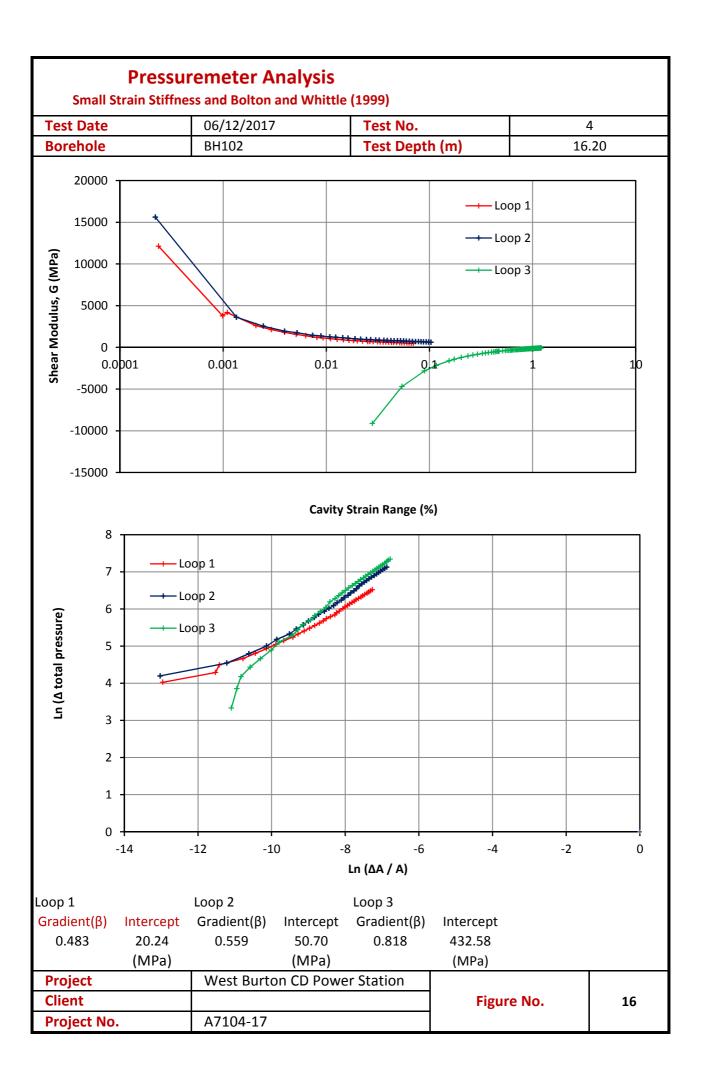
Project	West Burton CD Power Station		
Client		Figure No.	
Project No.	A7104-17		





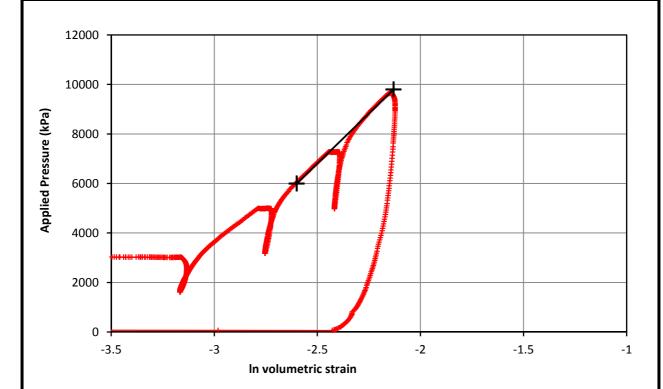


Project	West Burton CD Power Station
Client	
Project No.	A7104-17



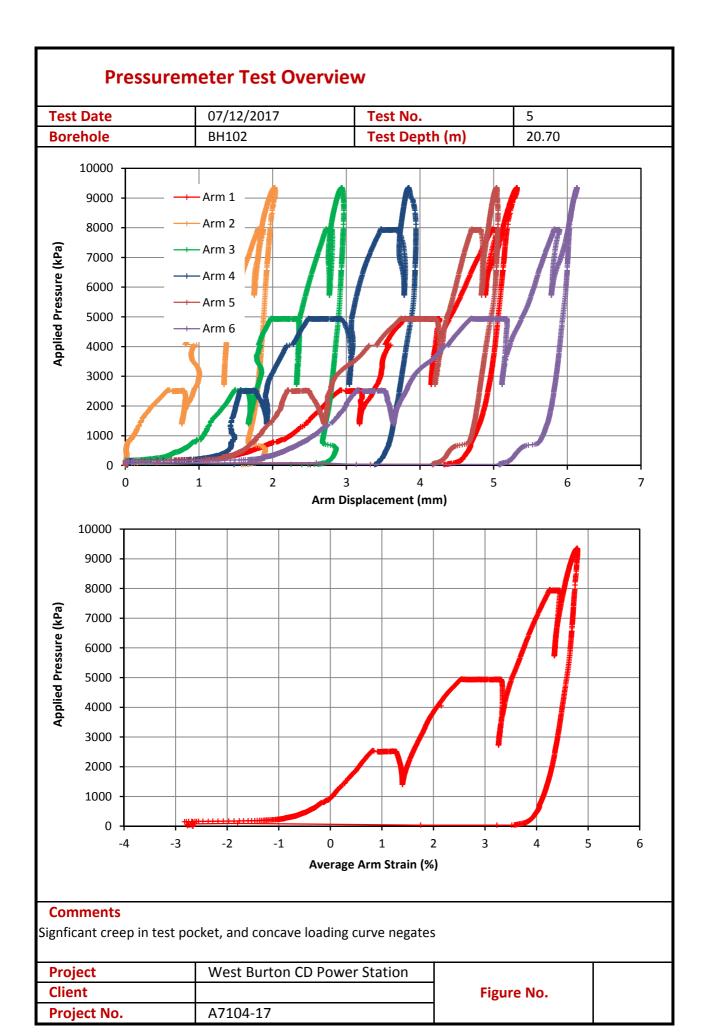
Pressuremeter Test - Strength

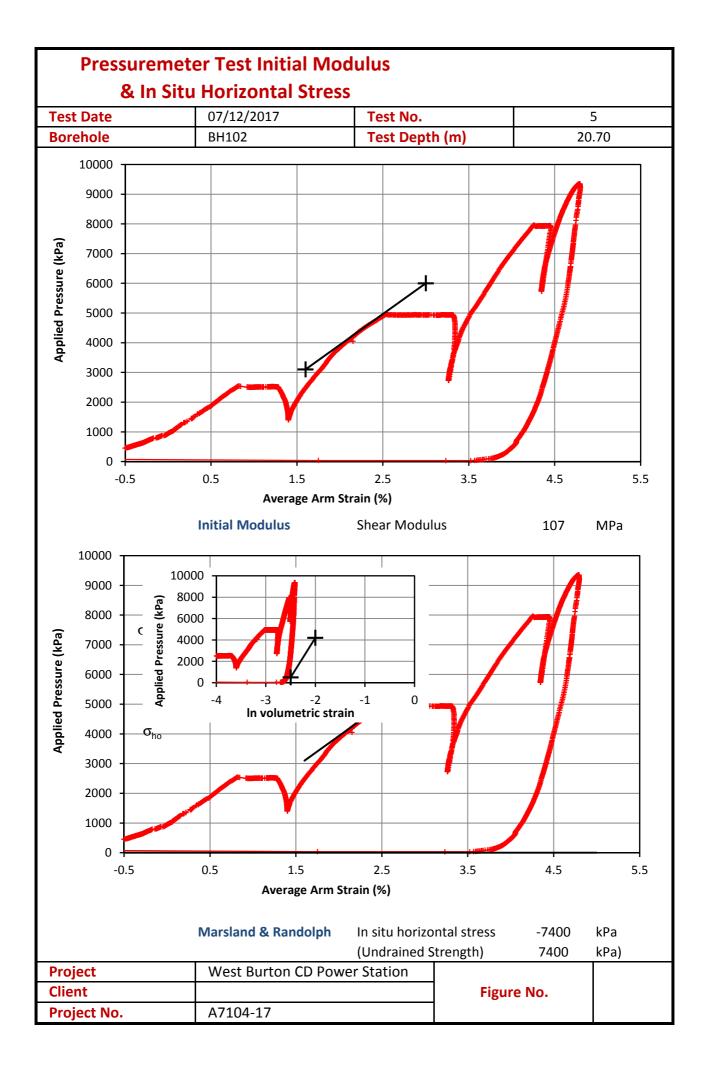
Test Date	06/12/2017	Test No.	4
Borehole	BH102	Test Depth (m)	16.20

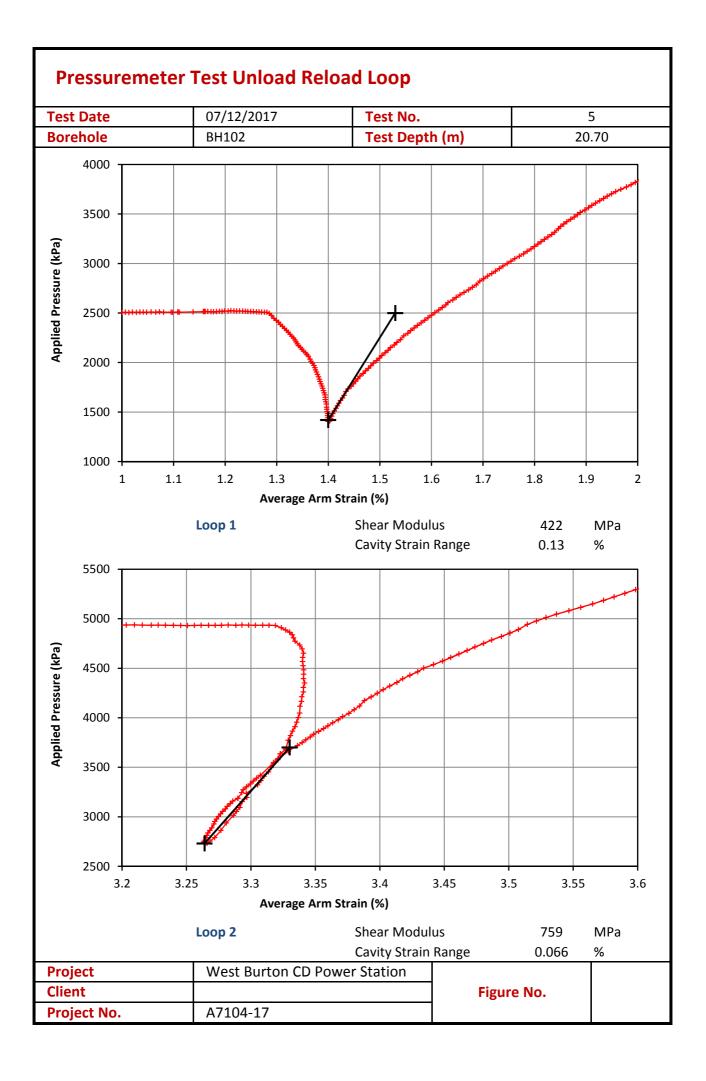


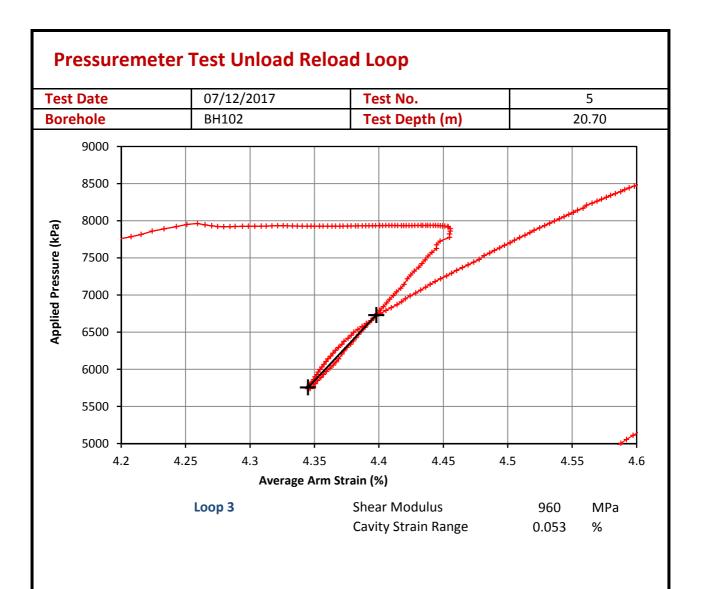
Strongth	Undrained Shear	8085 kPa
Strength	Limit Pressure	27021 kPa

Project	West Burton CD Power Station	
Client		
Project No.	A7104-17	

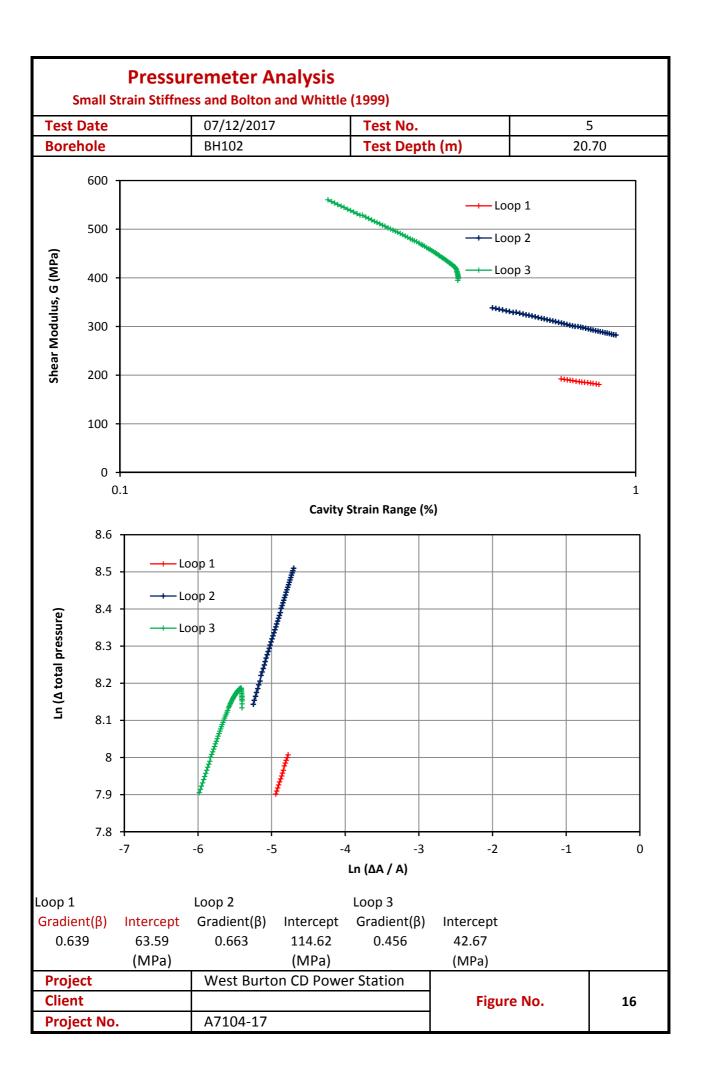








Project	West Burton CD Power Station
Client	
Project No.	A7104-17



Pressuremeter Test - Strength

Test Date	07/12/2017	Test No.	5
Borehole	BH102	Test Depth (m)	20.70



Strength	Undrained Shear	17200 kPa
	Limit Pressure	51440 kPa

Project	West Burton CD Power Station
Client	
Project No.	A7104-17

West Burton C (Gas Fired Generating Station)/Document Ref. 5.2 Environmental Statement Vol II/PINS Ref. EN10088 Appendix 11B: West Burton C Ground Investigation Environmental Support and Sampling



Annex B Laboratory Testing Receipts



AECOM West One

Leeds LS1 1BA

Wellington Street

Exova Jones Environmental

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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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







Attention: Alex Freeman

Date: 3rd January, 2018

Your reference : WEST BURTON POWER STATION

Our reference : Test Report 17/20096 Batch 1

Location : West Burton Power Station

Date samples received: 6th December, 2017

Status: Final report

Issue: 2

Six samples were received for analysis on 6th December, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM

Reference: WEST BURTON POWER STATION
Location: West Burton Power Station

Location: West Burton Po Contact: Alex Freeman Report : Solid

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

Contact: Alex Freen 17/20096

	17/20000					 	 			
J E Sample No.	1-3	7-9	10-12	13-15	16-18					
Sample ID	WS111	WS107	BH102	WS111	BH103					
Depth	1.00	0.50	2.20	4.00	0.50			Di		-t fII
COC No / misc									otes for all cronyms	
Containers		VID	VIB	VIB	VJB					
		VJB	VJB	VJB						
Sample Date		05/12/2017	05/12/2017	05/12/2017	05/12/2017					
Sample Type	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1			LOD/LOR	Units	Method
Date of Receipt	06/12/2017	06/12/2017	06/12/2017	06/12/2017	06/12/2017					No.
Antimony	7	4	7	8	7			<1	mg/kg	TM30/PM15
Arsenic **M	105.7	44.4	158.8	141.4	126.6			<0.5	mg/kg	TM30/PM15
Barium #M	594	365	328	349	624			<1	mg/kg	TM30/PM15
Beryllium Cadmium **M	4.2 <0.1	2.3 0.4	3.7 <0.1	4.2 <0.1	4.4 <0.1			<0.5 <0.1	mg/kg	TM30/PM15 TM30/PM15
Chromium **M	89.2	52.4	64.2	64.1	59.3			<0.1	mg/kg mg/kg	TM30/PM15
Copper **M	79	49	89	95	85			<1	mg/kg	TM30/PM15
Iron	42560	35820	42550	40230	43810			<20	mg/kg	TM30/PM15
Lead #M	61	64	38	42	55			<5	mg/kg	TM30/PM15
Manganese #M	371	667	291	327	509			<1	mg/kg	TM30/PM15
Mercury *M	0.1	<0.1	<0.1	0.1	<0.1			<0.1	mg/kg	TM30/PM15
Molybdenum *M	7.1	3.5	5.0	6.0	5.4			<0.1	mg/kg	TM30/PM15
Nickel #M	63.6	42.7	55.5	65.9	63.5			<0.7	mg/kg	TM30/PM15
Selenium **M	3	1	3	4	5			<1	mg/kg	TM30/PM15
Vanadium Water Soluble Boron ***	130 26.4	71 4.9	113 15.9	129 14.4	122 10.6			<1 <0.1	mg/kg mg/kg	TM30/PM15 TM74/PM32
Zinc *M	78	120	62	71	90			<5	mg/kg	TM30/PM15
									99	
PAH MS										
Naphthalene #M	-	<0.04	-	-	0.05			<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	-	-	<0.03			<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	<0.05	-	-	<0.05			<0.05	mg/kg	TM4/PM8
Fluorene #M	-	<0.04	-	-	<0.04			<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	0.08	-	-	0.05			<0.03	mg/kg	TM4/PM8
Anthracene # Fluoranthene #M	-	<0.04 0.13	_	-	<0.04			<0.04	mg/kg mg/kg	TM4/PM8 TM4/PM8
Pyrene #	_	0.13	_	_	<0.03			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	0.10	-	-	<0.06			<0.06	mg/kg	TM4/PM8
Chrysene *M	-	0.08	-	-	<0.02			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	0.14	-	-	<0.07			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	0.06	-	-	<0.04			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene **M	-	<0.04	-	-	<0.04			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	-	-	<0.04			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	-	-	<0.04			<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	0.7	-	-	<0.6			<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene Benzo(k)fluoranthene	-	0.10	-	-	<0.05 <0.02			<0.05 <0.02	mg/kg mg/kg	TM4/PM8 TM4/PM8
PAH Surrogate % Recovery	-	75	-	-	108			<0.02	mg/kg %	TM4/PM8
Natural Moisture Content	20.5	21.4	17.6	19.6	15.0			<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	<0.6	2.9	<0.6	<0.6			<0.6	mg/kg	TM38/PM20
Chloride #M	-	79	5	7	5			<2	mg/kg	TM38/PM20
Fluoride	-	1.5	<0.3	<0.3	<0.3			<0.3	mg/kg	TM173/PM20

Client Name: AECOM

Reference: WEST BURTON POWER STATION
Location: West Burton Power Station

Location: West Burton Po Contact: Alex Freeman Report : Solid

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

Contact: Alex Freem JE Job No.: 17/20096

JE Job No.:	17/20096					 	 		-				
J E Sample No.	1-3	7-9	10-12	13-15	16-18								
Sample ID	WS111	WS107	BH102	WS111	BH103								
Depth	1.00	0.50	2.20	4.00	0.50				Please se	e attached n	otes for all		
COC No / misc									abbreviations and acronyms				
Containers	VJB	VJB	VJB	VJB	VJB								
Sample Date	05/12/2017	05/12/2017	05/12/2017	05/12/2017	05/12/2017								
Sample Type		Soil	Soil	Soil	Soil								
Batch Number		1	1	1	1				LOD/LOR	Units	Method No.		
Date of Receipt				06/12/2017									
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20 TM38/PM20		
Nitrate as NO3 Nitrite as NO2	-	29.2 0.46	<2.5 <0.05	<2.5 <0.05	<2.5 <0.05				<2.5 <0.05	mg/kg mg/kg	TM38/PM20		
Ortho Phosphate as PO4	-	0.4	<0.3	<0.3	2.0				<0.3	mg/kg	TM38/PM20		
Sulphate as SO4 (2:1 Ext) #M	-	0.4837	1.4336	1.4839	0.2060				<0.0015	g/l	TM38/PM20		
Chromium III	89.2	52.4	64.2	64.1	59.3				<0.0015	mg/kg	NONE/NONE		
Cirronium III	05.2	JZ.4	04.∠	O4.1	39.3				νυ.σ	mg/kg			
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	mg/kg	TM89/PM45		
Total Organic Carbon [#]	6.56	2.90	3.17	3.65	4.81				<0.02	%	TM21/PM24		
Sulphide	-	<10	<10	<10	<10				<10	mg/kg	TM106/PM119		
Total Alkalinity as CaCO3	-	580	320	320	330				<10	mg/kg	TM75/PM58		
рН ^{#М}	8.12	8.01	8.89	8.89	8.39				<0.01	pH units	TM73/PM11		
Sample Type	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand	Clayey Sand					None	PM13/PM0		
Sample Colour	Dark Grey	Dark Grey	Dark Grey	Dark Grey	Dark Grey					None	PM13/PM0		
Other Items	NA	NA	NA	NA	NA					None	PM13/PM0		

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

JE		0 1 15		JE	Date Of		
Job No.	Batch	Sample ID	Depth	Sample No.	Analysis	Analysis	Result
17/20096	1	WS111	1.00	3	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20096	1	WS107	0.50	9	18/12/2017	General Description (Bulk Analysis)	Soi/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20096	1	BH102	2.20	12	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20096	1	WS111	4.00	15	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20096	1	BH103	0.50	18	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20096	1	BH103	0.50	18	18/12/2017	Asbestos ACM	Unable to characterise
					18/12/2017	Asbestos ACM (2)	NAD
						Asbestos Type	NAD
						Asbestos Type (2)	NAD
						Asbestos Level Screen	NAD
					10/12/2011		

Exova Jones Environmental Notification of Deviating Samples

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
					No deviating sample report results for job 17/20096	

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20096

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

17/20096

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS Ref No. 4225) accredited - UK.
ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes



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

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Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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Attention: Alex Freeman

Date: 3rd January, 2018

Your reference :

Our reference : Test Report 17/20361 Batch 1

Location : West Barton Power Station

Date samples received: 9th December, 2017

Status: Final report

Issue: 2

Four samples were received for analysis on 9th December, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM

Reference: Location:

West Barton Power Station

Contact: Alex Freeman
JE Job No.: 17/20361

Report : Solid

								l .			
J E Sample No.	1-3	4-6	7-9	10-12							
Sample ID	WS108	WS108	WS109	BH101							
Depth	8.5	12.0	15.0	0.5				Please se	otes for all		
COC No / misc								Please see attached notes for abbreviations and acronyms			
Containers	VJB	VJB	VJB	VJB							
Sample Date	07/12/2017	07/12/2017	08/12/2017	08/12/2017							
Sample Type	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1				LOD/LOR	Units	Method No.	
Date of Receipt		09/12/2017	09/12/2017	09/12/2017							
Antimony	8	2	2	6				<1	mg/kg	TM30/PM15	
Arsenic #M	113.9	11.2	3.6	119.8				<0.5	mg/kg	TM30/PM15	
Barium #M	358 4.5	1.0	740 1.7	352 3.3				<1 <0.5	mg/kg	TM30/PM15 TM30/PM15	
Beryllium Cadmium ^{#M}	<0.1	<0.1	2.1	<0.1				<0.5	mg/kg mg/kg	TM30/PM15	
Chromium **M	69.2	30.7	88.8	62.9				<0.1	mg/kg	TM30/PM15	
Copper **M	87	11	20	80				<1	mg/kg	TM30/PM15	
Iron	36360	29620	31390	41630				<20	mg/kg	TM30/PM15	
Lead *M	46	12	<5	49				<5	mg/kg	TM30/PM15	
Manganese #M	349	699	217	412				<1	mg/kg	TM30/PM15	
Mercury #M	0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM30/PM15	
Molybdenum #M	5.4	1.5	5.9	3.3				<0.1	mg/kg	TM30/PM15	
Nickel #M	65.0	26.0	56.3	54.3				<0.7	mg/kg	TM30/PM15	
Selenium *M	4	<1	1	3				<1	mg/kg	TM30/PM15	
Vanadium	120	37	59	104				<1	mg/kg	TM30/PM15	
Water Soluble Boron ***	10.6	3.4	3.7	2.6				<0.1	mg/kg	TM74/PM32	
Zinc ^{#M}	62	64	88	87				<5	mg/kg	TM30/PM15	
PAH MS											
Naphthalene *M	_	_	_	<0.04				<0.04	mg/kg	TM4/PM8	
Acenaphthylene	-	-	-	<0.03				<0.03	mg/kg	TM4/PM8	
Acenaphthene #M	-	-	-	<0.05				<0.05	mg/kg	TM4/PM8	
Fluorene #M	-	-	-	<0.04				<0.04	mg/kg	TM4/PM8	
Phenanthrene #M	-	-	-	0.06				<0.03	mg/kg	TM4/PM8	
Anthracene #	-	-	-	<0.04				<0.04	mg/kg	TM4/PM8	
Fluoranthene #M	-	-	-	0.16				<0.03	mg/kg	TM4/PM8	
Pyrene #	-	-	-	0.14				<0.03	mg/kg	TM4/PM8	
Benzo(a)anthracene #	-	-	-	0.11				<0.06	mg/kg	TM4/PM8	
Chrysene *M	-	-	-	0.10				<0.02	mg/kg	TM4/PM8	
Benzo(bk)fluoranthene #M	-	-	-	0.17				<0.07	mg/kg	TM4/PM8	
Benzo(a)pyrene * Indeno(123cd)pyrene ***	-	-	-	0.10				<0.04	mg/kg	TM4/PM8	
Dibenzo(ah)anthracene #	-	-	-	0.07 <0.04				<0.04	mg/kg mg/kg	TM4/PM8 TM4/PM8	
Benzo(ghi)perylene #	-	-	-	0.07				<0.04	mg/kg	TM4/PM8	
PAH 16 Total	-	-	-	1.0				<0.6	mg/kg	TM4/PM8	
Benzo(b)fluoranthene	-	-	-	0.12				<0.05	mg/kg	TM4/PM8	
Benzo(k)fluoranthene	-	-	-	0.05				<0.02	mg/kg	TM4/PM8	
PAH Surrogate % Recovery	-	-	-	87				<0	%	TM4/PM8	
Methyl Tertiary Butyl Ether #M	<30 _{AA}	<6	<6	-				<6	ug/kg	TM15/PM10	
Benzene #M	<25 _{AA}	<5	<5	-				<5	ug/kg	TM15/PM10	
Toluene #M	<15 _{AA}	<3	<3	-				<3	ug/kg	TM15/PM10	
Ethylbenzene #M	<15 _{AA}	<3	<3	-				<3	ug/kg	TM15/PM10	
p/m-Xylene #M	<20 _{AA}	<4	<4	-				<4	ug/kg	TM15/PM10	

AECOM Client Name:

Reference:

West Barton Power Station

Location: Alex Freeman Report : Solid

Contact:	Alex Freen
JE Job No.:	17/20361

JE JOD NO.:	17/20361												
J E Sample No.	1-3	4-6	7-9	10-12									
Sample ID	WS108	WS108	WS109	BH101									
Depth	8.5	12.0	15.0	0.5									
	0.5	12.0	13.0	0.5				Please see attached notes for al abbreviations and acronyms					
COC No / misc									,				
Containers	VJB	VJB	VJB	VJB									
Sample Date	07/12/2017	07/12/2017	08/12/2017	08/12/2017									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1						Method			
Date of Receipt	09/12/2017	09/12/2017	09/12/2017	09/12/2017				LOD/LOR	Units	No.			
o-Xylene **M	<20 _{AA}	<4	<4	-				<4	ug/kg	TM15/PM10			
Surrogate Recovery Toluene D8	96 _{AA}	68	139	-				<0	% %	TM15/PM10			
Surrogate Recovery 4-Bromofluorobenzene	65 _{AA}	61	149	-				<0	%	TM15/PM10			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>C6-C8 #M	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>C8-C10	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>C10-C12 #M	<0.2	<0.2	<0.2	-				<0.2	mg/kg	TM5/PM16			
>C12-C16 **M	<4	<4	<4	-				<4	mg/kg	TM5/PM16			
>C16-C21 #M	<7	<7	<7	-				<7	mg/kg	TM5/PM16			
>C21-C35 #M	<7	<7	<7	-				<7	mg/kg	TM5/PM16			
Total aliphatics C5-35	<19	<19	<19	-				<19	mg/kg	TM5/TM36/PM12/PM16			
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>EC7-EC8#	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>EC8-EC10 **M	<0.1	<0.1	<0.1	-				<0.1	mg/kg	TM36/PM12			
>EC10-EC12#	<0.2 <4	<0.2 <4	<0.2 <4	-				<0.2 <4	mg/kg	TM5/PM16 TM5/PM16			
>EC12-EC16# >EC16-EC21#	<7	<7	<7	-				<7	mg/kg mg/kg	TM5/PM16			
>EC21-EC35#	<7	<7	<7	-				<7	mg/kg	TM5/PM16			
Total aromatics C5-35 #	<19	<19	<19	_				<19	mg/kg	TM5/TM36/PM12/PM16			
Total aliphatics and aromatics(C5-35)	<38	<38	<38	-				<38	mg/kg	TM5/TM36/PM12/PM16			
, ,									3 3				
Natural Moisture Content	19.6	29.0	34.5	14.7				<0.1	%	PM4/PM0			
Ammoniacal Nitrogen as N	<0.6	<0.6	-	<0.6				<0.6	mg/kg	TM38/PM20			
Chloride *M	14	48	-	4				<2	mg/kg	TM38/PM20			
Fluoride	<0.3	2.2	-	1.9				<0.3	mg/kg	TM173/PM20			
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20			
Nitrate as NO3	<2.5	<2.5	-	<2.5				<2.5	mg/kg	TM38/PM20			
Nitrite as NO2	<0.05	<0.05	-	<0.05				<0.05	mg/kg	TM38/PM20			
Ortho Phosphate as PO4	<0.3	<0.3	-	1.7				<0.3	mg/kg	TM38/PM20			
Sulphate as SO4 (2:1 Ext) #M	0.4613	0.9326	-	0.2406				<0.0015	g/l	TM38/PM20			
Chromium III	69.2	30.7	88.8	62.9				<0.5	mg/kg	NONE/NONE			
Total Cyanide #M	<0.5	-	-	<0.5				<0.5	mg/kg	TM89/PM45			
Total Organic Carbon #	3.78	0.54	0.27	2.93				<0.02	%	TM21/PM24			
Sulphide	<10	<10	-	<10				<10	mg/kg	TM106/PM119			
Total Alkalinity as CaCO3	330	400	-	330				<10	mg/kg	TM75/PM58			

Client Name: AECOM

Reference: Location:

West Barton Power Station

Contact: Alex Freeman
JE Job No.: 17/20361

Report : Solid

JE JOB NO.:	17/20361				 	 	 	_			
J E Sample No.	1-3	4-6	7-9	10-12							
Sample ID	WS108	WS108	WS109	BH101							
Depth	8.5	12.0	15.0	0.5							
COC No / misc		12.0	10.0	0.0				Please see attached notes for a abbreviations and acronyms			
Containers		VJB	VJB	VJB							
Sample Date											
Sample Type		Soil	Soil	Soil							
Batch Number		1	1	1							
Date of Receipt								LOD/LOR	Units	Method No.	
pH#M	9.22	8.41	8.19	8.23				<0.01	pH units	TM73/PM11	
	Clayey Sand		Clay	Sand					None	PM13/PM0	
Sample Colour				Dark Brown					None	PM13/PM0	
Other Items				NA NA						PM13/PM0	
Other items	NA	stones	stones	NA .					None	PIVIT3/PIVIU	

Client Name: AECOM SVOC Report :

Reference:

Location: West Barton Power Station

Contact: Alex Freeman
JE Job No.: 17/20361

2.4-Dientryphenol 410 41	JE Job No.:	17/20361								
Pages see stacked notes for all abbreviations and acronyms	J E Sample No.	1-3	4-6	7-9						
COCN for / misc Cochianes Sample ID	WS108	WS108	WS109							
COCN for / misc Cochianes Denth	8.5	12.0	15.0				Please se	a attached n	otes for all	
Containers		0.0	12.0	10.0						
Sample Type Soil Soil 1		VJB	VJB	VJB						
Batch Number	Sample Date	07/12/2017	07/12/2017	08/12/2017						
Date of Receipt 09/12/2017	Sample Type	Soil	Soil	Soil						
SVOC MS								LOD/LOR	Units	
Phenois Calcinosphenol M < 10	·	09/12/2017	09/12/2017	09/12/2017						NO.
2-Chicrophenol										
2-Methylphenol		<10	<10	<10				<10	ua/ka	TM16/PM8
2-Nitrophenol 40										
24-Dimetrylphenol <10	2-Nitrophenol									
2.4.5-Trichbrophenol <10 <10 <10 ug/kg TM16/PM8 2.4.6-Trichbrophenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Chotro-3-methyphenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Methyphenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Mitophenol <10 <10 <10 <10 ug/kg TM16/PM8 Pentachbrophenol <10 <10 <10 <10 ug/kg TM16/PM8 Pentachbrophenol <10 <10 <10 <10 ug/kg TM16/PM8 Polation <10 <10 <10 <10 ug/kg TM16/PM8 PAHs <10 <10 <10 <10 ug/kg TM16/PM8 2-Chloronaphthalene <10 <10 <10 ug/kg TM16/PM8 Abenaphthalene <10 <10 <10 ug/kg TM16/PM8 Abenaphthalene <10 <td< th=""><th>2,4-Dichlorophenol *M</th><th><10</th><th><10</th><th><10</th><th></th><th></th><th></th><th><10</th><th>ug/kg</th><th>TM16/PM8</th></td<>	2,4-Dichlorophenol *M	<10	<10	<10				<10	ug/kg	TM16/PM8
2.4.6-Trichbrorphenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Chloro-3-methylphenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Mitrophenol <10 <10 <10 <10 ug/kg TM16/PM8 4-Mitrophenol <10 <10 <10 <10 ug/kg TM16/PM8 Phenol*** <10 <10 <10 <10 ug/kg TM16/PM8 Phenol*** <10 <10 <10 <10 ug/kg TM16/PM8 Phenol**** <10 <10 <10 <10 ug/kg TM16/PM8 2-Chlorosphthalene*** <10 <10 <10 ug/kg TM16/PM8 2-Methylapathalene*** <10 <10 <10 ug/kg TM16/PM8 Acenaphtylore <10 <10 <10 ug/kg TM16/PM8 Acenaphtylore <10 <10 <10 ug/kg TM16/PM8 Pluorene <10 <10 <10	2,4-Dimethylphenol	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol <10	2,4,5-Trichlorophenol							<10	ug/kg	
4-Methylphenol <10	2,4,6-Trichlorophenol									
4-Nitrophenol <10 <10 <10 <10 <10 <10 <10 <10 <10 <10										
Pentachlorophenol <10	• •									
Pheno March PAHS	· · · · · · · · · · · · · · · · · · ·									
PAHS										
2-Chloronaphthalene		1.3	1.3	1.0					-99	
2-Methylnaphthalene M		<10	<10	<10				<10	ug/kg	TM16/PM8
Naphthalene		<10	<10	<10				<10		TM16/PM8
Acenaphthene		<10	<10	<10				<10	ug/kg	TM16/PM8
Fluorene	Acenaphthylene	<10	<10	<10				<10	ug/kg	TM16/PM8
Phenanthrene M										
Anthracene										
Fluoranthene M										
Pyrene M <10 <10 <10 ug/kg TM16/PM8 Benzo(a)anthracene <10 <10 <10 ug/kg TM16/PM8 Chrysene <10 <10 <10 ug/kg TM16/PM8 Benzo(bk)filuoranthene <10 <10 <10 ug/kg TM16/PM8 Benzo(a)pyrene <10 <10 <10 ug/kg TM16/PM8 Benzo(a)pyrene <10 <10 <10 ug/kg TM16/PM8 Dibenzo(a)hanthracene <10 <10 ug/kg TM16/PM8 Benzo(gh)perylene <10 <10 <10 ug/kg TM16/PM8 Benzo(gh)fluoranthene <10 <10 <10 ug/kg TM16/PM8 Benzo(k)fluoranthene <10 <10 <10 ug/kg TM16/PM8 Benzo(k)fluoranthene <10 <10 <10 ug/kg TM16/PM8 Benzo(k)fluoranthene <10 <10 <10 ug/kg TM16/PM8 Phthalates <10										
Benzo(a)anthracene										
Chrysene	-									
Benzo(bk)fluoranthene										
Indeno(123cd)pyrene		<10	<10	<10				<10		TM16/PM8
Dibenzo(ah)anthracene	Benzo(a)pyrene	<10	<10	<10				<10	ug/kg	TM16/PM8
Benzo(ghi)perylene		<10	<10					<10	ug/kg	
Benzo(b)fluoranthene										
Benzo(k)fluoranthene										
Phthalates Bis(2-ethylhexyl) phthalate < 100										
Bis(2-ethylhexyl) phthalate		<10	<10	<10				<10	ug/kg	TIVITO/PIVIO
Butylbenzyl phthalate <100 <100 ug/kg TM16/PM8 Di-n-butyl phthalate <100 <100 <100 ug/kg TM16/PM8 Di-n-Octyl phthalate <100 <100 <100 ug/kg TM16/PM8 Di-n-Octyl phthalate <100 <100 ug/kg TM16/PM8 Diethyl phthalate <100 <100 <100 ug/kg TM16/PM8		<100	<100	<100				<100	ua/ka	TM16/PM8
Di-n-butyl phthalate										
Diethyl phthalate <100 <100 <100 <100 <100 <100 ug/kg TM16/PM8	Di-n-butyl phthalate	<100	<100	<100				<100		TM16/PM8
	Di-n-Octyl phthalate	<100	<100	<100				<100	ug/kg	
Dimethyl phthalate M < 100 < 100 < 100	Diethyl phthalate							<100	ug/kg	
	Dimethyl phthalate #M	<100	<100	<100				<100	ug/kg	TM16/PM8

Client Name: AECOM

Reference:

Location: West Barton Power Station

Contact: Alex Freeman JE Job No.: 17/20361

J E Sample No. 1-3 4-6 7-9 Sample ID WS108 WS108 WS109 Depth 8.5 12.0 15.0 Please see attached notes for all COC No / misc abbreviations and acronyms Containers VJB VJB VJB Sample Date 07/12/2017 07/12/201 08/12/2017 Sample Type Batch Number Method 1 LOD/LOR Units Date of Receipt 09/12/2017 09/12/2017 09/12/2017 SVOC MS Other SVOCs 1.2-Dichlorobenzene <10 <10 <10 <10 TM16/PM8 ug/kg 1,2,4-Trichlorobenzene #M <10 <10 <10 <10 ug/kg TM16/PM8 1,3-Dichlorobenzene <10 <10 <10 <10 ug/kg TM16/PM8 1,4-Dichlorobenzene TM16/PM8 <10 <10 <10 <10 ug/kg TM16/PM8 2-Nitroaniline <10 <10 <10 <10 ug/kg 2,4-Dinitrotoluene <10 <10 <10 <10 ug/kg TM16/PM8 2,6-Dinitrotoluene TM16/PM8 <10 <10 <10 <10 ug/kg TM16/PM8 3-Nitroaniline <10 <10 <10 <10 ug/kg 4-Bromophenylphenylether #M <10 <10 <10 <10 ug/kg TM16/PM8 4-Chloroaniline <10 <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 4-Chlorophenylphenylether <10 <10 <10 <10 ug/kg 4-Nitroaniline <10 <10 <10 <10 ug/kg TM16/PM8 Azobenzene <10 <10 <10 <10 TM16/PM8 ug/kg Bis(2-chloroethoxy)methane <10 <10 ug/kg TM16/PM8 <10 <10 TM16/PM8 Bis(2-chloroethyl)ether <10 <10 <10 <10 ug/kg Carbazole <10 <10 <10 <10 ug/kg TM16/PM8 Dibenzofuran #M TM16/PM8 <10 <10 <10 <10 ug/kg TM16/PM8 Hexachlorobenzene <10 <10 <10 <10 ug/kg Hexachlorobutadiene #M <10 <10 <10 <10 ug/kg TM16/PM8 Hexachlorocyclopentadiene <10 <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 Hexachloroethane <10 <10 <10 <10 ua/ka sophorone #M TM16/PM8 <10 <10 -10 <10 ug/kg N-nitrosodi-n-propylamine #M <10 <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 Nitrobenzene #M <10 <10 <10 <10 ug/kg Surrogate Recovery 2-Fluorobiphenyl TM16/PM8 110 113 113 <0 56^{SV} Surrogate Recovery p-Terphenyl-d14 96 98 <0 % TM16/PM8

SVOC Report :

Client Name: AECOM VOC Report : Solid

Reference:

Location: West Barton Power Station

Contact: Alex Freeman JE Job No.: 17/20361

JE Job No.:	17/20361								
J E Sample No.	1-3	4-6	7-9						
Sample ID	WS108	WS108	WS109						
Depth	8.5	12.0	15.0					e attached n	
COC No / misc							abbrevi	ations and a	cronyms
Containers Sample Date	V J B	V J B 07/12/2017	V J B 08/12/2017						
Sample Type	Soil	Soil	Soil						
Batch Number	1	1	1				100/100	11.20	Method
Date of Receipt	09/12/2017	09/12/2017	09/12/2017				LOD/LOR	Units	No.
VOC MS									
Dichlorodifluoromethane	<10 _{AA}	<2	<2				<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<30 _{AA}	<6	<6				<6	ug/kg	TM15/PM10
Chloromethane # Vinyl Chloride	<15 _{AA}	<3 <2	<3 <2				<3 <2	ug/kg	TM15/PM10 TM15_A/PM10
Bromomethane	<10 _{AA}	<1	<1				<1	ug/kg ug/kg	TM15/PM10
Chloroethane #M	<30 _{AA}	<6	<6				<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<30 _{AA}	<6	<6				<6	ug/kg	TM15/PM10
Dichloromethane (DCM)#	<150 _{AA}	<30	<30				<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<30 _{AA}	<6	<6				<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene *** 2,2-Dichloropropane	<35 _{AA}	<7 <4	<7 <4				<7 <4	ug/kg	TM15/PM10 TM15/PM10
Bromochloromethane **M	<20 AA	<4	<4				<4 <4	ug/kg ug/kg	TM15/PM10
Chloroform #M	<25 _{AA}	<5	<5				<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<25 _{AA}	<5	<5				<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<25 _{AA}	<5	<5				<5	ug/kg	TM15/PM10
Benzene #M	<25 _{AA}	<5	<5				<5	ug/kg	TM15/PM10
Trichloroethene (TCE) *** 1,2-Dichloropropane ***	<25 _{AA}	<5 <4	<5 <4				<5 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Dibromomethane #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
Toluene #M	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
1,3-Dichloropropane **M Dibromochloromethane **M	<20 _{AA}	<4 <5	<4 <5				<4 <5	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,2-Dibromoethane #	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
Chlorobenzene #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<25 _{AA}	<5	<5				<5	ug/kg	TM15/PM10
Ethylbenzene #M	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
p/m-Xylene **M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
o-Xylene *M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
Styrene	<15 _{AA}	<3	<3				<3	ug/kg	TM15_A/PM10
Bromoform Isopropylbenzene *	<20 _{AA}	<4 <3	<4 <3				<4 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,1,2,2-Tetrachloroethane ***	<15AA	<3	<3 <3				<3 <3	ug/kg ug/kg	TM15/PM10
Bromobenzene	<10 _{AA}	<2	<2				<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane **M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
Propylbenzene #	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
2-Chlorotoluene	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
4-Chlorotoluene	<15 _{AA}	<3	<3				<3	ug/kg	TM15/PM10
tert-Butylbenzene # 1,2,4-Trimethylbenzene #	<25 _{AA}	<5 <6	<5 <6				<5 <6	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,2,4-1rimetnylbenzene sec-Butylbenzene#	<30 _{AA}	<6 <4	<6 <4				<0 <4	ug/kg ug/kg	TM15/PM10
4-Isopropyltoluene #	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene#	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
n-Butylbenzene#	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<20 _{AA}	<4	<4				<4	ug/kg	TM15/PM10 TM15/PM10
1,2,4-Trichlorobenzene * Hexachlorobutadiene	<35 _{AA}	<7 <4	<7 <4				<7 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Naphthalene	<135 _{AA}	<27	<27				<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<35 _{AA}	<7	<7				<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	96 _{AA}	68	139				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	65 _{AA}	61	149				<0	%	TM15/PM10

