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MINING ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

**REMEDIATION STRATEGY
FOR
FORMER CARLTON COLLIERY**

PLANNING REF: 2007/1365

**ON BEHALF OF
DTS ENVIRONMENTAL LTD**

DECEMBER 2008

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REMEDIATION STRATEGY FORMER CARLTON COLLIERY

CONTENTS

1	INTRODUCTION	3
2	BACKGROUND • Site Details	3
3	GEOLOGY, HYDROLOGY & HYDROGEOLOGY • <i>Superficial Geology</i> • Major underlying Geology • Hydrology • Hydrogeology	4
4	PREVIOUS INVESTIGATIONS • Soil Sampling Results	5
5	REMEDIATION STRATEGY • Outline • Ground Conditions • Type, form and scale of contamination • Remediation Objectives • Remediation Works to be Undertaken	6
6	SITE MANAGEMENT PROCEDURES • Excavation Procedures • <i>Importing Material and Backfilling</i> • Health and Safety	8
7	MATTERS ARISING DURING REMEDIATION	9
8	VALIDATION OF REMEDIATION	9
9	LIMITS AND LIABILITY	10

APPENDIX A – TRIAL PIT LOGS

APPENDIX B – SOIL ANALYTICAL RESULTS

REMEDIATION STRATEGY: FORMER CARLTON COLLIERY, SHAW LANE, CARLTON

1. INTRODUCTION

- 1.1 Fennell Green & Bates have been instructed by the owners of the land, DTS Environmental to provide a report to discharge planning condition 32 of planning permission 2007/1365 which relates to a remediation scheme to be submitted which should provide a general overview of the remediation objectives to ensure that the site is remediated suitable for the proposed use.

Document Reviews

- 1.2 Previous documents relating to the site have been reviewed in order to develop the remediation strategy. The documents available comprise:
- FGB's Phase I & II Contamination Audit - March 2006
 - Cromwell Wood Site Investigation – April 2006

Objectives

- 1.3 The objective of the remediation strategy is to outline the remediation works required to ensure that the development site can be considered 'suitable for use'. The remediation works are to be designed, implemented and validated to clean-up standards based on published UK guidelines and quantitative risk assessment criteria in accordance with current Environment Agency Guidelines.
- 1.4 This remediation strategy describes the objectives of the remediation works, methodology for the works, health, safety and environmental control measures and the validation procedures.

2. BACKGROUND

Site Details

- 2.1 The site, which lies to the western flank of the former main Leeds to Sheffield line, and to the east of Manor Bakeries in Carlton near Barnsley, is situated to the south of Shaw Lane and comprises of an area of land that is derelict and in some places bare.
- 2.2 The scheme proposes the comprehensive restoration of the site, involving several operations which will involve the removal of approximately 30,000 cubic metres of red shale and the capping of the colliery spoil with clay material.
- 2.3 The review of previous land uses indicated that a number of contaminative uses had occurred on the site. These included a colliery, coking plant, spoil heaps, railways and railway sidings and infilled reservoirs. Contaminants associated with these uses may include organic residues (eg PAH, metals, oils, solvents tars, phenols, cyanides, sulphur compounds and asbestos)

3. GEOLOGY, HYDROLOGY & HYDROGEOLOGY

3.1 Superficial Geology

The proposed Shaw Lane development site is located on quaternary alluvium (i.e. river lain deposits) comprised of clays, sands, silts and gravels.

3.2 Major underlying Geology

The district of Barnsley lies on the Carboniferous Middle Coal Measures. The locality is situated on mudstone and shale sequence, between the Warmfield Rock and Oaks Rock, towards the base of the succession. The area, as is typical of the Carboniferous, is highly faulted. Three large north east-southwest striking faults can be observed on the geological plan. Two are north of the site, the other south. The Shaw Lane site is on the downthrow side of the northern fault and the up throw side of the southern. Out crops of the Warmfield Marine band and Oaks Rock sandstone occurs in the western corner of the site.

3.3 Hydrology

The nearest ground water courses are the two dikes, the first of which flows eastwards into Shaw dike which then flows south and feeds Carlton Marsh. This is joined just below the site by Boulder Bridge dike. The marsh obviously has high levels of surface water courses draining from the surrounding land to the east and north. The confluence of dikes leave the marsh as Cudworth dike and flows southward. Drains around the area all feed into the dykes. Surface water flow occurs down slope towards the east of the site into the installed drainage system. Previous investigation indicates that these drain then pass beneath the embankment and into the Carlton Marsh.