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Barton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20361	1	WS108	8.5	3	18/12/2017	General Description (Bulk Analysis)	Soil/Stones
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20361	1	BH101	0.5	12	18/12/2017	General Description (Bulk Analysis)	Soil/Stones
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Barton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/20361	1	WS108	8.5	1-3	VOC	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20361

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS Ref No. 4225) accredited - UK.
ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range
x5 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM 2 City Walk Leeds LS11 9AR

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





Attention: Alex Freeman

Date: 3rd January, 2018

Your reference :

Our reference : Test Report 17/20238 Batch 1

Location: West Burton Power Station

Date samples received: 8th December, 2017

Status: Final report

Issue: 2

Six samples were received for analysis on 8th December, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20238

Report : Solid

								l .				
J E Sample No.	1-3	4-6	7-9	10-12								
Sample ID	BH103	BH102	WS106	WS106								
Depth	9.30	13.80	7.00	4.50				Please se	e attached n	otes for all		
COC No / misc								abbreviations and acronyms				
Containers	VJB	VJB	VJB	VJB								
Sample Date	06/12/2017	06/12/2017	07/12/2017	07/12/2017								
Sample Type			Soil	Soil								
	Soil	Soil										
Batch Number	1	1	1	1				LOD/LOR	Units	Method No.		
Date of Receipt		08/12/2017	08/12/2017									
Antimony	3	4	4	3				<1	mg/kg	TM30/PM15		
Arsenic#	16.2	6.9	152.4	17.9				<0.5	mg/kg	TM30/PM15		
Barium #	472	185 2.6	922 5.8	192 2.2				<1 <0.5	mg/kg	TM30/PM15 TM30/PM15		
Beryllium Cadmium #	2.4 1.2	<0.1	<0.1	<0.1				<0.5	mg/kg mg/kg	TM30/PM15		
Chromium #	82.9	74.3	73.0	62.2				<0.1	mg/kg	TM30/PM15		
Copper#	24	10	117	29				<1	mg/kg	TM30/PM15		
Iron	37140	49870	39560	38040				<20	mg/kg	TM30/PM15		
Lead#	131	<5	60	8				<5	mg/kg	TM30/PM15		
Manganese #	790	764	846	813				<1	mg/kg	TM30/PM15		
Mercury #	<0.1	<0.1	<0.1	<0.1				<0.1	mg/kg	TM30/PM15		
Molybdenum #	4.7	4.3	4.9	5.8				<0.1	mg/kg	TM30/PM15		
Nickel #	51.9	58.6	83.4	62.7				<0.7	mg/kg	TM30/PM15		
Selenium #	1	<1	5	2				<1	mg/kg	TM30/PM15		
Vanadium	81	72	169	51				<1	mg/kg	TM30/PM15		
Water Soluble Boron #	13.8	3.1	30.7	13.9				<0.1	mg/kg	TM74/PM32		
Zinc#	225	79	75	83				<5	mg/kg	TM30/PM15		
PAH MS												
Naphthalene #	_	_	<0.04	_				<0.04	mg/kg	TM4/PM8		
Acenaphthylene		_	<0.03	-				<0.03	mg/kg	TM4/PM8		
Acenaphthene #	-	-	<0.05	-				<0.05	mg/kg	TM4/PM8		
Fluorene #	-	-	<0.04	-				<0.04	mg/kg	TM4/PM8		
Phenanthrene #	-	-	<0.03	-				<0.03	mg/kg	TM4/PM8		
Anthracene #	-	-	<0.04	-				<0.04	mg/kg	TM4/PM8		
Fluoranthene#	-	-	<0.03	-				<0.03	mg/kg	TM4/PM8		
Pyrene #	-	-	<0.03	-				<0.03	mg/kg	TM4/PM8		
Benzo(a)anthracene #	-	-	<0.06	-				<0.06	mg/kg	TM4/PM8		
Chrysene#	-	-	<0.02	-				<0.02	mg/kg	TM4/PM8		
Benzo(bk)fluoranthene #	-	-	<0.07	-				<0.07	mg/kg	TM4/PM8		
Benzo(a)pyrene #	-	-	<0.04	-				<0.04	mg/kg	TM4/PM8		
Indeno(123cd)pyrene#	-	-	<0.04 <0.04	-				<0.04	mg/kg	TM4/PM8 TM4/PM8		
Dibenzo(ah)anthracene # Benzo(ghi)perylene #	-	-	<0.04	-				<0.04	mg/kg mg/kg	TM4/PM8		
PAH 16 Total	-	-	<0.6	-				<0.04	mg/kg	TM4/PM8		
Benzo(b)fluoranthene	-	-	<0.05	_				<0.05	mg/kg	TM4/PM8		
Benzo(k)fluoranthene	-	-	<0.02	-				<0.02	mg/kg	TM4/PM8		
PAH Surrogate % Recovery	-	-	89	-				<0	%	TM4/PM8		
Methyl Tertiary Butyl Ether #	<6	<6	-	-				<6	ug/kg	TM15/PM10		
Benzene #	<5	<5	-	-				<5	ug/kg	TM15/PM10		
Toluene #	<3	<3	-	-				<3	ug/kg	TM15/PM10		
Ethylbenzene #	<3	<3	-	-				<3	ug/kg	TM15/PM10		
p/m-Xylene [#]	<4	<4	-	-				<4	ug/kg	TM15/PM10		

Client Name: AECOM

Reference: Location:

West Burton Power Station

Alex Freeman

Report : Solid

Contact:	Alex Freen
JE Job No.:	17/20238

JE JOB NO.:	17/20238				 		 	 _		
J E Sample No.	1-3	4-6	7-9	10-12						
Sample ID	BH103	BH102	WS106	WS106						
Depth	9.30	13.80	7.00	4.50						
-		13.80	7.00	4.50					e attached nations and a	
COC No / misc								abbioti	anono ana a	oronyo
Containers	VJB	VJB	VJB	VJB						
Sample Date	06/12/2017	06/12/2017	07/12/2017	07/12/2017						
Sample Type	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1						
								LOD/LOR	Units	Method No.
Date of Receipt			08/12/2017	08/12/2017				.4	//	TM45/DM40
o-Xylene * Surrogate Recovery Toluene D8	<4 94	<4 105	-	-				<4 <0	ug/kg %	TM15/PM10 TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	123	-	-				<0	%	TM15/PM10
	30	120							,,,	110110/110110
TPH CWG										
Aliphatics										
>C5-C6 [#]	<0.1	<0.1 sv	-	-				<0.1	mg/kg	TM36/PM12
>C6-C8#	<0.1	<0.1 ^{sv}	-	-				<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1 ^{sv}	-	-				<0.1	mg/kg	TM36/PM12
>C10-C12#	<0.2	<0.2	-	-				<0.2	mg/kg	TM5/PM16
>C12-C16#	<4	<4	-	-				<4	mg/kg	TM5/PM16
>C16-C21#	<7	<7	-	-				<7	mg/kg	TM5/PM16
>C21-C35#	<7	<7	-	-				<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	<19	-	-				<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics										
>C5-EC7#	<0.1	<0.1 sv	-	-				<0.1	mg/kg	TM36/PM12
>EC7-EC8#	<0.1	<0.1 ^{SV}	-	-				<0.1	mg/kg	TM36/PM12
>EC8-EC10#	<0.1	<0.1 ^{SV}	-	-				<0.1	mg/kg	TM36/PM12
>EC10-EC12#	<0.2	<0.2	-	-				<0.2	mg/kg	TM5/PM16
>EC12-EC16#	<4	<4	-	-				<4	mg/kg	TM5/PM16
>EC16-EC21 # >EC21-EC35 #	<7 <7	<7 <7	-	-				<7	mg/kg	TM5/PM16 TM5/PM16
>EC21-EC35 Total aromatics C5-35 #	<19	<19	-	-				<7 <19	mg/kg mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	<38	-	_				<38	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics (ee co)	400	400						400	mg/kg	
Natural Moisture Content	33.3	33.0	21.3	21.4				<0.1	%	PM4/PM0
									, -	
Ammoniacal Nitrogen as N	-	-	<0.6	<0.6				<0.6	mg/kg	TM38/PM20
Chloride #	-	-	63	84				<2	mg/kg	TM38/PM20
Fluoride	-	-	<0.3	2.4				<0.3	mg/kg	TM173/PM20
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20
Nitrate as NO3	-	-	<2.5	<2.5				<2.5	mg/kg	TM38/PM20
Nitrite as NO2	-	-	0.56	<0.05				<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	-	<0.3	0.4				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	0.7342	0.2552				<0.0015	g/l	TM38/PM20
Chromium III	82.9	74.3	73.0	62.2				<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	-	<0.5	<0.5				<0.5	mg/kg	TM89/PM45
_										
Total Organic Carbon #	0.46	0.05	2.39	0.42				<0.02	%	TM21/PM24
Culphido			-40	-40				-40	me#:=	TM106/DM110
Sulphide	-	-	<10	<10				<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	_	_	390	440				<10	mg/kg	TM75/PM58
TOTAL AIRAIITIILY AS CACOS	_	_	390	440	I.	l		<10	mg/kg	TIVIT OF TVIOO

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20238

Report : Solid

									ŀ		
J E Sample No.	1-3	4-6	7-9	10-12							
Sample ID	BH103	BH102	WS106	WS106							
Depth	9.30	13.80	7.00	4.50					Please se	e attached n	otes for all
COC No / misc									abbrevi	ations and ad	cronyms
Containers	VJB	VJB	VJB	VJB							
Sample Date	06/12/2017	06/12/2017	07/12/2017	07/12/2017							
Sample Type	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1					LOD/LOR	Units	Method
Date of Receipt	08/12/2017	08/12/2017	08/12/2017	08/12/2017					LOD/LOR	Offics	No.
pH#	8.19	8.20	8.69	8.47					<0.01	pH units	TM73/PM11
Sample Type	Clay	Clayey Loam	-	-						None	PM13/PM0
	Medium Brown	Medium Brown	-	-						None	PM13/PM0
Other Items	stones, roots	stones	-	-						None	PM13/PM0
			·	·	·	<u> </u>	·	·	·		

Client Name: AECOM SVOC Report :

Reference:

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20238

JE Job No.:	17/20238								
J E Sample No.	1-3	4-6							
Sample ID	BH103	BH102							
Depth	9.30	13.80					Please se	e attached n	otes for all
COC No / misc								ations and a	
Containers	VJB	VJB							
Sample Date	06/12/2017								
Sample Type	Soil	Soil							
Batch Number	1	1					LOD/LOR	Units	Method No.
Date of Receipt SVOC MS	08/12/2017	08/12/2017							140.
Phenois									
2-Chlorophenol#	<10	<10					<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10					<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10					<10	ug/kg	TM16/PM8
2,4-Dichlorophenol#	<10	<10					<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10					<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10					<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10					<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol 4-Methylphenol	<10 <10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
4-Nitrophenol	<10	<10					<10	ug/kg ug/kg	TM16/PM8
Pentachlorophenol	<10	<10					<10	ug/kg	TM16/PM8
Phenol#	<10	<10					<10	ug/kg	TM16/PM8
PAHs									
2-Chloronaphthalene #	<10	<10					<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	<10	<10					<10	ug/kg	TM16/PM8
Naphthalene	<10	<10					<10	ug/kg	TM16/PM8
Acenaphthylene	<10	<10					<10	ug/kg	TM16/PM8
Acenaphthene Fluorene	<10 <10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Phenanthrene #	<10	<10					<10	ug/kg	TM16/PM8
Anthracene	<10	<10					<10	ug/kg	TM16/PM8
Fluoranthene #	<10	<10					<10	ug/kg	TM16/PM8
Pyrene #	<10	<10					<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10	<10					<10	ug/kg	TM16/PM8
Chrysene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene Benzo(a)pyrene	<10 <10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Indeno(123cd)pyrene	<10	<10					<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10	<10					<10	ug/kg	TM16/PM8
Phthalates	.100	:400					.400	/	TM4.C/DM40
Bis(2-ethylhexyl) phthalate Butylbenzyl phthalate	<100 <100	<100 <100					<100 <100	ug/kg ug/kg	TM16/PM8 TM16/PM8
Di-n-butyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100	<100					<100	ug/kg	TM16/PM8
									} <u> </u>
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Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20238

J E Sample No. 1-3 4-6 Sample ID BH103 BH102 Depth 9.30 13.80 Please see attached notes for all COC No / misc abbreviations and acronyms Containers VJB VJB Sample Date 06/12/2017 06/12/201 Sample Type Batch Number Method 1 LOD/LOR Units Date of Receipt 08/12/2017 08/12/2017 SVOC MS Other SVOCs 1.2-Dichlorobenzene <10 <10 <10 ug/kg TM16/PM8 1,2,4-Trichlorobenzene# <10 <10 <10 ug/kg TM16/PM8 1,3-Dichlorobenzene <10 <10 <10 ug/kg TM16/PM8 1,4-Dichlorobenzene TM16/PM8 <10 <10 <10 ug/kg TM16/PM8 2-Nitroaniline <10 <10 <10 ug/kg 2,4-Dinitrotoluene <10 <10 <10 ug/kg TM16/PM8 2,6-Dinitrotoluene TM16/PM8 <10 <10 <10 ug/kg TM16/PM8 3-Nitroaniline <10 <10 <10 ug/kg 4-Bromophenylphenylether # <10 <10 <10 ug/kg TM16/PM8 4-Chloroaniline <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 4-Chlorophenylphenylether <10 <10 <10 ug/kg 4-Nitroaniline <10 <10 <10 ug/kg TM16/PM8 Azobenzene <10 <10 <10 TM16/PM8 ug/kg Bis(2-chloroethoxy)methane <10 <10 <10 ug/kg TM16/PM8 Bis(2-chloroethyl)ether TM16/PM8 <10 <10 <10 ug/kg Carbazole <10 <10 <10 ug/kg TM16/PM8 <10 <10 <10 TM16/PM8 Dibenzofuran # ug/kg TM16/PM8 Hexachlorobenzene <10 <10 <10 ug/kg Hexachlorobutadiene # <10 <10 <10 ug/kg TM16/PM8 Hexachlorocyclopentadiene <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 Hexachloroethane <10 <10 <10 ua/ka sophorone # TM16/PM8 <10 <10 <10 ug/kg N-nitrosodi-n-propylamine # <10 <10 <10 ug/kg TM16/PM8 TM16/PM8 <10 <10 <10 Nitrobenzene 1 ug/kg Surrogate Recovery 2-Fluorobiphenyl 108 TM16/PM8 111 <0 Surrogate Recovery p-Terphenyl-d14 94 89 <0 % TM16/PM8

SVOC Report :

Client Name: AECOM VOC Report :

Reference:

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20238

JE Job No.:	17/20238										
J E Sample No.	1-3	4-6									
Sample ID	BH103	BH102									
Depth COC No / misc	9.30	13.80								e attached nations and a	
Containers	VJB	VJB							abbiotic	4110110 U110 U	o. o. iyi ilo
Sample Date		06/12/2017									
Sample Type	Soil	Soil									
Batch Number	1	1							LOD/LOR	Units	Method
Date of Receipt	08/12/2017	08/12/2017							LOD/LOIX	OTINO	No.
VOC MS	_										
Dichlorodifluoromethane	<2	<2							<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether # Chloromethane #	<6 <3	<6 <3							<6	ug/kg	TM15/PM10 TM15/PM10
Vinyl Chloride	<2	<2							<3 <2	ug/kg ug/kg	TM15_A/PM10
Bromomethane	<1	<1							<1	ug/kg	TM15/PM10
Chloroethane #	<6	<6							<6	ug/kg	TM15/PM10
Trichlorofluoromethane #	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE)#	<6	<6							<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	<30							<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloroethane#	<6	<6							<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<7	<7							<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4							<4	ug/kg	TM15/PM10 TM15/PM10
Bromochloromethane # Chloroform #	<4 <5	<4 <5							<4	ug/kg	TM15/PM10 TM15/PM10
Chloroform* 1,1,1-Trichloroethane#	<5 <5	<5 <5							<5 <5	ug/kg ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3							<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<5	<5							<5	ug/kg	TM15/PM10
Benzene #	<5	<5							<5	ug/kg	TM15/PM10
Trichloroethene (TCE)#	<5	<5							<5	ug/kg	TM15/PM10
1,2-Dichloropropane #	<4	<4							<4	ug/kg	TM15/PM10
Dibromomethane #	<4	<4							<4	ug/kg	TM15/PM10
Bromodichloromethane #	<4	<4							<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4							<4	ug/kg	TM15/PM10 TM15/PM10
Toluene # trans-1-3-Dichloropropene	<3 <3	<3 <3							<3 <3	ug/kg ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<4	<4							<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3							<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<4	<4							<4	ug/kg	TM15/PM10
Dibromochloromethane #	<5	<5							<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3							<3	ug/kg	TM15/PM10
Chlorobenzene #	<4	<4							<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<5	<5							<5	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3							<3	ug/kg	TM15/PM10
p/m-Xylene #	<4	<4							<4	ug/kg	TM15/PM10 TM15/PM10
o-Xylene [#] Styrene	<4 <3	<4 <3							<4 <3	ug/kg ug/kg	TM15/PM10
Bromoform	<4	<4							<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3							<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3							<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2							<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4							<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4							<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3							<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3							<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3							<3	ug/kg	TM15/PM10 TM15/PM10
tert-Butylbenzene #	<5 <6	<5 <6							<5	ug/kg	TM15/PM10 TM15/PM10
1,2,4-Trimethylbenzene * sec-Butylbenzene *	<6 <4	 <4							<6 <4	ug/kg ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4							<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4							<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4							<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4							<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7							<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4							<4	ug/kg	TM15/PM10
Naphthalene	<27	<27							<27	ug/kg	TM15/PM10 TM15/PM10
1,2,3-Trichlorobenzene * Surrogate Recovery Toluene D8	<7 94	<7 105							<7 <0	ug/kg %	TM15/PM10 TM15/PM10
Surrogate Recovery Toluene Do Surrogate Recovery 4-Bromofluorobenzene	95	123							<0	%	TM15/PM10
2 Squite incountry 4-bromonuorobenzene	90	123	l	l	l	I		l	、 ∪	/0	TIVITO/TIVITO

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20238	1	WS106	7.00	9	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20238	1	WS106	4.50	12	18/12/2017	General Description (Bulk Analysis)	Soil/Stone
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
						l	

Exova Jones Environmental Notification of Deviating Samples

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason					
	No deviating sample report results for job 17/20238										

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20238

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS Ref No. 4225) accredited - UK.
ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM West One Wellington Street Leeds LS1 1BA

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







Attention: Alex Freeman

Date: 3rd January, 2018

Your reference :

Our reference : Test Report 17/20132 Batch 1

Location: West Burton Power Station

Date samples received: 7th December, 2017

Status: Final report

Issue:

Four samples were received for analysis on 7th December, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20132

Report : Solid

JE JOD NO.:	17/20132								
J E Sample No.	1-3	4-6	7-9						
Sample ID	WS111	WS107	WS107						
Depth	8.20	3.00	11.70						
COC No / misc	0.20	0.00						e attached r ations and a	
Containers	VJB	VJB	VJB						
Sample Date	06/12/2017	06/12/2017	06/12/2017						
Sample Type	Soil	Soil	Soil						
Batch Number	1	1	1				LOD/LOR	Units	Method
Date of Receipt	07/12/2017	07/12/2017	07/12/2017				LOD/LOK	Offics	No.
Antimony	7	4	5				<1	mg/kg	TM30/PM15
Arsenic #M	107.5	72.9	17.8				<0.5	mg/kg	TM30/PM15
Barium *M	722	326	223				<1	mg/kg	TM30/PM15
Beryllium	5.1	2.3	1.2				<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.1	<0.1	0.1				<0.1	mg/kg	TM30/PM15
Chromium #M	70.8	55.2	69.2				<0.5	mg/kg	TM30/PM15
Copper **M	119	53	19				<1	mg/kg	TM30/PM15
Iron	38880	34020	40259				<20	mg/kg	TM30/PM15
Lead **M	64	27	16				<5	mg/kg	TM30/PM15 TM30/PM15
Manganese *** Mercury ***	307 0.2	345 <0.1	850 <0.1				<1 <0.1	mg/kg mg/kg	TM30/PM15
Molybdenum ^{#M}	6.4	4.9	5.2				<0.1	mg/kg	TM30/PM15
Nickel #M	75.8	50.0	28.1				<0.7	mg/kg	TM30/PM15
Selenium **M	4	4	1				<1	mg/kg	TM30/PM15
Vanadium	148	76	43				<1	mg/kg	TM30/PM15
Water Soluble Boron **M	17.9	24.8	5.2				<0.1	mg/kg	TM74/PM32
Zinc #M	87	52	73				<5	mg/kg	TM30/PM15
PAH MS									
Naphthalene #M	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	-				<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	<0.05	-				<0.05	mg/kg	TM4/PM8
Fluorene #M	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	0.07	-				<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Fluoranthene #M	-	0.09	-				<0.03	mg/kg	TM4/PM8
Pyrene * Benzo(a)anthracene *	-	0.07	-				<0.03 <0.06	mg/kg mg/kg	TM4/PM8 TM4/PM8
Chrysene *M	_	0.04	-				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	<0.07	-				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	-				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	-				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	-				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	-				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	-				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	119	-				<0	%	TM4/PM8
Methyl Tertiary Butyl Ether **	-	-	<30 _{AA}				<6	ug/kg	TM15/PM10
Benzene *M	-	-	<25 _{AA}				<5	ug/kg	TM15/PM10
Toluene #M	-	-	<15 _{AA}				<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	-	<15 _{AA}				<3	ug/kg	TM15/PM10
p/m-Xylene **M	-	-	<20 _{AA}				<4	ug/kg	TM15/PM10

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20132

Report : Solid

				 	 		 i		
J E Sample No.	1-3	4-6	7-9						
Sample ID	WS111	WS107	WS107						
Depth	8.20	3.00	11.70				Please se	e attached n	otes for all
COC No / misc								ations and a	
Containers	VJB	VJB	VJB						
Sample Date	06/12/2017	06/12/2017	06/12/2017						
Sample Type	Soil	Soil	Soil						
Batch Number	1		1						
		1					LOD/LOR	Units	Method No.
Date of Receipt		07/12/2017							T1445/D1440
o-Xylene **M Surrogate Recovery Toluene D8	-	-	<20 _{AA}				<4 <0	ug/kg %	TM15/PM10 TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	110 _{AA}				<0	%	TM15/PM10
,			ПОДД					,,	
TPH CWG									
Aliphatics									
>C5-C6 #M	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C6-C8 #M	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>C10-C12 **M >C12-C16 **M	-	-	<0.2 <4				<0.2 <4	mg/kg mg/kg	TM5/PM16 TM5/PM16
>C12-C16 >C16-C21 **M	-	- -	<7				<7	mg/kg	TM5/PM16
>C21-C35 #M	-	-	<7				<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	-	<19				<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics									
>C5-EC7#	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC7-EC8#	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC8-EC10 **M	-	-	<0.1				<0.1	mg/kg	TM36/PM12
>EC10-EC12#	-	-	<0.2				<0.2	mg/kg	TM5/PM16
>EC12-EC16#	-	-	<4 <7				<4 <7	mg/kg	TM5/PM16 TM5/PM16
>EC16-EC21 # >EC21-EC35 #	-	-	<7				<7	mg/kg mg/kg	TM5/PM16
Total aromatics C5-35 #	-	-	<19				<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	-	<38				<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	24.3	23.5	31.9				<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	-				<0.6	mg/kg	TM38/PM20
Chloride *M	945	58	-				<2	mg/kg	TM38/PM20
Fluoride	0.5	0.7	-0.3				<0.3 <0.3	mg/kg	TM173/PM20 TM38/PM20
Hexavalent Chromium * Nitrate as NO3	<0.3 <2.5	<0.3 <2.5	<0.3				<0.3 <2.5	mg/kg mg/kg	TM38/PM20
Nitrite as NO2	0.46	0.23	-				<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	<0.3	0.4	-				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	1.1049	0.8181	-				<0.0015	g/l	TM38/PM20
Chromium III	70.8	55.2	69.2				<0.5	mg/kg	NONE/NONE
Total Cyanide **M	<0.5	<0.5	-				<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	4.83	3.69	0.56				<0.02	%	TM21/PM24
Total Organic Calbuil	7.03	5.05	0.50				₹0.02	/0	. 1412 1/1 14124
Sulphide	<10	<10	-				<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	390	320	-				<10	mg/kg	TM75/PM58

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20132

Report : Solid

J E Sample No. 1-3 4-6 7-9		
Sample ID WS111 WS107 WS107		
Depth 8.20 3.00 11.70		
COC No / misc Please see a abbreviation		
Containers VJB VJB VJB		
Sample Date 06/12/2017 06/12/2017 06/12/2017		
Sample Type Soil Soil Soil		
Batch Number 1 1 1 LOD/LOR	Units	Method No.
Date of Receipt 07/12/2017 07/12/2017 07/12/2017		
		TM73/PM11
		PM13/PM0
		PM13/PM0
Other Items stones stones n/a	None	PM13/PM0

Client Name: AECOM SVOC Report :

Reference:

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20132

JE Job No.:	17/20132								
J E Sample No.	7-9								
Sample ID	WS107								
Depth	11.70							e attached n	
COC No / misc							abbrevia	ations and a	cronyms
Containers	VJB								
Sample Date Sample Type	06/12/2017 Soil								
Batch Number	1								Method
Date of Receipt	07/12/2017						LOD/LOR	Units	No.
SVOC MS									
Phenols									
2-Chlorophenol #M	<10						<10	ug/kg	TM16/PM8
2-Methylphenol	<10						<10	ug/kg	TM16/PM8
2-Nitrophenol 2,4-Dichlorophenol **M	<10 <10						<10	ug/kg	TM16/PM8 TM16/PM8
2,4-Dimethylphenol	<10						<10 <10	ug/kg ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10						<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10						<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10						<10	ug/kg	TM16/PM8
4-Methylphenol	<10						<10	ug/kg	TM16/PM8
4-Nitrophenol	<10						<10	ug/kg	TM16/PM8
Pentachlorophenol Phenol **M	<10						<10	ug/kg	TM16/PM8 TM16/PM8
Phenol "" PAHs	<10						<10	ug/kg	TIVITO/PIVIS
2-Chloronaphthalene #M	<10						<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10						<10	ug/kg	TM16/PM8
Naphthalene	<10						<10	ug/kg	TM16/PM8
Acenaphthylene	<10						<10	ug/kg	TM16/PM8
Acenaphthene	<10						<10	ug/kg	TM16/PM8
Fluorene	<10						<10	ug/kg	TM16/PM8
Phenanthrene #M	<10						<10	ug/kg	TM16/PM8 TM16/PM8
Anthracene Fluoranthene **M	<10 <10						<10 <10	ug/kg ug/kg	TM16/PM8
Pyrene *M	<10						<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10						<10	ug/kg	TM16/PM8
Chrysene	<10						<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	<10						<10	ug/kg	TM16/PM8
Benzo(a)pyrene	<10						<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10						<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene Benzo(ghi)perylene	<10 <10						<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Benzo(b)fluoranthene	<10						<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10						<10	ug/kg	TM16/PM8
Phthalates									
Bis(2-ethylhexyl) phthalate	<100						<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100						<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100						<100	ug/kg	TM16/PM8 TM16/PM8
Di-n-Octyl phthalate Diethyl phthalate	<100 <100						<100 <100	ug/kg ug/kg	TM16/PM8
Dimethyl phthalate **M	<100						<100	ug/kg ug/kg	TM16/PM8
, ,								<i>3</i> 9	
						<u> </u>			

Solid

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman 17/20132

	17/20132	IIIII								
JE Job No.:	17/20132									
J E Sample No.	7-9									
Sample ID	WS107									
Sample ID	W3107									
Depth	11.70								e attached n	
COC No / misc								abbrevia	ations and ac	cronyms
Containers	VJB									
Sample Date	06/12/2017									
Sample Type	Soil									
Batch Number	1							1.00/1.00	11.50	Method
Date of Receipt	07/12/2017							LOD/LOR	Units	No.
SVOC MS										
Other SVOCs										
1,2-Dichlorobenzene	<10							<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene **M	<10							<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10							<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10									TM16/PM8
·								<10	ug/kg	
2-Nitroaniline	<10							<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10							<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10							<10	ug/kg	TM16/PM8
3-Nitroaniline	<10							<10	ug/kg	TM16/PM8
4-Bromophenylphenylether ***	<10							<10	ug/kg	TM16/PM8
4-Chloroaniline	<10							<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10							<10	ug/kg	TM16/PM8
4-Nitroaniline	<10							<10	ug/kg	TM16/PM8
Azobenzene	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10							<10	ug/kg	TM16/PM8
Carbazole	<10							<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10							<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10							<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10							<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10							<10	ug/kg	TM16/PM8
Hexachloroethane	<10							<10	ug/kg	TM16/PM8
Isophorone #M	<10									TM16/PM8
isopriorone #M								<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10							<10	ug/kg	
Nitrobenzene #M	<10							<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	115							<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	96							<0	%	TM16/PM8
			l	l	l	l	l			l

SVOC Report :

Solid

Client Name: AECOM VOC Report : Solid

Reference:

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20132

Month Tests Stuff Eth	JE Job No.:	17/20132							
Phose see altained values for all sobreviations and prompine V1.5 Sample Date V1.5	J E Sample No.	7-9							
COC Not miles Sample Totals Sampl	Sample ID	WS107							
Cock Interiment	Donth	11.70					Diagona		
Semple Type		11.70							
Sample Date Date		V.IB							, .
Sample Type Buch Number									
Back Number 1									
Date of Receipt COLORS									Method
DATE College							LOD/LOR	Units	
Morty Charlon Stancy St	VOC MS								
Challenger Charles C		<10 _{AA}					<2	ug/kg	TM15/PM10
Valy Obtodes 4.10 _{ph} 1.00 1.00	Methyl Tertiary Butyl Ether #M	<30 _{AA}					<6	ug/kg	TM15/PM10
Becommented	Chloromethane #	<15 _{AA}					<3	ug/kg	TM15/PM10
Coloromemon Coloromemon	Vinyl Chloride	<10 _{AA}					<2	ug/kg	TM15_A/PM10
Trickhotochromerier (1.01.05)*** 1.05-Carbonomerier (1.01.05)***		<5 _{AA}					<1	ug/kg	TM15/PM10
1.1-Delinorember (1,1 DE)		<30 _{AA}						ug/kg	TM15/PM10
Debroomshame (CDM)									TM15/PM10
Insert 1-20-bit									
15-Delchoropropense	, ,								
Commonwealthman Commonweal		<15 _{AA}							
2-2-0-bit horopropame 2-20-bit 2-20-bi	•								
Bonnechtorometham									ł
Chordworm									TM15/PM10 TM15/PM10
13.1-Trichicoreanee									
1.1-Dichiorpropose									TM15/PM10
Carbon testachodes									TM15/PM10
12-Delchrosethane Marchae Marc									TM15/PM10
Benzene									TM15/PM10
Treibicroethane (TCE) 44 29/06 20/06	-								TM15/PM10
1.2-Dichioropropane Marie									TM15/PM10
Dibromethane							<4	ug/kg	TM15/PM10
cain-13-Dichloropropene	Dibromomethane #M						<4	ug/kg	TM15/PM10
cain-13-Dichloropropene	Bromodichloromethane #M	<20 _{AA}					<4	ug/kg	TM15/PM10
trans-13-Olichloroptopopene <15A	cis-1-3-Dichloropropene						<4	ug/kg	TM15/PM10
1,1,2-Trichloroethane	Toluene #M	<15 _{AA}					<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE)		<15 _{AA}					<3	ug/kg	TM15/PM10
1,3-Dichloropropane								ug/kg	TM15/PM10
Dibromochloromethane									TM15/PM10
1.2-Dibromoethane									
Chlorobenzene Chlorobenzen									
1.1.1.2-Tetrachloroethane	The state of the s								
Ethylbenzene M									
p/m Xylene PM									
o-Xylene M	n/m-Yvlene #M								Į.
Syrene	o-Xvlene *M								TM15/PM10
Bromoform									TM15_A/PM10
Sopropylbenzene Sopropylbe	·								TM15/PM10
1,1,2,2-Tetrachloroethane **M									TM15/PM10
Bromobenzene									TM15/PM10
1,2,3-Trichloropropane M									TM15/PM10
Propylbenzene									TM15/PM10
1,3,5-Trimethylbenzene							<4	ug/kg	TM15/PM10
4-Chlorotoluene									

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20132	1	WS111	8.20	3	18/12/2017	General Description (Bulk Analysis)	soil/stones
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
17/20132	1	WS107	3.00	6	18/12/2017	General Description (Bulk Analysis)	soil/stones
					18/12/2017	Asbestos Fibres	NAD
					18/12/2017	Asbestos Fibres (2)	NAD
					18/12/2017	Asbestos ACM	NAD
					18/12/2017	Asbestos ACM (2)	NAD
					18/12/2017	Asbestos Type	NAD
					18/12/2017	Asbestos Type (2)	NAD
					18/12/2017	Asbestos Level Screen	NAD
						l	

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/20132	1	WS107	11.70	7-9	GRO, VOC	Sample holding time exceeded
17/20132	1	WS107	11.70	7-9	GRO, VOC	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20132

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40,

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS Ref No. 4225) accredited - UK.
ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range
x5 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
ТМ36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



AECOM 2 City Walk

Leeds

LS11 9AR

Exova Jones Environmental

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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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





Attention: Alex Freeman

Date: 5th January, 2018

Your reference : 60527350

Our reference : Test Report 17/21125 Batch 1

Location : West Burton Power station

Date samples received: 22nd December, 2017

Status: Final report

Issue:

Five samples were received for analysis on 22nd December, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc Project Manager

AECOM Client Name:

60527350 Reference:

West Burton Power station Location:

Contact: Alex Freeman

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle H=H-SO, Z=ZnAc, N=NaOH, HN=HNO.

Report : Liquid

JE Job No.:	17/21125						H=H ₂ SO ₄ , 2	Z=ZnAc, N=	NaOH, HN=	HN0 ₃			
J E Sample No.	1-7	8-14	15-21	22-28	29-35								
Sample ID	WS106	WS108	WS110	BH104	BH105								
Depth											Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	VHNNPG	V HN N P G	VHNDG	VHNNPG	VHNNPG								
Sample Date													
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1						LOD/LOR	Units	Method
Date of Receipt	22/12/2017	22/12/2017	22/12/2017	22/12/2017	22/12/2017						203/2011	00	No.
Dissolved Antimony#	<2	<2	<2	<2	<2						<2	ug/l	TM30/PM14
Dissolved Arsenic#	11.9	5.7	2.6	10.3	<2.5						<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Total Dissolved Chromium#	<1.5	<1.5	<1.5	<1.5	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	<7	<7						<7	ug/l	TM30/PM14
Total Dissolved Iron #	<20	168	<20	<20	86						<20	ug/l	TM30/PM14
Dissolved Lead #	<5 46	<5 634	<5 1033	<5 73	<5 202						<5	ug/l	TM30/PM14 TM30/PM14
Dissolved Manganese #	46 <1	<1	1033	/3 <1	303 <1						<2 <1	ug/l ug/l	TM30/PM14
Dissolved Mercury# Dissolved Molybdenum#	3931 _{AA}	2932 _{AA}	811	4110 _{AA}	19						<2	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2	4	2	5						<2	ug/l	TM30/PM14
Dissolved Selenium #	68	11	38	16	16						<3	ug/l	TM30/PM14
Dissolved Zinc #	<3	21	6	7	<3						<3	ug/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	0.6	<0.5						<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5						<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1						<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2	<2						<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1						<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	94	99	98	104	104						<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene TPH CWG	99	102	96	101	102						<0	%	TM15/PM10
Aliphatics													
>C5-C6#	<10	<10	<10	634	<10						<10	ug/l	TM36/PM12
>C6-C8#	<10	<10	<10	40	<10						<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C10-C12#	<5	<5	<5	<5	<5						<5	ug/l	TM5/PM30
>C12-C16#	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>C16-C21#	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
Total aliphatics C5-35#	<10	<10	<10	674	<10						<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7#	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC7-EC8#	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC8-EC10#	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC10-EC12#	<5 <10	<5	<5 <10	<5	<5 <10						<5 <10	ug/l	TM5/PM30
>EC12-EC16# >EC16-EC21#	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10						<10 <10	ug/l	TM5/PM30 TM5/PM30
>EC16-EC21 * >EC21-EC35 *	<10	<10	<10	<10	<10						<10	ug/l ug/l	TM5/PM30
Total aromatics C5-35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	674	<10						<10	ug/l	TM5/TM36/PM30/PM12
	-		-		-						-	J.	
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Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman
JE Job No.: 17/21125

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

JE Job No.:	17/21125					H=H ₂ SU ₄ , A	Z=ZNAC, N=	NaOH, HN=	:HNU ₃			
J E Sample No.	1-7	8-14	15-21	22-28	29-35							
Sample ID	WS106	WS108	WS110	BH104	BH105							
Depth										Please so	e attached n	notes for all
COC No / misc											ations and a	
Containers	V HN N P G	V HN N P G	VHNPG	V HN N P G	V HN N P G							
Sample Date	20/12/2017	20/12/2017	20/12/2017	20/12/2017	20/12/2017							
Sample Type												
Batch Number	1	1	1	1	1							Method
Date of Receipt	22/12/2017	22/12/2017	22/12/2017	22/12/2017	22/12/2017					LOD/LOR	Units	No.
Fluoride	<0.3	0.4	<0.3	<0.3	<0.3					<0.3	mg/l	TM173/PM0
0.1-1	2444.2	2400.4	2260.2	2222.6	1775 0					-O.F	ma/l	TM29/DM0
Sulphate as SO4 # Chloride #	2141.3 176.5	2490.4 95.6	2360.3 96.0	2332.6 100.9	1775.2 117.2					<0.5 <0.3	mg/l mg/l	TM38/PM0 TM38/PM0
Nitrate as NO3#	10.8	0.8	<0.2	<0.2	17.1					<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	4.46	<0.02	<0.02	<0.02	1.64					<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4#	<0.06	<0.06	<0.06	<0.06	<0.06					<0.06	mg/l	TM38/PM0
Total Cyanide #	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	mg/l	TM89/PM0
Total Organic Carbon #	<2	8	3	347	3					<2	mg/l	TM60/PM0
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		<u> </u>										

Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

SVOC Report : Liquid

JE Job No.:	17/21125					 	 	 _		
J E Sample No.	1-7	8-14	15-21	22-28	29-35					
Sample ID	WS106	WS108	WS110	BH104	BH105					
Donth								Diagram	o ottoch sil	otoo fo!!
Depth COC No / misc									e attached r ations and a	
Containers	V HN N P G	V HN N P G	V HN P G	V HN N P G	V HN N P G					•
Sample Date		20/12/2017	20/12/2017	20/12/2017	20/12/2017					
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water					
Batch Number	1	1	1	1	1			LOD/LOR	Units	Method
Date of Receipt	22/12/2017	22/12/2017	22/12/2017	22/12/2017	22/12/2017					No.
SVOC MS										
Phenois	-4	-4	-4	<1	-4			-4	/!	TM16/PM30
2-Chlorophenol # 2-Methylphenol #	<1 <0.5	<1 <0.5	<1 <0.5	<0.5	<1 <0.5			<1 <0.5	ug/l ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10			<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Phenol PAHs	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Chloronaphthalene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Naphthalene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	<0.5	<0.5	<0.5 <0.5	<0.5			<0.5	ug/l	TM16/PM30 TM16/PM30
Benzo(a)anthracene # Chrysene #	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5 <0.5			<0.5 <0.5	ug/l ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Phthalates										
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5			<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1 <1.5	<1 <1.5	<1 <1.5	<1 <1.5	<1 <1.5			<1 <1.5	ug/l	TM16/PM30 TM16/PM30
Di-n-butyl phthalate [#] Di-n-Octyl phthalate	<1.5	<1.5	<1.5	<1.5	<1.5			<1.5	ug/l ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	2	<1	<1	<1			<1	ug/l	TM16/PM30

Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

SVOC Report : Liquid

								_		
J E Sample No.	1-7	8-14	15-21	22-28	29-35					
Sample ID	WS106	WS108	WS110	BH104	BH105					
Depth COC No / misc									e attached n ations and a	
Containers	V HN N P G	V HN N P G	VHNPG	V HN N P G	V HN N P G			GDD1011	anono ana a	oronymo
Sample Date	20/12/2017	20/12/2017			20/12/2017					
Sample Type		Ground Water			Ground Water					
Batch Number	1	1	1	1	1					Method
Date of Receipt	22/12/2017	22/12/2017	22/12/2017	22/12/2017	22/12/2017			LOD/LOR	Units	No.
SVOC MS										
Other SVOCs										
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,4-Dichlorobenzene#	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Nitroaniline	<1 <0.5	<1 <0.5	<1 <0.5	<1 <0.5	<1 <0.5			<1 <0.5	ug/l	TM16/PM30 TM16/PM30
2,4-Dinitrotoluene # 2,6-Dinitrotoluene	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether#	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene Hexachloroethane #	<1 <1	<1 <1	<1 <1	<1 <1	<1 <1			<1 <1	ug/l	TM16/PM30 TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l ug/l	TM16/PM30
N-nitrosodi-n-propylamine *	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	129	110	127	118	123			<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	126	120	124	125	125			<0	%	TM16/PM30
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Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

VOC Report : Liquid

JE Job No.:	17/21125					 	 		_		
J E Sample No.	1-7	8-14	15-21	22-28	29-35						
Sample ID	WS106	WS108	WS110	BH104	BH105						
Depth									Please se	e attached n	ntes for all
COC No / misc										ations and a	
Containers	V HN N P G	V HN N P G	_	-	V HN N P G						
Sample Date	20/12/2017	20/12/2017	20/12/2017	20/12/2017							
Sample Type Batch Number	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water						Method
Date of Receipt	22/12/2017	22/12/2017	22/12/2017	22/12/2017					LOD/LOR	Units	No.
VOC MS											
Dichlorodifluoromethane	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane # Vinyl Chloride #	<3 <0.1	<3 <0.1	<3 <0.1	<3 <0.1	<3 <0.1				<3 <0.1	ug/l ug/l	TM15/PM10 TM15/PM10
Bromomethane	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene # 1,1-Dichloroethane #	<3 <3	<3 <3	<3 <3	<3 <3	<3 <3				<3 <3	ug/l ug/l	TM15/PM10 TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform#	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene # Carbon tetrachloride #	<3 <2	<3 <2	<3 <2	<3 <2	<3 <2				<3 <2	ug/l ug/l	TM15/PM10 TM15/PM10
1,2-Dichloroethane#	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	0.6	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE)#	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3 <2	<3 <2	<3 <2	<3 <2	<3 <2				<3 <2	ug/l ug/l	TM15/PM10 TM15/PM10
Bromodichloromethane * cis-1-3-Dichloropropene	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane * Dibromochloromethane *	<2 <2	<2 <2	<2 <2	<2 <2	<2 <2				<2 <2	ug/l ug/l	TM15/PM10 TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
p/m-Xylene # o-Xylene #	<2 <1	<2 <1	<2 <1	<2 <1	<2 <1				<2 <1	ug/l ug/l	TM15/PM10 TM15/PM10
Styrene	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform#	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene # 1,2,3-Trichloropropane #	<2 <3	<2 <3	<2 <3	<2 <3	<2 <3				<2 <3	ug/l ug/l	TM15/PM10 TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene # 1,2,4-Trimethylbenzene #	<3 <3	<3 <3	<3 <3	<3 <3	<3 <3				<3 <3	ug/l ug/l	TM15/PM10 TM15/PM10
1,2,4-1rimethylbenzene sec-Butylbenzene#	<3 <3	<3	<3	<3 <3	<3 <3				<3 <3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene # 1,2-Dibromo-3-chloropropane	<3 <2	<3 <2	<3 <2	<3 <2	<3 <2				<3 <2	ug/l ug/l	TM15/PM10 TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	94	99	98	104	104				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	99	102	96	101	102			İ	<0	%	TM15/PM10

Notification of Deviating Samples

Client Name: AECOM Matrix : Liquid

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/21125

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

17/21125

T	
#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM West One Wellington Street Leeds LS1 1BA

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







Attention : Alex Freeman

Date: 5th January, 2018

Your reference: WEST BURTON POWER STATION

Our reference : Test Report 17/20922 Batch 1

Location: West Burton Power Station

Date samples received : 20th December, 2017

Status: Final report

Issue:

Two samples were received for analysis on 20th December, 2017 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.



Paul Boden BSc Project Manager

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station **Contact:** Alex Freeman

Contact: Alex Freeman JE Job No.: 17/20922

Report : Solid

3E 30B 140										_		
J E Sample No.	1-3	4-6										
Sample ID	WS102	BH106										
Depth	8.60	1.00								Diago ao	a attached n	otoo for all
COC No / misc											e attached n ations and a	
Containers	VJB	VJB										
Sample Date												
Sample Type	Soil	Soil										
Batch Number	1	1								LOD/LOR	Units	Method
Date of Receipt	20/12/2017	20/12/2017										No.
Antimony	2	8								<1	mg/kg	TM30/PM15
Arsenic **M	7.3	147.1								<0.5	mg/kg	TM30/PM15
Barium ^{#M} Beryllium	272	474 4.3								<1 <0.5	mg/kg mg/kg	TM30/PM15 TM30/PM15
Cadmium **M	<0.1	<0.1								<0.1	mg/kg	TM30/PM15
Chromium **M	58.0	104.7								<0.5	mg/kg	TM30/PM15
Copper **M	4	94								<1	mg/kg	TM30/PM15
Iron	45140	48190								<20	mg/kg	TM30/PM15
Lead #M	<5	52								<5	mg/kg	TM30/PM15
Manganese **M	530	333								<1	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1								<0.1	mg/kg	TM30/PM15 TM30/PM15
Molybdenum ^{#M} Nickel ^{#M}	1.1 51.9	7.1 68.9								<0.1 <0.7	mg/kg mg/kg	TM30/PM15
Selenium **M	<1	3								<1	mg/kg	TM30/PM15
Vanadium	61	136								<1	mg/kg	TM30/PM15
Water Soluble Boron ***	2.3	10.1								<0.1	mg/kg	TM74/PM32
Zinc #M	81	80								<5	mg/kg	TM30/PM15
Methyl Tertiary Butyl Ether #M	<6	-								<6	ug/kg	TM15/PM10
Benzene #M	<5	-								<5	ug/kg	TM15/PM10
Toluene ^{#M} Ethylbenzene ^{#M}	<3 <3	-								<3 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
p/m-Xylene #M	<4	<u>-</u>								<4	ug/kg	TM15/PM10
o-Xylene ^{#M}	<4	-								<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	110	-								<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	126	-								<0	%	TM15/PM10
TPH CWG												
Aliphatics >C5-C6 **M	<0.1 ^{SV}	_								<0.1	mg/kg	TM36/PM12
>C5-C6 >C6-C8 **M	<0.1° <0.1 SV	-								<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 sv	-								<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	-								<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	-								<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	-								<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	-								<7	mg/kg	TM5/PM16
Total aliphatics C5-35	<19	-								<19	mg/kg	TM5/TM36/PM12/PM16
			· <u> </u>	· <u> </u>	· <u> </u>	· <u> </u>	 	· <u> </u>	· <u> </u>		· <u></u>	·

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station
Contact: Alex Freeman

Contact: Alex Freeman
JE Job No.: 17/20922

Report : Solid

			 	 	 	 	ı		
J E Sample No.	1-3	4-6							
Sample ID	WS102	BH106							
Depth	8.60	1.00					Please se	e attached n	otes for all
COC No / misc								ations and a	
Containers	VJB	VJB							
Sample Date	18/12/2017	16/12/2017							
Sample Type	Soil	Soil							
	1	1							
Batch Number							LOD/LOR	Units	Method No.
Date of Receipt	20/12/2017	20/12/2017							
TPH CWG Aromatics									
>C5-EC7#	<0.1 ^{SV}	-					<0.1	mg/kg	TM36/PM12
>EC7-EC8#	<0.1 sv	-					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1 sv	-					<0.1	mg/kg	TM36/PM12
>EC10-EC12#	<0.2	-					<0.2	mg/kg	TM5/PM16
>EC12-EC16#	<4	-					<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	-					<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7 <19	-					<7 <19	mg/kg	TM5/PM16 TM5/TM36/PM12/PM16
Total aromatics C5-35 * Total aliphatics and aromatics(C5-35)	<38	-					<38	mg/kg mg/kg	TM5/TM36/PM12/PM16
	400						400	mg/kg	
Natural Moisture Content	45.5	18.8					<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	-					<0.6	mg/kg	TM38/PM20
Chloride #M	17	-					<2	mg/kg	TM38/PM20
Fluoride	3.1	-					<0.3	mg/kg	TM173/PM20
Hexavalent Chromium#	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Nitrate as NO3	<2.5	-					<2.5	mg/kg	TM38/PM20
Nitrite as NO2	<0.05	-					<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	<0.3 0.1441	-					<0.3 <0.0015	mg/kg g/l	TM38/PM20 TM38/PM20
Sulphate as SO4 (2:1 Ext) *** Chromium III	58.0	104.7					<0.0015	mg/kg	NONE/NONE
	00.0						10.0	g/g	
Total Cyanide #M	-	<0.5					<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	0.08	3.84					<0.02	%	TM21/PM24
Sulphide	<10	-					<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	430	_					<10	mg/kg	TM75/PM58
							~10	9/19	5/1 14136
рН **	8.31	8.54					<0.01	pH units	TM73/PM11
Sample Type	Clay	Clay						None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown						None	PM13/PM0
Other Items	water	silt						None	PM13/PM0
									-
									-
									1

Client Name: AECOM SVOC Report :

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20922

JE Job No.:	17/20922							
J E Sample No.	1-3							
Sample ID	WS102							
Depth	8.60						e attached n	
COC No / misc						abbrevia	ations and a	cronyms
Containers	VJB							
Sample Date	18/12/2017							
Sample Type Batch Number	Soil							
Date of Receipt	1 20/12/2017					LOD/LOR	Units	Method No.
SVOC MS	20/12/2017							
Phenols								
2-Chlorophenoi **M	<10					<10	ug/kg	TM16/PM8
2-Methylphenol	<10					<10	ug/kg	TM16/PM8
2-Nitrophenol	<10					<10	ug/kg	TM16/PM8
2,4-Dichlorophenol **M	<10					<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10					<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10					<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10					<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol 4-Methylphenol	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
4-Nitrophenol	<10					<10	ug/kg ug/kg	TM16/PM8
Pentachlorophenol	<10					<10	ug/kg	TM16/PM8
Phenol *M	<10					<10	ug/kg	TM16/PM8
PAHs								
2-Chloronaphthalene #M	<10					<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10					<10	ug/kg	TM16/PM8
Naphthalene	<10					<10	ug/kg	TM16/PM8
Acenaphthylene	<10					<10	ug/kg	TM16/PM8
Acenaphthene	<10					<10	ug/kg	TM16/PM8
Fluorene Phenanthrene #M	<10 <10					<10	ug/kg	TM16/PM8 TM16/PM8
Anthracene	<10					<10 <10	ug/kg ug/kg	TM16/PM8
Fluoranthene #M	<10					<10	ug/kg	TM16/PM8
Pyrene *M	<10					<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10					<10	ug/kg	TM16/PM8
Chrysene	<10					<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	<10					<10	ug/kg	TM16/PM8
Benzo(a)pyrene	<10					<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10					<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene Benzo(ghi)perylene	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Benzo(b)fluoranthene	<10					<10	ug/kg ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10					<10	ug/kg	TM16/PM8
Phthalates							-55	
Bis(2-ethylhexyl) phthalate	<100					<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100					<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100					<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100					<100	ug/kg	TM16/PM8
Diethyl phthalate Dimethyl phthalate #M	<100 <100					<100 <100	ug/kg ug/kg	TM16/PM8 TM16/PM8
Dimetriyi pritrialate	×100					\100	ug/kg	TIVITO/F'IVIO
								ļ
	i							

Solid

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20922

SVOC Report : Solid

4-Bromophenylphenylether ***	JE Job No.:	17/20922									
Depth B.80 Please see attached notes for all abbreviations and acronyms Please see attached notes Please	J E Sample No.	1-3									
Depth CCC No / misc Containers V.J.B Sample Date Sample Dat											
Depth CCC No / misc Containers V.J.B Sample Date Sample Dat	Commis ID	14/04/00									
COC No / misc Containers V J B Sample Date Sample Date Sample Date Sample Date Sample Date Sample Date Sample Date Sample Type Soil	Sample ID	WS102									
COC No / misc Containers V J B Sample Date Sample Date Sample Date Sample Date Sample Date Sample Date Sample Date Sample Type Soil											
Containers Sample Date 18/12/2017 Soil So	Depth	8.60							Please se	e attached n	otes for all
Sample Type Sample Type Soil	COC No / misc								abbrevia	ations and a	cronyms
Sample Type Batch Number 1	Containers	VJB									
Batch Number Date of Receipt 20/12/2017	Sample Date	18/12/2017									
Batch Number Date of Receipt 20/12/2017		Soil									
SYOC MS											Method
SYOC MS									LOD/LOR	Units	
Other SVOCs Collaboration (1,2-Dichlorobenzene) <10	· ·										
1,2-Dichlorobenzene											
1,2,4-Trichlorobenzene		-10							-10	ua/ka	TM16/DM9
1,3-Dichlorobenzene <10											
1,4-Dichlorobenzene											1
2-Nitroaniline											
2,4-Dinitrotoluene	· ·										
2,6-Dinitrotoluene											
3-Nitroaniline	· ·										
4-Bromophenylphenylether **M											
4-Chlorophenylphenylether	3-Nitroaniline										
4-Chlorophenylphenylether											
4-Nitroaniline	4-Chloroaniline	<10							<10	ug/kg	
Azobenzene < 10	4-Chlorophenylphenylether	<10							<10	ug/kg	TM16/PM8
Azobenzene < 10	4-Nitroaniline	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	Azobenzene	<10							<10		TM16/PM8
Bis(2-chloroethyl)ether	Bis(2-chloroethoxy)methane	<10							<10		TM16/PM8
Carbazole <10	Bis(2-chloroethyl)ether										
Dibenzofuran	Carbazole										
Hexachlorobenzene											1
Hexachlorobutadiene											
Hexachlorocyclopentadiene <10											1 1
Hexachloroethane											
Suprogate Recovery 2-Fluorobipheny Suprogate Recovery 2-Fluorobip											
N-nitrosodi-n-propylamine M											
Nitrobenzene ^{₹M} <10 ug/kg TM16/PM8 Surrogate Recovery 2-Fluorobiphenyl 101 <0											
Surrogate Recovery 2-Fluorobiphenyl 101 <0	N-nitrosodi-n-propylamine										
Surrogate Recovery p Terpheryl-d14 88 C TM16/PM8											
	Surrogate Recovery p-Terphenyl-d14	88							<0	%	TM16/PM8
		<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		

Client Name: AECOM VOC Report :

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20922

Sementhorometane	JE Job No.:	17/20922							
Please we method value for a please of a propriet for a please we method value for a please of a propriet for a please of a please of a propriet for a please of a please o	J E Sample No.	1-3							
Please we method value for a please of a propriet for a please we method value for a please of a propriet for a please of a please of a propriet for a please of a please o									
Please we method value for a please of a propriet for a please we method value for a please of a propriet for a please of a please of a propriet for a please of a please o	Sample ID	WS102							
Containing Description Page 1972 Simple Page Page 2017 Simple Page Page 2017 Simple Page Page 2017 Simple Page 2012 Simple P	Cumple 15	W0102							
Containing Description Page 1972 Simple Page Page 2017 Simple Page Page 2017 Simple Page Page 2017 Simple Page 2012 Simple P	Dth	0.00							
Sample Type Sample Type		8.60							
Sample Date 1922/07 19		V 15					abbievie	alloris aria a	Cionyma
Sample Type Gal									
Batich Number 1									
Date of Receipt 2012/2017									
NOCAME							LOD/LOR	Units	
District Company Compa	•	20/12/2017							140.
Membrane Saul Eller -6									T1445/D1440
Chancemann -3									1
Virty Chalacle									
Biomorestations									
Chicoretine	•								
Trishondromentaries									1
1.1-Clainosember (1.1 DE) -6 6									
Dischonomaname (DCIM)* <a <a="" <a<="" href="https://doi.org/10.1061/biorosthane" td="" =""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td>									
Trans-F3-Chichocontene"									
1.1.Dischoorembrame	, , ,								
18-1-2-Delicorenteme									
2.2 Dichioroproposes									1
Bernachicomentane									
Chicartomm									TM15/PM10
1.1.1-Trichtorochane "	Bromochloromethane #M								TM15/PM10
1.1-Dichtopropropene -3									TM15/PM10
Carbon transchiordom Carbon transchiordom									TM15/PM10
12-Dehrorostenee 12-Dehrorostenee 12-Dehrorostenee 13-Dehrorostenee 13-Dehroros		<3					<3	ug/kg	TM15/PM10
Beazene	Carbon tetrachloride #M	<4					<4	ug/kg	TM15/PM10
Trichiorechane (TCE) March Section Sec		<5					<5	ug/kg	TM15/PM10
12-Dichtorpropone	Benzene #M	<5					<5	ug/kg	TM15/PM10
Distromoreshane Marcolinomethane Marcolinomet	Trichloroethene (TCE) #M	<5					<5	ug/kg	TM15/PM10
Semondichromethane	1,2-Dichloropropane #M	<4					<4	ug/kg	TM15/PM10
Sea 1-3-Dichloropropene	Dibromomethane #M	<4					<4	ug/kg	TM15/PM10
Toluene M	Bromodichloromethane #M	<4					<4	ug/kg	TM15/PM10
Trans-13-Dichloropropenee 3	cis-1-3-Dichloropropene	<4					<4	ug/kg	TM15/PM10
1.1.2-Trichloroethene M	Toluene #M	<3					<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE)		<3					<3	ug/kg	TM15/PM10
1,3-Dichloropropane	1,1,2-Trichloroethane #M	<4					<4		TM15/PM10
1.3-Dichloropropane M	Tetrachloroethene (PCE)#	<3					<3	ug/kg	TM15/PM10
Dibromochloromethane	` '	<4					<4		TM15/PM10
12-Dibromoethane		<5					<5		TM15/PM10
Chlorobenzene M									TM15/PM10
1.1.1.2-Tetrachloroethane 5									TM15/PM10
Ethylbenzene ***									
pm-Xylene M									1
o-Xylene M									1
Styrene	o-Xviene #M								1
Bromoform									TM15_A/PM10
Sopropylbenzene									
1,1,2,2-Tetrachloroethane **M									
Bromobenzene									
1,2,3-Trichloropropane									1
Propylbenzene #									1
2-Chlorotoluene									
1,3,5-Trimethylbenzene									
4-Chlorotoluene									
tert-Butylbenzene #									
1.2,4-Trimethylbenzene									1
Sec-Butylbenzene #									
A-Isopropytoluene #	·								
1,3-Dichlorobenzene **M <4									
1,4-Dichlorobenzene # <4									1
n-Butylbenzene # <4									
1,2-Dichlorobenzene#M <4									
1,2-Dibromo-3-chloropropane # <4									TM15/PM10
1,2,4-Trichlorobenzene * <7									TM15/PM10
Hexachlorobutadiene									TM15/PM10
Naphthalene <27									TM15/PM10
1,2,3-Trichlorobenzene * <7	Hexachlorobutadiene	<4					<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8 110 < 0 % TM15/PM10	Naphthalene	<27					<27	ug/kg	TM15/PM10
	1,2,3-Trichlorobenzene#	<7					<7	ug/kg	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene 126	Surrogate Recovery Toluene D8	110					<0	%	TM15/PM10
,	Surrogate Recovery 4-Bromofluorobenzene	126					<0	%	TM15/PM10

Solid

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20922	1	BH106	1.00	6	27/12/2017	General Description (Bulk Analysis)	soil/stones
						Asbestos Fibres	NAD
					27/12/2017	Asbestos Fibres (2)	NAD
					27/12/2017	Asbestos ACM	NAD
					27/12/2017	Asbestos ACM (2)	NAD
					27/12/2017	Asbestos Type	NAD
					27/12/2017	Asbestos Type (2)	NAD
					27/12/2017	Asbestos Level Screen	NAD

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference: WEST BURTON POWER STATION

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/20922	1	WS102	8.60	1-3	GRO, VOC	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20922

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

ISO17025 (UKAS Ref No. 4225) accredited - UK. SA ISO17025 (SANAS Ref No.T0729) accredited - South Africa. B Indicates analyte found in associated method blank. DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
B Indicates analyte found in associated method blank. DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
SV Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W. Deputts syrroged on as received basis
W Results expressed on as received basis.
+ AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++ Result outside calibration range, results should be considered as indicative only and are not accredited.
* Analysis subcontracted to a Jones Environmental approved laboratory.
AD Samples are dried at 35°C ±5°C
CO Suspected carry over
LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME Matrix Effect
NFD No Fibres Detected
BS AQC Sample
LB Blank Sample
N Client Sample
TB Trip Blank Sample
OC Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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







Attention: Alex Freeman

Date: 8th January, 2018

Your reference :

AECOM West One

Leeds LS1 1BA

Wellington Street

Our reference: Test Report 17/20654 Batch 1

Location: West Burton P S

Date samples received: 14th December, 2017

Status: Final report

Issue:

Five samples were received for analysis on 14th December, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Paul Boden BSc Project Manager

Client Name:

AECOM

Report : Solid

Reference:

Location: West Burton P S
Contact: Alex Freeman

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

JE JOD NO.:	17/20654										_		
J E Sample No.	1-3	4-6	10-12										
Sample ID	TP113	TP104	TP114										
Depth	2.0	0.8	1.0										
		0.8	1.0									e attached nations and a	
COC No / misc													,
Containers	VJB	VJB	VJB										
Sample Date	13/12/2017	13/12/2017	13/12/2017										
Sample Type	Soil	Soil	Soil										
Batch Number	1	1	1								100/100	Units	Method
Date of Receipt	14/12/2017	14/12/2017	14/12/2017								LOD/LOR	Offics	No.
Antimony	7	5	3								<1	mg/kg	TM30/PM15
Arsenic #M	129.5	79.8	23.9								<0.5	mg/kg	TM30/PM15
Barium ^{#M}	418	315	286								<1	mg/kg	TM30/PM15
Beryllium	3.8	3.0	1.8								<0.5	mg/kg	TM30/PM15
Cadmium **M Chromium **M	<0.1	<0.1 52.9	0.6 47.7								<0.1	mg/kg	TM30/PM15 TM30/PM15
Copper #M	63.9 80	60	31								<0.5 <1	mg/kg mg/kg	TM30/PM15
Iron	38040	35110	33340								<20	mg/kg	TM30/PM15
Lead *M	49	30	101								<5	mg/kg	TM30/PM15
Manganese #M	338	309	857								<1	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM30/PM15
Molybdenum **M	2.7	3.8	3.6								<0.1	mg/kg	TM30/PM15
Nickel #M	58.0	47.8	38.1								<0.7	mg/kg	TM30/PM15
Selenium **M	3	1	2								<1	mg/kg	TM30/PM15
Vanadium #M	116	90	57								<1	mg/kg	TM30/PM15
Water Soluble Boron *** Zinc ****	3.0 75	14.2 55	5.4 146								<0.1 <5	mg/kg mg/kg	TM74/PM32 TM30/PM15
ZITIC	73	33	140								ζ3	ilig/kg	110130/1 10113
PAH MS													
Naphthalene #M	-	-	0.09								<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	<0.03								<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	-	<0.05								<0.05	mg/kg	TM4/PM8
Fluorene #M	-	-	<0.04								<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	-	0.10								<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	<0.04								<0.04	mg/kg	TM4/PM8 TM4/PM8
Fluoranthene #M Pyrene #	-	-	0.10								<0.03 <0.03	mg/kg mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	0.03								<0.06	mg/kg	TM4/PM8
Chrysene **M	-	-	0.07								<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	-	0.11								<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	<0.04								<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	-	-	<0.04								<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	<0.04								<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	0.06								<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	-	0.8								<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	0.08								<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene PAH Surrogate % Recovery	-	-	0.03 121								<0.02 <0	mg/kg %	TM4/PM8 TM4/PM8
Sunsgate /o Recovery			121								10	,,,	
Natural Moisture Content	13.9	13.8	43.6								<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	3.9	<0.6	11.0								<0.6	mg/kg	TM38/PM20
Chloride **M	6	3	24								<0.6	mg/kg	TM38/PM20
Fluoride	3.2	2.5	1.9								<0.3	mg/kg	TM173/PM20
				l	ı	l	L	l	l .	l	.3.0	9/119	

Client Name:

AECOM

Report : Solid

Reference:

Location: West Burton P S
Contact: Alex Freeman

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

JE Job No.:	17/20654								
J E Sample No.	1-3	4-6	10-12						
Sample ID	TP113	TP104	TP114						
Depth	2.0	0.8	1.0						
COC No / misc								e attached n ations and a	
Containers	VJB	VJB	VJB						
Sample Date	13/12/2017	13/12/2017	13/12/2017						
Sample Type		Soil	Soil						
Batch Number	1	1	1				LOD/LOR	Units	Method No.
Date of Receipt									
Hexavalent Chromium #	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20
Nitrate as NO3	<2.5	<2.5	<2.5				<2.5	mg/kg	TM38/PM20
Nitrite as NO2	<0.05	<0.05	<0.05				<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	1.4	3.8	<0.3				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	0.0649	0.1957	0.0255				<0.0015	g/l	TM38/PM20
Chromium III	63.9	52.9	47.7				<0.5	mg/kg	NONE/NONE
Total Cyanide #M	<0.5	<0.5	<0.5				<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	2.62	3.74	3.66				<0.02	%	TM21/PM24
Sulphide	<10	<10	<10				<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	430	360	16110				<10	mg/kg	TM75/PM58
рН ^{#М}	8.08	8.23	12.28				<0.01	pH units	TM73/PM11
Sample Type	Clayey Silt	Silt	Clay					None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown					None	PM13/PM0
Other Items	stones	stones	roots					None	PM13/PM0

Client Name: AECOM

Reference:

 Location:
 West Burton P S

 Contact:
 Alex Freeman

 JE Job No.:
 17/20654

SVOC Report : Solid

Date of Receipt 14/12/2017		
Depth 0.8 Please see att abbreviator COC No / misc COTalainers V.J.B. Sample Date Sample Type Soil Sample Type Batch Number Date of Receipt 14/12/2017 SVOC MS Phenols CChlorophenol state Misc	Units Ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	Method No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
COC No / misc Containers V	Units Ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	Method No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Containers V J B Sample Date 13/12/2017 Sample Type Soil	Units ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	Method No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Sample Date 13/12/2017 Soil	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Sample Type Batch Number 1	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Batch Number 1	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Date of Receipt 14/12/2017	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	No. TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
SVOC MS	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
Phenois < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 10	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
2-Methylphenol	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	TM16/PM8 TM16/PM8 TM16/PM8 TM16/PM8
2-Methylphenol <10	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	TM16/PM8 TM16/PM8 TM16/PM8
2,4-Dichlorophenol #M <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	ug/kg ug/kg ug/kg ug/kg ug/kg	TM16/PM8 TM16/PM8
2,4-Dimethylphenol <10 2,4,5-Trichlorophenol <10 2,4,6-Trichlorophenol <10 4-Chloro-3-methylphenol <10 4-Methylphenol <10 4-Nitrophenol <10 4-Nitrophenol <10 Pentachlorophenol <10 Pentachlorophenol <10 Phenol **M <10 PAHs <10 2-Chloronaphthalene **M <10 2-Methylnaphthalene **M <10	ug/kg ug/kg ug/kg ug/kg	TM16/PM8
2,4,5-Trichlorophenol <10 2,4,6-Trichlorophenol <10 4-Chloro-3-methylphenol <10 4-Methylphenol <10 4-Nitrophenol <10 4-Nitrophenol <10 Pentachlorophenol <10 Phenol #M <10 PAHs <10 2-Chloronaphthalene #M <10 2-Methylnaphthalene #M <10	ug/kg ug/kg ug/kg	t .
2,4,6-Trichlorophenol <10 4-Chloro-3-methylphenol <10 4-Methylphenol <10 4-Nitrophenol <10 Pentachlorophenol <10 Phenol #M <10 PAHs <10 2-Chloronaphthalene #M <10 2-Methylnaphthalene #M <10 2-Methylnaphthalene #M <10	ug/kg ug/kg	TM16/PM8
4-Chloro-3-methylphenol	ug/kg	1
4-Methylphenol <10		TM16/PM8
4-Nitrophenol <10	ug/kg	TM16/PM8
Pentachlorophenol <10	ua/ka	TM16/PM8 TM16/PM8
Phenol #M	ug/kg ug/kg	TM16/PM8
PAHs 2-Chloronaphthalene ^{#M} <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	ug/kg ug/kg	TM16/PM8
2-Chloronaphthalene #M <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <	~g, ng	TIVITO/FIVIO
2-Methylnaphthalene **M <10 <10 <10	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
Naphthalene <10 <10 <10 <10 to	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
Acenaphthene <10 <10 <10 <10 <10 <10 <10 <10 <10 <10	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
1	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
1	ug/kg	TM16/PM8
	ug/kg ug/kg	TM16/PM8 TM16/PM8
	ug/kg ug/kg	TM16/PM8
	ug/kg	TM16/PM8
Benzo(k)fluoranthene	ug/kg	TM16/PM8
Phthalates		
	ug/kg	TM16/PM8
	ug/kg	TM16/PM8
		TM16/PM8
	ug/kg	TM16/PM8 TM16/PM8
	ug/kg ug/kg	TM16/PM8
Dimetry) prinalate	ug/kg	TIVITO/PIVIO
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Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman
JE Job No.: 17/20654

SVOC Report : Solid

JE Job No.:	17/20654							
J E Sample No.	4-6							
Sample ID	TP104							
Depth	0.8					Please se	e attached n	otes for all
COC No / misc	*.*						ations and a	
Containers	VJB							
Sample Date	13/12/2017							
Sample Type	Soil							
Batch Number	1							Method
Date of Receipt	14/12/2017					LOD/LOR	Units	No.
SVOC MS	14/12/2017							
Other SVOCs								
1,2-Dichlorobenzene	<10					<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene **M	<10							TM16/PM8
1,2,4-1 richlorobenzene 1,3-Dichlorobenzene						<10	ug/kg	TM16/PM8
	<10					<10	ug/kg	
1,4-Dichlorobenzene	<10					<10	ug/kg	TM16/PM8
2-Nitroaniline	<10					<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10					<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10					<10	ug/kg	TM16/PM8
3-Nitroaniline	<10					<10	ug/kg	TM16/PM8
4-Bromophenylphenylether ***	<10					<10	ug/kg	TM16/PM8
4-Chloroaniline	<10					<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10					<10	ug/kg	TM16/PM8
4-Nitroaniline	<10					<10	ug/kg	TM16/PM8
Azobenzene	<10					<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10					<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10					<10	ug/kg	TM16/PM8
Carbazole	<10					<10	ug/kg	TM16/PM8
Dibenzofuran *M	<10					<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10					<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10					<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10					<10	ug/kg	TM16/PM8
Hexachloroethane	<10					<10	ug/kg	TM16/PM8
Isophorone #M	<10					<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10					<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10					<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	112					<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	87					<0	%	TM16/PM8
								}
								}
								}
								-
								}
		 	 	 	 	 	·	

Client Name: AECOM

Reference:

 Location:
 West Burton P S

 Contact:
 Alex Freeman

 JE Job No.:
 17/20654

VOC Report : Solid

JE Job No.:	17/20654							
J E Sample No.	4-6							
Sample ID	TP104							
Depth	0.8					Diagon on	o ottoobod n	otoo for all
COC No / misc	0.6						e attached r ations and a	
Containers	VJB							
Sample Date	13/12/2017							
Sample Type	Soil							
Batch Number	1					LOD/LOR	Units	Method
VOC MS	14/12/2017							No.
Dichlorodifluoromethane	<2					<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether ***	<6					<6	ug/kg	TM15/PM10
Chloromethane #	<3					<3	ug/kg	TM15/PM10
Vinyl Chloride	<2					<2	ug/kg	TM15_A/PM10
Bromomethane	<1					<1	ug/kg	TM15/PM10
Chloroethane #M	<6					<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3					<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6					<6	ug/kg	TM15/PM10
Dichloromethane (DCM) # trans-1-2-Dichloroethene #	<30 <3					<30 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
trans-1-2-Dichloroethene 1.1-Dichloroethane ***	<5 <6					<5 <6	ug/kg ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7					<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4					<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4					<4	ug/kg	TM15/PM10
Chloroform #M	<5					<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5					<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3					<3	ug/kg	TM15/PM10
Carbon tetrachloride **M 1,2-Dichloroethane **M	<4 <5					<4 <5	ug/kg ug/kg	TM15/PM10 TM15/PM10
Benzene **M	<5					<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5					<5	ug/kg	TM15/PM10
1,2-Dichloropropane **M	<4					<4	ug/kg	TM15/PM10
Dibromomethane #M	<4					<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4					<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4					<4	ug/kg	TM15/PM10
Toluene #M	<3					<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene 1,1,2-Trichloroethane #M	<3 <4					<3 <4	ug/kg	TM15/PM10 TM15/PM10
Tetrachloroethene (PCE) #	<3					<3	ug/kg ug/kg	TM15/PM10
1,3-Dichloropropane **M	<4					<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5					<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3					<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4					<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5					<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3					<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4					<4	ug/kg	TM15/PM10
o-Xylene ^{#M} Styrene	<4 <3					<4 <3	ug/kg ug/kg	TM15/PM10 TM15_A/PM10
Bromoform	<4					<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3					<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane **M	<3					<3	ug/kg	TM15/PM10
Bromobenzene	<2					<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4					<4	ug/kg	TM15/PM10
Propylbenzene #	<4					<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3					<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene [#] 4-Chlorotoluene	<3 <3					<3 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
tert-Butylbenzene #	<5 <5					<5 <5	ug/kg ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6					<6	ug/kg	TM15/PM10
sec-Butylbenzene#	<4					<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4					<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4					<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4					<4	ug/kg	TM15/PM10
n-Butylbenzene#	<4					<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4 <4					<4 <4	ug/kg	TM15/PM10 TM15/PM10
1,2-Dibromo-3-chloropropane # 1,2,4-Trichlorobenzene #	<4 <7					<4 <7	ug/kg ug/kg	TM15/PM10
Hexachlorobutadiene	<4					<4	ug/kg	TM15/PM10
Naphthalene	<27					<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7					<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	106					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	57					<0	%	TM15/PM10

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20654	1	TP113	2.0	3	27/12/2017	General Description (Bulk Analysis)	soil/stones
					27/12/2017	Asbestos Fibres	NAD
					27/12/2017	Asbestos Fibres (2)	NAD
					27/12/2017	Asbestos ACM	NAD
					27/12/2017	Asbestos ACM (2)	NAD
					27/12/2017	Asbestos Type	NAD
					27/12/2017	Asbestos Type (2)	NAD
					27/12/2017	Asbestos Level Screen	NAD
17/20654	1	TP104	8.0	6	27/12/2017	General Description (Bulk Analysis)	soil/stones
					27/12/2017	Asbestos Fibres	NAD
					27/12/2017	Asbestos Fibres (2)	NAD
					27/12/2017	Asbestos ACM	NAD
					27/12/2017	Asbestos ACM (2)	NAD
					27/12/2017	Asbestos Type	NAD
					27/12/2017	Asbestos Type (2)	NAD
					27/12/2017	Asbestos Level Screen	NAD
17/20654	1	TP114	1.0	12	27/12/2017	General Description (Bulk Analysis)	soil/stones
					27/12/2017	Asbestos Fibres	NAD
					27/12/2017	Asbestos Fibres (2)	NAD
					27/12/2017	Asbestos ACM	NAD
					27/12/2017	Asbestos ACM (2)	NAD
					27/12/2017	Asbestos Type	NAD
					27/12/2017	Asbestos Type (2)	NAD
					27/12/2017	Asbestos Level Screen	NAD

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton P S
Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20654

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ОС	Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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







Attention: Alex Freeman

Date: 8th January, 2018

Your reference :

AECOM West One

Leeds LS1 1BA

Wellington Street

Our reference : Test Report 17/20808 Batch 1

Location: West Burton P S

Date samples received : 16th December, 2017

Status: Final report

Issue:

Eleven samples were received for analysis on 16th December, 2017 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc Project Manager

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman

JE Job No.: 17/20808

Report : Solid

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

JE Job No.:	17/20808										_		
J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	31-33			
Sample ID	TP105	WS105	WS106	TP112	TP112	TP111	TP111	WS104	WS110	WS112			
Depth	2.00	14.2	10.0	2.50	0.50	3.00	2.00	14.0	15.0	2.00	Please se	e attached n	otes for all
COC No / misc											abbrevi	ations and a	cronyms
Containers	VJB	VJB	VJB										
Sample Date	12/12/2017	12/12/2017	12/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	15/12/2017	15/12/2017	15/12/2017			
Sample Type	Soil	Soil	Soil		ı								
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt		16/12/2017			16/12/2017	16/12/2017			16/12/2017	16/12/2017			
Antimony	7	1	2	2	1	2	2	1	2	NDP	<1	mg/kg	TM30/PM15
Arsenic **M	146.4	6.0	19.0	5.3	3.0	8.4	7.7	10.0	4.2	NDP	<0.5	mg/kg	TM30/PM15
Barium **M	504	1094	272	153	192	198	298	263	1671	NDP	<1	mg/kg	TM30/PM15
Beryllium	4.8	1.5	1.3	1.7	1.6	1.2	1.0	0.9	1.7	NDP	<0.5	mg/kg	TM30/PM15
Cadmium #M	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.5	0.4	<0.1	NDP	<0.1	mg/kg	TM30/PM15
Chromium *M	62.6	52.3	32.6	63.8	74.8	54.1	42.5	28.9	45.0	NDP	<0.5	mg/kg	TM30/PM15
Copper **M	85	9	16	13	128	13	10	7	5	NDP	<1	mg/kg	TM30/PM15
Iron	36180	31180	29710	39510	31510	32320	28700	25330	35230	NDP	<20	mg/kg	TM30/PM15
Lead #M	39	6	14	<5	<5	38	73	69	<5	NDP	<5	mg/kg	TM30/PM15
Manganese *M	274	549	1013	509	545	881	853	634	509	NDP	<1	mg/kg	TM30/PM15
Mercury *M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NDP	<0.1	mg/kg	TM30/PM15
Molybdenum #M	3.8	1.4	5.5	0.4	0.4	1.3	1.1	38.2 _{AA}	1.2	NDP	<0.1	mg/kg	TM30/PM15
Nickel #M	54.8	34.9	31.0	61.1	66.0	31.4	27.1	23.1	38.8	NDP	<0.7	mg/kg	TM30/PM15
Selenium *M	7	<1	1	<1	<1	<1	<1	<1	<1	NDP	<1	mg/kg	TM30/PM15
Vanadium	115	41	44	49	67	44	34	33	49	NDP	<1	mg/kg	TM30/PM15
Water Soluble Boron #M	25.7	4.8	8.1	1.1	2.0	1.9	1.4	9.0	1.4	NDP	<0.1	mg/kg	TM74/PM32
Zinc **M	63	68	65	73	81	92	98	94	54	NDP	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	4	<1	mg/kg	TM30/PM62
Arsenic		_	-	-	-	_	_	_	_	32.9	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-	-	-	-	-	373	<0.5	mg/kg	TM30/PM62
		-		-	-	-	-		-		<0.5		TM30/PM62
Beryllium			-					-		1.7		mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	-	-	-	-	0.2	<0.1	mg/kg	
Chromium	-	-	-	-	-	-	-	-	-	27.8	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	-	-	-	-	63	<1	mg/kg	TM30/PM62
Iron	-	-	-	-	-	-	-	-	-	26903	<20	mg/kg	TM30/PM62
Lead	-	-	-	-	-	-	-	-	-	43	<5	mg/kg	TM30/PM62
Manganese	-	-	-	-	-	-	-	-	-	463	<1	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	-	-	-	-	<0.1	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-	3.7	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	-	-	-	-	37.5	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	-	-	-	-	4	<1	mg/kg	TM30/PM62
Vanadium	-	-	-	-	-	-	-	-	-	48	<1	mg/kg	TM30/PM62
Water Soluble Boron	-	-	-	-	-	-	-	-	-	2.8	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	-	-	-	-	150	<5	mg/kg	TM30/PM62
								<u> </u>			<u> </u>		

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman

JE Job No.: 17/20808

Report : Solid

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

JE JOD NO.:	17/20808										•1		
J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	31-33			
Sample ID	TP105	WS105	WS106	TP112	TP112	TP111	TP111	WS104	WS110	WS112			
Depth	2.00	14.2	10.0	2.50	0.50	3.00	2.00	14.0	15.0	2.00	Diagram		-t fII
COC No / misc												e attached n ations and a	
Containers	VID	\/ I.D	VID	VID	VID	VID	\/ I.D	\/ I.D	\/ I.D	VID			
	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB			
Sample Date	12/12/2017	12/12/2017	12/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	15/12/2017	15/12/2017	15/12/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method
Date of Receipt	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	LOD/LOR	Offics	No.
PAH MS													
Naphthalene #M	<0.04	-	-	-	-	-	-	<0.04	-	1.00	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	-	-	-	-	-	<0.03	-	0.09	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	-	-	-	-	-	-	<0.05	-	0.37	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	-	-	-	-	-	-	<0.04	-	0.38	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	-	-	-	-	-	-	0.04	-	2.45	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	-	-	-	-	-	<0.04	-	0.73	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	-	-	-	-	-	-	<0.03	-	3.00	<0.03	mg/kg	TM4/PM8
Pyrene # Benzo(a)anthracene #	<0.03 <0.06	-	-	-	-	-	-	<0.03 <0.06	-	2.47 1.51	<0.03 <0.06	mg/kg	TM4/PM8 TM4/PM8
Chrysene **M	<0.06	-	-	-	-	-	-	<0.06	-	1.01	<0.06	mg/kg mg/kg	TM4/PM8
Benzo(bk)fluoranthene ***	<0.02	-	-	_	_	_	_	<0.02	_	1.97	<0.02	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	-	-	-	-	-	-	<0.04	-	1.08	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene *M	<0.04	-	-	-	-	-	-	<0.04	-	0.65	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	-	-	-	-	-	<0.04	-	0.15	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	-	-	-	-	-	-	<0.04	-	0.62	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	-	-	-	-	-	-	<0.6	-	17.5	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	-	-	-	-	-	-	<0.05	-	1.42	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	-	-	-	-	-	-	<0.02	-	0.55	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	93	-	-	-	-	-	-	98	-	92	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether ***	-	<6	<6	-	-	<6	<6	<6	<6	-	<6	ug/kg	TM15/PM10
Benzene #M	-	<5	<5	-	-	<5	<5	<5	<5	-	<5	ug/kg	TM15/PM10
Toluene #M	-	<3	6	-	-	<3	<3	<3	<3	-	<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	<3	<3	-	-	<3	<3	<3	<3	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	<4	<4	-	-	<4	<4	<4	<4	-	<4	ug/kg	TM15/PM10
o-Xylene [™] Surrogate Recovery Toluene D8	-	<4 109	<4 107	-	-	<4 104	<4 111	<4 108	<4 116	-	<4 <0	ug/kg %	TM15/PM10 TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	128	89	-	-	97	108	105	136		<0	%	TM15/PM10
		120	00			01	100	100	100		νο.	70	110110/110110
TPH CWG													
Aliphatics													
>C5-C6 #M	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1 ^{sv}	-	<0.1	mg/kg	TM36/PM12
>C6-C8 **M	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1 ^{sv}	-	<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1 ^{SV}	-	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	-	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	mg/kg	TM5/PM16
>C12-C16 **M	-	<4	<4	-	-	<4	<4	<4	<4	-	<4	mg/kg	TM5/PM16
>C16-C21 #M	-	<7	<7	-	-	<7	<7	<7	<7	-	<7	mg/kg	TM5/PM16
>C21-C35 *M	-	<7	<7	-	-	<7	<7	<7	<7	-	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	<19	<19	-	-	<19	<19	<19	<19	-	<19	mg/kg	TM5/TM36/PM12/PM16
		<u> </u>					<u> </u>	<u> </u>	<u> </u>	<u> </u>			

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman

JE Job No.: 17/20808

Report : Solid

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

JE Job No.:	17/20808												
J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	31-33			
Sample ID	TP105	WS105	WS106	TP112	TP112	TP111	TP111	WS104	WS110	WS112			
Depth	2.00	14.2	10.0	2.50	0.50	3.00	2.00	14.0	15.0	2.00	Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB			
Sample Date	12/12/2017	12/12/2017	12/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	15/12/2017	15/12/2017	15/12/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt		16/12/2017	16/12/2017		16/12/2017	16/12/2017		16/12/2017	16/12/2017	16/12/2017	LOD/LOR	Units	Method No.
TPH CWG	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017	10/12/2017			
Aromatics													
>C5-EC7#	_	<0.1	<0.1	-	_	<0.1	<0.1	<0.1	<0.1 ^{sv}	_	<0.1	mg/kg	TM36/PM12
>EC7-EC8#	-	<0.1	<0.1	_	_	<0.1	<0.1	<0.1	<0.1 <0.1	_	<0.1	mg/kg	TM36/PM12
>EC7-EC8 >EC8-EC10 ***	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1 sv	-	<0.1	mg/kg	TM36/PM12
>EC0-EC10 >EC10-EC12#	-	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	mg/kg	TM5/PM16
>EC10-EC12 >EC12-EC16#	-	<4	<4	-	-	<4	<4	<4	<4	-	<4	mg/kg	TM5/PM16
>EC16-EC21 #	-	<7	<7	-	-	<7	<7	<7	<7	-	<7	mg/kg	TM5/PM16
>EC21-EC35#	-	<7	<7	-	-	<7	<7	<7	<7	-	<7	mg/kg	TM5/PM16
Total aromatics C5-35#	-	<19	<19	-	-	<19	<19	<19	<19	-	<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	<38	<38	-	-	<38	<38	<38	<38	-	<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	13.6	29.2	27.9	22.2	20.6	36.6	33.5	38.9	31.7	NDP	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	-	<0.6	<0.6	-	-	-	17.9	<0.6	4.6	<0.6	mg/kg	TM38/PM20
Chloride *M	3	-	46	13	-	-	-	44	32	NDP	<2	mg/kg	TM38/PM20
Chloride	-	-	-	-	-	-	-	-	-	20	<2	mg/kg	TM38/PM60
Fluoride	0.8	-	1.5	1.8	-	-	-	0.5	1.8	3.4	<0.3	mg/kg	TM173/PM20
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Nitrate as NO3	<2.5	-	<2.5	<2.5	-	-	-	<2.5	<2.5	NDP	<2.5	mg/kg	TM38/PM20
Nitrate as NO3	-	-	-	-	-	-	-	-	-	37.3	<2.5	mg/kg	TM38/PM60
Nitrite as NO2	<0.05	-	0.20	0.26	-	-	-	<0.05	<0.05	NDP	<0.05	mg/kg	TM38/PM20
Nitrite as NO2	-	-	-	-	-	-	-	-	-	5.64	<0.05	mg/kg	TM38/PM60
Ortho Phosphate as PO4	<0.3	-	<0.3	<0.3	-	-	-	<0.3	<0.3	NDP	<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	-	-	-	-	-	-	-	-	<0.3	<0.3	mg/kg	TM38/PM60
Sulphate as SO4 (2:1 Ext) #M	1.4479	-	1.2386	0.0505	-	-	-	0.4693	0.1439	NDP	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-	-	-	-	0.2045	<0.0015	g/l	TM38/PM60
Chromium III	62.6	52.3	32.6	63.8	74.8	54.1	42.5	28.9	45.0	NDP	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	-	-	-	27.8	<0.5	mg/kg	NONE/NONE
Total Cyanide #M	<0.5	-	-	-	-	<0.5	-	-	-	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	3.44	0.28	0.51	0.22	0.07	1.20	0.60	0.95	0.06	NDP	<0.02	%	TM21/PM24
Sulphide	<10	-	<10	<10	-	-	-	<10	<10	<10	<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	190	-	440	420	-	-	-	560	480	NDP	<10	mg/kg	TM75/PM58
рН * М	8.58	8.29	8.12	8.23	8.32	7.63	8.50	-	8.77	7.92	<0.01	pH units	TM73/PM11
Sample Type	Silt	-	Clay	Clay	Clay	-	-	Clay	Clay	NDP		None	PM13/PM0
Sample Colour	Medium Brown	-	Medium Brown	Medium Brown	Light Brown	-	-	Medium Brown	Medium Brown	NDP		None	PM13/PM0
Other Items	none	-	stones	none	none	-	-	sand	none	NDP		None	PM13/PM0

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman
JE Job No.: 17/20808

SVOC Report : Solid

J E Sample No.	4-6	7-9	16-18	19-21	22-24	25-27					
o L Galliple NO.	7-0	1-3	10-10	13-21	22-24	20-21					
Sample ID	WS105	WS106	TP111	TP111	WS104	WS110					
Depth	14.2	10.0	3.00	2.00	14.0	15.0				e attached n ations and a	
COC No / misc Containers	VJB	VJB	VJB	VJB	VJB	VJB			abblevia	alions and a	Dioliyilis
Sample Date	12/12/2017	12/12/2017	14/12/2017	14/12/2017	15/12/2017	15/12/2017					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1			1.00/1.00	11.2.	Method
Date of Receipt	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017			LOD/LOR	Units	No.
SVOC MS											
Phenois											
2-Chlorophenol #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2-Nitrophenol 2,4-Dichlorophenol #M	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10			<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10			<10	ug/kg ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Phenol #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
PAHs											
2-Chloronaphthalene #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Naphthalene Acenaphthylene	<10 <10	<10 <10	<10 <10	<10 <10	-	<10 <10			<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Acenaphthene	<10	<10	<10	<10	-	<10			<10	ug/kg ug/kg	TM16/PM8
Fluorene	<10	<10	<10	<10	_	<10			<10	ug/kg	TM16/PM8
Phenanthrene **M	<10	41	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Anthracene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Fluoranthene #M	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Pyrene #M	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Chrysene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Benzo(a)pyrene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene Benzo(ghi)perylene	<10 <10	<10 <10	<10 <10	<10 <10	-	<10 <10			<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Benzo(b)fluoranthene	<10	<10	<10	<10	-	<10			<10	ug/kg ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10	<10	<10	<10	-	<10			<10	ug/kg	TM16/PM8
Phthalates											
Bis(2-ethylhexyl) phthalate	<100	228	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100	<100	<100	<100	<100	<100			<100	ug/kg	TM16/PM8
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Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman
JE Job No.: 17/20808

SVOC Report : Solid

JE Job No.:	17/20808										
J E Sample No.	4-6	7-9	16-18	19-21	22-24	25-27					
Sample ID	WS105	WS106	TP111	TP111	WS104	WS110					
Depth	14.2	10.0	3.00	2.00	14.0	15.0			Please se	e attached n	otes for all
COC No / misc									abbrevi	ations and ad	cronyms
Containers	VJB	VJB	VJB	VJB	VJB	VJB					
Sample Date	12/12/2017	12/12/2017	14/12/2017	14/12/2017	15/12/2017	15/12/2017					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1					Method
Date of Receipt	16/12/2017	16/12/2017		16/12/2017		16/12/2017			LOD/LOR	Units	No.
SVOC MS	10/12/2017	10/12/2017	10/12/2017	10/12/2011	10/12/2011	10/12/2011					
Other SVOCs											
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene **M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
				<10							TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10		<10	<10			<10	ug/kg	
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Bromophenylphenylether ***	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Carbazole	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Isophorone #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Nitrobenzene *M	<10	<10	<10	<10	<10	<10			<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	110	105	102	101	120	114			<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	87	83	85	88	100	93			<0	%	TM16/PM8
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Client Name: AECOM VOC Report :

Reference:

Location: West Burton P S
Contact: Alex Freeman
JE Job No.: 17/20808

JE Job No.:	17/20808						 	 	_		
J E Sample No.	4-6	7-9	16-18	19-21	22-24	25-27					
Sample ID	WS105	WS106	TP111	TP111	WS104	WS110					
Depth	14.2	10.0	3.00	2.00	14.0	15.0			Please se	e attached r	notes for all
COC No / misc	_				-					ations and a	
Containers	VJB	VJB	VJB	VJB	VJB	VJB					
Sample Date	12/12/2017		14/12/2017	14/12/2017	15/12/2017						
Sample Type Batch Number	Soil 1	Soil 1	Soil 1	Soil 1	Soil 1	Soil 1					Method
Date of Receipt	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017	16/12/2017			LOD/LOR	Units	No.
VOC MS											
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2			<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether ***	<6	<6	<6	<6	<6	<6			<6	ug/kg	TM15/PM10
Chloromethane # Vinyl Chloride	<3 <2	<3 <2	<3 <2	<3 <2	<3 <2	<3 <2			<3 <2	ug/kg ug/kg	TM15/PM10 TM15_A/PM10
Bromomethane	<1	<1	<1	<1	<1	<1			<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6	<6	<6	<6	<6			<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) **M	<6	<6	<6	<6	<6	<6			<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	<30	<30	<30	<30	<30			<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene * 1.1-Dichloroethane *M	<3 <6	<3 <6	<3 <6	<3 <6	<3 <6	<3 <6			<3 <6	ug/kg ug/kg	TM15/PM10 TM15/PM10
cis-1-2-Dichloroethene ***	<0 <7	<0 <7	<o <7</o 	<o <7</o 	<o <7</o 	<0 <7			<0 <7	ug/kg ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Chloroform #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
1,1-Dichloropropene [#] Carbon tetrachloride ^{#M}	<3 <4	<3 <4	<3 <4	<3 <4	<3 <4	<3 <4			<3 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,2-Dichloroethane #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
Benzene #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
1,2-Dichloropropane *M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Bromodichloromethane #M cis-1-3-Dichloropropene	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4			<4 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Toluene **M	<3	6	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
1,3-Dichloropropane *** Dibromochloromethane ***	<4 <5	<4 <5	<4 <5	<4 <5	<4 <5	<4 <5			<4 <5	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
o-Xylene ^{#M} Styrene	<4 <3	<4 <3	<4 <3	<4 <3	<4 <3	<4 <3			<4 <3	ug/kg ug/kg	TM15/PM10 TM15_A/PM10
Bromoform	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane **M	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2	<2			<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane *** Propylbenzene **	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4			<4 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3	<3			<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5	<5			<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6 <4	<6	<6	<6 <4	<6	<6 <4			<6	ug/kg	TM15/PM10 TM15/PM10
sec-Butylbenzene# 4-Isopropyltoluene#	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4	<4 <4			<4 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,3-Dichlorobenzene **M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4	<4	<4	<4	<4			<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane # 1,2,4-Trichlorobenzene #	<4 <7	<4 <7	<4 <7	<4 <7	<4	<4 <7			<4 <7	ug/kg	TM15/PM10 TM15/PM10
1,2,4-Trichlorobenzene " Hexachlorobutadiene	<4	<4	<4	<4	<7 <4	<br <4			<4	ug/kg ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27	<27	<27			<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7	<7			<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	109	107	104	111	108	116			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	128	89	97	108	105	136			<0	%	TM15/PM10

Solid

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Burton P S
Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20808	1	TP105	2.00	3	28/12/2017	General Description (Bulk Analysis)	soil.stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20808	1	TP111	3.00	18	28/12/2017	General Description (Bulk Analysis)	soil.stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20808	1	WS104	14.0	24	28/12/2017	General Description (Bulk Analysis)	soil.stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20808	1	WS112	2.00	33	28/12/2017	General Description (Bulk Analysis)	soil.stones
					28/12/2017	Asbestos Fibres	Fibre Bundles
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos Type	Chrysotile
					28/12/2017	Asbestos Level Screen	less than 0.1%

NDP Reason Report

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton P S
Contact: Alex Freeman

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J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/20808	1	WS112	2.00	31-33	Asbestos detected in sample

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton P S
Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20808

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ОС	Outside Calibration Range
AA	x5 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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







Attention: Alex Freeman

Date: 8th January, 2018

Your reference :

AECOM West One

Leeds LS1 1BA

Wellington Street

Our reference: Test Report 17/20820 Batch 1

Location: West Burton

Date samples received: 15th December, 2017

Status: Final report

Issue:

Thirteen samples were received for analysis on 15th December, 2017 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc Project Manager

Client Name: AECOM

Reference:

Location: West Burton

Contact: Alex Freeman
JE Job No.: 17/20820

Report : Solid

JE Job No.:	17/20820												
J E Sample No.	1-3	7-9	10-12	13-15	19-21	25-27	28-30	31-33	34-36	37-39			
Sample ID	WS103	WS110	TP115	WS104	TP116	TP102	TP102	TP103	TP108	TP108			
Depth	3.20	2.00	3.00	0.50	3.00	2.50	0.60	3.00	0.50	1.50	Please se	e attached r	notes for all
COC No / misc												ations and a	
Containers	VJB												
Sample Date	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017			
Sample Type	Soil												
. ,													
Batch Number		1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method No.
Date of Receipt		15/12/2017		15/12/2017	15/12/2017					15/12/2017			
Antimony	7	8	3	6	5	1	2	2	3	7	<1	mg/kg	TM30/PM15
Arsenic **M	155.3	157.2	45.0	120.2	65.3	6.8	11.7	11.0	32.2	137.0	<0.5	mg/kg	TM30/PM15
Barium **M	370	421	198	601	330	188	202	402	323	379	<1	mg/kg	TM30/PM15
Beryllium	3.6	4.3	1.8	4.3	2.9	0.9	1.4	1.0	1.9	4.0	<0.5	mg/kg	TM30/PM15
Cadmium *M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1.1	0.3	<0.1	<0.1	mg/kg	TM30/PM15
Chromium *M	62.4	99.8	37.6	88.0	57.9	58.5	48.4	54.0	69.7	93.8	<0.5	mg/kg	TM30/PM15
Copper **M	84	89	47	85	61	10	21	17	32	89	<1	mg/kg	TM30/PM15
Iron	36970	43290	27760	43640	32280	23780	30850	28560	31540	44970	<20	mg/kg	TM30/PM15
Lead #M	42	43	10	59	37	47	35	182	69	39	<5	mg/kg	TM30/PM15
Manganese #M	255	307	385	468	526	391	636	857	454	338	<1	mg/kg	TM30/PM15
Mercury **M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #M	4.1	8.4	4.7	6.8	3.3	3.4	2.2	1.5	5.0	5.9	<0.1	mg/kg	TM30/PM15
Nickel #M	56.0	62.4	38.2	63.0	48.7	21.4	41.4	27.5	36.2	60.4	<0.7	mg/kg	TM30/PM15
Selenium *M	3	4	2	5	2	<1	1	<1	1	3	<1	mg/kg	TM30/PM15
Vanadium	113	129	50	121	75	32	42	35	61	122	<1	mg/kg	TM30/PM15
Water Soluble Boron #M	27.5	40.2	2.2	17.4	7.6	1.9	7.8	2.6	4.5	5.5	<0.1	mg/kg	TM74/PM32
Zinc **M	75	68	27	95	82	68	87	163	117	67	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #M	-	<0.04	-	-	-	-	-	-	-	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	-	-	-	-	-	-	-	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	-	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	-	<0.04	-	-	-	-	-	-	-	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	-	<0.03	-	-	-	-	-	-	-	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	-	-	-	-	-	-	-	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	-	<0.03	-	-	-	-	-	-	-	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	-	<0.03	-	-	-	-	_	-	-	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	-	-	-	-	-	-	-	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #M	-	<0.02	-	-	-	-	_	_	-	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	_	<0.07	_	_	_	_	-	_	_	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	_	<0.04	_	_	_	_	-	_	_	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	_	<0.04	_	_	_	_	_	_	_	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	-	-	-	-	-	_	-	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	_	<0.04	-	-	_	-	-	_	_	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	-	-	-	-	-	-	_	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	-	-	-	-	-	-	-	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	-	-	-	-	-	-	-	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	_	102	-	-	-	-	_	_	-	90	<0	//////////////////////////////////////	TM4/PM8
		102					-			30	10	70	TIVI-7/T WIO
Methyl Tertiary Butyl Ether #M	-	-	-	-	-	-	-	<6	-	-	<6	ug/kg	TM15/PM10
Benzene #M	-	-	-	-	-	-	-	<5	-	-	<5	ug/kg	TM15/PM10
Toluene #M	-	-	-	-	-	-	-	<3	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene *M	-	-	-	-	-	-	-	<3	-	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	-	-	-	-	-	_	<4	-	-	<4	ug/kg	TM15/PM10

AECOM Client Name:

Reference:

West Burton

Report : Solid

Location: Contact: Alex Freeman JE Job No.: 17/20820

J E Sample No.	1-3	7-9	10-12	13-15	19-21	25-27	28-30	31-33	34-36	37-39			
Sample ID	WS103	WS110	TP115	WS104	TP116	TP102	TP102	TP103	TP108	TP108			
Depth	3.20	2.00	3.00	0.50	3.00	2.50	0.60	3.00	0.50	1.50	Diagona	o attached n	otoo for all
COC No / misc												e attached r ations and a	
	VID	VID	VID	\/ I.D	V/ I D	VID	\/ I.D	VID	VID	V 1D			
Containers	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB			
Sample Date	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method
Date of Receipt	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	15/12/2017	LOD/LOR	Offics	No.
o-Xylene #M	-	-	-	-	-	-	-	<4	-	-	<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	-	-	-	-	95	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	-	-	-	-	90	-	-	<0	%	TM15/PM10
TPH CWG													
Aliphatics								_				_	
>C5-C6 #M	-	-	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 **M >C8-C10	-	-	-	-	-	-	-	<0.1 <0.1	-	-	<0.1 <0.1	mg/kg mg/kg	TM36/PM12 TM36/PM12
>C10-C12 ***	-	_	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM5/PM16
>C12-C16 ***	-	_	-	_	-	_	-	<4	_	_	<4	mg/kg	TM5/PM16
>C16-C21 #M	-	_	-	-	-	-	-	<7	_	_	<7	mg/kg	TM5/PM16
>C21-C35 *M	-	-	-	-	-	-	-	<7	-	-	<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	-	-	-	-	-	-	<19	-	-	<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7#	-	-	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8#	-	-	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 **M	-	-	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12#	-	-	-	-	-	-	-	<0.2	-	-	<0.2	mg/kg	TM5/PM16
>EC12-EC16#	-	-	-	-	-	-	-	<4	-	-	<4	mg/kg	TM5/PM16
>EC16-EC21 # >EC21-EC35 #	-	-	-	-	-	-	-	<7 <7	-	-	<7 <7	mg/kg	TM5/PM16 TM5/PM16
Total aromatics C5-35 #	-	-	-	-	-	-	-	<19	-	-	<19	mg/kg mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	_	-	-	-	-	-	<38	_	_	<38	mg/kg	TM5/TM36/PM12/PM16
, , ,												3 3	
Natural Moisture Content	22.2	23.1	16.2	30.0	16.5	34.4	28.1	43.2	26.4	16.1	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	-	<0.6	-	3.0	-	<0.6	-	-	-	<0.6	mg/kg	TM38/PM20
Chloride #M	11	-	4	-	31	-	45	-	-	-	<2	mg/kg	TM38/PM20
Fluoride	0.6	-	1.5	-	2.2	-	2.7	-	-	-	<0.3	mg/kg	TM173/PM20
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Nitrate as NO3	<2.5	-	<2.5	-	<2.5	-	43.0	-	-	-	<2.5	mg/kg	TM38/PM20
Nitrite as NO2	<0.05	-	<0.05	-	0.16	-	0.39	-	-	-	<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	0.5	-	<0.3	-	1.2	-	0.7	-	-	-	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M Chromium III	1.5750 62.4	99.8	0.0568 37.6	88.0	0.0521 57.9	- 58.5	0.0687 48.4	- 54.0	69.7	93.8	<0.0015 <0.5	g/l ma/ka	TM38/PM20 NONE/NONE
Chromium iii	02.4	99.8	37.0	00.0	57.9	56.5	46.4	54.0	09.7	93.8	<0.5	mg/kg	INDINE/INDINE
Total Cyanide #M	<0.5	<0.5	-	<0.5	-	<0.5	-	-	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	3.39	3.26	0.16	6.12	1.95	0.85	1.53	0.23	2.50	3.49	<0.02	%	TM21/PM24
Sulphide	<10	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	320	-	420	-	620	-	550	-	-	-	<10	mg/kg	TM75/PM58

Client Name: AECOM

Reference:

Location: West Burton

Contact: Alex Freeman
JE Job No.: 17/20820

Report : Solid

JE JOB NO.:	17/20620												
J E Sample No.	1-3	7-9	10-12	13-15	19-21	25-27	28-30	31-33	34-36	37-39			
Sample ID	WS103	WS110	TP115	WS104	TP116	TP102	TP102	TP103	TP108	TP108			
Depth	3.20	2.00	3.00	0.50	3.00	2.50	0.60	3.00	0.50	1.50	Please se	e attached n	otes for all
COC No / misc												ations and a	
Containers	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB	VJB			
Sample Date	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1	LOD/LOR	Units	Method
Date of Receipt										15/12/2017			No.
рН * М	8.05	9.09	8.46	8.15	8.40	8.37	8.00	7.56	7.96	8.26	<0.01	pH units	TM73/PM11
Sample Type	Clayey Silt	Silt	Sand	Silt	Clay	Clay	Clay	Clay	Clay	Silt		None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown	Dark Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown		None	PM13/PM0
Other Items	none	none	stones	none	stones and vegertation	sand	stones and sand	none	silt and roots	stones		None	PM13/PM0

Client Name: AECOM

Reference:

Location: West Burton
Contact: Alex Freeman
JE Job No.: 17/20820

SVOC Report : Solid

JE Job No.:	17/20820								
J E Sample No.	10-12	31-33							
Sample ID	TP115	TP103							
Depth	3.00	3.00					Please se	e attached n	otes for all
COC No / misc							abbrevia	ations and a	cronyms
Containers	VJB	VJB							
Sample Date	13/12/2017	14/12/2017							
Sample Type	Soil	Soil							
Batch Number	1	1					LOD/LOR	Units	Method
Date of Receipt	15/12/2017	15/12/2017					LOD/LOIX	OTILO	No.
SVOC MS									
Phenols									
2-Chlorophenol #M	<10	<10					<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10					<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10					<10	ug/kg	TM16/PM8
2,4-Dichlorophenol **M	<10	<10					<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10					<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10					<10	ug/kg	TM16/PM8 TM16/PM8
2,4,6-Trichlorophenol 4-Chloro-3-methylphenol	<10 <10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8
4-Chioro-3-methylphenol 4-Methylphenol	<10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8
4-Nitrophenol	<10	<10					<10	ug/kg ug/kg	TM16/PM8
Pentachlorophenol	<10	<10					<10	ug/kg ug/kg	TM16/PM8
Phenol **M	<10	<10					<10	ug/kg ug/kg	TM16/PM8
PAHs									
2-Chloronaphthalene #M	<10	<10					<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10	<10					<10	ug/kg	TM16/PM8
Naphthalene	<10	<10					<10	ug/kg	TM16/PM8
Acenaphthylene	<10	<10					<10	ug/kg	TM16/PM8
Acenaphthene	<10	<10					<10	ug/kg	TM16/PM8
Fluorene	<10	<10					<10	ug/kg	TM16/PM8
Phenanthrene *M	<10	<10					<10	ug/kg	TM16/PM8
Anthracene	<10	<10					<10	ug/kg	TM16/PM8
Fluoranthene #M	<10	<10					<10	ug/kg	TM16/PM8
Pyrene **M	<10	<10					<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10	<10					<10	ug/kg	TM16/PM8 TM16/PM8
Chrysene Benzo(bk)fluoranthene	<10 <10	<10 <10					<10 <10	ug/kg ug/kg	TM16/PM8
Benzo(a)pyrene	<10	<10					<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10	<10					<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	<10	<10					<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10	<10					<10	ug/kg	TM16/PM8
Phthalates									
Bis(2-ethylhexyl) phthalate	<100	<100					<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100					<100	ug/kg	TM16/PM8
Diethyl phthalate Dimethyl phthalate #M	<100 <100	<100 <100					<100	ug/kg	TM16/PM8 TM16/PM8
Dimetnyi pritrialate	<100	<100					<100	ug/kg	TIVITO/FIVIO
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Client Name: AECOM

Reference:

Location: West Burton
Contact: Alex Freeman
JE Job No.: 17/20820

SVOC Report : Solid

4-Bromophenylphenylether **M	JE Job No.:	17/20820								
Depth COC No / misc Containers V.J.B V.J.B V.J.B V.J.B Sample Date 13/12/2017 14/12/2017 V.J.B V.J.B Sample Date 13/12/2017 14/12/2017 V.J.B V.J.B Soil	J E Sample No.	10-12	31-33							
COC No / misc V J B V J B Sample Type Sample Type Batch Number Date of Receipt 15/12/2017	Sample ID	TP115	TP103							
Containers V J B V J B Sample Date 14/12/2017 14/12/2017 14/12/2017 14/12/2017 14/12/2017 14/12/2017 14/12/2017 14/12/2017 15/12/2017		3.00	3.00							
Sample Date Sample Type Soil								abbrevi	ations and a	cronyms
Sample Type Batch Number 1										
Batch Number 1 1 1 1 1 1 1 1 1										
SYOC MS										,
Sylva Sylv								LOD/LOR	Units	
Other SVOCs - <t< th=""><th></th><th>15/12/2017</th><th>15/12/2017</th><th></th><th></th><th></th><th></th><th></th><th></th><th>No.</th></t<>		15/12/2017	15/12/2017							No.
1,2-Dichlorobenzene										
1,2,4-Trichlorobenzene										
1,3-Dichlorobenzene										
1,4-Dichlorobenzene										
2-Nitroaniline										
2,4-Dinitrotoluene										
2,6-Dinitrotoluene										
3-Nitroaniline										
4-Bromophenylphenylether **M	*									
4-Chlorophenylphenylether	3-Nitroaniline									
4-Chlorophenylphenylether < 10										
4-Nitroaniline < 10 <10 <10 <10 <10 ug/kg TM16/PM8 Azobenzene <10 <10 <10 ug/kg TM16/PM8 Bis(2-chloroethoxy)methane <10 <10 ug/kg TM16/PM8 Bis(2-chloroethyl)ether <10 <10 ug/kg TM16/PM8 Bis(2-chloroethyl)ether <10 <10 ug/kg TM16/PM8 Bis(2-chloroethyl)ether <10 <10 ug/kg TM16/PM8 Carbazole <10 <10 ug/kg TM16/PM8 Dibenzofuran M <10 <10 ug/kg TM16/PM8 Dibenzofuran M <10 <10 ug/kg TM16/PM8 Hexachlorobenzene <10 <10 ug/kg TM16/PM8 Hexachlorobenzene <10 <10 ug/kg TM16/PM8 Hexachloroethadiene M <10 <10 ug/kg TM16/PM8 Hexachloroethane <10 <10 ug/kg TM16/PM8 Hexachloroethane <10 <10 ug/kg TM16/PM8 Isophorone M <10 <10 ug/kg TM16/PM8 N-nitrosodi-n-propylamine M <10 <10 ug/kg TM16/PM8 N-nitrosodi-n-propylamine M <10 <10 ug/kg TM16/PM8 N-nitrosodi-n-propylamine M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8 Nitrobenzene M <10 <10 ug/kg TM16/PM8										
Azobenzene 	4-Chlorophenylphenylether									
Bis(2-chloroethoxy)methane										
Bis(2-chloroethyl)ether	Azobenzene									
Carbazole <10	Bis(2-chloroethoxy)methane									
Dibenzofuran **M <10 <10 ug/kg TM16/PM8 Hexachlorobenzene <10	Bis(2-chloroethyl)ether							<10		
Hexachlorobenzene <10	Carbazole									
Hexachlorobutadiene		<10	<10					<10	ug/kg	
Hexachlorocyclopentadiene <10	Hexachlorobenzene	<10	<10					<10	ug/kg	TM16/PM8
Hexachloroethane	Hexachlorobutadiene #M	<10	<10					<10	ug/kg	TM16/PM8
Isophorone 410 <10 ug/kg TM16/PM8 N-nitrosodi-n-propylamine <10	Hexachlorocyclopentadiene	<10	<10					<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine M	Hexachloroethane	<10	<10					<10	ug/kg	
Nitrobenzene **M <10 <10 ug/kg TM16/PM8 Surrogate Recovery 2-Fluorobiphenyl 96 108 <0	Isophorone *M	<10	<10					<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl 96 108 <0	N-nitrosodi-n-propylamine ***	<10	<10					<10	ug/kg	TM16/PM8
	Nitrobenzene #M	<10	<10					<10	ug/kg	TM16/PM8
Suragete Recovery p-Terphenyl-cht 79 87	Surrogate Recovery 2-Fluorobiphenyl	96	108					<0	%	TM16/PM8
	Surrogate Recovery p-Terphenyl-d14	79	87					<0	%	TM16/PM8

Client Name: AECOM

Reference:

Location: West Burton
Contact: Alex Freeman
JE Job No.: 17/20820

VOC Report : Solid

JE Job No.:	17/20820									
J E Sample No.	10-12	31-33								
Sample ID	TP115	TP103								
Depth	3.00	3.00						Please se	e attached r	otes for all
COC No / misc								abbrevia	ations and a	cronyms
Containers	VJB	VJB								
Sample Date		14/12/2017								
Sample Type	Soil	Soil								
Batch Number Date of Receipt	1 15/12/2017	1 15/12/2017						LOD/LOR	Units	Method No.
VOC MS	13/12/2017	13/12/2017								
Dichlorodifluoromethane	<2	<2						<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether ***	<6	<6						<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3						<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2						<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1						<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6 <3						<6	ug/kg	TM15/PM10
Trichlorofluoromethane **M 1,1-Dichloroethene (1,1 DCE) **M	<3 <6	<5 <6						<3 <6	ug/kg ug/kg	TM15/PM10 TM15/PM10
Dichloromethane (DCM) #	<30	<30						<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3						<3	ug/kg	TM15/PM10
1,1-Dichloroethane **M	<6	<6						<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7	<7						<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4						<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4						<4	ug/kg	TM15/PM10
Chloroform **M	<5 <5	<5 <5						<5 -5	ug/kg	TM15/PM10 TM15/PM10
1,1,1-Trichloroethane #M 1,1-Dichloropropene #	<3	<3						<5 <3	ug/kg ug/kg	TM15/PM10
Carbon tetrachloride **M	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichloroethane *M	<5	<5						<5	ug/kg	TM15/PM10
Benzene #M	<5	<5						<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5						<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4	<4						<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4						<4	ug/kg	TM15/PM10
Bromodichloromethane #M cis-1-3-Dichloropropene	<4 <4	<4 <4						<4 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Toluene **M	<3	<3						<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3						<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4						<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE)#	<3	<3						<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4	<4						<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5						<5	ug/kg	TM15/PM10
1,2-Dibromoethane * Chlorobenzene *M	<3 <4	<3						<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane ***	<4 <5	<4 <5						<4 <5	ug/kg ug/kg	TM15/PM10 TM15/PM10
Ethylbenzene **M	<3	<3						<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	<4						<4	ug/kg	TM15/PM10
o-Xylene ^{#M}	<4	<4						<4	ug/kg	TM15/PM10
Styrene	<3	<3						<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4						<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3						<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane **M Bromobenzene	<3 <2	<3 <2						<3 <2	ug/kg	TM15/PM10 TM15/PM10
1,2,3-Trichloropropane ***	<2 <4	<2 <4						<2 <4	ug/kg ug/kg	TM15/PM10
Propylbenzene#	<4	<4						<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3						<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3						<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3						<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5						<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6						<6	ug/kg	TM15/PM10
sec-Butylbenzene# 4-Isopropyltoluene#	<4 <4	<4 <4						<4	ug/kg	TM15/PM10 TM15/PM10
4-Isopropyltoluene " 1,3-Dichlorobenzene ^{#M}	<4 <4	<4 <4						<4 <4	ug/kg ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4						<4	ug/kg	TM15/PM10
n-Butylbenzene#	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	30	23						<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4						<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7						<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4						<4	ug/kg	TM15/PM10
Naphthalene 1,2,3-Trichlorobenzene #	<27 <7	<27 <7						<27 <7	ug/kg	TM15/PM10 TM15/PM10
1,2,3-Trichlorobenzene Surrogate Recovery Toluene D8	99	95						<0	ug/kg %	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	82	90						<0	%	TM15/PM10
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Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Burton
Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20820	1	WS103	3.20	3	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20820	1	WS110	2.00	9	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20820	1	WS104	0.50	15	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20820	1	TP102	2.50	27	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
					28/12/2017	Asbestos ACM	NAD
					28/12/2017	Asbestos ACM (2)	NAD
					28/12/2017	Asbestos Type	NAD
					28/12/2017	Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20820	1	TP108	0.50	36	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD

Client Name: Reference: AECOM

Location: West Burton
Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20820	1	TP108	0.50	36	28/12/2017	Asbestos ACM	NAD
			0.00			Asbestos ACM (2)	NAD
						Asbestos Type	NAD
						Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
17/20820	1	TP108	1.50	39	28/12/2017	General Description (Bulk Analysis)	soil/stones
					28/12/2017	Asbestos Fibres	NAD
					28/12/2017	Asbestos Fibres (2)	NAD
						Asbestos ACM	NAD
						Asbestos ACM (2)	NAD
						Asbestos Type	NAD
						Asbestos Type (2)	NAD
					28/12/2017	Asbestos Level Screen	NAD
		_		_			

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton
Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20820

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM 2 City Walk Leeds LS11 9AR

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





Attention: Alex Freeman

Date: 8th January, 2018

Your reference: 60527350

Our reference: Test Report 17/21026 Batch 1 Schedule A 17/21026 Batch 1 Schedule B 17/21026 Ba

Location : West Burton Power Station

Date samples received : 21st December, 2017

Status: Final report

Issue:

Five samples were received for analysis on 21st December, 2017 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc Project Manager

Client Name: AECOM

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/21026

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

Report : Liquid

JE Job No.:	17/21026		 		 H=H ₂ SO ₄ , Z	Z=ZnAc, N=I	NaOH, HN=I	HN0 ₃			
J E Sample No.	10-16	17-23									
Sample ID	WS109	WS111									
Depth									<u> </u>		
COC No / misc										e attached n ations and a	
		V									
Containers											
Sample Date	19/12/2017	19/12/2017									
Sample Type	Ground Water	Ground Water									
Batch Number	1	1									Method
Date of Receipt	21/12/2017	21/12/2017							LOD/LOR	Units	No.
Dissolved Antimony#	<2	<2							<2	ug/l	TM30/PM14
Dissolved Arsenic #	36.2	56.2							<2.5	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5							<0.5	ug/l	TM30/PM14
Total Dissolved Chromium#	<1.5	<1.5							<1.5	ug/l	TM30/PM14
Dissolved Copper#	<7	<7							<7	ug/l	TM30/PM14
Total Dissolved Iron #	<20	<20							<20	ug/l	TM30/PM14
Dissolved Lead #	<5	<5							<5	ug/l	TM30/PM14
Dissolved Manganese #	25	<2							<2	ug/l	TM30/PM14
Dissolved Mercury#	<1	<1							<1	ug/l	TM30/PM14
Dissolved Molybdenum #	1616	3796 _{AA}							<2	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2							<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	8							<3	ug/l	TM30/PM14 TM30/PM14
Dissolved Zinc #	<3	<3							<3	ug/l	TIVISU/PIVIT4
Methyl Tertiary Butyl Ether #	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Benzene#	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Toluene #	<5	16							<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1							<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2							<2	ug/l	TM15/PM10
o-Xylene #	<1	<1							<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	105	104							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	105	106							<0	%	TM15/PM10
TPH CWG											
Aliphatics											
>C5-C6#	<10	<10							<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10							<10	ug/l	TM36/PM12
>C8-C10#	<10	17							<10	ug/l	TM36/PM12
>C10-C12#	<5	<5							<5	ug/l	TM5/PM30
>C12-C16#	<10	<10							<10	ug/l	TM5/PM30
>C16-C21#	<10	80							<10	ug/l	TM5/PM30
>C21-C35#	<10	<10							<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	<10	97							<10	ug/l	TM5/TM36/PM30/PM12
Aromatics											T1400/D1440
>C5-EC7#	<10	<10							<10	ug/l	TM36/PM12
>EC7-EC8# >EC8-EC10#	<10 <10	14 <10							<10 <10	ug/l	TM36/PM12 TM36/PM12
>EC8-EC10" >EC10-EC12#	<10 <5	<10 <5							<10 <5	ug/l ug/l	TM5/PM30
>EC10-EC12 >EC12-EC16#	<10	30							<10	ug/l	TM5/PM30
>EC12-EC16 >EC16-EC21#	<10	220							<10	ug/l	TM5/PM30
>EC10-EC21 >EC21-EC35#	<10	<10							<10	ug/l	TM5/PM30
Total aromatics C5-35 #	<10	264							<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35)#	<10	361							<10		TM5/TM36/PM30/PM12
Total aliphatics and aromatics(Co-55)	1.0	301		1		l l	1 1		<10	ug/l	L

Client Name: AECOM

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/21026

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

JE Job No.:	17/21026				H=H ₂ SO ₄ , 2	Z=ZNAC, N=	inaon, nin=	:INU3	_		
J E Sample No.	10-16	17-23									
Sample ID	WS109	WS111									
Depth									DI		
COC No / misc									abbrevia	e attached n ations and a	cronyms
		V HN N P G									
Sample Date											
Sample Type											
Batch Number		1									Marked
Date of Receipt									LOD/LOR	Units	Method No.
Fluoride	<0.3	<0.3							<0.3	mg/l	TM173/PM0
	40400	1000.1							0.5		TM00/DM0
Sulphate as SO4 # Chloride #	1948.3 110.3	1998.1 118.6							<0.5 <0.3	mg/l mg/l	TM38/PM0 TM38/PM0
Nitrate as NO3 #	0.4	<0.2							<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	0.40	0.15							<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4#	<0.06	<0.06							<0.06	mg/l	TM38/PM0
Total Cyanide #	<0.01	<0.01							<0.01	mg/l	TM89/PM0
Total Organic Carbon #	2	<2							<2	mg/l	TM60/PM0

Client Name: AECOM

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/21026

SVOC Report : Liquid

Date of Receipt 21/12/2017 21/12/2017	
Please see attached note of between the containers and sorror co	
COC No / misc Containers Containers Containers Sample Date 19/12/2017	
COC No / misc Containers Containers Containers Sample Date 19/12/2017	
Containers Sample Date 19/12/2017 19	
Sample Date 18/12/2017 19	,
Batch Number 1	
SYOC MS	
Date of Receipt 21/1/22017	Method
Phenois	No.
2-Chlorophenol*	
2-Methylphenol*	M16/PM30
2-Alichorophenol	M16/PM30
2.4-Dichlorophenol del color c	M16/PM30
2.4. Enrichtychenol	M16/PM30
2.4.6-Trichlorophenol <1 <1 <1 ug/l TM 4Chioro-3-methylphenol* <0.5 <0.5 <0.5 <0.5 ug/l TM 4-Methylphenol <1 <1 <1 <0.0 ug/l TM 4-Nitrophenol <10 <10 <10 ug/l TM Pentachlorophenol <1 <1 <1 ug/l TM Phenol <1 <1 <1 ug/l TM Pentachlorophenol <1 <1 <1 ug/l TM Phenol <1 <1 <1 ug/l TM Phenol <1 <1 <1 ug/l TM PAHS <1 <1 <1 ug/l TM Naphthalene* <1 <1 ug/l <td< th=""><td>M16/PM30</td></td<>	M16/PM30
4-Chloro-3-methylphenol	M16/PM30
4-Methylphenol	M16/PM30
4-Nitrophenol	M16/PM30
Pentachlorophenol	M16/PM30 M16/PM30
Phenol PAHs	M16/PM30
PAHS 2-Chloronaphthalene	M16/PM30
2-Methylnaphthalene	
Naphthalene "	M16/PM30
Acenaphthylene	M16/PM30
Acenaphthene	M16/PM30
Fluorene #	M16/PM30 M16/PM30
Phenanthrene	M16/PM30
Anthracene #	M16/PM30
Pyrene P	M16/PM30
Benzo(a)anthracene	M16/PM30
Chrysene #	M16/PM30
Benzo(bk)fluoranthene	M16/PM30
Benzo(a)pyrene	M16/PM30
Indeno(123cd)pyrene	M16/PM30 M16/PM30
Dibenzo(ah)anthracene	M16/PM30
Benzo(ghi)perylene # <0.5 <0.5 ug/l The Phthalates	M16/PM30
Bis(2-ethylhexyl) phthalate	M16/PM30
Butylbenzyl phthalate	
Di-n-butyl phthalate # <1.5 <1.5 ug/l TM Di-n-Octyl phthalate <1 <1 ug/l TM Diethyl phthalate # <1 <1 ug/l TM User TM <1 <1 ug/l TM User TM <1 <1 ug/l TM	M16/PM30
Di-n-Octyl phthalate <1 <1 ug/l TN Diethyl phthalate # <1 <1 ug/l TN	M16/PM30
Diethyl phthalate # <1 <1 ug/l Th	M16/PM30
	M16/PM30 M16/PM30
	M16/PM30

Client Name: AECOM

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/21026

SVOC Report : Liquid

JE Job No.:	17/21026										
J E Sample No.	10-16	17-23									
Sample ID	WS109	WS111									
Depth										e attached n	
COC No / misc									abbievia	ations and a	CIONYMS
Containers		V HN N P G									
Sample Date	19/12/2017										
Sample Type		Ground Water									
Batch Number	1	1							LOD/LOR	Units	Method No.
Date of Receipt	21/12/2017	21/12/2017									INO.
SVOC MS											
Other SVOCs											
1,2-Dichlorobenzene#	<1	<1							<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1							<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1							<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1							<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1							<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1							<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1							<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1							<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1							<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1							<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Azobenzene#	<0.5	<0.5							<0.5	ug/l	TM16/PM30 TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5							<0.5	ug/l	TM16/PM30 TM16/PM30
Bis(2-chloroethyl)ether # Carbazole #	<1	<1							<1	ug/l	TM16/PM30 TM16/PM30
Carbazole " Dibenzofuran #	<0.5 <0.5	<0.5 <0.5							<0.5 <0.5	ug/l	TM16/PM30 TM16/PM30
										ug/l	TM16/PM30
Hexachlorobenzene#	<1	<1							<1	ug/l	
Hexachlorobutadiene #	<1 <1	<1 <1							<1 <1	ug/l	TM16/PM30 TM16/PM30
Hexachlorocyclopentadiene										ug/l	TM16/PM30
Hexachloroethane #	<1	<1							<1	ug/l	TM16/PM30
Isophorone #	<0.5 <0.5	<0.5 <0.5							<0.5 <0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5									ug/l	TM16/PM30
Nitrobenzene * Surrogate Recovery 2-Fluorobiphenyl		<1							<1	ug/l	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	123 121	114 117							<0 <0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	121	117							<0	70	TIVITO/PIVISU
			'	'	i .	'	i .	'			

Client Name: AECOM

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/21026

VOC Report : Liquid

J E Sample No. Sample ID Depth	10-16 WS109	17-23							
·	WS109								
Depth		WS111							
							Please see	e attached n	otes for all
COC No / misc								ations and a	
Containers V	' HN N P G	V HN N P G							
•	9/12/2017								
		Ground Water							1 1
Batch Number Date of Receipt 2	121/12/2017	1					LOD/LOR	Units	Method No.
VOC MS	1/12/2017	21/12/2017							110.
Dichlorodifluoromethane	<2	<2					<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3					<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1					<1	ug/l	TM15/PM10
Chloroethane #	<3 <3	<3 <3					<3 <3	ug/l	TM15/PM10 TM15/PM10
Trichlorofluoromethane # 1,1-Dichloroethene (1,1 DCE) #	<3	<3					<3	ug/l ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5					<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3					<3	ug/l	TM15/PM10
1,1-Dichloroethane#	<3	<3					<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene#	<3	<3					<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1					<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2					<2	ug/l	TM15/PM10
Chloroform # 1,1,1-Trichloroethane #	<2 <2	<2 <2					<2 <2	ug/l ug/l	TM15/PM10 TM15/PM10
1,1-Dichloropropene #	<3	<3					<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2					<2	ug/l	TM15/PM10
1,2-Dichloroethane#	<2	<2					<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5					<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2					<2	ug/l	TM15/PM10
Dibromomethane # Bromodichloromethane #	<3 <2	<3 <2					<3 <2	ug/l ug/l	TM15/PM10 TM15/PM10
cis-1-3-Dichloropropene	<2	<2					<2	ug/l	TM15/PM10
Toluene #	<5	16					<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2					<2	ug/l	TM15/PM10
1,1,2-Trichloroethane#	<2	<2					<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2					<2	ug/l	TM15/PM10
Dibromochloromethane # 1,2-Dibromoethane #	<2 <2	<2 <2					<2 <2	ug/l ug/l	TM15/PM10 TM15/PM10
Chlorobenzene #	<2	<2					<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2					<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1					<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2					<2	ug/l	TM15/PM10
o-Xylene #	<1	<1					<1	ug/l	TM15/PM10
Styrene #	<2	<2					<2	ug/l	TM15/PM10
Bromoform #	<2	<2					<2	ug/l	TM15/PM10 TM15/PM10
Isopropylbenzene * 1,1,2,2-Tetrachloroethane	<3 <4	<3 <4					<3 <4	ug/l ug/l	TM15/PM10 TM15/PM10
Bromobenzene #	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3					<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3					<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3					<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3					<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3					<3	ug/l	TM15/PM10
tert-Butylbenzene # 1,2,4-Trimethylbenzene #	<3 <3	<3 <3					<3 <3	ug/l ug/l	TM15/PM10 TM15/PM10
sec-Butylbenzene #	<3 <3	<3 <3					<3 <3	ug/I ug/I	TM15/PM10
4-Isopropyltoluene #	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3					<3	ug/l	TM15/PM10
1,4-Dichlorobenzene#	<3	<3					<3	ug/l	TM15/PM10
n-Butylbenzene#	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3					<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene	<2 <3	<2 <3					<2 <3	ug/l	TM15/PM10 TM15/PM10
1,2,4-Trichioropenzene Hexachlorobutadiene	<3 <3	<3 <3					<3 <3	ug/l ug/l	TM15/PM10 TM15/PM10
Naphthalene	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3					<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	105	104					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	105	106					<0	%	TM15/PM10

Notification of Deviating Samples

Client Name: AECOM Matrix : Liquid

Reference: 60527350

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/21026

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

# ISO17025 (UKAS Ref No. 4225) accredited - UK. SA ISO17025 (SANAS Ref No. T0729) accredited - South Africa. B Indicates analyte found in associated method blank. DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see "Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected		
B Indicates analyte found in associated method blank. DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
DR Dilution required. M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
M MCERTS accredited. NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	В	Indicates analyte found in associated method blank.
NA Not applicable NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	DR	Dilution required.
NAD No Asbestos Detected. ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	М	MCERTS accredited.
ND None Detected (usually refers to VOC and/SVOC TICs). NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	NA	Not applicable
NDP No Determination Possible SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	NAD	No Asbestos Detected.
SS Calibrated against a single substance SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	ND	None Detected (usually refers to VOC and/SVOC TICs).
SV Surrogate recovery outside performance criteria. This may be due to a matrix effect. W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	NDP	No Determination Possible
W Results expressed on as received basis. + AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	SS	Calibrated against a single substance
+ AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page. ++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
++ Result outside calibration range, results should be considered as indicative only and are not accredited. * Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	W	Results expressed on as received basis.
* Analysis subcontracted to a Jones Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Analysis subcontracted to a sories Environmental approved laboratory. AD Samples are dried at 35°C ±5°C CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	++	Result outside calibration range, results should be considered as indicative only and are not accredited.
CO Suspected carry over LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	*	Analysis subcontracted to a Jones Environmental approved laboratory.
LOD/LOR Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS ME Matrix Effect NFD No Fibres Detected	AD	Samples are dried at 35°C ±5°C
ME Matrix Effect NFD No Fibres Detected	СО	Suspected carry over
NFD No Fibres Detected	LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
102 100 100 100 100 100 100 100 100 100	ME	Matrix Effect
	NFD	No Fibres Detected
BS AQC Sample	BS	AQC Sample
LB Blank Sample	LB	Blank Sample
N Client Sample	N	Client Sample
TB Trip Blank Sample	ТВ	Trip Blank Sample
OC Outside Calibration Range	ОС	Outside Calibration Range
AA x5 Dilution	AA	x5 Dilution

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
ТМ30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM 2 City Walk Leeds LS11 9AR

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





Attention: Alex Freeman

Date: 9th January, 2018

Your reference: 60527350

Our reference : Test Report 17/21125 Batch 2

Location : West Burton Power station

Date samples received: 22nd December, 2017

Status: Final report

Issue:

Four samples were received for analysis on 22nd December, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman
JE Job No.: 17/21125

Report : Solid

							ı		
J E Sample No.	36-38	42-44	45-47						
Sample ID	TP107	TP110	TP110						
Depth	0.20	0.20	1.40				Please se	e attached n	otes for all
COC No / misc								ations and a	
Containers	VJB	VJB	VJB						
Sample Date									
Sample Type	Soil	Soil	Soil						1
Batch Number	2	2	2				LOD/LOR	Units	Method No.
Date of Receipt	22/12/2017	22/12/2017	22/12/2017						NO.
Antimony	4	2	2				<1	mg/kg	TM30/PM15
Arsenic#	49.6	24.7	21.0				<0.5	mg/kg	TM30/PM15
Barium #	320	256	286				<1	mg/kg	TM30/PM15
Beryllium	2.1	1.3	1.2				<0.5	mg/kg	TM30/PM15
Cadmium#	0.3	<0.1	<0.1				<0.1	mg/kg	TM30/PM15 TM30/PM15
Chromium # Copper #	57.7 54	44.6 28	29.4 31				<0.5 <1	mg/kg mg/kg	TM30/PM15
lron	29710	20150	19030				<20	mg/kg	TM30/PM15
Lead #	50	12	8				<5	mg/kg	TM30/PM15
Manganese #	530	217	287				<1	mg/kg	TM30/PM15
Mercury#	<0.1	<0.1	<0.1				<0.1	mg/kg	TM30/PM15
Molybdenum #	3.9	4.1	2.9				<0.1	mg/kg	TM30/PM15
Nickel#	37.8	27.3	29.3				<0.7	mg/kg	TM30/PM15
Selenium#	2	<1	<1				<1	mg/kg	TM30/PM15
Vanadium	64	39	31				<1	mg/kg	TM30/PM15
Water Soluble Boron #	5.1	0.6	1.2				<0.1	mg/kg	TM74/PM32
Zinc#	198	27	22				<5	mg/kg	TM30/PM15
PAH MS									
Naphthalene #	0.05	<0.04	-				<0.04	mg/kg	TM4/PM8
Acenaphthylene #	<0.03	<0.03	-				<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	-				<0.05	mg/kg	TM4/PM8
Fluorene # Phenanthrene #	<0.04	<0.04	-				<0.04	mg/kg mg/kg	TM4/PM8 TM4/PM8
Anthracene #	0.40	<0.04	-				<0.04	mg/kg	TM4/PM8
Fluoranthene #	7.61	<0.03	-				<0.03	mg/kg	TM4/PM8
Pyrene #	6.31	<0.03	-				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	7.18	<0.06	-				<0.06	mg/kg	TM4/PM8
Chrysene #	11.34	<0.02	-				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene#	13.17	<0.07	-				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	3.30	<0.04	-				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.47	<0.04	-				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.65	<0.04	-				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	1.41	<0.04	-				<0.04	mg/kg	TM4/PM8
PAH 16 Total	54.2	<0.6	-				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	9.48	<0.05	-				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	3.69	<0.02	-				<0.02	mg/kg %	TM4/PM8 TM4/PM8
PAH Surrogate % Recovery	109	112	-				<0	70	I IVI4/PIVI8
Natural Moisture Content	13.6	8.8	24.0				<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	<0.6				<0.6	mg/kg	TM38/PM20
Chloride #	32	6	29				<2	mg/kg	TM38/PM20
Fluoride	2.1	1.2	2.4				<0.3	mg/kg	TM173/PM20

Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman
JE Job No.: 17/21125

Report : Solid

J E Sample No.	36-38	42-44	45-47										
0 2 0ap.0 110.	00 00		.0										
Sample ID	TP107	TP110	TP110										
Gample ID	11 107	11 110	11 110										
Depth	0.20	0.20	1.40										
-		0.20	1.40									e attached n ations and a	
COC No / misc											abbievi	alions and at	Stortyttis
Containers	VJB	VJB	VJB										
Sample Date	20/12/2017	20/12/2017	20/12/2017										
Sample Type	Soil	Soil	Soil										
Batch Number		2	2								LOD/LOR	Units	Method No.
Date of Receipt	22/12/2017	22/12/2017	22/12/2017										INO.
Hexavalent Chromium #	<0.3	<0.3	<0.3								<0.3	mg/kg	TM38/PM20
Nitrate as NO3	<2.5	<2.5	<2.5								<2.5	mg/kg	TM38/PM20
Nitrite as NO2	<0.05	<0.05	<0.05								<0.05	mg/kg	TM38/PM20
Ortho Phosphate as PO4	0.5	3.5	1.0								<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.1779	0.0131	0.0424								<0.0015	g/l	TM38/PM20
Chromium III	57.7	44.6	29.4								<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	-								<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	2.03	1.41	5.24								<0.02	%	TM21/PM24
Sulphide	<10	<10	<10								<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	190	200	340								<10	mg/kg	TM75/PM58
pH#	6.23	8.32	8.41								<0.01	pH units	TM73/PM11
Sample Type	Clayey Loam	Sand	Sand									None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Dark Brown									None	PM13/PM0
Other Items	stones	stones	stones									None	PM13/PM0
	•	•	•	•	•	•	•	•	•	•	•		

Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

SVOC Report : Solid

JE Job No.:	17/21125									
J E Sample No.	45-47									
Sample ID	TP110									
Depth	1.40							Please se	e attached n	otes for all
COC No / misc									ations and a	
Containers	VJB									
Sample Date	20/12/2017									
Sample Type	Soil									
Batch Number	2							LOD/LOR	Units	Method
Date of Receipt	22/12/2017									No.
SVOC MS Phenols										
2-Chlorophenol #	<10							<10	ug/kg	TM16/PM8
2-Methylphenol	<10							<10	ug/kg	TM16/PM8
2-Nitrophenol	<10							<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #	<10							<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10							<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10							<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10							<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10							<10	ug/kg	TM16/PM8
4-Methylphenol	<10							<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	ļ						<10	ug/kg	TM16/PM8
Pentachlorophenol Phenol #	<10 <10							<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Phenol** PAHs	<10]						<10	ug/kg	TIVITO/FIVIO
2-Chloronaphthalene #	<10							<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	<10							<10	ug/kg ug/kg	TM16/PM8
Naphthalene	<10	,						<10	ug/kg	TM16/PM8
Acenaphthylene	<10							<10	ug/kg	TM16/PM8
Acenaphthene	<10							<10	ug/kg	TM16/PM8
Fluorene	<10							<10	ug/kg	TM16/PM8
Phenanthrene#	<10							<10	ug/kg	TM16/PM8
Anthracene #	<10							<10	ug/kg	TM16/PM8
Fluoranthene #	<10							<10	ug/kg	TM16/PM8
Pyrene # Benzo(a)anthracene	<10 <10							<10 <10	ug/kg ug/kg	TM16/PM8 TM16/PM8
Chrysene	<10							<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	<10							<10	ug/kg	TM16/PM8
Benzo(a)pyrene	<10							<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10							<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10							<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	<10							<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	<10							<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene Phthalates	<10							<10	ug/kg	TM16/PM8
Bis(2-ethylhexyl) phthalate	<100							<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100							<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100							<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100							<100	ug/kg	TM16/PM8
Diethyl phthalate	<100							<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100							<100	ug/kg	TM16/PM8
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Client Name: AECOM

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

SVOC Report : Solid

JE Job No.:	17/21125								
J E Sample No.	45-47								
Sample ID	TP110								
Sample ID	11110								
Depth	1.40							e attached n	
COC No / misc							abbrevi	ations and a	cronyms
Containers	VJB								
Sample Date	20/12/2017								
Sample Type	Soil								
Batch Number	2					'	100/100	Haita	Method
Date of Receipt	22/12/2017						LOD/LOR	Units	No.
SVOC MS									
Other SVOCs									
1,2-Dichlorobenzene	<10						<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #	<10						<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10						<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10						<10	ug/kg	TM16/PM8
2-Nitroaniline	<10						<10		TM16/PM8
2,4-Dinitrotoluene	<10						<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene 2,6-Dinitrotoluene								ug/kg	TM16/PM8
·	<10						<10	ug/kg	ł .
3-Nitroaniline	<10						<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10						<10	ug/kg	TM16/PM8
4-Chloroaniline	<10						<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10						<10	ug/kg	TM16/PM8
4-Nitroaniline	<10						<10	ug/kg	TM16/PM8
Azobenzene	<10						<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10						<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10						<10	ug/kg	TM16/PM8
Carbazole	<10						<10	ug/kg	TM16/PM8
Dibenzofuran #	<10						<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10						<10	ug/kg	TM16/PM8
Hexachlorobutadiene#	<10						<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10						<10	ug/kg	TM16/PM8
Hexachloroethane	<10						<10	ug/kg	TM16/PM8
Isophorone #	<10						<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10						<10	ug/kg	TM16/PM8
Nitrobenzene #	<10						<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	113						<0	% %	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	97						<0	%	TM16/PM8
Currogate Recovery p Telphenyl 414	31						\ 0	70	TIVITO/T IVIO
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Client Name: AECOM VOC Report :

Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman JE Job No.: 17/21125

JE Job No.:	17/21125					•		
J E Sample No.	45-47							
Sample ID	TP110							
Depth	1.40					Please se	e attached r	notes for all
COC No / misc							ations and a	
Containers	VJB							
Sample Date	20/12/2017							
Sample Type	Soil							
Batch Number	2					LOD/LOR	Units	Method No.
VOC MS	22/12/2017							140.
Dichlorodifluoromethane	<2					<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<6					<6	ug/kg	TM15/PM10
Chloromethane#	<3					<3	ug/kg	TM15/PM10
Vinyl Chloride	<2					<2	ug/kg	TM15_A/PM10
Bromomethane	<1					<1	ug/kg	TM15/PM10
Chloroethane #	<6					<6	ug/kg	TM15/PM10
Trichlorofluoromethane #	<3					<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6					<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30					<30	ug/kg	TM15/PM10 TM15/PM10
trans-1-2-Dichloroethene # 1.1-Dichloroethane #	<3 <6					<3 <6	ug/kg	TM15/PM10 TM15/PM10
1,1-Dichloroethane " cis-1-2-Dichloroethene #	<6 <7					<6 <7	ug/kg ug/kg	TM15/PM10
2,2-Dichloropropane	<4					<4	ug/kg ug/kg	TM15/PM10
Bromochloromethane #	<4					<4	ug/kg	TM15/PM10
Chloroform #	<5					<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<5					<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3					<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4					<4	ug/kg	TM15/PM10
1,2-Dichloroethane#	<5					<5	ug/kg	TM15/PM10
Benzene #	<5					<5	ug/kg	TM15/PM10
Trichloroethene (TCE)#	<5					<5	ug/kg	TM15/PM10
1,2-Dichloropropane #	<4					<4	ug/kg	TM15/PM10
Dibromomethane #	<4					<4	ug/kg	TM15/PM10
Bromodichloromethane * cis-1-3-Dichloropropene	<4 <4					<4 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Toluene #	<3					<3	ug/kg ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3					<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<4					<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3					<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<4					<4	ug/kg	TM15/PM10
Dibromochloromethane #	<5					<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3					<3	ug/kg	TM15/PM10
Chlorobenzene #	<4					<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<5					<5	ug/kg	TM15/PM10
Ethylbenzene #	<3					<3	ug/kg	TM15/PM10 TM15/PM10
p/m-Xylene [#] o-Xylene [#]	<4 <4					<4 <4	ug/kg ug/kg	TM15/PM10
Styrene	<3					<3	ug/kg ug/kg	TM15_A/PM10
Bromoform	<4					<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3					<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3					<3	ug/kg	TM15/PM10
Bromobenzene	<2					<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4					<4	ug/kg	TM15/PM10
Propylbenzene #	<4					<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3					<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3					<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3					<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5 <6					<5 -6	ug/kg	TM15/PM10 TM15/PM10
1,2,4-Trimethylbenzene # sec-Butylbenzene #	<6 <4					<6 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
4-Isopropyltoluene #	<4					<4	ug/kg ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4					<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4					<4	ug/kg	TM15/PM10
n-Butylbenzene#	<4					<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4					<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4					<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7					<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4					<4	ug/kg	TM15/PM10
Naphthalene	<27					<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7					<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	76					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	50		<u> </u>			<0	%	TM15/PM10

Solid

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/21125	2	TP107	0.20	38	03/01/2018	General Description (Bulk Analysis)	soil.stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD
17/21125	2	TP110	0.20	44	03/01/2018	General Description (Bulk Analysis)	soil.stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD

Exova Jones Environmental Notification of Deviating Samples

Client Name: AECOM Reference: 60527350

Location: West Burton Power station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason						
	No deviating sample report results for job 17/21125											

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/21125

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

17/21125

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ОС	Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
ТМ38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

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







Attention: Alex Freeman

Date: 9th January, 2018

Your reference :

AECOM West One

Leeds LS1 1BA

Wellington Street

Our reference : Test Report 17/20488 Batch 1

Location: West Burton Power Station

Date samples received: 13th December, 2017

Status: Final report

Issue:

Six samples were received for analysis on 13th December, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Paul Boden BSc Project Manager

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20488

Report : Solid

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

	11/20400					 	 			
J E Sample No.	1-3	4-6	7-9	10-12	13-15					
Sample ID	BH104	WS105	WS105	BH101	TP106					
Depth	1.00	1.30	6.50	14.7	0.50			Please se	e attached n	otos for all
COC No / misc									ations and a	
Containers	VJB	VJB	VJB	VJB	VJB					
Sample Date			12/12/2017		12/12/2017					
Sample Type	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1			LOD/LOR	Units	Method
Date of Receipt	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017					No.
Antimony	5	7	4	2	2			<1	mg/kg	TM30/PM15
Arsenic **M	100.9	139.4	63.6	4.7	33.2			<0.5	mg/kg	TM30/PM15
Barium ^{#M} Beryllium	352 3.1	420 3.9	443 2.7	1575 1.6	265 1.4			<1 <0.5	mg/kg mg/kg	TM30/PM15 TM30/PM15
Cadmium **M	<0.1	<0.1	0.8	<0.1	0.4			<0.1	mg/kg	TM30/PM15
Chromium **M	64.6	69.5	73.4	52.2	41.3			<0.5	mg/kg	TM30/PM15
Copper #M	70	85	50	3	27			<1	mg/kg	TM30/PM15
Iron	38650	43320	45970	36540	19220			<20	mg/kg	TM30/PM15
Lead #M	54	48	98	<5	49			<5	mg/kg	TM30/PM15
Manganese **M	415	383	670	647	417			<1	mg/kg	TM30/PM15
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM30/PM15
Molybdenum *** Nickel ***	3.4 53.4	4.8 59.8	9.4 97.8	1.4 36.2	3.5 22.2			<0.1 <0.7	mg/kg mg/kg	TM30/PM15 TM30/PM15
Selenium **M	2	39.6	3	<1	1			<0.7	mg/kg	TM30/PM15
Vanadium	98	116	86	45	37			<1	mg/kg	TM30/PM15
Water Soluble Boron #M	2.7	8.9	19.0	2.9	3.3			<0.1	mg/kg	TM74/PM32
Zinc *M	82	72	161	53	92			<5	mg/kg	TM30/PM15
PAH MS										
Naphthalene **M	-	-	-	-	<0.04			<0.04	mg/kg	TM4/PM8
Acenaphthylene #M	-	-	-	-	0.06			<0.03	mg/kg	TM4/PM8
Acenaphthene **M Fluorene **M	-	-	-	-	0.22 0.15			<0.05 <0.04	mg/kg mg/kg	TM4/PM8 TM4/PM8
Phenanthrene *M	-	-	-	-	2.20			<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	0.56			<0.04	mg/kg	TM4/PM8
Fluoranthene #M	-	-	-	-	3.48			<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	2.88			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	1.50			<0.06	mg/kg	TM4/PM8
Chrysene #M	-	-	-	-	1.48			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	-	-	-	-	2.44			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene * Indeno(123cd)pyrene *M	-	-	-	-	1.32 0.87			<0.04 <0.04	mg/kg	TM4/PM8 TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	0.87			<0.04	mg/kg mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	0.84			<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	-	-	-	18.2			<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	1.76			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	0.68			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	118			<0	%	TM4/PM8
				_				_		TAME
Methyl Tertiary Butyl Ether ***	-	-	-	<6 <5	-			<6	ug/kg	TM15/PM10 TM15/PM10
Benzene **M Toluene **M	-	-	-	<5 <3	-			<5 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
Ethylbenzene #M	-	-	-	<3	-			<3	ug/kg	TM15/PM10
p/m-Xylene **M	-	-	-	<4	-			<4	ug/kg	TM15/PM10
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Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20488

Report : Solid

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

_							 	l .		
J E Sample No.	1-3	4-6	7-9	10-12	13-15					
Sample ID	BH104	WS105	WS105	BH101	TP106					
Depth	1.00	1.30	6.50	14.7	0.50			Please se	e attached n	otes for all
COC No / misc								abbrevi	ations and a	cronyms
Containers	VJB	VJB	VJB	VJB	VJB					
Sample Date	11/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017					
-	Soil		Soil							
Sample Type		Soil		Soil	Soil					
Batch Number	1	1	1	1	1			LOD/LOR	Units	Method No.
Date of Receipt	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017					INO.
o-Xylene #M	-	-	-	<4	-			<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	108	-			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	126	-			<0	%	TM15/PM10
TPH CWG										
Aliphatics									_	
>C5-C6 #M	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>C6-C8 #M	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>C8-C10 >C10-C12 **M	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>C10-C12 >C12-C16 **M	-	-	-	<0.2 <4	-			<0.2 <4	mg/kg mg/kg	TM5/PM16 TM5/PM16
>C12-C16 >C16-C21 #M	-	_	-	<7	-			<7	mg/kg	TM5/PM16
>C16-C21 >C21-C35 #M	-	_	_	<7	_			<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	_	-	<19	_			<19	mg/kg	TM5/TM36/PM12/PM16
Aromatics				1.0				1.0	g/g	
>C5-EC7#	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>EC7-EC8#	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>EC8-EC10 ^{#M}	-	-	-	<0.1	-			<0.1	mg/kg	TM36/PM12
>EC10-EC12#	-	-	-	<0.2	-			<0.2	mg/kg	TM5/PM16
>EC12-EC16#	-	-	-	<4	-			<4	mg/kg	TM5/PM16
>EC16-EC21#	-	-	-	<7	-			<7	mg/kg	TM5/PM16
>EC21-EC35#	-	-	-	<7	-			<7	mg/kg	TM5/PM16
Total aromatics C5-35#	-	-	-	<19	-			<19	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	-	-	<38	-			<38	mg/kg	TM5/TM36/PM12/PM16
Natural Moisture Content	13.5	19.2	18.7	27.4	11.5			<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	7.9	-	<0.6			<0.6	mg/kg	TM38/PM20
Chloride **M	<2	15	18	-	58			<2	mg/kg	TM38/PM20
Fluoride	2.8	2.7	4.1	-	0.9			<0.3	mg/kg	TM173/PM20
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3			<0.3	mg/kg	TM38/PM20
Nitrate as NO3 Nitrite as NO2	<2.5 <0.05	<2.5 <0.05	<2.5 <0.05	-	14.6 0.99			<2.5 <0.05	mg/kg	TM38/PM20 TM38/PM20
Ortho Phosphate as PO4	1.8	1.8	<0.03	-	<0.3			<0.05	mg/kg mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	0.1190	0.2830	0.6682	-	1.3462			<0.0015	g/l	TM38/PM20
Chromium III	64.6	69.5	73.4	52.2	41.3			<0.5	mg/kg	NONE/NONE
	55	55.5	. 5.7	52.2				-0.0	9"19	
Total Cyanide #M	<0.5	<0.5	<0.5	-	<0.5			<0.5	mg/kg	TM89/PM45
,										
Total Organic Carbon #	2.85	3.31	2.55	0.08	1.30			<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	-	<10			<10	mg/kg	TM106/PM119
Total Alkalinity as CaCO3	190	320	180	-	180			<10	mg/kg	TM75/PM58

Client Name: AECOM

Reference: Location:

West Burton Power Station

Contact: Alex Freeman
JE Job No.: 17/20488

Report : Solid

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

									•		
	J E Sample No.	1-3	4-6	7-9	10-12	13-15					
	Sample ID	BH104	WS105	WS105	BH101	TP106					
	Depth	1.00	1.30	6.50	14.7	0.50			Please se	e attached n	otes for all
	COC No / misc									ations and ad	
	Containers	VJB	VJB	VJB	VJB	VJB					
	Sample Date	11/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017					
	Sample Type	Soil	Soil	Soil	Soil	Soil					
	Batch Number	1	1	1	1	1			1.00#.00	I I a fra	Method
	Date of Receipt	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017			LOD/LOR	Units	No.
рН ^{#М}		8.14	6.18	6.43	8.01	6.17			<0.01	pH units	TM73/PM11
Sample Type		Clay	Clay	Clay	Clay	Clay				None	PM13/PM0
Sample Colour		Medium Brown	Medium Brown	Dark Brown	Medium Brown	Medium Brown				None	PM13/PM0
Other Items		loam, stones, brick	n/a	loam, roots, stones	stones	roots, sand, stones, brick				None	PM13/PM0

Client Name: AECOM SVOC Report :

Reference:

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20488

JE Job No.:	17/20488								
J E Sample No.	1-3	7-9	10-12						
Sample ID	BH104	WS105	BH101						
Depth	1.00	6.50	14.7					e attached n ations and a	
COC No / misc	V/ 1.D	V/ 15	V/ 15				abbievia	alions and a	Citityiiis
Containers	VJB	VJB	VJB						
Sample Date	11/12/2017		12/12/2017						
Sample Type	Soil	Soil	Soil						
Batch Number	1	1	1				LOD/LOR	Units	Method No.
Date of Receipt	13/12/2017	13/12/2017	13/12/2017						NO.
SVOC MS									
Phenois									
2-Chlorophenol *M	<10	<10	<10				<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10				<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10				<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10	<10	<10				<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10				<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10				<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10				<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10				<10	ug/kg	TM16/PM8
Phenol #M	<10	<10	<10				<10	ug/kg	TM16/PM8
PAHs									
2-Chloronaphthalene #M	<10	<10	<10				<10	ug/kg	TM16/PM8
2-Methylnaphthalene **M	<10	<10	<10				<10	ug/kg	TM16/PM8
Naphthalene	<10	<10	<10				<10	ug/kg	TM16/PM8
Acenaphthylene	<10	<10	<10				<10	ug/kg	TM16/PM8
Acenaphthene	<10	<10	<10				<10	ug/kg	TM16/PM8
Fluorene	<10	<10	<10				<10	ug/kg	TM16/PM8
Phenanthrene *M	<10	<10	<10				<10	ug/kg	TM16/PM8
Anthracene	<10	<10	<10				<10	ug/kg	TM16/PM8
Fluoranthene #M	42	<10	<10				<10	ug/kg	TM16/PM8
Pyrene #M	43	<10	<10				<10	ug/kg	TM16/PM8
Benzo(a)anthracene	26	<10	<10				<10	ug/kg	TM16/PM8
Chrysene	35	<10	<10				<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	49	<10	<10				<10	ug/kg	TM16/PM8
Benzo(a)pyrene	32	<10	<10				<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	22	<10	<10				<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10	<10	<10				<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	29	<10	<10				<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	35	<10	<10				<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	14	<10	<10				<10	ug/kg	TM16/PM8
Phthalates								-99	
Bis(2-ethylhexyl) phthalate	<100	<100	<100				<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100				<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100				<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100				<100	ug/kg ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100				<100	ug/kg ug/kg	TM16/PM8
Dimethyl phthalate **M	<100	<100	<100				<100	ug/kg ug/kg	TM16/PM8
metriyi pritrialate	×100	<100	×100				\100	ug/kg	114110/171010

Solid

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20488

SVOC Report : Solid

JE Job No.:	17/20488								
J E Sample No.	1-3	7-9	10-12						
·									
Sample ID	BH104	WS105	BH101						
Depth	1.00	6.50	14.7				Diagona	e attached n	ataa far all
COC No / misc	1.00	0.50	14.7					e allached h ations and a	
Containers	VJB	VJB	VJB						,
Sample Date			12/12/2017						
Sample Type	Soil	Soil	Soil						
Batch Number	1	1	1						Method
Date of Receipt	13/12/2017	13/12/2017	13/12/2017				LOD/LOR	Units	No.
SVOC MS									
Other SVOCs									
1,2-Dichlorobenzene	<10	<10	<10				<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10	<10	<10				<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10				<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10				<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10				<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10				<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10				<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Bromophenylphenylether ***	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10				<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10				<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10				<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10				<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10				<10	ug/kg	TM16/PM8
Carbazole	<10	<10	<10				<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10	<10	<10				<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10				<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<10	<10				<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10				<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10				<10	ug/kg	TM16/PM8
Isophorone #M	<10	<10	<10				<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine ***	<10	<10	<10				<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10	<10	<10				<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	115	119	118				<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	101	101	103				<0	%	TM16/PM8

Client Name: AECOM VOC Report :

Reference:

Location: West Burton Power Station

Contact: Alex Freeman JE Job No.: 17/20488

JE Job No.:	17/20488										
J E Sample No.	1-3	7-9	10-12						1		
Sample ID	BH104	WS105	BH101								
Depth	1.00	6.50	14.7						Please se	e attached n	notes for all
COC No / misc										ations and a	
Containers	VJB	VJB	VJB								
Sample Date	11/12/2017		12/12/2017								
Sample Type Batch Number	Soil	Soil	Soil 1								NA-th1
Date of Receipt	1 13/12/2017	1 13/12/2017	13/12/2017						LOD/LOR	Units	Method No.
VOC MS	10/12/2011	10/12/2011	10/12/2011								
Dichlorodifluoromethane	<2	<2	<2						<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether ***	<6	<6	<6						<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3						<3	ug/kg	TM15/PM10
Vinyl Chloride Bromomethane	<2 <1	<2 <1	<2 <1						<2 <1	ug/kg	TM15_A/PM10 TM15/PM10
Chloroethane **M	<1 <6	<6	<6						<6	ug/kg ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6	<6	<6						<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	<30	<30						<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6	<6	<6						<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M 2,2-Dichloropropane	<7 <4	<7 <4	<7 <4						<7 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Bromochloromethane **M	<4	<4	<4						<4	ug/kg ug/kg	TM15/PM10
Chloroform #M	<5	<5	<5						<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5	<5						<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3						<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichloroethane *** Benzene ***	<5	<5	<5						<5 .5	ug/kg	TM15/PM10
Trichloroethene (TCE) **M	<5 <5	<5 <5	<5 <5						<5 <5	ug/kg ug/kg	TM15/PM10 TM15/PM10
1,2-Dichloropropane *M	<4	<4	<4						<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4	<4						<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4	<4	<4						<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4						<4	ug/kg	TM15/PM10
Toluene #M	<3	<3	<3						<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene 1,1,2-Trichloroethane #M	<3 <4	<3 <4	<3 <4						<3 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3						<3	ug/kg	TM15/PM10
1,3-Dichloropropane **M	<4	<4	<4						<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5	<5						<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3						<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4	<4						<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane *** Ethylbenzene ***	<5 <3	<5 <3	<5 <3						<5 <3	ug/kg ug/kg	TM15/PM10 TM15/PM10
p/m-Xylene **M	<4	11	<4						<4	ug/kg	TM15/PM10
o-Xylene *M	<4	<4	<4						<4	ug/kg	TM15/PM10
Styrene	<3	<3	<3						<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4	<4						<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane **M Bromobenzene	<3	<3 <2	<3 <2						<3 <2	ug/kg	TM15/PM10 TM15/PM10
1,2,3-Trichloropropane **M	<2 <4	<2 <4	<2 <4						<2 <4	ug/kg ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4						<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3						<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3						<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3						<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5						<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene * sec-Butylbenzene *	<6 <4	<6 <4	<6 <4						<6 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
4-Isopropyltoluene #	<4	<4	<4						<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4	<4	<4						<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4						<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4						<4	ug/kg	TM15/PM10 TM15/PM10
1,2,4-Trichlorobenzene [#] Hexachlorobutadiene	<7 <4	<7 <4	<7 <4						<7 <4	ug/kg ug/kg	TM15/PM10 TM15/PM10
Naphthalene	<27	<27	<27						<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7						<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8							1	1	_		T145/D1440
Surrogate Recovery 4-Bromofluorobenzene	84 59	98 91	108 126			l i	l .	l i	<0	%	TM15/PM10 TM15/PM10

Solid

Exova Jones Environmental Asbestos Analysis

Client Name: AECOM

Reference:

Location: West Burton Power Station

Contact: Alex Freeman

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/20488	1	BH104	1.00	3	03/01/2018	General Description (Bulk Analysis)	Soil/Stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD
17/20488	1	WS105	1.30	6	03/01/2018	General Description (Bulk Analysis)	Soil/Stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD
17/20488	1	WS105	6.50	9	03/01/2018	General Description (Bulk Analysis)	Soil/Stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD
17/20488	1	TP106	0.50	15	03/01/2018	General Description (Bulk Analysis)	Soil/Stones
					03/01/2018	Asbestos Fibres	NAD
					03/01/2018	Asbestos Fibres (2)	NAD
					03/01/2018	Asbestos ACM	NAD
					03/01/2018	Asbestos ACM (2)	NAD
					03/01/2018	Asbestos Type	NAD
					03/01/2018	Asbestos Type (2)	NAD
					03/01/2018	Asbestos Level Screen	NAD
	-					l .	l .

Notification of Deviating Samples

Client Name: AECOM Matrix : Solid

Reference:

Location: West Burton Power Station

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/20488

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40,

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
М	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
OC	Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM58	Dried and ground solid samples are extracted with water in a 5:1 water to solid ratio, the samples are shaken on an orbital shaker.			AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes



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

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Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM 2 City Walk Leeds LS11 9AR

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





Attention: Alex Freeman

Date: 9th January, 2018

Your reference :

Our reference: Test Report 17/21155 Batch 1

Location:

Date samples received: 23rd December, 2017

Status: Final report

Issue:

Four samples were received for analysis on 23rd December, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AECOM Report : Liquid

Reference: Location:

Contact: Alex Freeman JE Job No.: 17/21155

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

JE Job No.:	17/21155					H=H ₂ SO ₄ ,	∠=∠nAc, N=	NaOH, HN=	HNU ₃	_		
J E Sample No.	1-7	8-14	15-21	22-24								
Sample ID	SW01	SW02	DUP02	TRIP BLANK								
Depth										Diagon on	o attached n	otoo for all
COC No / misc											e attached r ations and a	
Containers	V HN N P G	V HN N P G	V HN N P G	VPG								
Sample Date												
Sample Type												
Batch Number	1	1		1								
			1							LOD/LOR	Units	Method No.
Date of Receipt			23/12/2017							0		
Dissolved Antimony #	<2	<2	4	<2						<2	ug/l	TM30/PM14 TM30/PM14
Dissolved Arsenic # Dissolved Cadmium #	<2.5 <0.5	<2.5 <0.5	<2.5 <0.5	<2.5 <0.5						<2.5 <0.5	ug/l ug/l	TM30/PM14
Total Dissolved Chromium#	<1.5	<1.5	<1.5	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Copper#	<7	<7	<7	<7						<7	ug/l	TM30/PM14
Total Dissolved Iron #	<20	<20	<20	<20						<20	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5						<5	ug/l	TM30/PM14
Dissolved Manganese #	18	35	18	<2						<2	ug/l	TM30/PM14
Dissolved Mercury#	<1	<1	<1	<1						<1	ug/l	TM30/PM14
Dissolved Molybdenum #	7	4	8	<2						<2	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2	<2	<2						<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Dissolved Zinc #	<3	6	<3	<3						<3	ug/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1						<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5						<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5						<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1						<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2						<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1						<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	99	97	98	98						<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	103	102	104	103						<0	%	TM15/PM10
TPH CWG												
Aliphatics												
>C5-C6#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C6-C8#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C8-C10#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C10-C12#	<5	<5 <10	<5	<5 -10						<5	ug/l	TM5/PM30 TM5/PM30
>C12-C16# >C16-C21#	<10 <10	<10	<10 <10	<10 <10						<10 <10	ug/l ug/l	TM5/PM30
>C16-C21 >C21-C35#	<10	<10	<10	<10						<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
Aromatics			-								- 3	
>C5-EC7#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC7-EC8#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC8-EC10#	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC10-EC12#	<5	<5	<5	<5						<5	ug/l	TM5/PM30
>EC12-EC16#	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>EC21-EC35#	<10	<10	<10	<10						<10	ug/l	TM5/PM30
Total aromatics C5-35 #	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12

Client Name: AECOM

Reference: Location:

Contact: Alex Freeman JE Job No.: 17/21155

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

Report : Liquid

0E 00D 110.:	17/21100					11-112004, 2	 	 _		
J E Sample No.	1-7	8-14	15-21	22-24						
Sample ID	SW01	SW02	DUP02	TRIP BLANK						
Depth								Please se	e attached n	otes for all
COC No / misc									ations and a	
Containers	V HN N P G	V HN N P G	V HN N P G	VPG						
Sample Date	22/12/2017	22/12/2017	22/12/2017	22/12/2017						
Sample Type										
Batch Number		1	1	1						Method
Date of Receipt	23/12/2017	23/12/2017	23/12/2017	23/12/2017				LOD/LOR	Units	No.
Fluoride	0.3	0.4	0.3	<0.3				<0.3	mg/l	TM173/PM0
Sulphate as SO4#	44.9	1095.8	45.9	<0.5				<0.5	mg/l	TM38/PM0
Chloride [#] Nitrate as NO3 [#]	58.8 0.8	101.6 38.8	59.6 0.8	<0.3 <0.2				<0.3 <0.2	mg/l	TM38/PM0 TM38/PM0
Nitrate as NO3 Nitrite as NO2 #	<0.02	0.05	<0.02	<0.2				<0.2	mg/l mg/l	TM38/PM0
Ortho Phosphate as PO4 #	0.21	0.80	0.21	<0.06				<0.06	mg/l	TM38/PM0
Total Cyanide #	<0.01	<0.01	<0.01	<0.01				<0.01	mg/l	TM89/PM0
Total Organic Carbon #	5	<2	5	<2				<2	mg/l	TM60/PM0
					1				1	

Client Name: AECOM

Reference:

Location: Contact:

Alex Freeman 17/21155 SVOC Report : Liquid

JE Job No.:	17/21155									
J E Sample No.	1-7	8-14	15-21	22-24						
Sample ID	SW01	SW02	DUP02	TRIP BLANK						
	01101	51102	20102	TKII BEARK						
Depth									e attached nations and a	
COC No / misc Containers	V HN N D C	VUNNDG	V HN N P G	VPG				abbievi	alions and at	Dionyms
Sample Date	22/12/2017	22/12/2017		22/12/2017						
Sample Type	Surface Water			Trip Blank						
Batch Number	1	1	1	1						Method
Date of Receipt	23/12/2017		23/12/2017	23/12/2017				LOD/LOR	Units	No.
SVOC MS										
Phenols										
2-Chlorophenol #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol # 2,4-Dimethylphenol	<0.5 <1	<0.5 <1	<0.5 <1	<0.5 <1				<0.5 <1	ug/l	TM16/PM30 TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10				<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1				<1	ug/l	TM16/PM30
PAHs										That offer to
2-Chloronaphthalene #	<1	<1	<1	<1 <1				<1	ug/l	TM16/PM30 TM16/PM30
2-Methylnaphthalene # Naphthalene #	<1 <1	<1 <1	<1 <1	<1				<1 <1	ug/l ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Benzo(a)anthracene#	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Chrysene * Benzo(bk)fluoranthene *	<0.5 <1	<0.5 <1	<0.5 <1	<0.5 <1				<0.5 <1	ug/l ug/l	TM16/PM30 TM16/PM30
Benzo(a)pyrene	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Phthalates										
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5				<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1				<1	ug/l	TM16/PM30 TM16/PM30
Di-n-butyl phthalate # Di-n-Octyl phthalate	<1.5 <1	<1.5 <1	<1.5 <1	<1.5 <1				<1.5 <1	ug/l ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1				<1	ug/l	TM16/PM30
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Client Name: AECOM

Reference: Location:

Contact: Alex Freeman
JE Job No.: 17/21155

SVOC Report : Liquid

JE Job No.:	17/21155									
J E Sample No.	1-7	8-14	15-21	22-24						
Sample ID	SW01	SW02	DUP02	TRIP BLANK						
Depth								Please se	e attached n	otes for all
COC No / misc								abbrevi	ations and a	cronyms
Containers	V HN N P G	V HN N P G	V HN N P G	VPG						
Sample Date	22/12/2017	22/12/2017	22/12/2017	22/12/2017						
Sample Type	Surface Water	Surface Water	Surface Water	Trip Blank						
Batch Number	1	1	1	1						Method
Date of Receipt		23/12/2017		23/12/2017				LOD/LOR	Units	No.
SVOC MS										
Other SVOCs										
1,2-Dichlorobenzene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #		<1		<1						TM16/PM30
	<1		<1					<1	ug/l	Į.
2-Nitroaniline	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1				<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether#	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Dibenzofuran [#]	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	75	78	80	130				<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	100	67 ^{SV}	68 ^{SV}	120				<0	%	TM16/PM30
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Client Name: AECOM

Reference: Location:

Contact:

Alex Freeman

VOC Report : Liquid

Contact:	Alex Free	man								
JE Job No.:	17/21155									
J E Sample No.	1-7	8-14	15-21	22-24						
J E Sample No.	1-7	8-14	15-21	22-24						
Sample ID	SW01	SW02	DUP02	TRIP BLANK						
Depth									e attached n	
COC No / misc								abbrevi	ations and a	cronyms
Containers	V HN N P G	V HN N P G	V HN N P G	VPG						
Sample Date	22/12/2017	22/12/2017	22/12/2017	22/12/2017						
Sample Type	Surface Water	Surface Water	Surface Water	Trip Blank						
Batch Number	1	1	1	1				LOD/LOR	Units	Method
Date of Receipt	23/12/2017	23/12/2017	23/12/2017	23/12/2017				LOD/LOR	Office	No.
VOC MS										
Dichlorodifluoromethane	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE)#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform#	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane#	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane#	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE)#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1.1.2-Trichloroethane#	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE)#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1				<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform#	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene#	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloroberizerie	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	99	97	98	98				<0	www.	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	103	102	104	103				<0	%	TM15/PM10
	100	102	104	100			1		/0	

Notification of Deviating Samples

Client Name: AECOM Matrix : Liquid

Reference: Location:

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/21155	1	DUP02		15-21	GRO	Sample holding time exceeded
17/21155	1	TRIP BLANK		22-24	GRO, Mercury, Metals	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/21155

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40,

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

17/21155

ISO17025 (UKAS Ref No. 4225) accredited - UK.
ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
Indicates analyte found in associated method blank.
Dilution required.
MCERTS accredited.
Not applicable
No Asbestos Detected.
None Detected (usually refers to VOC and/SVOC TICs).
No Determination Possible
Calibrated against a single substance
Surrogate recovery outside performance criteria. This may be due to a matrix effect.
Results expressed on as received basis.
AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
Result outside calibration range, results should be considered as indicative only and are not accredited.
Analysis subcontracted to a Jones Environmental approved laboratory.
Samples are dried at 35°C ±5°C
Suspected carry over
Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
Matrix Effect
No Fibres Detected
AQC Sample
Blank Sample
Client Sample
Trip Blank Sample
Outside Calibration Range

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Method Code Appendix

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				



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

Unit 3 Deeside Point

Zone 3

Deeside Industrial Park

Deeside CH5 2UA

AECOM 2 City Walk Leeds LS11 9AR

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





Attention: Alex Freeman

Date: 9th January, 2018

Your reference: 60527350

Our reference: Test Report 17/21149 Batch 1

Location:

Date samples received: 23rd December, 2017

Status: Final report

Issue:

Six samples were received for analysis on 23rd December, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:



Simon Gomery BSc Project Manager

Client Name: AFCOM Report: Liquid 60527350 Reference:

Location:

Contact:

Alex Freeman

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.: H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HN0₃ 17/21149 22,37-42 23-29 J E Sample No 8-14 15-21 30-36 Sample ID WS103 WS104 DUP01 WS101 WS112 WS102 Depth Please see attached notes for all abbreviations and acronyms COC No / misc Containers V HN N P G V HN N P G V HN N P G G V HN N P V HN N P G V HN N P G Sample Date 21/12/2017 21/12/2017 21/12/2017 21/12/2017 21/12/2017 21/12/2017 Sample Type Ground Wate Ground Wate Ground Water Ground Water Ground Water Ground Water Batch Number Method LOD/LOR Units No. Date of Receipt 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 TM30/PM14 Dissolved Antimony <2 **~**2 ug/l TM30/PM1 Dissolved Arsenic # 8.0 8.1 8.1 <25 <25 <25 ug/l Dissolved Cadmium * < 0.5 TM30/PM1 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 ug/l TM30/PM1 Total Dissolved Chromium [‡] <1.5 2.0 <1.5 <1.5 <1.5 <1.5 <1.5 ug/l TM30/PM1 Dissolved Copper 4 <7 <7 <7 <7 <7 <7 ug/l 12440_{AA} TM30/PM1 Total Dissolved Iron # 692 <20 74 82 7453 <20 ug/l TM30/PM1 <5 <5 <5 Dissolved Lead # <5 <5 <5 <5 ua/l TM30/PM1 172 564 645 577 1464 1116 Dissolved Manganese 4 <2 ua/l TM30/PM1 Dissolved Mercury# <1 <1 <1 <1 ua/l 5227_{AA} TM30/PM1 7 247 2214 5 592 <2 Dissolved Molybdenum * ua/l TM30/PM1 Dissolved Nickel # <2 <2 <2 2 5 <2 <2 ug/l TM30/PM1 95 Dissolved Selenium * 5 <3 <3 <3 8 <3 ug/l TM30/PM14 Dissolved Zinc# 88 5 31 <3 <3 ug/l TM15/PM10 Methyl Tertiary Butyl Ether # <0.1 <0.1 < 0.1 < 0.1 <0.1 <0.1 <0.1 ua/l <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 TM15/PM10 Benzene * ua/l TM15/PM10 Toluene # <5 <5 <5 <5 <5 ua/l <5 <5 Ethylbenzene # TM15/PM10 <1 <1 <1 <1 <1 <1 <1 ua/l p/m-Xylene # TM15/PM10 <2 <2 <2 <2 <2 <2 <2 ua/l o-Xylene # <1 TM15/PM10 ug/l Surrogate Recovery Toluene D8 110 109 112 117 110 110 <0 TM15/PM10 TM15/PM10 rogate Recovery 4-Bromofluorobenzene 100 98 101 105 99 100 <0 TPH CWG Aliphatics TM36/PM12 >C5-C6# <10 <10 <10 <10 <10 ug/l TM36/PM12 >C6-C8# <10 <10 <10 <10 <10 <10 <10 ug/l <10 <10 <10 <10 <10 <10 <10 TM36/PM12 >C8-C10# ug/l <5 <5 TM5/PM30 >C10-C12# <5 <5 <5 <5 ug/l >C12-C16# <10 <10 <10 <10 <10 <10 <10 TM5/PM30 ug/l >C16-C21# <10 <10 <10 <10 <10 <10 <10 TM5/PM30 ug/l >C21-C35# <10 <10 <10 TM5/PM30 <10 <10 <10 <10 ug/l <10 <10 <10 <10 <10 <10 <10 Total aliphatics C5-35 # ug/l Aromatics >C5-EC7# <10 <10 <10 <10 <10 <10 <10 TM36/PM12 ug/l >EC7-EC8# <10 <10 <10 <10 <10 <10 <10 TM36/PM1: ug/l >EC8-EC10# <10 <10 <10 <10 <10 <10 <10 ug/l TM36/PM1: >EC10-EC12# <5 <5 <5 <5 <5 <5 <5 ug/l TM5/PM30 >EC12-EC16# <10 <10 <10 <10 <10 <10 <10 ug/l TM5/PM30 >EC16-EC21# <10 <10 <10 <10 <10 <10 <10 ug/l TM5/PM30 >EC21-EC35# <10 <10 <10 <10 <10 <10 <10 ug/l TM5/PM30 Total aromatics C5-35# <10 <10 <10 <10 <10 <10 <10 ug/l Total aliphatics and aromatics(C5-35) <10 <10 <10 <10 <10 <10 <10 ug/l

AECOM Client Name: Report : Liquid

60527350 Reference:

Location: Contact:

Alex Freeman JE Job No.: 17/21149

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

JE JOB NO.:	17/21149						H=H ₂ SO ₄ ,		 -111403			
J E Sample No.	1-7	8-14	15-21	22,37-42	23-29	30-36						
Sample ID	WS103	WS104	WS102	DUP01	WS101	WS112						
Depth										Diago ao	e attached n	otoo for all
COC No / misc											ations and a	
Containers	V HN N P G	V HN N P G	V HN N P G	G V HN N P	V HN N P G	V HN N P G						
Sample Date												
Sample Type												
Batch Number		1	1	1	1	1						
										LOD/LOR	Units	Method No.
Date of Receipt	<0.3	<0.3	0.4	0.4	<0.3	<0.3				<0.3	mg/l	TM173/PM0
Tidolide	V 0.3	V0.3	0.4	0.4	V0.3	V 0.3				V 0.3	mg/i	1101173/1100
Sulphate as SO4 #	3310.0	1918.0	941.3	922.6	1587.5	1436.6				<0.5	mg/l	TM38/PM0
Chloride #	121.4	66.9	128.2	132.0	143.1	223.5				<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	<0.2	26.0	<0.2	<0.2	4.4	<0.2				<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	<0.02 <0.06	3.82 <0.06	0.06 0.14	0.06 0.19	0.25 <0.06	0.08				<0.02	mg/l	TM38/PM0 TM38/PM0
Ortho Phosphate as PO4#	<0.00	<0.06	0.14	0.19	<0.06	<0.00				<0.06	mg/l	1 IVI36/PIVIU
Total Cyanide #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				<0.01	mg/l	TM89/PM0
Total Organic Carbon #	<2	<2	<2	<2	<2	<2				<2	mg/l	TM60/PM0
								•	•			

Client Name: AECOM SVOC Report :

Reference:

60527350

Location: Contact: JE Job No.:

Alex Freeman 17/21149

J E Sample No. 8-14 15-21 22,37-42 23-29 30-36 WS103 WS104 DUP01 WS112 Sample ID WS102 WS101 Depth Please see attached notes for all COC No / misc abbreviations and acronyms V HN N P G V HN N P G V HN N P G G V HN N P V HN N P G V HN N P G Containers 21/12/2017 21/12/2017 21/12/2017 21/12/2017 21/12/2017 Sample Date 21/12/2017 Ground Wate Ground Wat Ground Wate Ground Wate Ground Wat Ground Wat Sample Type Batch Number Method 1 1 1 1 LOD/LOR Units Date of Receipt 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 SVOC MS Phenols TM16/PM3 <1 2-Chlorophenol * <1 <1 <1 <1 <1 <1 uq/l 2-Methylphenol # <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM3 2-Nitrophenol <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 TM16/PM30 ug/l TM16/PM30 2,4-Dichlorophenol * <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 2,4-Dimethylphenol **~1 ~**1 **~1 ~1** <1 **~1 ~**1 ug/l 2,4,5-Trichlorophenol # <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 TM16/PM30 2,4,6-Trichlorophenol <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 4-Chloro-3-methylphenol # < 0.5 < 0.5 < 0.5 <0.5 < 0.5 < 0.5 < 0.5 ug/l 4-Methylphenol **~1** ug/l TM16/PM30 4-Nitrophenol <10 <10 <10 <10 <10 <10 <10 TM16/PM30 ug/l TM16/PM30 Pentachlorophenol <1 <1 <1 <1 <1 <1 <1 ug/l Phenol <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 2-Chloronaphthalene # TM16/PM30 <1 <1 <1 <1 <1 <1 <1 ua/l TM16/PM30 2-Methylnaphthalene# <1 <1 <1 **~1** <1 <1 **~1** ug/l Naphthalene # <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 <0.5 <0.5 TM16/PM30 <0.5 <0.5 <0.5 <0.5 <0.5 Acenaphthylene * ug/l TM16/PM30 Acenaphthene [‡] <1 <1 <1 <1 <1 <1 <1 ug/l Fluorene # <0.5 <0.5 <0.5 <0.5 < 0.5 <0.5 <0.5 ug/l TM16/PM30 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 TM16/PM30 Phenanthrene * ug/l <0.5 TM16/PM30 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 Anthracene i ug/l Fluoranthene [#] TM16/PM30 < 0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 ug/l <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 Pyrene # TM16/PM30 Benzo(a)anthracene# <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 Chrvsene * < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 ug/l Benzo(bk)fluoranthene# <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 Benzo(a)pyrene <1 <1 <1 <1 <1 <1 <1 TM16/PM30 ug/l TM16/PM30 Indeno(123cd)pyrene <1 <1 <1 <1 <1 <1 <1 ug/l Dibenzo(ah)anthracene # < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5 ug/l TM16/PM30 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 TM16/PM30 Benzo(ghi)perylene # ug/l Phthalates TM16/PM30 Bis(2-ethylhexyl) phthalate <5 <5 <5 <5 <5 <5 <5 ug/l Butylbenzyl phthalate <1 <1 <1 <1 ug/l TM16/PM30 TM16/PM30 Di-n-butyl phthalate # <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 <1.5 ug/l TM16/PM30 Di-n-Octyl phthalate <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 Diethyl phthalate # <1 <1 <1 <1 <1 <1 <1 ug/l Dimethyl phthalate TM16/PM30 ug/l

Liquid

Client Name: AECOM SVOC Report: Liquid
Reference: 60527350

Location:

Contact: Alex Freeman
JE Job No.: 17/21149

J E Sample No. 22,37-42 8-14 15-21 23-29 30-36 WS103 WS104 WS102 DUP01 WS101 WS112 Sample ID Depth Please see attached notes for all COC No / misc abbreviations and acronyms Containers V HN N P G V HN N P G V HN N P G G V HN N P V HN N P G V HN N P G 21/12/2017 21/12/2017 21/12/2017 21/12/2017 21/12/2017 21/12/2017 Sample Date Sample Type Ground Wate Ground Wate Ground Wate Ground Wate Ground Wate Ground Wat Batch Number 1 1 Method 1 1 1 1 LOD/LOR Units Date of Receipt 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 23/12/2017 SVOC MS Other SVOCs TM16/PM3 1.2-Dichlorobenzene# <1 <1 <1 <1 <1 <1 <1 ug/l 1,2,4-Trichlorobenzene# <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM3 <1 <1 TM16/PM30 1,3-Dichlorobenzene # ug/l TM16/PM30 1.4-Dichlorobenzene # <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 2-Nitroaniline **~1 ~**1 **~1 ~1** <1 **~1** <1 ug/l 2,4-Dinitrotoluene # <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 TM16/PM30 2,6-Dinitrotoluene <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 3-Nitroaniline <1 <1 <1 <1 <1 <1 <1 ug/l 4-Bromophenylphenylether # <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 4-Chloroaniline <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 TM16/PM30 4-Chlorophenylphenylether # <1 <1 <1 <1 <1 <1 <1 ug/l 4-Nitroaniline <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 TM16/PM30 Azobenzene# ug/l TM16/PM30 Bis(2-chloroethoxy)methane# <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 Bis(2-chloroethyl)ether# <1 <1 <1 <1 <1 <1 <1 ug/l Carbazole # <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 <0.5 <0.5 <0.5 TM16/PM30 Dibenzofuran # <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 Hexachlorobenzene# <1 <1 <1 <1 <1 <1 <1 ug/l Hexachlorobutadiene# <1 <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 Hexachlorocyclopentadiene <1 <1 TM16/PM30 <1 ug/l TM16/PM30 <1 Hexachloroethane * <1 <1 <1 <1 <1 <1 ug/l TM16/PM30 sophorone # < 0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 ug/l <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM16/PM30 N-nitrosodi-n-propylamine # TM16/PM30 <1 <1 <1 <1 <1 <1 <1 ug/l Nitrobenzene 1 Surrogate Recovery 2-Fluorobiphenyl TM16/PM30 125 92 127 129 92 129 <0 % Surrogate Recovery p-Terphenyl-d14 121 96 123 137 104 127 <0 % TM16/PM30

Client Name: AECOM VOC Report : Liquid
Reference: 60527350

Reference: Location:

Contact: Alex Freeman
JE Job No.: 17/21149

J E Sample No. 8-14 15-21 22,37-42 23-29 30-36 1-7 WS112 Sample ID WS103 WS104 WS102 DUP01 WS101 Depth Please see attached notes for al COC No / misc abbreviations and acronyms V HN N P G V HN N P G V HN N P G G V HN N P V HN N P G V HN N P G Containers 21/12/2017 21/12/2017 21/12/2017 Sample Date 21/12/2017 21/12/2017 21/12/2017 Ground Wate Ground Wat Ground Wate Ground Wat Sample Type Ground Wat Ground Wat Batch Number Method 1 1 1 LOD/LOR Units 23/12/2017 23/12/2017 Date of Receipt 23/12/2017 23/12/2017 23/12/2017 23/12/2017 VOC MS TM15/PM1 Dichlorodifluoromethane <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 < 0.1 < 0.1 < 0.1 Methyl Tertiary Butyl Ether 1 < 0.1 < 0.1 < 0.1 < 0.1 ug/l Chloromethane <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 TM15/PM10 Vinyl Chloride # ug/l TM15/PM10 Bromomethane <1 <1 <1 <1 <1 <1 <1 uq/l TM15/PM10 Chloroethane <3 <3 <3 <3 <3 <3 <3 ug/l Trichlorofluoromethane # <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 1,1-Dichloroethene (1,1 DCE) # <3 <3 <3 <3 <3 <3 <3 TM15/PM1 uq/l TM15/PM1 Dichloromethane (DCM) <5 <5 <5 <5 <5 <5 <5 ug/l trans-1-2-Dichloroethene # <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 <3 <3 <3 <3 <3 <3 <3 TM15/PM10 1.1-Dichloroethane ug/l TM15/PM10 <3 <3 <3 <3 <3 <3 cis-1-2-Dichloroethene <3 ug/l 2,2-Dichloropropane <1 <1 <1 <1 <1 <1 <1 ug/l TM15/PM10 <2 <2 <2 <2 <2 <2 <2 TM15/PM10 Bromochloromethane # ug/l Chloroform # <2 TM15/PM10 <2 <2 <2 <2 <2 <2 ug/l 1.1.1-Trichloroethane# <2 <2 <2 **~**2 <2 **~**2 <2 ug/l TM15/PM10 1.1-Dichloropropene <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 TM15/PM10 Carbon tetrachloride # <2 <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 <2 1,2-Dichloroethane <2 <2 <2 <2 <2 <2 ug/l Benzene * <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 ug/l TM15/PM10 TM15/PM10 Trichloroethene (TCE) # <3 <3 <3 <3 <3 <3 <3 ug/l <2 TM15/PM10 <2 <2 <2 <2 <2 1.2-Dichloropropane <2 ua/l TM15/PM10 Dibromomethane # <3 <3 <3 <3 <3 <3 -3 ug/l <2 <2 <2 <2 <2 <2 <2 TM15/PM10 Bromodichloromethane # ug/l TM15/PM10 cis-1-3-Dichloropropene <2 <2 <2 <2 <2 <2 <2 ug/l Toluene # TM15/PM1 <5 <5 <5 <5 <5 <5 <5 ug/l trans-1-3-Dichloropropene <2 <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 <2 <2 <2 <2 <2 <2 <2 TM15/PM10 1,1,2-Trichloroethane ug/l TM15/PM10 Tetrachloroethene (PCF) <3 <3 <3 <3 <3 <3 <3 uq/l 1,3-Dichloropropane <2 <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 <2 <2 <2 <2 <2 <2 <2 TM15/PM10 Dibromochloromethane f ug/l TM15/PM10 1.2-Dibromoethane <2 <2 <2 <2 <2 <2 <2 uq/l Chlorobenzene * <2 <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 1,1,1,2-Tetrachloroethane <2 <2 <2 <2 <2 <2 <2 ug/l TM15/PM10 TM15/PM10 Ethylbenzene# <1 <1 <1 <1 <1 <1 <1 ug/l TM15/PM10 p/m-Xvlene <2 <2 <2 <2 <2 <2 <2 uq/l o-Xylene [‡] <1 <1 <1 <1 <1 <1 <1 ug/l TM15/PM10 <2 <2 <2 <2 <2 <2 <2 TM15/PM10 Styrene ug/l <2 <2 <2 <2 <2 <2 TM15/PM10 <2 Bromoform 1 uq/l lsopropylbenzene# TM15/PM10 <3 <3 <3 <3 <3 <3 <3 ug/l 1,1,2,2-Tetrachloroethane <4 <4 <4 <4 <4 <4 <4 TM15/PM10 ug/l TM15/PM10 <2 <2 <2 <2 <2 <2 <2 Bromobenzene uq/l TM15/PM10 <3 1,2,3-Trichloropropane 4 <3 <3 <3 <3 <3 <3 ug/l Propylbenzene # <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 <3 TM15/PM10 2-Chlorotoluene # <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 <3 <3 <3 <3 1,3,5-Trimethylbenzene <3 <3 <3 ug/l 4-Chlorotoluene # <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 <3 <3 <3 <3 <3 <3 <3 TM15/PM10 tert-Butvlbenzene# ug/l TM15/PM10 1.2.4-Trimethylbenzene <3 <3 <3 <3 <3 <3 <3 ua/l TM15/PM10 sec-Butylbenzene * <3 <3 <3 <3 <3 <3 <3 ug/l <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 4-Isopropyltoluene# <3 <3 <3 <3 <3 <3 <3 TM15/PM10 1,3-Dichlorobenzene # ug/l TM15/PM10 1,4-Dichlorobenzene # <3 <3 <3 <3 <3 <3 <3 ug/l n-Butylbenzene [#] <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 <3 <3 <3 TM15/PM10 1,2-Dichlorobenzene # <3 <3 <3 <3 ug/l <2 <2 <2 <2 <2 <2 <2 TM15/PM10 1.2-Dibromo-3-chloropropane ua/l TM15/PM1 1,2,4-Trichlorobenzene <3 <3 <3 <3 <3 <3 <3 ug/l Hexachlorobutadiene <3 <3 <3 <3 <3 <3 <3 ug/l TM15/PM10 Naphthalene <2 <2 <2 <2 <2 <2 <2 TM15/PM1 ug/l TM15/PM1 1.2.3-Trichlorobenzene <3 <3 <3 <3 <3 <3 <3 ug/l Surrogate Recovery Toluene D8 110 109 112 117 110 110 <0 % TM15/PM10 TM15/PM1

Exova Jones Environmental Notification of Deviating Samples

Client Name: AECOM Reference: 60527350

Location:

Contact: Alex Freeman

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
					No deviating sample report results for job 17/21149	

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/21149

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCI (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

17/21149

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
В	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
СО	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
ТВ	Trip Blank Sample
ОС	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/21149

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			

Exova Jones Environmental

Method Code Appendix

JE Job No: 17/21149

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

West Burton C (Gas Fired Generating Station)/Document Ref. 5.2 Environmental Statement Vol II/PINS Ref. EN10088 Appendix 11B: West Burton C Ground Investigation Environmental Support and Sampling



Annex C QA/QC Table

	Units	MDL	DUP01	WS102	RPD (%)	DUP02	SW01	RPD (%)	Trip Blar
H >C5-C6 Aliphatics	µg/L	10	<10	<10	0	<10	<10	0	<10
>C6-C8 Aliphatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>C8-C10 Aliphatics	µg/L	10	<10	<10	0	<10	<10	0	<10
>C10-C12 Aliphatics	μg/L	5	<5	<5	0	<5	<5	0	<5
>C12-C16 Aliphatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>C16-C21 Aliphatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>C16-C35 Aliphatics	μg/L		-	-	-	-	1	-	-
>C21-C35 Aliphatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>C5-C35 Aliphatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC5-EC7 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC7-EC8 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC8-EC10 Aromatics	µg/L	10	<10	<10	0	<10	<10	0	<10
>EC10-EC12 Aromatics	μg/L	5	<5	<5	0	<5	<5	0	<5
>EC12-EC16 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC16-EC21 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC21-EC35 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>EC5-EC35 Aromatics	μg/L	10	<10	<10	0	<10	<10	0	<10
>C5-C35 Aliphatics & Aromatics	µg/L	10	<10	<10	0	<10	<10	0	<10
C	IMB/ L	- 10	110	110	Ŭ	110	110	Ŭ	110
Dichlorodifluoromethane	µg/L	2	<2	<2	0	<2	<2	0	<2
MTBE	μg/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1
Chloromethane	μg/L	3	<3	<3	0	<3	<3	0	<3
Vinyl chloride	μg/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1
Bromomethane	μg/L	1	<1	<1	0	<1	<1	0	<1
Chloroethane	μg/L μg/L	3	<3	<3	0	<1 <3	<3	0	<3
Cnioroetnane Trichlorofluoromethane	μg/L μg/L	3	<3 <3	<3 <3	0	<3 <3	<3 <3	0	<3 <3
1,1-dichloroethene	μg/L	3	<3	<3	0	<3	<3	0	<3
Dichloromethane	μg/L	5	<5	<5	0	<5	<5	0	<5
trans-1,2-dichloroethene	μg/L	3	<3	<3	0	<3	<3	0	<3
1,1-dichloroethane	μg/L	3	<3	<3	0	<3	<3	0	<3
cis-1,2-dichloroethene	μg/L	3	<3	<3	0	<3	<3	0	<3
2,2-dichloropropane	μg/L	1	<1	<1	0	<1	<1	0	<1
Bromochloromethane	μg/L	2	<2	<2	0	<2	<2	0	<2
Chloroform	μg/L	2	<2	<2	0	<2	<2	0	<2
1,1,1-trichloroethane	μg/L	2	<2	<2	0	<2	<2	0	<2
1,1-dichloropropene	μg/L	3	<3	<3	0	<3	<3	0	<3
Carbon tetrachloride	μg/L	2	<2	<2	0	<2	<2	0	<2
1,2-dichloroethane	μg/L	2	<2	<2	0	<2	<2	0	<2
Benzene	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
Trichloroethene	μg/L	3	<3	<3	0	<3	<3	0	<3
1,2-dichloropropane	μg/L	2	<2	<2	0	<2	<2	0	<2
Dibromomethane	μg/L	3	<3	<3	0	<3	<3	0	<3
Bromodichloromethane	μg/L	2	<2	<2	0	<2	<2	0	<2
cis-1,3-dichloropropene	μg/L	2	<2	<2	0	<2	<2	0	<2
Toluene	μg/L	5	<5	<5	0	< 5	<5	0	<5
trans-1,3-dichloropropene	μg/L	2	<2	<2	0	<2	<2	0	<2
1.1.2-trichloroethane	μg/L	2	<2	<2	0	<2	<2	0	<2
Tetrachloroethene	μg/L	3	<3	<3	0	<3	<3	0	<3
1,3-dichloropropane	μg/L	2	<2	<2	0	<2	<2	0	<2
Sum of PCE and TCE				-					
	μg/L		-		-	-	-	-	-
Chlorodibromomethane	μg/L	2	<2	<2	0	<2	<2	0	<2
TCE+DCE+VC	μg/L			-	-			-	-
1,2-dibromoethane	μg/L	2	<2	<2	0	<2	<2	0	<2
PCE+TCE+DCE+VC	μg/L			-	-	-	-	-	-
1,1,1,2-tetrachloroethane	μg/L	2	<2	<2	0	<2	<2	0	<2
Ethylbenzene	μg/L	1	<1	<1	0	<1	<1	0	<1
Xylene (m & p)	μg/L	2	<2	<2	0	<2	<2	0	<2
Xylene Total	μg/L		-	-			_		
					-				
, , ,	μg/L	1	<1	<1	0	- <1	<1	0	- <1
, , ,	μg/L	1	-	-	0	=	-	0 -	-
Total BTEX		2							
Total BTEX Styrene	μg/L		-	-	-	=	-	-	-
Total BTEX Styrene Bromoform	μg/L μg/L	2	- <2	- <2	- 0	- <2	- <2	- 0	- <2
Total BTEX Styrene Bromoform sopropylbenzene	μg/L μg/L μg/L	2 2	- <2 <2	- <2 <2	0 0	- <2 <2	- <2 <2	- 0 0	- <2 <2
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane	μg/L μg/L μg/L μg/L	2 2 3	- <2 <2 <3	- <2 <2 <3	- 0 0	- <2 <2 <3	- <2 <2 <2 <3	- 0 0 0	- <2 <2 <3
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane	μg/L μg/L μg/L μg/L μg/L μg/L	2 2 3 4 3	- <2 <2 <3 <4	- <2 <2 <3 <4 <3	- 0 0 0	- <2 <2 <3 <4 <3	- <2 <2 <3 <4 <3	0 0 0 0	- <2 <2 <3 <4
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3	- <2 <2 <3 <4 <3 <3	- <2 <2 <3 <4 <3 <3 <3	0 0 0 0 0	- <2 <2 <3 <4 <3 <3	- <2 <2 <3 <4 <3 <3	0 0 0 0 0	- <2 <2 <3 <4 <3
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3	- <2 <2 <3 <4 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3	0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3	0 0 0 0 0	- <2 <2 <3 <4 <3 <3
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0	- 2 -2 -3 -3 -4 -3 -3 -3 -3
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0	- 2 - 2 - 3 - 3 - 4 - 3 - 3 - 3 - 3 - 3
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene	ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L ру/L	2 2 3 4 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0	
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0	- 2 - 2 - 3 - 4 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene n-butylbenzene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0	
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0	
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0 0	- 2
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0	
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0 0	- 2
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <2 <- <- <- <- <- <- <- <- <- <- <- <- <-	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene	ру/L ру/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <2 <- <- <- <- <- <- <- <- <- <- <- <- <-	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene	ру/L ру/L	2 2 3 4 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Fluorene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Fluorene Phenanthrene	ру/L ру/L	2 2 3 4 3 3 3 3 3 3 3 3 2	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <5 <5 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4 <4	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5 0.5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Anthracene Fluoranthene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <5 <5 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,3-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene	Hg/L Hg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5 0.5	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform sopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Phenanthrene Phenanthrene Phenanthrene Fluoranthene Fluoranthene Pyrene Benzo(a)anthracene Chrysene	Hall Hall	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 1 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,3-tetrachloroethane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(a)pyrene	Hay Hay	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,3-trichloropthane 1,2,3-trichloropropane 1,3,5-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2,4-trimethylbenzene 1,2-dibromo-3-chloropropane 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(a)pyrene Indeno(1,2,3-c,d)pyrene	Hayl Hayl	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene n-butylbenzene 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Anthracene Fluoranthene Fluoranthene Pyrene Benzo(a)anthracene Indeno(1,2,3-c,d)pyrene Dibenzo(a,h)anthracene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Xylene (o) Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene n-butylbenzene 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Phenanthrene Phenanthrene Phenanthrene Pyrene Benzo(a)anthracene Benzo(a,h)anthracene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene n-butylbenzene 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Phenanthrene Phenanthrene Anthracene Fluoranthene Fluoranthene Pyrene Benzo(a)anthracene Benzo(a,h)anthracene Benzo(b)&(k)fluoranthene Benzo(b)&(k)fluoranthene	Hayl Hayl	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <4 <4 <4 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-
Total BTEX Styrene Bromoform Isopropylbenzene 1,1,2,2-tetrachloroethane 1,2,3-trichloropropane n-propylbenzene 1,3,5-trimethylbenzene tert-butylbenzene 1,2,4-trimethylbenzene sec-butylbenzene p-isopropyltoluene n-butylbenzene 1,2-dibromo-3-chloropropane 1,2-Dichloroethene Trihalomethanes H Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Anthracene Fluoranthene Fluoranthene Pyrene Benzo(a)anthracene Chrysene Benzo(a,h)anthracene Benzo(a,h,i)perylene Benzo(a,h,i)perylene	µg/L µg/L	2 2 3 4 3 3 3 3 3 3 3 3 3 3 2 1 0.5 0.5 0.5 0.5 0.5 0.5	-	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- <2 <2 <3 <4 <4 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <3 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5 <5	-	- 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-

lethod Type	Units	MDL	DUP01	WS102	RPD (%)	DUP02	SW01	RPD (%)	Trip Blank
VOC									
Chlorobenzene	μg/L	2	<2	<2	0	<2	<2	0	<2
Bromobenzene	μg/L	2	<2	<2	0	<2	<2	0	<2
2-chlorotoluene	μg/L	3	<3	<3	0	<3	<3	0	<3
4-chlorotoluene	μg/L	3	<3	<3	0	<3	<3	0	<3
1,3-dichlorobenzene	μg/L	1	<1	<1	0	<1	<1	0	<1
1,4-dichlorobenzene	μg/L	1	<1	<1	0	<1	<1	0	<1
1.2-dichlorobenzene	µg/L	1	<1	<1	0	<1	<1	0	<1
1,2,4-trichlorobenzene	µg/L	1	<1	<1	0	<1	<1	0	<1
Hexachlorobutadiene	μg/L	1	<1	<1	0	<1	<1	0	<1
1,2,3-trichlorobenzene	μg/L	3	<3	<3	0	<3	<3	0	<3
2-chlorophenol	µg/L	1	<1	<1	0	<1	< 1	0	<1
2-methylphenol	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
		0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
2-nitrophenol	μg/L								
2,4-dichlorophenol	µg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
2,4-dimethylphenol	μg/L	1	<1	<1	0	<1	<1	0	<1
2,4,5-trichlorophenol	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
2,4,6-trichlorophenol	μg/L	1	<1	<1	0	<1	<1	0	<1
4-chloro-3-methylphenol	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
4-methylphenol	μg/L	1	<1	<1	0	<1	<1	0	<1
4-nitrophenol	μg/L	10	<10	<10	0	<10	<10	0	<10
Pentachlorophenol	μg/L	1	<1	<1	0	<1	<1	0	<1
Phenol	μg/L	1	<1	<1	0	<1	<1	0	<1
2-chloronaphthalene	μg/L	1	<1	<1	0	<1	<1	0	<1
2-methylnaphthalene	μg/L	1	<1	<1	0	<1	<1	0	<1
Bis(2-ethylhexyl) phthalate	µg/L	5	<5	<5	0	<5	<5	0	<5
Butyl benzyl phthalate	μg/L	1	<1	<1	0	<1	<1	0	<1
Di-n-butyl phthalate	μg/L	1.5	<1.5	<1.5	0	<1.5	<1.5	0	<1.5
Di-n-octyl phthalate	μg/L	1	<1	<1	0	<1	<1	0	<1
Diethylphthalate	µg/L	1	<1	<1	0	<1	<1	0	<1
Dimethyl phthalate	µg/L	1	<1	<1	0	<1	<1	0	<1
2-nitroaniline	μg/L	1	<1	<1	0	<1	<1	0	<1
2,4-Dinitrotoluene	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
2,6-dinitrotoluene		1	<1	<1	0	<1	<1 <1	0	
,	μg/L		<1	<1	0	<1 <1	<1 <1	0	<1 <1
3-nitroaniline	μg/L	1							
4-bromophenyl phenyl ether	μg/L	1	<1	<1	0	<1	<1	0	<1
4-chloroaniline	μg/L	1	<1	<1	0	<1	<1	0	<1
4-chlorophenyl phenyl ether	μg/L	1	<1	<1	0	<1	<1	0	<1
4-nitroaniline	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
Azobenzene	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
Bis(2-chloroethoxy) methane	μg/L	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5
Bis(2-chloroethyl)ether	μg/L	1	<1	<1	0	<1	<1	0	<1
Carbazole	μg/L	0.5	<0.5	<0.5	0	< 0.5	<0.5	0	< 0.5
Dibenzofuran	μg/L	0.5	<0.5	<0.5	0	< 0.5	< 0.5	0	< 0.5
Hexachlorobenzene	μg/L	1	<1	<1	0	<1	<1	0	<1
Hexachlorocyclopentadiene	μg/L	1	<1	<1	0	<1	<1	0	<1
Hexachloroethane	μg/L	1	<1	<1	0	<1	<1	0	<1
Isophorone	μg/L				•	Λ.Γ.			
N-nitrosodi-n-propylamine		0.5	<0.5	< 0.5	0	<0.5	<0.5	0	
	µa/L	0.5 0.5	<0.5 <0.5	<0.5 <0.5	0	<0.5 <0.5	<0.5 <0.5	0	<0.5
	μg/L μg/L	0.5 0.5 1	<0.5	<0.5	0	<0.5	<0.5		<0.5 <0.5
Nitrobenzene	μg/L μg/L				0			0	<0.5
Nitrobenzene alogenated Benzenes	µg/L		<0.5 <1	<0.5 <1	0	<0.5 <1	<0.5 <1	0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total)			<0.5	<0.5	0	<0.5	<0.5	0	<0.5 <0.5
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals	μg/L μg/L	0.5	<0.5 <1	<0.5 <1	0	<0.5 <1	<0.5 <1	0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered)	μg/L μg/L μg/L	0.5	<0.5 <1 - <2	<0.5 <1 - <2	0 0 -	<0.5 <1 -	<0.5 <1 - <2	0 0 -	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered)	µg/L µg/L µg/L µg/L	0.5 1 2 2.5	<0.5 <1 - - <2 9.4	<0.5 <1 - - <2 8.1	0 0 - 0 15	<0.5 <1 - 4 <2.5	<0.5 <1 - - <2 <2.5	0 0 - 67	<0.5 <0.5 <1 - - <2 <2.5
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered)	µg/L µg/L µg/L µg/L µg/L	0.5 1 2 2.5 0.5	<0.5 <1 - - <2 9.4 <0.5	<0.5 <1 - - <2 8.1 <0.5	0 0 - 0 15 0	<0.5 <1 - - 4 <2.5 <0.5	<0.5 <1 - - <2 <2.5 <0.5	0 0 - 67 0	<0.5 <0.5 <1 - - - - - - - - - - - - - - - - - -
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered)	µg/L µg/L µg/L µg/L µg/L µg/L µg/L	0.5 1 2 2.5 0.5 1.5	<0.5 <1 - - - - 2 9.4 <0.5 <1.5	<0.5 <1 - - - - 2 8.1 <0.5 <1.5	0 0 - 0 15 0	<0.5 <1 - 4 <2.5 <0.5 <1.5	<0.5 <1 - - <2 <2.5 <0.5 <1.5	- 67 0	<0.5 <0.5 <1 - - - - - - - - - - - - - - - - - -
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered)	µg/L µg/L µg/L µg/L µg/L µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7	<0.5 <1 - - - - 2 9.4 <0.5 <1.5 <7	<0.5 <1 - - - - 2 8.1 <0.5 <1.5 <7	0 0 - 0 15 0 0	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7	<0.5 <1 - - - - - - - - - - - - - - - - - -	- 67 0 0	<0.5 <0.5 <1 - - - - - - - - - - - - - - - - - -
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered)	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7	<0.5 <1 - - - 2 9.4 <0.5 <1.5 <7 82	<0.5 <1 - - - 2 8.1 <0.5 <1.5 <7 74	0 0 0 15 0 0 0	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7 <20	<0.5 <1 - - - - - - - - - - - - - - - - - -	- 67 0 0 0 0	<0.5 <0.5 <1 <2 <2.5 <0.5 <1.5 <7 <20
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered)	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	2 2.5 0.5 1.5 7 20 5	<0.5 <1 - - - 2 9.4 <0.5 <1.5 <7 82 <5	<0.5 <1	0 0 15 0 0 15 0	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7 <20 <5	<0.5 <1 - - - - - - - - - - - - - - - - - -	- 67 0 0 0 0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered)	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5	<0.5 <1 - - 2 9.4 <0.5 <1.5 <7 82 <5	<0.5 <1 - <2 8.1 <0.5 <1.5 <7 74 <5 564	0 0 15 0 0 10 0	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7 <20 <5 18	<0.5 <1 - - - - - - - - - - - - - - - - - -	- 67 0 0 0 0 0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered)	µg/L µg/L µg/L µg/L µg/L µg/L µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2	<0.5 <1	<0.5 <1 - <2 8.1 <0.5 <1.5 <7 74 <5 564 <1	0 0 15 0 0 10 0 2	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1	<0.5 <1	- - - - - - - - - - - - - - - - - - -	<0.5 <0.5 <1 - - - - - - - - - - - - -
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered)	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2	<0.5 <1	<0.5 <1 - <2 8.1 <0.5 <1.5 <7 74 <5 564 <1 5	0 0 15 0 0 0 0 10 0 2 0	<0.5 <1 - - 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1	<0.5 <1 - - - - - - - - - - - - - - - - - -	0 0 0 	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered)	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1	<0.5 <1	<0.5 <1	0 0 15 0 0 0 10 0 2 0 33	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2	<0.5 <1	0 0 0 67 0 0 0 0 0 0 0 0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered)	Hg/L H	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered)	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1	<0.5 <1	<0.5 <1	0 0 15 0 0 0 10 0 2 0 33	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2	<0.5 <1	0 0 0 67 0 0 0 0 0 0 0 0	<0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics	µg/L µg/L	2 2.5 0.5 1.5 7 20 5 2 1 2 2 3	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics TOC	Hg/L H	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics TOC norganics	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 5	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics TOC norganics Fluoride	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 5 0.3	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics TOC Torganics Fluoride Sulphate	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 5	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Iron (Filtered) Tick (Filtered) Nickel (Filtered) Selenium (Filtered) Tick (Filtered) Tock Tock Tock Torganics Fluoride	µg/L µg/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 5 0.3	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) TOC norganics Fluoride Sulphate Chloride	ид/L ид/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3 3 0.5	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 - 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 <5 0.3 45.9	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) Organics TOC Torganics Fluoride Sulphate Chloride Nitrate (as NO3-)	ид/L ид/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3 3 0.5 0.3 0.5	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 <5 0.3 45.9 59.6 0.8	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Zinc (Filtered) TOC norganics Fluoride Sulphate Chloride Nitrate (as NO3-) Nitrite (as NO2-)	ид/L ид/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3 3 	<0.5 <1	<0.5 <1	0 0 15 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 <5 0.3 45.9 59.6 0.8 <0.02	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1
Nitrobenzene lalogenated Benzenes Trichlorobenzene (total) letals Antimony (Filtered) Arsenic (Filtered) Cadmium (Filtered) Chromium (III+VI) (Filtered) Copper (Filtered) Iron (Filtered) Lead (Filtered) Manganese (Filtered) Mercury (Filtered) Molybdenum (Filtered) Nickel (Filtered) Selenium (Filtered) Iron (Filtered) Selenium (Filtered) Selenium (Filtered) Iron (Filtered) Selenium (Filtered) Iron (Filtered) Iro	ид/L ид/L	0.5 1 2 2.5 0.5 1.5 7 20 5 2 1 2 2 3 3 3 0.5 0.3 0.5	<0.5 <1	<0.5 <1	0 0 15 0 0 15 0 0 0 10 0 2 0 33 0 0 22 0	<0.5 <1 4 <2.5 <0.5 <1.5 <7 <20 <5 18 <1 8 <2 <3 <3 <5 0.3 45.9 59.6 0.8	<0.5 <1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<0.5 <0.5 <0.5 <1

Notes:

MDL - Method detection limit
"DUP" - Duplicate sample
RPD - Relative Percentage Difference
Bold values exceed acceptable RPD of ±30%
All concentrations are in μg/l

West Burton C (Gas Fired Generating Station)/Document Ref. 5.2 Environmental Statement Vol II/PINS Ref. EN10088 Appendix 11B: West Burton C Ground Investigation Environmental Support and Sampling



Annex D Soil and Water Analysis Screening Tables

			GAC HH COM/IND	Bl	1101	BH	1102	BH	1103	BH104	BH106	TP	102	TP103	TP104	TP105	TP106	TP107	TP	108	Т	P110	TF	111	TF	P112	TP113
	Units	MDL	SAND >3.48%TOC	0.5	14.7	13.8	2.2	0.5	9.3	1	1	0.6	2.5	3	0.8	2	0.5	0.2	0.5	1.5	0.2	1.4	2	3	0.5	2.5	2
			3AND >3.46%10C	08/12/2017	12/12/2017	06/12/2017	05/12/2017	05/12/2017	06/12/2017	11/12/2017	16/12/2017	14/12/2017	14/12/2017	14/12/2017	13/12/2017	12/12/2017	12/12/2017	20/12/2017	14/12/2017	14/12/2017	7 20/12/201	7 20/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	7 13/12/2017
TPH																											
>C5-C6 Aliphatics	mg/kg	0.1	6,500 ^{#3}	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>C6-C8 Aliphatics	mg/kg	0.1	21,000 ^{#3}	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>C8-C10 Aliphatics	mg/kg	0.1	5,900 ^{#3}	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>C10-C12 Aliphatics	mg/kg	0.2	27,000 ^{#3}	-	< 0.2	< 0.2	-	-	< 0.2	-	-	-	-	< 0.2	-	-	-	-	-	-	-	-	< 0.2	< 0.2	-	-	-
>C12-C16 Aliphatics	mg/kg	4	84,000 ^{#3}	-	<4	<4	-	-	<4	-	-	-	-	<4	-	-	-	-	-	-	-	-	<4	<4	-	-	-
>C16-C21 Aliphatics	mg/kg	7		-	<7	<7	-	-	<7	-	-	-	-	<7	-	-	-	-	-	-	-	-	<7	<7	-	-	-
>C16-C35 Aliphatics	mg/kg		1,800,000 ^{#3}	-	<14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>C21-C35 Aliphatics	mg/kg	7		-	<7	<7	-	-	<7	-	-	-	-	<7	-	-	-	-	-	-	-	-	<7	<7	-	-	-
>C5-C35 Aliphatics	mg/kg	19		-	<19	<19	-	-	<19	-	-	-	-	<19	-	-	-	-	-	-	-	-	<19	<19	-	-	-
>EC5-EC7 Aromatics	mg/kg	0.1	46,000 ^{#3}	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>EC7-EC8 Aromatics	mg/kg	0.1	110,000#3	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>EC8-EC10 Aromatics	mg/kg	0.1	9,700 ^{#3}	-	< 0.1	< 0.1	-	-	< 0.1	-	-	-	-	< 0.1	-	-	-	-	-	-	-	-	< 0.1	< 0.1	-	-	-
>EC10-EC12 Aromatics	mg/kg	0.2	30,000#3	-	< 0.2	< 0.2	-	-	< 0.2	-	-	-	-	< 0.2	-	-	-	-	-	-	-	-	< 0.2	< 0.2	-	-	-
>EC12-EC16 Aromatics	mg/kg	4	37,000 ^{#3}	-	<4	<4	-	-	<4	-	-	-	-	<4	-	-	-	-	-	-	-	-	<4	<4	-	-	-
>EC16-EC21 Aromatics	mg/kg	7	28,000 ^{#3}	-	<7	<7	-	-	<7	-	-	-	-	<7	-	-	-	-	-	-	-	-	<7	<7	-	-	-
>EC21-EC35 Aromatics	mg/kg	7	28,000 ^{#3}	-	<7	<7	-	-	<7	-	-	-	-	<7	-	-	-	-	-	-	-	-	<7	<7	-	-	-
>EC5-EC35 Aromatics	mg/kg	19		-	<19	<19	-	-	<19	-	-	-	-	<19	-	-	-	-	-	-	-	-	<19	<19	-	-	-
>C5-C35 Aliphatics & Aromatics	mg/kg	38		-	<38	<38	-	-	<38	-	-	-	-	<38	-	-	-	-	-	-	-	-	<38	<38	-	-	-

			0.4.0.1.11.0.004//NID	BH	H101	BH	1102	BH	103	BH104	BH106	TF	102	TP103	TP104	TP105	TP106	TP107	TP	108	TF	P110	TF	P111	TP	112	TP113
	Units	MDL	GAC HH COM/IND	0.5	14.7	13.8	2.2	0.5	9.3	1	1	0.6	2.5	3	0.8	2	0.5	0.2	0.5	1.5	0.2	1.4	2	3	0.5	2.5	2
			SAND >3.48%TOC	08/12/2017	7 12/12/2017	06/12/2017	05/12/2017	05/12/2017	06/12/2017	11/12/2017	16/12/2017	14/12/2017	14/12/2017	14/12/2017	13/12/2017	12/12/2017	12/12/2017	20/12/2017	14/12/2017	14/12/2017	20/12/2017	20/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	7 13/12/2017
OC																											
Dichlorodifluoromethane	mg/kg	0.002	370 ^{#1}	-	< 0.002	< 0.002	-	-	< 0.002	< 0.002	-	-	-	< 0.002	< 0.002	-	-	-	-	-	-	< 0.002	< 0.002	< 0.002	-	-	-
MTBE	mg/kg	0.006	11,300 ^{#4}	-	< 0.006	< 0.006	-	-	< 0.006	< 0.006	-	-	-	< 0.006	< 0.006	-	-	-	-	-	-	< 0.006	< 0.006	< 0.006	-	-	-
Chloromethane	mg/kg	0.003	0.788#4		< 0.003	< 0.003	-	-	< 0.003	< 0.003		-	-	< 0.003	< 0.003		-	-	-	-		< 0.003	< 0.003	< 0.003	-	-	-
Vinyl chloride	mg/kg	0.002	0.061#3	-	< 0.002	< 0.002	-	-	< 0.002	< 0.002	-	-	-	< 0.002	< 0.002	-	-	-	-	-	-	< 0.002	< 0.002	< 0.002	-	-	-
Bromomethane	mg/kg	0.001	30 ^{#1}	-	< 0.001	< 0.001	-	-	< 0.001	< 0.001	-	-	-	< 0.001	< 0.001	-	-	-	-	-	-	< 0.001	< 0.001	< 0.001	-	-	-
Chloroethane	mg/kg	0.006	1,050#4	-	< 0.006	< 0.006	-	-	< 0.006	< 0.006	-	-	-	<0.006	< 0.006	-	-	-	-	-	-	< 0.006	< 0.006	< 0.006	-	-	-
Trichlorofluoromethane	mg/kg	0.003	350,000 ^{#1}	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
1,1-dichloroethene	mg/kg	0.006	45.8 ^{#4}	-	< 0.006	< 0.006	-	-	< 0.006	< 0.006	-	-	-	< 0.006	< 0.006	-	-	-	-	-	-	< 0.006	< 0.006	< 0.006	-	-	-
Dichloromethane	mg/kg	0.03	269 ^{#4}	-	< 0.03	< 0.03	-	-	< 0.03	< 0.03	-	-	-	< 0.03	< 0.03	-	-	-	-	-	-	< 0.03	< 0.03	< 0.03	-	-	-
trans-1,2-dichloroethene	mg/kg	0.003	39.5 ^{#4}	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
1,1-dichloroethane	mg/kg	0.006	406#4	-	< 0.006	< 0.006	-	-	< 0.006	< 0.006	-	-	-	< 0.006	< 0.006	-	-	-	-	-	-	< 0.006	< 0.006	< 0.006	-	-	-
cis-1,2-dichloroethene	mg/kg	0.007	22.7 ^{#4}	-	< 0.007	< 0.007	-	-	< 0.007	< 0.007	-	-	-	< 0.007	< 0.007	-	-	-	-	-	-	< 0.007	< 0.007	< 0.007	-	-	-
2,2-dichloropropane	mg/kg	0.004		-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	<u> </u>	-	-
Bromochloromethane	mg/kg	0.004	630 ^{#1}	-	< 0.004	< 0.004	-		< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
Chloroform	mg/kg	0.005	170 ^{#3}	-	< 0.005	< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	< 0.005	-	-	-	-	-	-	< 0.005	< 0.005	< 0.005	-	-	-
1,1,1-trichloroethane	mg/kg	0.005	1,400 ^{#3}	<u> </u>	< 0.005	< 0.005	-	-	< 0.005	< 0.005	<u> </u>	-	-	<0.005	< 0.005	-	-	-	-	-	-	< 0.005	< 0.005	< 0.005	-	-	-
1,1-dichloropropene	mg/kg	0.003	#2	<u> </u>	<0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	<0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
Carbon tetrachloride	mg/kg	0.004	6.8#3	-	<0.004	<0.004	-	-	<0.004	<0.004	-	-	-	<0.004	<0.004	-	-	-	-	-	-	<0.004	<0.004	<0.004	-	-	-
1,2-dichloroethane	mg/kg	0.005	0.77 ^{#3}	<u> </u>	< 0.005	<0.005	-	-	< 0.005	<0.005	<u> </u>	-	-	<0.005	<0.005	-	-	-	-	-	-	<0.005	< 0.005	<0.005	<u> </u>	-	-
Benzene	mg/kg	0.005	48 ^{#3}	-	< 0.005	< 0.005	-	-	< 0.005	< 0.005	•	-	-	<0.005	< 0.005	-	-	-	-	-	-	< 0.005	< 0.005	< 0.005	-	-	-
Trichloroethene	mg/kg	0.005	2.7 ^{#3}	•	< 0.005	< 0.005	-	-	< 0.005	< 0.005	•	-	-	< 0.005	< 0.005	-	-	-	-	-	•	< 0.005	< 0.005	< 0.005	-	-	-
1,2-dichloropropane	mg/kg	0.004	5.51 ^{#4}	-	<0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	<0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	<0.004	-	-	-
Dibromomethane	mg/kg	0.004	99 ^{#1}	-	<0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
Bromodichloromethane	mg/kg	0.004	1.3 ^{#1}	-	<0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	<0.004	< 0.004	-	-	-	-	-	-	<0.004	< 0.004	<0.004	-	-	-
cis-1,3-dichloropropene	mg/kg	0.004	110 000#3	-	<0.004	<0.004	-	-	< 0.004	< 0.004	-	-	-	<0.004	<0.004	-	-	-	-	-	-	<0.004	<0.004	<0.004	-	-	-
Toluene	mg/kg	0.003	110,000 ^{#3}	-	<0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
trans-1,3-dichloropropene	mg/kg	0.003	#4	-	<0.003	<0.003	-	-	<0.003	<0.003	-	-	-	<0.003	<0.003	-	-	-	-	-	-	<0.003	<0.003	<0.003	-	-	-
1,1,2-trichloroethane	mg/kg	0.004	198#4	-	<0.004		-	-			-	-	-			-	-	-	-	-	-				-	-	-
Tetrachloroethene	mg/kg	0.003	45 ^{#3}	-	<0.003	<0.003	-	-	<0.003	<0.003	-	-	-	<0.003	<0.003	-	-	-	-	-	-	<0.003	<0.003	<0.003	-	-	-
1,3-dichloropropane Sum of PCE and TCE	mg/kg	0.004	23,000 ^{#1}	-	<0.004	<0.004	-	<u> </u>	<0.004	<0.004	-	-	-	<0.004	<0.004	-	-	-	-	-	-	<0.004	<0.004	<0.004	-	-	-
Chlorodibromomethane	mg/kg mg/kg	0.005	39 ^{#1}		< 0.005	< 0.005	<u> </u>	Hi	<0.005	< 0.005			-	< 0.005	<0.005	-				-		< 0.005	< 0.005	< 0.005	+ -		-
TCE+DCE+VC	mg/kg	0.003	39		<0.003	-	<u> </u>		-	< 0.003				-	-					_		<0.003	<0.003	-	 		
1,2-dibromoethane	mg/kg	0.003	0.16 ^{#1}		<0.023	< 0.003	<u> </u>		< 0.003	< 0.023		 		< 0.003	< 0.003					-		< 0.023	< 0.003	< 0.003	 		
PCE+TCE+DCE+VC	mg/kg	0.003	0.16	-	<0.003	-	-		-	< 0.003	-	 	-	<0.003	-	-	-	-			-	<0.003	<0.003	-	 -	-	<u> </u>
1,1,1,2-tetrachloroethane	mg/kg	0.005	270 ^{#3}		<0.020	< 0.005	_		< 0.005	< 0.005	-	<u> </u>	_	< 0.005	< 0.005	-	_	-	_	_	-	< 0.025	< 0.005	< 0.005	-	_	-
Ethylbenzene	mg/kg	0.003	14.000 ^{#3}		< 0.000	< 0.003			< 0.000	< 0.003				< 0.003	< 0.000		_	_		_		< 0.003	< 0.000	< 0.000	<u> </u>	_	-
Xylene (m & p)	mg/kg	0.004	14,000	-	< 0.004	< 0.004	<u> </u>	_	< 0.004	< 0.004	-	-	_	<0.004	<0.004	-	-	_	-	_	-	< 0.004	< 0.004	< 0.004	_	-	<u> </u>
Xylene Total	mg/kg		15,000 ^{#3}	-	<0.008	-	-	-	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	<0.004	-	-	-	-	-
Xylene (o)	mg/kg	0.004	16.000#3	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
Total BTEX	mg/kg		10,000	-	< 0.019	-	-	-	-	< 0.019	-	-	-	-	-	-	-	-	-	-	-	< 0.019	-	-	-	-	-
Styrene	mg/kg	0.003	6,860#4	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
Bromoform	mg/kg	0.004	1,590#4	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
Isopropylbenzene	mg/kg	0.003	3,610#4	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003		-	-
1,1,2,2-tetrachloroethane	mg/kg	0.003	560 ^{#3}	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003		-	-
1,2,3-trichloropropane	mg/kg	0.004	0.11 ^{#1}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004		-	-	-	-	-	< 0.004	< 0.004	< 0.004		-	-
n-propylbenzene	mg/kg	0.004	10,400 ^{#4}		< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	_	-	< 0.004	< 0.004	< 0.004	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.003	1,500 ^{#1}	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-		-	-	< 0.003	< 0.003	< 0.003	-	-	-
tert-butylbenzene	mg/kg	0.005	120,000 ^{#1}		< 0.005	< 0.005	-	-	< 0.005	< 0.005	-	-	-	< 0.005	< 0.005	-		-	-	-	-	< 0.005	< 0.005	< 0.005	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.006	107 ^{#4}		< 0.006	< 0.006	-	-	< 0.006	< 0.006		-	-	< 0.006	< 0.006	-	-	-	-	-		< 0.006	< 0.006	< 0.006		-	-
sec-butylbenzene	mg/kg	0.004	120,000 ^{#1}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
p-isopropyltoluene	mg/kg	0.004		-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
n-butylbenzene	mg/kg	0.004	58,000 ^{#1}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.004	0.064 ^{#1}		< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-		< 0.004	< 0.004	< 0.004	-	-	-
1,2-Dichloroethene	mg/kg			-	< 0.01	-	-	-	-	< 0.01	-	-	-	-	-	-	-	-	-	-	-	< 0.01	-	-	-	-	-
Trihalomethanes	mg/kg	1		-	< 0.018	-	-	-	-	< 0.018	-	-	-	-	-	-	-	_	_	-	-	< 0.018	-	-	-	-	-

			GAC HH COM/IND	Bl	H101	BH	1102	BH	1103	BH104	BH106	TP	102	TP103	TP104	TP105	TP106	TP107	TF	108	TF	110	TI	P111	TF	P112	TP113
	Units	MDL	SAND >3.48%TOC	0.5	14.7	13.8	2.2	0.5	9.3	1	1	0.6	2.5	3	8.0	2	0.5	0.2	0.5	1.5	0.2	1.4	2	3	0.5	2.5	2
			3AND >3.46%TOC	08/12/2017	12/12/2017	7 06/12/2017	05/12/2017	05/12/2017	06/12/2017	11/12/2017	16/12/2017	14/12/2017	14/12/2017	14/12/2017	13/12/2017	12/12/2017	12/12/2017	20/12/2017	14/12/2017	14/12/2017	20/12/2017	20/12/2017	14/12/2017	7 14/12/2017	14/12/2017	14/12/2017	7 13/12/2017
АН																											T
Naphthalene	mg/kg	0.01	520 ^{#3}	< 0.04	< 0.01	< 0.01	-	0.05	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.04	< 0.04	0.05	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	-
Acenaphthylene	mg/kg	0.01	100,000#3	< 0.03	< 0.01	< 0.01	-	< 0.03	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.03	0.06	< 0.03	-	< 0.03	< 0.03	< 0.01	< 0.01	< 0.01	-	-	-
Acenaphthene	mg/kg	0.01	100,000 ^{#3}	< 0.05	< 0.01	< 0.01	-	< 0.05	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.05	0.22	< 0.05	-	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	-	-	-
Fluorene	mg/kg	0.01	70,000#3	< 0.04	< 0.01	< 0.01	-	< 0.04	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.04	0.15	< 0.04	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	-
Phenanthrene	mg/kg	0.01	23,000#3	0.06	< 0.01	< 0.01	-	0.05	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.03	2.2	1.33	-	< 0.03	< 0.03	< 0.01	< 0.01	< 0.01	-	-	-
Anthracene	mg/kg	0.01	540,000#3	< 0.04	< 0.01	< 0.01	-	< 0.04	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.04	0.56	0.4	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	-
Fluoranthene	mg/kg	0.01	23,000 ^{#3}	0.16	< 0.01	< 0.01	-	< 0.03	< 0.01	0.042	-	-	-	< 0.01	< 0.01	< 0.03	3.48	7.61	-	< 0.03	< 0.03	< 0.01	< 0.01	< 0.01	-	-	
Pyrene	mg/kg	0.01	54,000 ^{#3}	0.14	< 0.01	< 0.01	-	< 0.03	< 0.01	0.043	-	-	-	< 0.01	< 0.01	< 0.03	2.88	6.31	-	< 0.03	< 0.03	< 0.01	< 0.01	< 0.01	-	-	
Benzo(a)anthracene	mg/kg	0.01	180 ^{#3}	0.11	< 0.01	< 0.01	-	< 0.06	< 0.01	0.026	-	-	-	< 0.01	< 0.01	< 0.06	1.5	7.18	-	< 0.06	< 0.06	< 0.01	< 0.01	< 0.01	-	-	
Chrysene	mg/kg	0.01	360 ^{#3}	0.1	< 0.01	< 0.01	-	< 0.02	< 0.01	0.035	-	-	-	< 0.01	< 0.01	< 0.02	1.48	11.34	-	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	-	-	
Benzo(a)pyrene	mg/kg	0.01	36 ^{#3}	0.1	< 0.01	< 0.01	-	< 0.04	< 0.01	0.032	-	-	-	< 0.01	< 0.01	< 0.04	1.32	3.3	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ^{#3}	0.07	< 0.01	< 0.01	-	< 0.04	< 0.01	0.022	-	-	-	< 0.01	< 0.01	< 0.04	0.87	1.47	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-		
Dibenzo(a,h)anthracene	mg/kg	0.01	3.6 ^{#3}	< 0.04	< 0.01	< 0.01	-	< 0.04	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	< 0.04	0.2	0.65	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	-
Benzo(g,h,i)perylene	mg/kg	0.01	4,000#3	0.07	< 0.01	< 0.01	-	< 0.04	< 0.01	0.029	-	-	-	< 0.01	< 0.01	< 0.04	0.84	1.41	-	< 0.04	< 0.04	< 0.01	< 0.01	< 0.01	-	-	-
Benzo(b)fluoranthene	mg/kg	0.01	45 ^{#3}	0.12	< 0.01	< 0.01	-	< 0.05	< 0.01	0.035	-	-	-	< 0.01	< 0.01	< 0.05	1.76	9.48	-	< 0.05	< 0.05	< 0.01	< 0.01	< 0.01	-	-	-
Benzo(k)fluoranthene	mg/kg	0.01	1,200 ^{#3}	0.05	< 0.01	< 0.01	-	< 0.02	< 0.01	0.014	-	-	-	< 0.01	< 0.01	< 0.02	0.68	3.69	-	< 0.02	< 0.02	< 0.01	< 0.01	< 0.01	-		-
Benzo(b)&(k)fluoranthene	mg/kg	0.01		0.17	< 0.01	< 0.01	-	< 0.07	< 0.01	0.049	-	-	-	< 0.01	< 0.01	< 0.07	2.44	13.17	-	< 0.07	< 0.07	< 0.01	< 0.01	< 0.01	-		-
PAHs (sum of 4)	mg/kg			0.31	< 0.04	-	-	< 0.15	-	0.1	-	-	-	-	-	-	4.15	16.05	-	-	< 0.15	< 0.04	-	-	-		
PAH 16 Total	mg/kg	0.6		1	-	-	-	< 0.6	-	-	-	-	-	-	-	<0.6	18.2	54.2	-	<0.6	< 0.6	-	-	-	-	-	
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyren				0.14	< 0.02	-	-	<0.08	-	0.051	-	-	-	-	-	-	1.71	2.88	-	-	< 0.08	< 0.02	-	-	-		
Coal Tar (Bap as surrogate marker)	mg/kg		15 ^{#3}	0.1	< 0.01	-	-	< 0.04	-	0.032	-	-	-	-	-	-	1.32	3.3	-	-	< 0.04	< 0.01	-	-	-	-	-

				BI	H101	RH	1102	RH	1103	BH104	BH106	TF	P102	TP103	TP104	TP105	TP106	TP107	TF	2108	Т	P110	TF	P111	TP	112	TP11:
	Units	MDL	GAC HH COM/IND	0.5	14.7	13.8	2.2	0.5	9.3	1	1	0.6	2.5	3	0.8	2	0.5	0.2	0.5	1.5	0.2	1.4	2	3	0.5	2.5	2
			SAND >3.48%TOC		7 12/12/2017				06/12/2017	11/12/2017	16/12/2017		14/12/2017	14/12/2017	13/12/2017	12/12/2017	12/12/2017	20/12/2017		14/12/2017	20/12/201		14/12/2017			14/12/2017	
OC													•														T
Chlorobenzene	mg/kg	0.004	140 ^{#3}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
Bromobenzene	mg/kg	0.002	245 ^{#4}	-	< 0.002	< 0.002	-	-	< 0.002	< 0.002	-	-	-	< 0.002	< 0.002	-	-	-	-	-	-	< 0.002	< 0.002	< 0.002	-	-	-
2-chlorotoluene	mg/kg	0.003	23,000#1	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
4-chlorotoluene	mg/kg	0.003	23.000#1	-	< 0.003	< 0.003	-	-	< 0.003	< 0.003	-	-	-	< 0.003	< 0.003	-	-	-	-	-	-	< 0.003	< 0.003	< 0.003	-	-	-
1,3-dichlorobenzene	mg/kg	0.004	80 ^{#3}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
1,4-dichlorobenzene	mg/kg	0.004	11,000 ^{#3}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
1,2-dichlorobenzene	mg/kg	0.004	5,300#3	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.01 - 0.023	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.007	580 ^{#3}	-	< 0.007	< 0.007	-	-	< 0.007	< 0.007	-	-	-	< 0.007	< 0.007	-	-	-	-	-	-	< 0.007	< 0.007	< 0.007	-	-	-
Hexachlorobutadiene	mg/kg	0.004	69 ^{#3}	-	< 0.004	< 0.004	-	-	< 0.004	< 0.004	-	-	-	< 0.004	< 0.004	-	-	-	-	-	-	< 0.004	< 0.004	< 0.004	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.007	270 ^{#3}	-	< 0.007	< 0.007	-	-	< 0.007	< 0.007	-	-	-	< 0.007	< 0.007	-	-	-	-	-	-	< 0.007	< 0.007	< 0.007	-	-	-
2-chlorophenol	mg/kg	0.01	5.800 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2-methylphenol	mg/kg	0.01	41.000#1	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2-nitrophenol	mg/kg	0.01		-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2,4-dichlorophenol	mg/kg	0.01	2,500 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2,4-dimethylphenol	mg/kg	0.01	27,300#4	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2,4,5-trichlorophenol	mg/kg	0.01	82,000 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2,4,6-trichlorophenol	mg/kg	0.01	210 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
1-chloro-3-methylphenol	mg/kg	0.01	82.000 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	1 -
1-methylphenol	mg/kg	0.01	82.000 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
-nitrophenol	mg/kg	0.01	32,000	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	
Pentachlorophenol	mg/kg	0.01	400 ^{#3}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	
Phenol	mg/kg	0.01	1 200#3	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-		< 0.01	< 0.01	< 0.01	-	-	
2-chloronaphthalene	mg/kg	0.01	1.080#4	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	
2-methylnaphthalene	mg/kg	0.01	3.000#1	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
Bis(2-ethylhexyl) phthalate	mg/kg	0.1	86.100 ^{#4}	-	<0.1	< 0.1	-	-	<0.1	<0.1	-	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	< 0.1	<0.1	-	-	-
Butyl benzyl phthalate	mg/kg	0.1	946.000#4	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	-	< 0.1	< 0.1	-	-	-	-	-		<0.1	<0.1	< 0.1	-	-	
Di-n-butyl phthalate	mg/kg	0.1	15.400#4	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	-	< 0.1	< 0.1	-	-	-	-	-	-	< 0.1	< 0.1	< 0.1	-	-	-
Di-n-octyl phthalate	mg/kg	0.1	89.100#4	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	-	< 0.1	< 0.1	-	-	-	-	-		< 0.1	< 0.1	< 0.1	-	-	-
Diethylphthalate	mg/kg	0.1	256.000#4	-	<0.1	< 0.1	-	-	<0.1	<0.1	-	-	-	<0.1	<0.1	-	-	-	-	-	-	<0.1	< 0.1	<0.1	-	-	-
Dimethyl phthalate	mg/kg	0.1	200,000	-	< 0.1	< 0.1	-	-	< 0.1	< 0.1	-	-	-	< 0.1	< 0.1	-	-	-	-	-		<0.1	<0.1	< 0.1	-	-	
2-nitroaniline	mg/kg	0.01	8.000#1	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-		< 0.01	< 0.01	< 0.01	-	-	
2,4-Dinitrotoluene	mg/kg	0.01	3.770#4	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
2,6-dinitrotoluene	mg/kg	0.01	1.890#4	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
3-nitroaniline	mg/kg	0.01	.,	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-		< 0.01	< 0.01	< 0.01	-	-	-
4-bromophenyl phenyl ether	mg/kg	0.01		-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-		< 0.01	< 0.01	< 0.01	-	-	
4-chloroaniline	mg/kg	0.01	11 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
4-chlorophenyl phenyl ether	mg/kg	0.01		-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	-	-	-	-	-	-	< 0.01	< 0.01	< 0.01	-	-	-
4-nitroaniline	mg/kg	0.01	110 ^{#1}	-	< 0.01	< 0.01	_	_	< 0.01	< 0.01	_	-	_	< 0.01	< 0.01	_	_	-	_	-	-	< 0.01	< 0.01	< 0.01	-	_	-
Azobenzene	mg/kg	0.01	26 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	-	-	-	< 0.01	< 0.01	_	-	-	-	-	-	<0.01	< 0.01	< 0.01	-	-	
Bis(2-chloroethoxy) methane	mg/kg	0.01	2,500 ^{#1}	-	< 0.01	< 0.01	_	_	< 0.01	< 0.01	_	-	_	<0.01	< 0.01	_	_	-	_	-	-	< 0.01	< 0.01	< 0.01	-	_	
Bis(2-chloroethyl)ether	mg/kg	0.01	1 ^{#1}	-	< 0.01	< 0.01	-	-	< 0.01	< 0.01	_	-	† -	< 0.01	< 0.01	_	<u> </u>	-	-	-	-	< 0.01	< 0.01	< 0.01	-	_	
Carbazole	ma/ka	0.01		-	<0.01	< 0.01	-	_	< 0.01	< 0.01	_	_	_	< 0.01	< 0.01	_	-	-		-	-	< 0.01	< 0.01	< 0.01	_	-	
Dibenzofuran	mg/kg	0.01	1.000 ^{#1}	-	<0.01	<0.01	-	<u> </u>	< 0.01	<0.01	_	-	<u> </u>	< 0.01	<0.01	_	<u> </u>	_	_	-	_	< 0.01	<0.01	<0.01	-	-	
Hexachlorobenzene	mg/kg	0.01	120 ^{#3}	<u> </u>	<0.01	< 0.01	 	† .	< 0.01	<0.01	-	<u> </u>	_	< 0.01	< 0.01	-	<u> </u>	<u> </u>	<u> </u>	† -	T -	<0.01	<0.01	<0.01	†	_	1 .
Hexachlorocyclopentadiene	mg/kg	0.01	7.5 ^{#1}		<0.01	< 0.01	-		< 0.01	< 0.01	-	-	-	<0.01	< 0.01	-	-	-		-		<0.01	< 0.01	<0.01	+ :	-	
Hexachloroethane	mg/kg	0.01	7.5 56 ^{#4}		<0.01	< 0.01	-		< 0.01	< 0.01	_	_	_	< 0.01	< 0.01	_	_	-	_	-	_	<0.01	<0.01	< 0.01		_	
Isophorone	mg/kg	0.01	2.400 ^{#1}		<0.01	< 0.01	-	† .	< 0.01	< 0.01	<u> </u>	<u> </u>	-	<0.01	< 0.01		 			+ - -		<0.01	< 0.01	<0.01	+	-	
N-nitrosodi-n-propylamine	mg/kg	0.01	0.33 ^{#1}		<0.01	<0.01	-	+ -	<0.01	<0.01				<0.01	<0.01	-	<u> </u>			+	-	<0.01	<0.01	<0.01	+ :		+ -:
Nitrobenzene	mg/kg	0.01	0.33 22 ^{#1}		<0.01	< 0.01	 	 	< 0.01	< 0.01		<u> </u>	-	<0.01	< 0.01	-	-			-	-	<0.01	<0.01	<0.01	 	-	+
MINODELIZELIE	mg/kg	0.01	22	-	\U.U.	<u.u1< td=""><td>1 -</td><td>1 -</td><td>\U.U1</td><td>\U.U.</td><td>I -</td><td>1 -</td><td>1 -</td><td><0.01</td><td>\U.U1</td><td>ı -</td><td>1 -</td><td>1 -</td><td>I -</td><td>1 -</td><td>1 -</td><td>\U.U.U</td><td>~0.01</td><td>\U.U.</td><td>1 -</td><td>1 -</td><td>1 -</td></u.u1<>	1 -	1 -	\U.U1	\U.U.	I -	1 -	1 -	<0.01	\U.U1	ı -	1 -	1 -	I -	1 -	1 -	\U.U.U	~ 0.01	\U.U.	1 -	1 -	1 -

			04011110004/1110	BH	1101	ВН	1102	BH	1103	BH104	BH106	TP	102	TP103	TP104	TP105	TP106	TP107	TP	108	TP	110	TP ²	111	TP	112	TP113
	Units	MDL	GAC HH COM/IND	0.5	14.7	13.8	2.2	0.5	9.3	1	1	0.6	2.5	3	0.8	2	0.5	0.2	0.5	1.5	0.2	1.4	2	3	0.5	2.5	2
			SAND >3.48%TOC	08/12/2017	12/12/2017	06/12/2017	05/12/2017	05/12/2017	06/12/2017	11/12/2017	16/12/2017	14/12/2017	14/12/2017	14/12/2017	13/12/2017	12/12/2017	12/12/2017	20/12/2017	14/12/2017	14/12/2017	20/12/2017	20/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	13/12/2017
Halogenated Benzenes																											
Trichlorobenzene (total)	mg/kg			-	< 0.014	-	-	-	-	< 0.014	-	-	-	-	-	-	-	-	-	-	-	< 0.014	-	-	-	-	-
Metals																											
Antimony	mg/kg	1	7,550#4	6	2	4	7	7	3	5	8	2	1	2	5	7	2	4	3	7	2	2	2	2	1	2	7
Arsenic	mg/kg	0.5	640 ^{#3}	119.8	4.7	6.9	158.8	126.6	16.2	100.9	147.1	11.7	6.8	11	79.8	146.4	33.2	49.6	32.2	137	24.7	21	7.7	8.4	3	5.3	129.5
Barium	mg/kg	1	22,100#4	352	1,575	185	328	624	472	352	474	202	188	402	315	504	265	320	323	379	256	286	298	198	192	153	418
Beryllium	mg/kg	0.5	12 ^{#3}	3.3	1.6	2.6	3.7	4.4	2.4	3.1	4.3	1.4	0.9	1	3	4.8	1.4	2.1	1.9	4	1.3	1.2	1	1.2	1.6	1.7	3.8
Boron	mg/kg	0.1	240,000#3	2.6	2.9	3.1	15.9	10.6	13.8	2.7	10.1	7.8	1.9	2.6	14.2	25.7	3.3	5.1	4.5	5.5	0.6	1.2	1.4	1.9	2	1.1	3
Cadmium	mg/kg	0.1	190 ^{#3}	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.2	< 0.1	< 0.1	0.1	< 0.1	1.1	< 0.1	< 0.1	0.4	0.3	0.3	< 0.1	< 0.1	< 0.1	0.5	0.1	< 0.1	< 0.1	< 0.1
Chromium (III+VI)	mg/kg	0.5	Use CrIII or CrVI#3	62.9	52.2	74.3	64.2	59.3	82.9	64.6	104.7	48.4	58.5	54	52.9	62.6	41.3	57.7	69.7	93.8	44.6	29.4	42.5	54.1	74.8	63.8	63.9
Copper	mg/kg	1	68,000 ^{#3}	80	3	10	89	85	24	70	94	21	10	17	60	85	27	54	32	89	28	31	10	13	128	13	80
Iron	mg/kg	20	820,000 ^{#1}	41,630	36,540	49,870	42,550	43,810	37,140	38,650	48,190	30,850	23,780	28,560	35,110	36,180	19,220	29,710	31,540	44,970	20,150	19,030	28,700	32,320	31,510	39,510	38,040
Lead	mg/kg	5	2,300#2	49	<5	<5	38	55	131	54	52	35	47	182	30	39	49	50	69	39	12	8	73	38	<5	<5	49
Manganese	mg/kg	1	26,000 ^{#1}	412	647	764	291	509	790	415	333	636	391	857	309	274	417	530	454	338	217	287	853	881	545	509	338
Mercury	mg/kg	0.1	1,100 ^{#3}	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	<0.1	< 0.1	< 0.1	<0.1	<0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	mg/kg	0.1	17,700 ^{#4}	3.3	1.4	4.3	5	5.4	4.7	3.4	7.1	2.2	3.4	1.5	3.8	3.8	3.5	3.9	5	5.9	4.1	2.9	1.1	1.3	0.4	0.4	2.7
Nickel	mg/kg	0.7	980 ^{#3}	54.3	36.2	58.6	55.5	63.5	51.9	53.4	68.9	41.4	21.4	27.5	47.8	54.8	22.2	37.8	36.2	60.4	27.3	29.3	27.1	31.4	66	61.1	58
Selenium	mg/kg	1	12,000 ^{#3}	3	<1	<1	3	5	1	2	3	1	<1	<1	1	7	1	2	1	3	<1	<1	<1	<1	<1	<1	3
Vanadium	mg/kg	1	9,000 ^{#3}	104	45	72	113	122	81	98	136	42	32	35	90	115	37	64	61	122	39	31	34	44	67	49	116
Zinc	mg/kg	5	730,000 ^{#3}	87	53	79	62	90	225	82	80	87	68	163	55	63	92	198	117	67	27	22	98	92	81	73	75
Chromium (hexavalent)	mg/kg	0.3	33 ^{#3}	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Chromium (Trivalent)	mg/kg	0.5	8,600 ^{#3}	62.9	52.2	74.3	64.2	59.3	82.9	64.6	104.7	48.4	58.5	54	52.9	62.6	41.3	57.7	69.7	93.8	44.6	29.4	42.5	54.1	74.8	63.8	63.9
Organics																											1
TOC	%	0.02		2.93	0.08	0.05	3.17	4.81	0.46	2.85	3.84	1.53	0.85	0.23	3.74	3.44	1.3	2.03	2.5	3.49	1.41	5.24	0.6	1.2	0.07	0.22	2.62
Inorganics			***		1								1									1					
Fluoride	mg/kg	0.3	47,000 ^{#1}	1.9	-	-	< 0.3	< 0.3	-	2.8	-	2.7	-	-	2.5	0.8	0.9	2.1	-	-	1.2	2.4	-	-	-	1.8	3.2
Sulphate	mg/l	1.5		240.6	-	-	1,434	206	-	119	-	68.7	-	-	195.7	1,448	1,346	177.9	-	-	13.1	42.4	-	-	-	50.5	64.9
Chloride	mg/kg	2	#4	4	-	-	5	5	-	<2	-	45	-	-	3	3	58	32	-	-	6	29	-	-	-	13	6
Nitrate (as NO3-)	mg/kg	2.5	1,900,000 ^{#1}	<2.5	-	-	<2.5	<2.5	-	<2.5	-	43	-	-	<2.5	<2.5	14.6	<2.5	-	-	<2.5	<2.5	-	-	-	<2.5	<2.5
Nitrite (as NO2-)	mg/kg	0.05	120,000 ^{#1}	< 0.05	-	-	< 0.05	< 0.05	-	< 0.05	•	0.39	-	-	< 0.05	< 0.05	0.99	<0.05	-	-	< 0.05	< 0.05	-	-	-	0.26	< 0.05
Ortho Phosphate as PO4	mg/kg	0.3		1.7	-	-	< 0.3	2	-	1.8	-	0.7	-	-	3.8	< 0.3	< 0.3	0.5	-	-	3.5	1	-	-	-	< 0.3	1.4
Sulphide	mg/kg	10	#1	<10	-	•	<10	<10	-	<10		<10	-	-	<10	<10	<10	<10		-	<10	<10	-	-	-	<10	<10
Cyanide Total	mg/kg	0.5	1,200 ^{#1}	< 0.5	-	•	< 0.5	< 0.5	-	< 0.5	<0.5	-	<0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	-	-	< 0.5	-	-	< 0.5
Alkalinity (total) as CaCO3	mg/kg	10		330	-	-	320	330	-	190	-	550	-	-	360	190	180	190	-	-	200	340	-	-	-	420	430
Ammoniacal Nitrogen as N	mg/kg	0.6		<0.6	-	-	2.9	<0.6	- 0.40	< 0.6	-	<0.6	-		< 0.6	<0.6	<0.6	<0.6	-	-	<0.6	< 0.6	-	-	-	<0.6	3.9
pH (Lab)	pH_Units	0.01		8.23	8.01	8.2	8.89	8.39	8.19	8.14	8.54	8	8.37	7.56	8.23	8.58	6.17	6.23	7.96	8.26	8.32	8.41	8.5	7.63	8.32	8.23	8.08
Other	la.										10.0				100		 	40.0		10.1							100
Natural Moisture Content	%	0.1		14.7	27.4	33	17.6	15	33.3	13.5	18.8	28.1	34.4	43.2	13.8	13.6	11.5	13.6	26.4	16.1	8.8	24	33.5	36.6	20.6	22.2	13.9
Asbestos	Ta .								1								—										
Asbestos Type	None			0	-	-	0	0	-	0	0	-	0	-	0	0	0	0	0	0	0	-	-	0	-	-	0
Asbestos Containing Material	None			U	-	-	0	1	-	0	0	-	0	-	0	0	0	0	U	0	0	-	-	0	-	-	0

Comments
#1 USEPA RSL (June 2017)
#2 Defra C4SL 12/2014
#3 AECOM (modified LQM/CIEH S4ULs)
#4 AECOM (modified EIC)
GAC: Generic Assessment Criteria
(blank): No assessment criteria available
-: Not analysed
HH: Human Health

Key

XXX

Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=3.48%

			GAC HH COM/IND	TP114	TP115	TP116	WS102	WS103	WS	104		WS105		WS106		WS107			WS	\$108		WS109	W	S110		WS111		WS11
	Units	MDL	SAND >3.48%TOC	1	3	3	8.6	3.2	0.5	14	1.3	14.2	6.5	10	0.5	11.7	3	12	4.5	7	8.5	15	15	2	1	4	8.2	2
			3AND 23.40/6100	13/12/2017	13/12/2017	13/12/2017	18/12/2017	13/12/2017	13/12/2017	15/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017	05/12/2017	06/12/2017	06/12/2017	07/12/2017	07/12/2017	07/12/2017	07/12/2017	08/12/2017	15/12/2017	13/12/2017	05/12/2017	05/12/2017	06/12/2017	7 15/12/2
1																												
C5-C6 Aliphatics	mg/kg	0.1	6,500 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
C6-C8 Aliphatics	mg/kg	0.1	21,000 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
C8-C10 Aliphatics	mg/kg	0.1	5,900 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
C10-C12 Aliphatics	mg/kg	0.2	27,000 ^{#3}	-	-	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	-	-	-	-	-
C12-C16 Aliphatics	mg/kg	4	84,000 ^{#3}	-	-	-	<4	-	-	<4	-	<4	-	<4	-	<4	-	<4	-	-	<4	<4	<4	-	-	-	-	-
C16-C21 Aliphatics	mg/kg	7		-	-	-	<7	-	-	<7	-	<7	-	<7	-	<7	-	<7	-	-	<7	<7	<7	-	-	-	-	-
C16-C35 Aliphatics	mg/kg		1,800,000#3	-	-	-	-	-	-	-	-	-	-	-	-	<14	-	<14	-	-	<14	<14	-	-	-	-	-	_
C21-C35 Aliphatics	mg/kg	7		-	-	-	<7	-	-	<7	-	<7	-	<7	-	<7	-	<7	-	-	<7	<7	<7	-	-	-	-	-
C5-C35 Aliphatics	mg/kg	19		-	-	-	<19	-	-	<19	-	<19	-	<19	-	<19	-	<19	-	-	<19	<19	<19	-	-	-	-	-
EC5-EC7 Aromatics	mg/kg	0.1	46,000 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
EC7-EC8 Aromatics	mg/kg	0.1	110,000 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
EC8-EC10 Aromatics	mg/kg	0.1	9,700 ^{#3}	-	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	-	< 0.1	< 0.1	< 0.1	-	-	-	-	-
EC10-EC12 Aromatics	mg/kg	0.2	30,000#3	-	-	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	-	< 0.2	< 0.2	< 0.2	-	-	-	-	-
EC12-EC16 Aromatics	mg/kg	4	37,000 ^{#3}	-	-	-	<4	-	-	<4	-	<4	-	<4	-	<4	-	<4	-	-	<4	<4	<4	-	-	-	-	-
EC16-EC21 Aromatics	mg/kg	7	28,000 ^{#3}	-	-	-	<7	-	-	<7	-	<7	-	<7	-	<7	-	<7	-	-	<7	<7	<7	-	-	-	-	-
EC21-EC35 Aromatics	mg/kg	7	28,000 ^{#3}	-	-	-	<7	-	-	<7	-	<7	-	<7	-	<7	-	<7	-	-	<7	<7	<7	-	-	-	-	-
EC5-EC35 Aromatics	mg/kg	19		-	-	-	<19	-	-	<19	-	<19	-	<19	-	<19	-	<19	-	-	<19	<19	<19	-	-	-	-	-
>C5-C35 Aliphatics & Aromatics	mg/kg	38		-	-	-	<38	-	-	<38	-	<38	-	<38	-	<38	-	<38	-	-	<38	<38	<38	-	-	-	-	T -

			GAC HH COM/IND	TP114	TP115	TP116	WS102	WS103	WS104		WS105		WS106		WS107			WS	108		WS109	WS	110	WS111		WS112
	Units	MDL	SAND >3.48%TOC	1	3	3	8.6	3.2	0.5 14	1.3	14.2	6.5	10	0.5	11.7	3	12	4.5	7	8.5	15	15	2	1 4	8.2	2
			3AND >3.46%10C	13/12/2017	13/12/2017	13/12/2017	18/12/2017	13/12/2017	13/12/2017 15/12/2017	11/12/2017	7 12/12/2017	12/12/2017	12/12/2017	05/12/2017	06/12/2017 06/1	2/2017	07/12/2017	07/12/2017	07/12/2017	07/12/2017	08/12/2017	15/12/2017	13/12/2017	05/12/2017 05/12/201	7 06/12/2017	7 15/12/2017
VOC																									,	1
Dichlorodifluoromethane	mg/kg	0.002	370 ^{#1}	-	< 0.002	-	< 0.002	-	- <0.002	-	< 0.002	< 0.002	< 0.002	-	< 0.01	-	< 0.002	-	-	< 0.01	< 0.002	< 0.002	-		-	-
MTBE	mg/kg	0.006	11,300#4	-	< 0.006	-	< 0.006	-	- <0.006	-	< 0.006	< 0.006	< 0.006	-	< 0.03	-	< 0.006	-	-	< 0.03	< 0.006	< 0.006	-		-	-
Chloromethane	mg/kg	0.003	0.788 ^{#4}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
Vinyl chloride	mg/kg	0.002	0.061#3	-	< 0.002	-	< 0.002	-	- <0.002	-	< 0.002	< 0.002	< 0.002	-	< 0.01	-	< 0.002	-	-	< 0.01	< 0.002	< 0.002	-		-	-
Bromomethane	mg/kg	0.001	30 ^{#1}	-	< 0.001	-	< 0.001	-	- <0.001	-	< 0.001	< 0.001	< 0.001	-	< 0.005	-	< 0.001	-	-	< 0.005	< 0.001	< 0.001	-		-	-
Chloroethane	mg/kg	0.006	1,050#4	-	< 0.006	-	< 0.006	-	- <0.006	-	< 0.006	< 0.006	< 0.006	-	< 0.03	- 1	< 0.006	-	-	< 0.03	< 0.006	< 0.006	-		-	_
Trichlorofluoromethane	mg/kg	0.003	350.000#1	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
1,1-dichloroethene	mg/kg	0.006	45.8 ^{#4}	-	< 0.006	-	< 0.006	-	- <0.006	-	< 0.006	< 0.006	< 0.006	-	< 0.03	- 1	< 0.006	-	-	< 0.03	< 0.006	< 0.006	-		-	-
Dichloromethane	mg/kg	0.03	269#4	-	< 0.03	-	< 0.03	-	- <0.03	-	< 0.03	< 0.03	< 0.03	-	< 0.15	-	< 0.03	-	-	< 0.15	< 0.03	< 0.03	-		-	-
trans-1,2-dichloroethene	mg/kg	0.003	39.5#4	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
1,1-dichloroethane	mg/kg	0.006	406#4	-	< 0.006	-	< 0.006	-	- <0.006	-	< 0.006	< 0.006	< 0.006	-	< 0.03	-	< 0.006	-	-	< 0.03	< 0.006	< 0.006	-		-	-
cis-1,2-dichloroethene	mg/kg	0.007	22.7 ^{#4}	-	< 0.007	-	< 0.007	-	- <0.007	-	< 0.007	< 0.007	< 0.007	-	< 0.035	- 1	< 0.007	-	-	< 0.035	< 0.007	< 0.007	-		-	-
2,2-dichloropropane	mg/kg	0.004		-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	- 1	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Bromochloromethane	mg/kg	0.004	630 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	1	-	< 0.004	-	- 1	<0.02	< 0.004	< 0.004	-		T -	-
Chloroform	mg/kg	0.005	170#3	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	- 1	< 0.005	-	- 1	< 0.025	< 0.005	< 0.005	-		T -	-
1,1,1-trichloroethane	mg/kg	0.005	1,400 ^{#3}	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	-	< 0.005	-	- 1	< 0.025	< 0.005	< 0.005	-		T -	T -
1,1-dichloropropene	mg/kg	0.003		-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	- 1	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
Carbon tetrachloride	mg/kg	0.004	6.8 ^{#3}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
1,2-dichloroethane	mg/kg	0.005	0.77 ^{#3}	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	-	< 0.005	-	- 1	< 0.025	< 0.005	< 0.005	-		T -	1 -
Benzene	mg/kg	0.005	48 ^{#3}	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	-	< 0.005	-	- 1	< 0.025	< 0.005	< 0.005	-		-	-
Trichloroethene	mg/kg	0.005	2.7 ^{#3}	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	-	< 0.005	-	-	< 0.025	< 0.005	< 0.005	-		-	-
1,2-dichloropropane	mg/kg	0.004	5.51#4	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Dibromomethane	mg/kg	0.004	99 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Bromodichloromethane	mg/kg	0.004	1.3 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
cis-1,3-dichloropropene	mg/kg	0.004		-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Toluene	mg/kg	0.003	110,000#3	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	0.006	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
trans-1,3-dichloropropene	mg/kg	0.003		-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
1,1,2-trichloroethane	mg/kg	0.004	198 ^{#4}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Tetrachloroethene	mg/kg	0.003	45 ^{#3}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
1,3-dichloropropane	mg/kg	0.004	23,000 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Sum of PCE and TCE	mg/kg			-	-	-	-	-		-	-	< 0.008	-	-	< 0.04	-	<0.008	-	-	< 0.04	<0.008	-	-		-	-
Chlorodibromomethane	mg/kg	0.005	39 ^{#1}	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	< 0.025	-	< 0.005	-	-	< 0.025	< 0.005	< 0.005	-		-	-
TCE+DCE+VC	mg/kg			-	-	-	-	-		-	-	< 0.023	-	-	< 0.115	-	< 0.023	-	-	<0.115	< 0.023	-	-		-	-
1,2-dibromoethane	mg/kg	0.003	0.16 ^{#1}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
PCE+TCE+DCE+VC	mg/kg			-	-	-	-	-		-	-	< 0.026	-	-	<0.13	-	< 0.026	-	-	< 0.13	< 0.026	-	-		<u> </u>	
1,1,1,2-tetrachloroethane	mg/kg	0.005	270#3	-	< 0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	101020	-	< 0.005	-	-	< 0.025	< 0.005	< 0.005	-		<u> </u>	-
Ethylbenzene	mg/kg	0.003	14,000 ^{#3}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	<0.010	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-			
Xylene (m & p)	mg/kg	0.004		-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	0.011	< 0.004	-	10.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Xylene Total	mg/kg		15,000 ^{#3}	-	-	-	-	-		<u> </u>	-	0.015	-	-	₹0.01	-	<0.008	-	-	< 0.04	<0.008	-	-			
Xylene (o)	mg/kg	0.004	16,000#3	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	40.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
Total BTEX	mg/kg			-	-	-	-	-		-	-	0.026	-	-	₹0.000	-	< 0.019	-	-	< 0.095	< 0.019	-	-			-
Styrene	mg/kg	0.003	6,860#4	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	10.0.0	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-		-	-
Bromoform	mg/kg	0.004	1,590#4	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	40.0Z	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	
Isopropylbenzene	mg/kg	0.003	3,610#4	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003			-	<0.003	-	- 1	<0.015	< 0.003	< 0.003	-			
1,1,2,2-tetrachloroethane	mg/kg	0.003	560 ^{#3}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003			-	<0.003	-	- 1	<0.015	< 0.003	< 0.003	-			
1,2,3-trichloropropane	mg/kg	0.004	0.11 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-			
n-propylbenzene	mg/kg	0.004	10,400#4	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	<0.004	< 0.004	-	40.0E	-	< 0.004	-	-	<0.02	< 0.004	< 0.004	-		_	-
1,3,5-trimethylbenzene	mg/kg	0.003	1,500 ^{#1}	-	< 0.003	-	< 0.003	-	- <0.003	-	< 0.003	< 0.003	< 0.003	-	<0.010	-	< 0.003	-	-	< 0.015	< 0.003	< 0.003	-			
tert-butylbenzene	mg/kg	0.005	120,000 ^{#1}	-	<0.005	-	< 0.005	-	- <0.005	-	< 0.005	< 0.005	< 0.005	-	~0.020	-	< 0.005	-	-	< 0.025	< 0.005	< 0.005	-		-	-
1,2,4-trimethylbenzene	mg/kg	0.006	107#4	-	<0.006	-	<0.006	-	- <0.006	-	< 0.006	<0.006	< 0.006	-	40.00	-	<0.006	-	-	< 0.03	< 0.006	<0.006	-			-
sec-butylbenzene	mg/kg	0.004	120,000 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	40.02	-	< 0.004	-	-	<0.02	< 0.004	< 0.004	-		-	-
p-isopropyltoluene	mg/kg	0.004	#4	-	<0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	40.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-		-	-
n-butylbenzene	mg/kg	0.004	58,000#1	-	<0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	10.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-			-
1,2-dibromo-3-chloropropane	mg/kg	0.004	0.064 ^{#1}	-	< 0.004	-	< 0.004	-	- <0.004	-	< 0.004	< 0.004	< 0.004	-	10.02	-	< 0.004	-	-	< 0.02	< 0.004	< 0.004	-			
1,2-Dichloroethene	mg/kg	1		-	-	-	-	-		-	-	< 0.01	-	-	< 0.05	-	< 0.01	-	-	< 0.05	< 0.01	-	-			
Trihalomethanes	mg/kg	I			-	-	-	I -	- -	-	-	< 0.018	-	-	< 0.09	-	< 0.018	-	1 -	< 0.09	<0.018		-	- -	-	-

			GAC HH COM/IND	TP114	TP115	TP116	WS102	WS103	WS	S104		WS105		WS106		WS107			WS108		WS109) W	S110		WS111		WS112
	Units	MDL	SAND >3.48%TOC	1	3	3	8.6	3.2	0.5	14	1.3	14.2	6.5	10	0.5	11.7	3	12	4.5	8.5		15	2	1	4	8.2	2
			0	13/12/2017	13/12/2017	13/12/2017	18/12/2017	13/12/2017	13/12/2017	15/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017	05/12/2017	7 06/12/2017	06/12/2017	07/12/2017	07/12/2017 07/12	/2017 07/12/2	08/12/20	17 15/12/201	7 13/12/2017	05/12/201	7 05/12/2017	06/12/2017	15/12/201
AH																											
Naphthalene	mg/kg	0.01	520 ^{#3}	0.09	< 0.01	-	< 0.01	-	-	< 0.027	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.04	-	-	-	1
Acenaphthylene	mg/kg	0.01	100,000#3	< 0.03	< 0.01	-	< 0.01	-	-	< 0.03	-	< 0.01	< 0.01	< 0.01	< 0.03	< 0.01	< 0.03	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.03	-	-	-	0.09
Acenaphthene	mg/kg	0.01	100,000 ^{#3}	< 0.05	< 0.01	-	< 0.01	-	-	< 0.05	-	< 0.01	< 0.01	< 0.01	< 0.05	< 0.01	< 0.05	< 0.01	- <0	05 <0.0	< 0.01	< 0.01	< 0.05	-	-	-	0.37
Fluorene	mg/kg	0.01	70,000 ^{#3}	< 0.04	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	04 <0.0	< 0.01	< 0.01	< 0.04	-	-	-	0.38
Phenanthrene	mg/kg	0.01	23,000 ^{#3}	0.1	< 0.01	-	< 0.01	-	-	0.04	-	< 0.01	< 0.01	0.041	0.08	< 0.01	0.07	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.03	-	-	-	2.45
Anthracene	mg/kg	0.01	540,000 ^{#3}	< 0.04	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	04 <0.0	< 0.01	< 0.01	< 0.04	-	-	-	0.73
Fluoranthene	mg/kg	0.01	23,000 ^{#3}	0.1	< 0.01	-	< 0.01	-	-	< 0.03	-	< 0.01	< 0.01	< 0.01	0.13	< 0.01	0.09	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.03	-	-	-	3
Pyrene	mg/kg	0.01	54,000 ^{#3}	0.09	< 0.01	-	< 0.01	-	-	< 0.03	-	< 0.01	< 0.01	< 0.01	0.13	< 0.01	0.07	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.03	-	-	-	2.47
Benzo(a)anthracene	mg/kg	0.01	180 ^{#3}	0.13	< 0.01	-	< 0.01	-	-	< 0.06	-	< 0.01	< 0.01	< 0.01	0.1	< 0.01	0.09	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.06	-	-	-	1.51
Chrysene	mg/kg	0.01	360 ^{#3}	0.07	< 0.01	-	< 0.01	-	-	< 0.02	-	< 0.01	< 0.01	< 0.01	0.08	< 0.01	0.04	< 0.01	- <0	02 <0.0	< 0.01	< 0.01	< 0.02	-	-	-	1.01
Benzo(a)pyrene	mg/kg	0.01	36 ^{#3}	< 0.04	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	0.06	< 0.01	< 0.04	< 0.01	- <0	04 <0.0	< 0.01	< 0.01	< 0.04	-	-	-	1.08
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	510 ^{#3}	< 0.04	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	04 <0.0	< 0.01	< 0.01	< 0.04	-	-	-	0.65
Dibenzo(a,h)anthracene	mg/kg	0.01	3.6#3	< 0.04	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.04	-	-	-	0.15
Benzo(g,h,i)perylene	mg/kg	0.01	4,000 ^{#3}	0.06	< 0.01	-	< 0.01	-	-	< 0.04	-	< 0.01	< 0.01	< 0.01	< 0.04	< 0.01	< 0.04	< 0.01	- <0	0.0	< 0.01	< 0.01	< 0.04	-	-	-	0.62
Benzo(b)fluoranthene	mg/kg	0.01	45 ^{#3}	0.08	< 0.01	-	< 0.01	-	-	< 0.05	-	< 0.01	< 0.01	< 0.01	0.1	< 0.01	< 0.05	< 0.01	- <0	05 <0.0	< 0.01	< 0.01	< 0.05	-	-	-	1.42
Benzo(k)fluoranthene	mg/kg	0.01	1,200 ^{#3}	0.03	< 0.01	-	< 0.01	-	-	< 0.02	-	< 0.01	< 0.01	< 0.01	0.04	< 0.01	< 0.02	< 0.01	- <0	02 <0.0	< 0.01	< 0.01	< 0.02	-	-	-	0.55
Benzo(b)&(k)fluoranthene	mg/kg	0.01		0.11	< 0.01	-	< 0.01	-	-	< 0.07	-	< 0.01	< 0.01	< 0.01	0.14	< 0.01	< 0.07	< 0.01	- <0	07 <0.0	< 0.01	< 0.01	< 0.07	-	-	-	1.97
PAHs (sum of 4)	mg/kg			-	-	-	-	-	-	-	-	-	< 0.04	-	0.22	< 0.04	< 0.15	< 0.04	-	<0.0	< 0.04	-	-	-	-	-	-
PAH 16 Total	mg/kg	0.6		0.8	-	-	-	-	-	< 0.6	-	-	-	-	0.7	-	< 0.6	-	- <(.6 -	-	-	< 0.6	-	-	-	17.5
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrei	ne mg/kg			-	-	-	-	-	-	-	-	-	< 0.02	-	< 0.08	< 0.02	<0.08	< 0.02	-	< 0.0	< 0.02	-	-	-	-	-	-
Coal Tar (Bap as surrogate marker)	mg/kg		15 ^{#3}	-	-	-	-	-	-	-	-	-	< 0.01	-	0.06	< 0.01	< 0.04	< 0.01	-	<0.0	< 0.01	-	-	-	-	-	-

			GAC HH COM/IND	TP114	TP115	TP116	WS102	WS103	WS	S104		WS105		WS106		WS107			WS108		WS109	WS	S110		WS111	WS11
	Units	MDL	SAND >3.48%TOC	1	3	3	8.6	3.2	0.5	14	1.3	14.2	6.5	10	0.5	11.7	3	12	4.5 7	8.5	15	15	2	1		8.2 2
			3AND 23.40 /61 OC	13/12/2017	7 13/12/2017	13/12/2017	18/12/2017	13/12/2017	13/12/2017	15/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017	05/12/2017	7 06/12/2017	06/12/2017	07/12/2017	07/12/2017 07/12/201	7 07/12/2017	08/12/2017	15/12/2017	13/12/2017	05/12/2017	05/12/2017 06/	/12/2017 15/12/20
SVOC																										
Chlorobenzene	mg/kg	0.004	140 ^{#3}	-	< 0.004	-	< 0.004	-	-	< 0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.02	-	< 0.004		< 0.02	< 0.004	< 0.004	-	-	-	-
Bromobenzene	mg/kg	0.002	245#4	-	< 0.002	-	< 0.002	-	-	< 0.002	-	< 0.002	< 0.002	< 0.002	-	< 0.01	-	< 0.002		< 0.01	< 0.002	< 0.002	-	-	-	
2-chlorotoluene	mg/kg	0.003	23,000#1	-	< 0.003	-	< 0.003	-	-	< 0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003		< 0.015	< 0.003	< 0.003	-	-	-	
4-chlorotoluene	mg/kg	0.003	23,000 ^{#1}	-	< 0.003	-	< 0.003	-	-	< 0.003	-	< 0.003	< 0.003	< 0.003	-	< 0.015	-	< 0.003		< 0.015	< 0.003	< 0.003	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.004	80#3	-	< 0.004	-	< 0.004	-	-	< 0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.01	-	< 0.004		< 0.01	< 0.004	< 0.004	-	-	-	
1,4-dichlorobenzene	mg/kg	0.004	11,000#3	-	< 0.004	-	< 0.004	-	-	< 0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.01	-	< 0.004		< 0.01	< 0.004	< 0.004	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.004	5,300#3	-	<0.01 - 0.03	-	< 0.004	-	-	< 0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.01	-	< 0.004		< 0.01	< 0.004	< 0.004	-	-	-	
1,2,4-trichlorobenzene	mg/kg	0.007	580 ^{#3}	-	< 0.007	-	< 0.007	-	-	< 0.007	-	< 0.007	< 0.007	< 0.007	-	< 0.01	-	< 0.007		< 0.01	< 0.007	< 0.007	-	-	-	-
Hexachlorobutadiene	mg/kg	0.004	69 ^{#3}	-	< 0.004	-	< 0.004	-	-	< 0.004	-	< 0.004	< 0.004	< 0.004	-	< 0.01	-	< 0.004		< 0.01	< 0.004	< 0.004	-	-	-	
1,2,3-trichlorobenzene	mg/kg	0.007	270 ^{#3}	-	< 0.007	-	< 0.007	-	-	< 0.007	-	< 0.007	< 0.007	< 0.007	-	< 0.035	-	< 0.007		< 0.035	< 0.007	< 0.007	-	-	-	-
2-chlorophenol	mg/kg	0.01	5,800 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2-methylphenol	mg/kg	0.01	41,000#1	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2-nitrophenol	mg/kg	0.01		-	< 0.01	-	< 0.01	-	-	< 0.01		< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,4-dichlorophenol	mg/kg	0.01	2,500 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01		< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,4-dimethylphenol	mg/kg	0.01	27,300#4	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,4,5-trichlorophenol	mg/kg	0.01	82,000#1	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,4,6-trichlorophenol	mg/kg	0.01	210 ^{#1}	-	< 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	mg/kg	0.01	82,000#1	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
4-methylphenol	mg/kg	0.01	82,000 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	-
4-nitrophenol	mg/kg	0.01		-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Pentachlorophenol	mg/kg	0.01	400 ^{#3}	-	< 0.01	-	< 0.01	-	-	< 0.01		< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Phenol	mg/kg	0.01	1,200 ^{#3}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2-chloronaphthalene	mg/kg	0.01	1,080#4	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2-methylnaphthalene	mg/kg	0.01	3,000#1	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Bis(2-ethylhexyl) phthalate	mg/kg	0.1	86,100#4	-	< 0.1	-	< 0.1	-	-	< 0.1		< 0.1	< 0.1	0.228	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	
Butyl benzyl phthalate	mg/kg	0.1	946,000#4	-	< 0.1	-	< 0.1	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	
Di-n-butyl phthalate	mg/kg	0.1	15,400#4	-	< 0.1	-	< 0.1	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	
Di-n-octyl phthalate	mg/kg	0.1	89,100#4	-	< 0.1	-	< 0.1	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	-
Diethylphthalate	mg/kg	0.1	256,000#4	-	< 0.1	-	< 0.1	-	-	< 0.1		< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	
Dimethyl phthalate	mg/kg	0.1		-	< 0.1	-	< 0.1	-	-	< 0.1	-	< 0.1	< 0.1	< 0.1	-	< 0.1	-	< 0.1		< 0.1	< 0.1	< 0.1	-	-	-	
2-nitroaniline	mg/kg	0.01	8,000#1	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,4-Dinitrotoluene	mg/kg	0.01	3,770#4	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
2,6-dinitrotoluene	mg/kg	0.01	1,890#4	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	-
3-nitroaniline	mg/kg	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-bromophenyl phenyl ether	mg/kg	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	mg/kg	0.01	11 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
4-chlorophenyl phenyl ether	mg/kg	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-nitroaniline	mg/kg	0.01	110 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Azobenzene	mg/kg	0.01	26 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Bis(2-chloroethoxy) methane	mg/kg	0.01	2,500 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Bis(2-chloroethyl)ether	mg/kg	0.01	1 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Carbazole	mg/kg	0.01		-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Dibenzofuran	mg/kg	0.01	1,000 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Hexachlorobenzene	mg/kg	0.01	120 ^{#3}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Hexachlorocyclopentadiene	mg/kg	0.01	7.5 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Hexachloroethane	mg/kg	0.01	56 ^{#4}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Isophorone	mg/kg	0.01	2,400 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
N-nitrosodi-n-propylamine	mg/kg	0.01	0.33 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
Nitrobenzene	mg/kg	0.01	22 ^{#1}	-	< 0.01	-	< 0.01	-	-	< 0.01	-	< 0.01	< 0.01	< 0.01	-	< 0.01	-	< 0.01		< 0.01	< 0.01	< 0.01	-	-	-	
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				TD111	TD445	TD440	14/0400	14/04/00	100	0101	1	14/0405		14/0400	ī	14/0407			1440	100		14/04/00	14/6	1110	1	11/0444		14/0440
	11.5	MDI	GAC HH COM/IND	TP114	TP115	TP116	WS102	WS103		S104	4.0	WS105	0.5	WS106	0.5	WS107	_	40		108	0.5	WS109		110		WS111	0.0	WS112
	Units	MDL	SAND >3.48%TOC	13/12/2017	3 13/12/2017	3 13/12/2017	8.6 18/12/2017	3.2 13/12/2017	0.5	14 7 15/12/2017	1.3 11/12/2017	14.2	6.5	10 12/12/2017	0.5 05/12/2017	11.7 06/12/2017 0	3	12	4.5 07/12/2017	07/40/2047	8.5	15 08/12/2017	15	2	1	4 05/12/2017	8.2	2 7 15/12/201
Halogenated Benzenes	<u> </u>			13/12/2017	13/12/2017	13/12/2017	10/12/2017	13/12/2017	13/12/2017	15/12/2017	11/12/2017	12/12/2017	12/12/2017	12/12/2017	05/12/2017	06/12/2017 0	00/12/2017	07/12/2017	07/12/2017	07/12/2017	07/12/2017	06/12/2017	15/12/2017	13/12/2017	05/12/2017	05/12/2017	06/12/2017	15/12/201
Trichlorobenzene (total)	ma/ka			_	 	<u> </u>	_	_		Т _		_	<0.014			< 0.045		-0.014	_	_	< 0.045	-0.014						_
Metals	ilig/kg			_	_	<u> </u>		<u> </u>	_		 		<0.014			<0.045		<0.014			<0.043	<0.014	_					+
Antimony	mg/kg	1	7.550#4	3	3	5	2	7	6	1	7	1	4	2	4	5	1	2	3	4	Ω	2	2	8	7	8	7	4
Arsenic	mg/kg	0.5	7,550 640 ^{#3}	23.9	45	65.3	7.3	155.3	120.2	10	139.4	6	63.6	19	44.4	17.8	72.9	11.2	17.9	152.4	113.9	3.6	4.2	157.2	105.7	141.4	107.5	32.9
Barium	mg/kg	1	22.100#4	286	198	330	272	370	601	263	420	1.094	443	272	365	223	326	211	192	922	358	740	1.671	421	594	349	722	373
Beryllium	mg/kg	0.5	12 ^{#3}	1.8	1.8	2.9	2.3	3.6	4.3	0.9	3.9	1.5	2.7	1.3	2.3	1.2	2.3	1	2.2	5.8	4.5	1.7	1.7	4.3	4.2	4.2	5.1	1.7
Boron	mg/kg	0.3	240.000#3	5.4	2.2	7.6	2.3	27.5	17.4	0.9	8.9	4.8	19	8.1	4.9	5.2	24.8	3.4	13.9	30.7	10.6	3.7	1.4	40.2	26.4	14.4	17.9	2.8
Cadmium	mg/kg	0.1	240,000 190 ^{#3}	0.6	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	0.8	<0.1	0.4	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.1	< 0.1	<0.1	<0.1	<0.1	<0.1	0.2
Chromium (III+VI)	mg/kg	0.1	Use CrIII or CrVI ^{#3}	47.7	37.6	57.9	58	62.4	88	28.9	69.5	52.3	73.4	32.6	52.4	69.2	55.2	30.7	62.2	73	69.2	88.8	45	99.8	89.2	64.1	70.8	27.8
Copper	mg/kg	1	68 000 ^{#3}	31	47	61	4	84	85	7	85	9	50	16	49	19	53	11	29	117	87	20	5	89	79	95	119	63
Iron	mg/kg	20	820 000 ^{#1}	33.340	27.760	32,280	45.140	36.970	43.640	25.330	43.320	31.180	45.970	29.710	35.820	40.259	34.020	29.620	38.040	39.560	36.360	31.390	35,230	43.290	42,560	40.230	38.880	26,903
Lead	mg/kg	5	2.300 ^{#2}	101	10	32,260	45,140 <5	42	59	69	43,320	6	98	14	64	16	27	12	8	60	46	31,390	<5	43,290	61	40,230	64	43
Manganese	mg/kg	1	2,300 26,000 ^{#1}	857	385	526	530	255	468	634	383	549	670	1,013	667	850	345	699	813	846	349	217	509	307	371	327	307	463
Mercury	mg/kg	0.1	26,000 1.100 ^{#3}	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1	0.2	<0.1
Molybdenum	mg/kg	0.1	17.700	3.6	4.7	3.3	1.1	4.1	6.8	38.2	4.8	1.4	9.4	5.5	3.5	5.2	4.9	1.5	5.8	4.9	5.4	5.9	1.2	8.4	7.1	6	6.4	3.7
Nickel	mg/kg	0.7	980 ^{#3}	38.1	38.2	48.7	51.9	56	63	23.1	59.8	34.9	97.8	31	42.7	28.1	50	26	62.7	83.4	65	56.3	38.8	62.4	63.6	65.9	75.8	37.5
Selenium	mg/kg	1	12.000 ^{#3}	2	2	2	<1	3	5	<1	3	<1	3	1	1	1	4	<1	2	5	4	1	<1	4	3	4	4	4
Vanadium	mg/kg	1	9.000#3	57	50	75	61	113	121	33	116	41	86	44	71	43	76	37	51	169	120	59	49	129	130	129	148	48
Zinc	mg/kg	5	730.000	146	27	82	81	75	95	94	72	68	161	65	120	73	52	64	83	75	62	88	54	68	78	71	87	150
Chromium (hexavalent)	mg/kg	0.3	33 ^{#3}	<0.3	< 0.3	<0.3	<0.3	<0.3	< 0.3	<0.3	< 0.3	<0.3	<0.3	< 0.3	<0.3	< 0.3	<0.3	<0.3	<0.3	< 0.3	< 0.3	<0.3	< 0.3	<0.3	< 0.3	< 0.3	<0.3	<0.3
Chromium (Trivalent)	mg/kg	0.5	8 600 ^{#3}	47.7	37.6	57.9	58	62.4	88	28.9	69.5	52.3	73.4	32.6	52.4	69.2	55.2	30.7	62.2	73	69.2	88.8	45	99.8	89.2	64.1	70.8	27.8
Organics	mg/kg	0.0	0,000	47.7	07.0	07.0	- 55	02.7	55	20.0	00.0	02.0	70.4	02.0	02.4	00.2	00.2	00.7	02.2	70	00.E	00.0	70	00.0	00.2	0-1.1	70.0	27.0
TOC	%	0.02		3.66	0.16	1.95	0.08	3.39	6.12	0.95	3.31	0.28	2.55	0.51	2.9	0.56	3.69	0.54	0.42	2.39	3.78	0.27	0.06	3.26	6.56	3.65	4.83	_
Inorganics	70	0.02		0.00	0.10	1.00	0.00	0.00	0.12	0.00	0.01	0.20	2.00	0.01	2.0	0.00	0.00	0.04	0.42	2.00	0.70	0.27	0.00	0.20	0.00	0.00	4.00	+
Fluoride	mg/kg	0.3	47 000#1	1.9	1.5	2.2	3.1	0.6	-	0.5	2.7	-	4.1	1.5	1.5	-	0.7	2.2	2.4	< 0.3	< 0.3	-	1.8	_	-	< 0.3	0.5	3.4
Sulphate	mg/l	1.5	47,000	25.5	56.8	52.1	144.1	1.575	-	469.3	283	-	668.2	1.239	483.7		818.1	932.6	255.2	734.2	461.3	-	143.9	_	-	1.484	1.105	204.5
Chloride	mg/kg	2		24	4	31	17	11	-	44	15	-	18	46	79		58	48	84	63	14	-	32	_	-	7	945	20
Nitrate (as NO3-)	ma/ka	2.5	1 900 000#1	<2.5	<2.5	<2.5	<2.5	<2.5	-	<2.5	<2.5	-	<2.5	<2.5	29.2	- 1	<2.5	<2.5	<2.5	<2.5	<2.5	-	<2.5	-	-	<2.5	<2.5	37.3
Nitrite (as NO2-)	mg/kg	0.05	120.000#1	< 0.05	< 0.05	0.16	< 0.05	< 0.05	-	< 0.05	< 0.05	-	< 0.05	0.2	0.46	-	0.23	< 0.05	< 0.05	0.56	< 0.05	-	< 0.05	-	-	< 0.05	0.46	5.64
Ortho Phosphate as PO4	mg/kg	0.3	120,000	< 0.3	< 0.3	1.2	< 0.3	0.5	-	< 0.3	1.8	-	< 0.3	< 0.3	0.4	-	0.4	< 0.3	0.4	< 0.3	< 0.3	-	< 0.3	-	-	< 0.3	< 0.3	< 0.3
Sulphide	mg/kg	10		<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	<10	-	<10	<10	<10	<10	<10	-	<10	-	-	<10	<10	<10
Cvanide Total	ma/ka	0.5	1.200#1	< 0.5	-	-	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	- 1	< 0.5	-	< 0.5	< 0.5	< 0.5	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Alkalinity (total) as CaCO3	mg/kg	10	11200	640	420	620	430	320	-	560	320	-	180	440	580	-	320	400	440	390	330	-	480	-	-	320	390	
Ammoniacal Nitrogen as N	mg/kg	0.6		11	< 0.6	3	< 0.6	< 0.6	-	17.9	< 0.6	-	7.9	< 0.6	< 0.6	-	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	-	< 0.6	-	-	< 0.6	< 0.6	4.6
pH (Lab)	pH_Units	0.01		7.42	8.46	8.4	8.31	8.05	8.15	-	6.18	8.29	6.43	8.12	8.01	8.32	8.5	8.41	8.47	8.69	9.22	8.19	8.77	9.09	8.12	8.89	8.97	7.92
Other																												1
Natural Moisture Content	%	0.1		43.6	16.2	16.5	45.5	22.2	30	38.9	19.2	29.2	18.7	27.9	21.4	31.9	23.5	29	21.4	21.3	19.6	34.5	31.7	23.1	20.5	19.6	24.3	-
Asbestos	•															•												T
Asbestos Type	None			0	-	-	-	0	0	0	0	-	0	-	0	-	0	-	0	0	0	-	-	0	0	0	0	1
Asbestos Containing Material	None			0	_	-	-	0	0	0	0	_	0	_	0		0	_	Λ	Λ	Λ	_	_	0	0	0	0	0

Comments
#1 USEPA RSL (June 2017)
#2 Defra C4SL 12/2014
#3 AECOM (modified LQM/CIEH S4ULs)
#4 AECOM (modified EIC)
GAC: Generic Assessment Criteria
(blank): No assessment criteria available
-: Not analysed
HH: Human Health

Key Exceedance of HH Soil. Commercial/Industrial. Sand. TOC >=3.48%

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	Units	MDL	GAC HH COM/IND	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Offics	IVIDL	SAND	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	7 22/12/2017
PH																	1
>C5-C6 Aliphatics	μg/L	10	Insufficiently volatile#2	634	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C6-C8 Aliphatics	μg/L	10	Insufficiently volatile#2	40	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C8-C10 Aliphatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	17	<10	<10	<10
>C10-C12 Aliphatics	μg/L	5	Insufficiently volatile#2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>C12-C16 Aliphatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C16-C21 Aliphatics	μg/L	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	80	<10	<10	<10
>C16-C35 Aliphatics	μg/L		Insufficiently volatile#2	<20	<20	-	-	-	-	<20	<20	<20	<20	90	-	-	-
>C21-C35 Aliphatics	μg/L	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C5-C35 Aliphatics	μg/L	10		674	<10	<10	<10	<10	<10	<10	<10	<10	<10	97	<10	<10	<10
>EC5-EC7 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC7-EC8 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	14	<10	<10	<10
>EC8-EC10 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC10-EC12 Aromatics	μg/L	5	Insufficiently volatile#2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>EC12-EC16 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	30	<10	<10	<10
>EC16-EC21 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	220	<10	<10	<10
>EC21-EC35 Aromatics	μg/L	10	Insufficiently volatile#2	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC5-EC35 Aromatics	μg/L	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	264	<10	<10	<10
>C5-C35 Aliphatics & Aromatics	μg/L	10		674	<10	<10	<10	<10	<10	<10	<10	<10	<10	361	<10	<10	<10

West Burton C Ground Investigation

	11-21-	MDI	GAC HH COM/IND	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	SAND	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	22/12/2017
VOC																	
Dichlorodifluoromethane	μg/L	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	μg/L	0.1	7.800.000#2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	μg/L	3	1.400 ^{#2}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Vinvl chloride	μg/L	0.1	63 ^{#2}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	μg/L	1	03	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	μg/L	3	1.000.000#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Trichlorofluoromethane	μg/L	3	1.000.000	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-dichloroethene	μg/L	3	16.000#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Dichloromethane	μg/L	5	370,000	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1.2-dichloroethene	μg/L	3	16.000 ^{#2}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-dichloroethane		3											•				
cis-1,2-dichloroethene	μg/L	3	260,000 ^{#2}	<3 <3	<3	<3 <3	<3 <3	<3	<3 <3	<3 <3	<3	<3 <3	<3 <3	<3 <3	<3 <3	<3 <3	<3 <3
,	μg/L		13,000#2		<3			<3			<3		1				
2,2-dichloropropane	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	μg/L	2	""	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	μg/L	2	85,000 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-trichloroethane	μg/L	2	290,000#2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloropropene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	μg/L	2	770 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	μg/L	2	850 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	μg/L	0.5	20,000 ^{#2}	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	μg/L	3	530 ^{#2}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-dichloropropane	μg/L	2	2,600 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dibromomethane	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bromodichloromethane	μg/L	2	1,600 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,3-dichloropropene	μg/L	2	7,000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	μg/L	5	Insufficiently volatile#2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	16	<5	<5	<5
trans-1,3-dichloropropene	μg/L	2	meanieren ar y veraune	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2-trichloroethane	μg/L	2	49.000 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene	μg/L	3	4.600 ^{#2}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3-dichloropropane	μg/L	2	4.000	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sum of PCE and TCE	μg/L		10 ^{#1}	<6	<6	-	_	_	-	<6	<6	<6	<6	<6	_	-	-
Chlorodibromomethane	μg/L	2	Use trihalomethanes ^{#1}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
TCE+DCE+VC	μg/L		Use individual GAC ^{#1}	<12.1	<12.1	-	-	-	-	<12.1	<12.1	<12.1	<12.1	<12.1	-	-	-
1,2-dibromoethane	μg/L	2	Ose individual GAC	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PCE+TCE+DCE+VC	μg/L		Use individual GAC#1	<15.1	<15.1	-	-	-	-	<15.1	<15.1	<15.1	<15.1	<15.1	-	-	-
1,1,1,2-tetrachloroethane	μg/L	2	22 000 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene		1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
,	μg/L		Insufficiently volatile#2										1				
Xylene (m & p)	μg/L	2	0 :#4	<2	<2	<2	<2 -	<2	<2	<2	<2 <3	<2 <3	<2 <3	<2	<2	<2	<2
Xylene Total	μg/L	4	Sat ^{#4}	<3	<3	- 4		.4	-4	<3				<3	.4	- 4	-4
Xylene (o)	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total BTEX	μg/L	_		9.6	<9.5	-	-	-	-	< 9.5	< 9.5	< 9.5	< 9.5	20.5	-	-	-
Styrene	μg/L	2	Insufficiently volatile#2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromoform	μg/L	2	400,000#2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene	μg/L	3	Insufficiently volatile#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1,2,2-tetrachloroethane	μg/L	4	150,000 ^{#2}	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
1,2,3-trichloropropane	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
n-propylbenzene	μg/L	3	Insufficiently volatile#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3,5-trimethylbenzene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
tert-butylbenzene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2,4-trimethylbenzene	μg/L	3	2,200#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
sec-butylbenzene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
p-isopropyltoluene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
n-butylbenzene	μg/L	3		<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-dibromo-3-chloropropane	μg/L	2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethene	μg/L			<6	<6	-	-	-	-	<6	<6	<6	<6	<6	-	-	-
Trihalomethanes	μg/L		100 ^{#1}	<8	<8	-	-	-	_	<8	<8	<8	<8	<8	<u> </u>	_	_
Timalomonianos	μ9/∟	ı	100	~0			-	-	-		~0	~0	~0	~0	1	· -	-

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	Units	MDL	GAC HH COM/IND	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	SAND	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	22/12/2017
PAH																	
Naphthalene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)&(k)fluoranthene	μg/L	1	Use individual PAHs#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PAHs (sum of 4)	μg/L		Use individual PAHs#2	<1.5	<1.5	-	-	-	-	<1.5	<1.5	<1.5	<1.5	<1.5	-	-	-
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	μg/L		Use individual PAHs#2	<1.5	<1.5	-	-	-	-	<1.5	<1.5	<1.5	<1.5	<1.5	-	-	-
Coal Tar (Bap as surrogate marker)	μg/L		Sat ^{#4}	<1	<1	-	-	-	-	<1	<1	<1	<1	<1	-	-	1 - 1

West Burton C Ground Investigation

			GAC HH COM/IND	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	SAND	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017		21/12/2017	22/12/2017	22/12/2017
SVOC			SAND	20/12/2017	20/12/2017	21/12/2011	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	13/12/2017	20/12/2017	13/12/2017	21/12/2017	22/12/2017	22/12/2011
	/1	2	#2	.0	<2	.0	.0	.0	.0	<2	.0	<2	.0	.0	.0	.0	-0
Chlorobenzene	μg/L	2	15.000 ^{#2}	<2		<2	<2	<2	<2		<2		<2	<2	<2	<2	<2
Bromobenzene	μg/L	2	20.000 ^{#2}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2-chlorotoluene	μg/L	3		<3 <3	<3	<3	<3	<3	<3	<3	<3	<3	<3 <3	<3	<3	<3 <3	<3
4-chlorotoluene	μg/L	<u>3</u>	#2		<3	<3	<3	<3	<3	<3	<3	<3		<3 <1	<3		<3
1,3-dichlorobenzene	μg/L		2.800 ^{#2}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1
1,4-dichlorobenzene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	μg/L	1	7.200 ^{#2}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorobutadiene	μg/L		230 ^{#2}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	μg/L	3	3,100#2	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
2-chlorophenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylphenol	μg/L	0.5	Insufficiently volatile#2	<0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-nitrophenol	μg/L	0.5		<0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2,4-dichlorophenol	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2,4-dimethylphenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4,5-trichlorophenol	μg/L	0.5	#2	<0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
2,4,6-trichlorophenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloro-3-methylphenol	μg/L	0.5	""	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	< 0.5
4-methylphenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitrophenol	μg/L	10	"0	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Pentachlorophenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Phenol	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chloronaphthalene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-methylnaphthalene	μg/L	1	"0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bis(2-ethylhexyl) phthalate	μg/L	5	Insufficiently volatile#2	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Butyl benzyl phthalate	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Di-n-butyl phthalate	μg/L	1.5	Insufficiently volatile#2	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Di-n-octyl phthalate	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diethylphthalate	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dimethyl phthalate	μg/L	1		<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
2-nitroaniline	μg/L	1	"0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,4-Dinitrotoluene	μg/L	0.5	Insufficiently volatile#2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2,6-dinitrotoluene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3-nitroaniline	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-bromophenyl phenyl ether	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chloroaniline	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorophenyl phenyl ether	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-nitroaniline	μg/L	0.5		< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Azobenzene	μg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Bis(2-chloroethoxy) methane	μg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5
Bis(2-chloroethyl)ether	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbazole	μg/L	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5
Dibenzofuran	μg/L	0.5	""	<0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5
Hexachlorobenzene	μg/L	1	Insufficiently volatile#2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachlorocyclopentadiene	μg/L	1	"0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Hexachloroethane	μg/L	1	740 ^{#2}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Isophorone	μg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
N-nitrosodi-n-propylamine	μg/L	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Nitrobenzene	μg/L	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

			GAC HH COM/IND	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	SAND							20/12/2017				_	_		
Halogenated Benzenes	•																
Trichlorobenzene (total)	μg/L		0.1 ^{#1}	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	-	-	-
Metals																	i '
Antimony (Filtered)	μg/L	2	No path ^{#3}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic (Filtered)	μg/L	2.5	No path ^{#3}	10.3	<2.5	<2.5	8.1	8	8.1	11.9	5.7	36.2	2.6	56.2	<2.5	<2.5	<2.5
Cadmium (Filtered)	μg/L	0.5	No path ^{#3}	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (III+VI) (Filtered)	μg/L	1.5	No path ^{#3}	<1.5	<1.5	<1.5	<1.5	<1.5	2	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Copper (Filtered)	μg/L	7	No path ^{#3}	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Iron (Filtered)	μg/L	20	No path ^{#3}	<20	86	7,453	74	692	<20	<20	168	<20	<20	<20	12,440	<20	<20
Lead (Filtered)	μg/L	5	No path ^{#3}	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Manganese (Filtered)	μg/L	2	No path ^{#3}	73	303	1,464	564	645	172	46	634	25	1,033	<2	1,116	18	35
Mercury (Filtered)	μg/L	1	No path ^{#3}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Molybdenum (Filtered)	μg/L	2	No path ^{#3}	4,110	19	592	5	5,227	2,214	3,931	2,932	1,616	811	3,796	247	7	4
Nickel (Filtered)	μg/L	2	No path ^{#3}	2	5	2	<2	<2	<2	<2	<2	<2	4	<2	5	<2	<2
Selenium (Filtered)	μg/L	3	No path ^{#3}	16	16	<3	<3	5	95	68	11	<3	38	8	8	<3	<3
Zinc (Filtered)	μg/L	3	No path ^{#3}	7	<3	31	4	4	<3	<3	21	<3	6	<3	88	<3	6
Organics																	
TOC	mg/L	2		347	3	<2	<2	<2	<2	<2	8	2	3	<2	<2	5	<2
Inorganics																	
Fluoride	mg/L	0.3	1.5 ^{#1}	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.4
Sulphate	mg/L	0.5	250 ^{#1}	2,333	1,775	1,588	941.3	3,310	1,918	2,141	2,490	1,948	2,360	1,998	1,437	44.9	1,096
Chloride	mg/L	0.3	250 ^{#1}	100.9	117.2	143.1	128.2	121.4	66.9	176.5	95.6	110.3	96	118.6	223.5	58.8	101.6
Nitrate (as NO3-)	mg/L	0.2	50 ^{#1}	<0.2	17.1	4.4	< 0.2	< 0.2	26	10.8	0.8	0.4	< 0.2	< 0.2	< 0.2	0.8	38.8
Nitrite (as NO2-)	mg/L	0.02	0.5 ^{#1}	< 0.02	1.64	0.25	0.06	< 0.02	3.82	4.46	< 0.02	0.4	< 0.02	0.15	0.08	< 0.02	0.05
Ortho Phosphate as PO4	mg/l	0.06		< 0.06	< 0.06	< 0.06	0.14	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.21	0.8
Cyanide Total	mg/L	0.01	0.05 ^{#1}	< 0.01	< 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

Comments #1 WS Regs 2016 (Eng/Wal) #2 SoBRA GW GAC 2017 (Comm.)

#3 AECOM (No path)
#4 AECOM (modified LQM/CIEH S4ULs)

GAC: Generic Assessment Criteria

(blank): No assessment criteria available

Sat: Unacceptable risk not achieved due to calculated saturation of vapour pathway

- : Not analysed HH: Human Health

Key

XXX

Exceedance of HH GW. Commercial/Industrial. Sand

	11.7	MDI	CACAMENT FAMILIA DIMO	OAOWTY FNAMA FOO Occasi	OAO MTV ENIAMA EOO Estado	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	GAC WTV EN/WA DWS	GAC WTV EN/WA EQS-Coast	GAC WTV EN/WA EQS-Fresh	20/12/2017	7 20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	7 22/12/2017
TPH																			1
>C5-C6 Aliphatics	μg/L	10	15,000 ^{#2}			634	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C6-C8 Aliphatics	μg/L	10	15,000 ^{#2}			40	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C8-C10 Aliphatics	μg/L	10	300 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	17	<10	<10	<10
>C10-C12 Aliphatics	μg/L	5	300 ^{#2}			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>C12-C16 Aliphatics	μg/L	10	300 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C16-C21 Aliphatics	μg/L	10	300 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	80	<10	<10	<10
>C16-C35 Aliphatics	μg/L					<20	<20	-	-	-	-	<20	<20	<20	<20	90	-	-	-
>C21-C35 Aliphatics	μg/L	10	300 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>C5-C35 Aliphatics	μg/L	10				674	<10	<10	<10	<10	<10	<10	<10	<10	<10	97	<10	<10	<10
>EC5-EC7 Aromatics	μg/L	10	1 ^{#1}	8 ^{#10}	10 ^{#11}	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC7-EC8 Aromatics	μg/L	10	700 ^{#2}	74 ^{#6}	74 ^{#9}	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	14	<10	<10	<10
>EC8-EC10 Aromatics	μg/L	10	300 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC10-EC12 Aromatics	μg/L	5	90 ^{#2}			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
>EC12-EC16 Aromatics	μg/L	10	90 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	30	<10	<10	<10
>EC16-EC21 Aromatics	μg/L	10	90 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	220	<10	<10	<10
>EC21-EC35 Aromatics	μg/L	10	90 ^{#2}			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
>EC5-EC35 Aromatics	μg/L	10				<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	264	<10	<10	<10
>C5-C35 Aliphatics & Aromatics	μg/L	10				674	<10	<10	<10	<10	<10	<10	<10	<10	<10	361	<10	<10	<10

			OAG WELFNAMA BUILD	0.40.14.7.4.5.4.4.5.00.0	0.	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	GAC WTV EN/WA DWS	GAC WTV EN/WA EQS-Coast	GAC WTV EN/WA EQS-Fresh	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	22/12/2017
VOC																			
Dichlorodifluoromethane	μg/L	2	200 ^{#14}			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MTBE	μg/L	0.1	1.800 #22	260 ^{#20}	5.100 ^{#19}	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chloromethane	μg/L	3	190 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Vinyl chloride	μg/L	0.1	0.5 ^{#1}			< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bromomethane	μg/L	1	7.5 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane	μg/L	3	21,000 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Trichlorofluoromethane	μg/L	3	5 . 200 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-dichloroethene	μg/L	3	140 ^{#3}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Dichloromethane	μg/L	5	20#3	20 ^{#10}	20 ^{#11}	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
trans-1,2-dichloroethene	μg/L	3	Use '1,2 dichloroethene' criteria #3			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1-dichloroethane	μg/L	3	2.8*14			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
cis-1,2-dichloroethene	μg/L	3	Use '1,2 dichloroethene' criteria #3			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
2,2-dichloropropane	μg/L	1				<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromochloromethane	μg/L	2	83 ^{#14}			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloroform	μg/L	2	Use trihalomethanes #1	2.5 ^{#10}	2.5 ^{#11}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,1-trichloroethane	μg/L	2	2,000 #3	100 ^{#16}	100 ^{#18}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1-dichloropropene	μg/L	3	<u></u>			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Carbon tetrachloride	μg/L	2	3 #1	12 ^{#10}	12 ^{#11}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-dichloroethane	μg/L	2	3#1	10 ^{#10}	10 ^{#11}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Benzene	μg/L	0.5	1 #1	8 ^{#10}	10#11	0.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Trichloroethene	μg/L	3	Use PCE + TCE ^{#1}	10 ^{#10}	10 ^{#11}	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-dichloropropane	μg/L	2	40 **3			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dibromomethane	μg/L	3	8.3*14			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Bromodichloromethane	μg/L	2	Use trihalomethanes #1			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
cis-1,3-dichloropropene	μg/L	2	#2	#6	.#0	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	μg/L	5	700 ^{#3}	74 ^{#6}	74 ^{#9}	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	16	<5	<5	<5
trans-1,3-dichloropropene	μg/L	2	#14	#16	#18	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,1,2-trichloroethane	μg/L	2	0.28 #14	300 ^{#16}	400 ^{#18}	<2	<2	<2	<2 <3	<2 <3	<2	<2 <3	<2	<2	<2	<2	<2	<2	<2
Tetrachloroethene	μg/L	2	Use PCE + TCE ^{#1}	10""	10 ^{#11}	<2	<3	<3	<3	<3	<3	<3	<2	<3	<3	<3	<3	<3	<3
1,3-dichloropropane Sum of PCE and TCE	μg/L		370 ^{#14} 10 ^{#1}	Use individual GAC ^{#10}		<6	<6	< <u> -</u>	< Z	< <u> </u>	-<	<6	<6	<6	<6	<6	< <u>~</u>	< Z	< <u> -</u>
Chlorodibromomethane	μg/L μg/L	2		Use individual GAC****		<2	 <2	<2	- <2	<2	<2	<0 <2	<b-><b-><2</b-></b->	 <2	<0	 <2	- <2	- <2	<2
TCE+DCE+VC	μg/L		Use trihalomethanes #1	Use individual GAC#10		<12.1	<12.1	-	<u>-</u>	-	-	<12.1	<12.1	<12.1	<12.1	<12.1	<u>-</u>	<u>-</u>	-
1.2-dibromoethane	μg/L	2	0.4 #3	Use individual GAC***		<2	<12.1	<2	<2	<2	<2	<12.1	<12.1	<12.1	<12.1	<12.1	<2	<2	<2
PCE+TCE+DCE+VC	μg/L		0.4	Lise individual GAC#10		<15.1	<15.1	-	-	< <u> </u>	-	<15.1	<15.1	<15.1	<15.1	<15.1	<u>-</u>	<u>-</u>	~~
1,1,1,2-tetrachloroethane	μg/L	2	0.57 ^{#14}	Use individual GAC		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Ethylbenzene	μg/L	1	300 ^{#3}	20 ^{#16}	20 ^{#18}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Xylene (m & p)	μg/L	2	300	20	20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Xylene Total	μg/L		500 ^{#3}	30 ^{#16}	30 ^{#18}	<3	<3	-	-	-	-	<3	<3	<3	<3	<3	-	-	-
Xylene (o)	μg/L	1	190 ^{#14}	<u> </u>	50	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total BTEX	μg/L	l -	,,,,			9.6	<9.5	-	-	-	-	<9.5	<9.5	<9.5	<9.5	20.5	-	-	-
Styrene	μg/L	2	20 ^{#3}	50 ^{#16}	50 ^{#18}	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bromoform	μg/L	2	Use trihalomethanes #1			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Isopropylbenzene	μg/L	3	450 #14			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,1,2,2-tetrachloroethane	μg/L	4	0.076 ^{#14}		140#9	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
1,2,3-trichloropropane	μg/L	3	0.00075 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
n-propylbenzene	μg/L	3	660 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,3,5-trimethylbenzene	μg/L	3	60 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
tert-butylbenzene	μg/L	3	690 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2,4-trimethylbenzene	μg/L	3	56 ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
sec-butylbenzene	μg/L	3	2.000 #14			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
p-isopropyltoluene	μg/L	3				<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
n-butylbenzene	μg/L	3	1,000 #14			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1,2-dibromo-3-chloropropane	μg/L	2	1 #3			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
1,2-Dichloroethene	μg/L		50 ^{#3}			<6	<6	-	-	-	-	<6	<6	<6	<6	<6	-	-	-
Trihalomethanes	μg/L		100 #1			<8	<8	-	-	-	-	<8	<8	<8	<8	<8	-	-	-
• •	0	-			,	•	-	-	-		•	-	•	•	•	-	•	-	

						BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	MDL	GAC WTV EN/WA DWS	GAC WTV EN/WA EQS-Coast	GAC WTV EN/WA EQS-Fresh					21/12/2017									
PAH																			
Naphthalene	μg/L	1	6 #22	2 ^{#10}	2 ^{#11}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Acenaphthylene	μg/L	0.5	18 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthene	μg/L	1	18 ^{#22}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluorene	μg/L	0.5	12 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	μg/L	0.5	4 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	μg/L	0.5	90 ^{#22}	0.1 ^{#10}	0.1 ^{#11}	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	μg/L	0.5	4 ^{#3}	0.0063 ^{#10}	0.0063 ^{#11}	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	μg/L	0.5	9 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	μg/L	0.5	3.5 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	μg/L	0.5	7 ^{#22}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	μg/L	1	0.01 ^{#1}	0.00017 ^{#10}	0.00017 ^{#11}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	μg/L	1	Use PAHs (sum of 4) #1	see BaP and notes#13	see BaP and notes#12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	μg/L	0.5	0.07 #22			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	μg/L	0.5	Use PAHs (sum of 4) #1	0.00082 ^{#7}	0.0082#8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b)&(k)fluoranthene	μg/L	1		Use individual PAHs ^{#10}		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PAHs (sum of 4)	μg/L		0.1 ^{#1}	Use individual PAHs ^{#10}		<1.5	<1.5	-	-	-	-	<1.5	<1.5	<1.5	<1.5	<1.5	-	<u> </u>	-
benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene	μg/L			Use individual PAHs ^{#10}		<1.5	<1.5	-	-	-	-	<1.5	<1.5	<1.5	<1.5	<1.5	-	<u> </u>	-
Coal Tar (Bap as surrogate marker)	μg/L					<1	<1	-	-	-	-	<1	<1	<1	<1	<1	-	1 -	-

EN/WA DWS	GAC WTV EN/WA EQS-Coast	GAC WTV EN/WA EQS-Fresh	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
. GAC WTV EN/WA DWS		CAO WIVEIWAA EQO-HESH	20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	22/12/20
00 ^{#3}			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
2 ^{#14}			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
O ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
O ^{#14}			<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
•			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00 ^{#3}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00 #3			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1 ^{#1}	Refer to 'Trichlorobenzene (total)'#13	Refer to 'Trichlorobenzene (total)'#12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1 ^{#1}	0.6 ^{#7}	0.6#8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1 ^{#1}	Refer to 'Trichlorobenzene (total)'#13	Refer to 'Trichlorobenzene (total)'#12	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
1 ^{#14}	50 ^{#16}	50 ^{#18}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
O ^{#14}	50	50	<0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	<0.5	< 0.5
<u> </u>			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
3 ^{#14}	0.42 ^{#6}	4.2 ^{#9}	<0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	< 0.5
0 ^{#14}	0.42	7.2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00 ^{#14}			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
00 ^{#3}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00 ^{#14}	40#16	40 ^{#18}	<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	<0.5	< 0.5	<0.5	< 0.5	<0.5	<0.5	< 0.5
00 ^{#14}	40	40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00			<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
# ³	0 4 ^{#10}	0.4 ^{#11}	<10	<10	<1	<10	<1	<1	<1	<1	<1	<10	<1	<10	<10	<1
	7.7 ^{#6}	7.7 ^{#9}	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
00 ^{#14}	1.7"	1./"	<1		<1	<1		1	<1	<1	<1	<1	<1		<1	<1
0 #14			<1	<1	<1	<1	<1 <1	<1 <1	<1	<1	<1	<1	<1	<1	<1	<1
) ^{#14}	#10	#11		<1	<1									<1		
#3 - #14	1.3 ^{#10}	1.3 ^{#11}	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
5 ^{#14}	0.75 ^{#6}	7.5 ^{#9} 8 ^{#18}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
0 #14	8 ^{#16}	· ·	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
0#14	20 ^{#16}	20 ^{#18}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
000 ^{#14}	200 ^{#16}	200 ^{#18}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
#14	800 ^{#16}	800#18	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1
0#14			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4 #14			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
49 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
7 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
***			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
8 ^{#14}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2 #14			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
) ^{#14}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
14 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
9 ^{#14}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1 ^{#1}	0.05 ^{#7}	0.05 ^{#8}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
!1 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3 ^{#14}			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
3 ^{#14}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
11 ^{#14}			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
63 #3			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1#1	0.4 ^{#10}	0.4*11	<4	<4	-	-	-	-	<4	<4	<4	<4	<4	-	-	-
3 ³	#14 1 ^{#14} 63 ^{#3}	#14 #14 63 ^{#3}	#14	##4 <0.5 ##4 <0.5 63 ^{#3} <1	##4	#14	#14	#14	##4	#14	#14	##4	#14	#14	****	#14

	Units	MDL	GAC WTV EN/WA DWS	GAC WTV EN/WA EQS-Coast	GAC WTV EN/WA EQS-Fresh	BH104	BH105	WS101	WS102	WS103	WS104	WS106	WS108	WS109	WS110	WS111	WS112	SW01	SW02
	Units	WIDL	GAC WTV EN/WA DWS			20/12/2017	20/12/2017	21/12/2017	21/12/2017	21/12/2017	21/12/2017	20/12/2017	20/12/2017	19/12/2017	20/12/2017	19/12/2017	21/12/2017	22/12/2017	22/12/201
Metals																			
Antimony (Filtered)	μg/L	2	5 ^{#1}			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Arsenic (Filtered)	μg/L	2.5	10 ^{#1}	25 ^{#6}	50 ^{#9}	10.3	<2.5	<2.5	8.1	8	8.1	<u>11.9</u>	5.7	36.2	2.6	<u>56.2</u>	<2.5	<2.5	<2.5
Cadmium (Filtered)	μg/L	0.5	5 ^{#1}	0.2 ^{#10}	0.08 ^{#11}	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Chromium (III+VI) (Filtered)	μg/L	1.5	50 ^{#1}			<1.5	<1.5	<1.5	<1.5	<1.5	2	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Copper (Filtered)	μg/L	7	2,000#1	3.76 ^{#6}	1 ^{#9}	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Iron (Filtered)	μg/L	20	200 ^{#1}	1,000 ^{#6}	1,000 ^{#9}	<20	86	7,453	74	692	<20	<20	168	<20	<20	<20	12,440	<20	<20
Lead (Filtered)	μg/L	5	10 ^{#1}	1.3 ^{#10}	1.2 ^{#11}	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Manganese (Filtered)	μg/L	2	50 ^{#1}		123 ^{#9}	<u>73</u>	303	1,464	<u>564</u>	<u>645</u>	<u>172</u>	46	<u>634</u>	25	1,033	<2	<u>1,116</u>	18	35
Mercury (Filtered)	μg/L	1	1 #1	0.07 ^{#7}	0.07 ^{#8}	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Molybdenum (Filtered)	μg/L	2	70 ^{#3}			4,110	19	592	5	5,227	2,214	3,931	2,932	1,616	811	3,796	247	7	4
Nickel (Filtered)	μg/L	2	20#1	8.6 ^{#10}	4 ^{#11}	2	5	2	<2	<2	<2	<2	<2	<2	4	<2	5	<2	<2
Selenium (Filtered)	μg/L	3	10 ^{#1}			16	16	<3	<3	5	95	68	11	<3	38	8	8	<3	<3
Zinc (Filtered)	μg/L	3	6,000 ^{#14}	6.8 ^{#6}	10.9 ^{#9}	7	<3	31	4	4	<3	<3	21	<3	6	<3	88	<3	6
Organics																			
TOC	mg/L	2				347	3	<2	<2	<2	<2	<2	8	2	3	<2	<2	5	<2
Inorganics																			
Fluoride	mg/L	0.3	1.5 #1	5 ^{#16}	1 ^{#18}	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	< 0.3	0.3	0.4
Sulphate	mg/L	0.5	250#4		400 ^{#18}	2,333	1,775	<u>1,588</u>	941.3	3,310	<u>1,918</u>	2,141	2,490	1,948	2,360	1,998	1,437	44.9	1,096
Chloride	mg/L	0.3	250 ^{#1}		250 ^{#18}	100.9	117.2	143.1	128.2	121.4	66.9	176.5	95.6	110.3	96	118.6	223.5	58.8	101.6
Nitrate (as NO3-)	mg/L	0.2	50 ^{#1}			<0.2	17.1	4.4	< 0.2	< 0.2	26	10.8	0.8	0.4	< 0.2	< 0.2	< 0.2	0.8	38.8
Nitrite (as NO2-)	mg/L	0.02	0.5 ^{#1}			< 0.02	1.64	0.25	0.06	< 0.02	3.82	4.46	< 0.02	0.4	< 0.02	0.15	0.08	< 0.02	0.05
Ortho Phosphate as PO4	mg/l	0.06				< 0.06	< 0.06	< 0.06	0.14	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	< 0.06	0.21	0.8
Cyanide Total	mg/L	0.01	0.05*1	0.001#6	0.001#9	< 0.01	< 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

Comments

- #1 WS Regs 2016 (Eng/Wal)
- #2 WHO Petroleum DWG 2008 #3 WHO DWG 2017 #4 WHO 2017 Taste
- #5 WHO 2017 Odour

- #5 WHO 2017 Odour

 #6 WFD England/Wales. 2015 Saltwater Standards

 #7 WFD England/Wales. 2015 MAC-EQS Trans./Coastal

 #8 WFD England/Wales. 2015 MAC-EQS Inland

 #9 WFD England/Wales. 2015 Freshwater Standards

 #10 WFD England/Wales. 2015 AA-EQS Trans./Coastal

 #11 WFD England/Wales. 2015 AA-EQS Inland

 #12 Water Env't Regs (Scotland) 2015. AA-EQS Inland

 #13 Water Env't Regs (Scotland) 2015. AA-EQS Coast

 #14 USEPA RSL (tapwater) [June 2017]

 #15 SEPA WAT-SG-53 Marine EQS MAC 2015

 #16 SEPA WAT-SG-53 Fresh EQS MAC 2015

 #17 SEPA WAT-SG-53 Fresh EQS MAC 2015

- #17 SEPA WAT-SG-53 Fresh EQS MAC 2015
 #18 SEPA WAT-SG-53 Fresh EQS AA 2015
 #19 PNEC (EU REACH) Freshwater
 #20 PNEC (EU REACH) Coastal
 #21 California Draft health protective concentration
 #22 AECOM DWG (WHO method)
- GAC: Generic Assessment Criteria
- (blank): No assessment criteria available
- -: Not analysed
- DWS: Drinking Water Standard
- EQS: Environmental Quality Standard