3.4 Hydrogeology

The sandstones found within the coal measures are generally fine grained and well cemented and therefore demonstrate low levels of the porosity or intergranular permeability often observed in other sandstones. Ground water movement in the area is therefore likely to occur along faults and fractures and between horizons with less permeable mudstone and shale layers. Groundwaters, moving along impermeable horizons will move down dip. The direction of the younger rocks of the succession, shown on the geological map, would suggest a northeast dip direction (there is no indication of degree of dip). Any water travelling between horizons would therefore flow northeast towards the dikes.

The strata immediately beneath the area has been classified as being a minor aquifer with intermediate permeability whilst the adjacent area, on which the marsh is located, is defined as having very low permeability-hence it's ability to retain surface water and form a marsh. Due to the substantial lateral variation of lithological groups within the Coal Measures, any groundwater movement can vary over a relatively short distance. The heterogeneity within the sandstone also means that, when an aquifer is present, it is unlikely to be wide spread. Borehole data taken from a shaft in Carlton Main Colliery shows water strikes within the Oaks Rock. The exact depth of these strikes is not supplied but this would be indicative of an aquifer being present somewhere between the top and base of this sequence i.e. between 6.83m and 30.7m depth.

4. PREVIOUS INVESTIGATIONS

- 4.1 23 soil samples were taken for analysis for the following metals and other compounds. Full trial pit logs can be found in Appendix A of the report.

TABLE PIIA1 Contaminants Tested For	
Metal	Hydrocarbons
Arsenic	BTEX
Cadmium	individual PAHs
Chromium	Total PAH
Copper	PCB's
Lead	Phenols
Mercury	Phthalates
Nickel	Ethers
Selenium	Benzenes
Zinc	Other Chlorinated Solvents

All pre existing sample analysis was carried out TechniChem Laboratories Ltd on the 24th January 2001

The full analytical report from this sampling is included in Appendix B of this report and the results were assessed using the guidelines being used at the time, i.e. the early SGV's and the Dutch List of Trigger Values.

Soil Sampling Results

4.2 Soil Guideline Values

Soil guideline values are a screening tool for use in the assessment of land affected by contamination. They can be used to assess the risks posed to human health from exposure to soil contamination in relation to land use. They provide trigger values for the contaminant being considered that may pose a risk to human health if samples are found to exceed them. Current published SGV's are reproduced in the table below.

Soil guideline values (mg kg ⁻¹ dry weight soil)									
	Residential with plant uptake			Residential without plant uptake			Industrial		
Arsenic	20			20			500		
Cadmium	pH6	pH7	pH8	30			100		
	1	2	8						
Chromium	130			200			5000		
Mercury	8			15			480		
Nickel	50			75			500		
Selenium	35			260			8000		
Lead	450			450			750		
Toluene *	1% som	2.5% som	5% som	1% som	2.5% som	5% som	1% som	2.5% som	5% som
	3	7	14	3	8	15	150	350	680
Ethylbenzene *	1% som	2.5% som	5% som	1% som	2.5% som	5% som	1% som	2.5% som	5% som
	9	21	41	16	41	80	48000		

* %SOM = percentage of soil organic matter

The Phase 1 investigation undertaken by Fennell Green & Bates highlighted the likely presence of various heavy metals and related contaminants. The results obtained from the samples taken do, as expected show elevated levels of metals such as lead and Chromium as well as the presence of PAHs and other hydrocarbons.

The samples show elevated levels of the following:

- i) Arsenic
- ii) Lead
- iii) Nickel
- iv) Various Polycyclic Aromatic Hydrocarbons (PAHs)

5. REMEDIATION STRATEGY

Outline

5.1 The remediation works are required to be undertaken for the following reasons:

- To reduce liabilities associated with ground conditions by reclaiming the site within a framework of risk assessment;
- To facilitate successful redevelopment of the site for proposed industrial use within the existing constraints;
- To ensure that the public and residents on or around the site are not exposed to contamination;
- To make the site safe for future occupants;
- To comply with current UK environmental legislation; and
- To provide a sustainable and cost effective solution.

Type, form and scale of contamination

Breakdown of Contaminants

Arsenic

- 5.2 Arsenic is a common contaminant through mining and ore processing but it is also prevalent within the Coal Measures due to common presence of the accessory mineral arseno pyrite. This pyrite (fools gold) is concentrated during coal processing and the higher concentrations are usually found on the tip where the wasted spoil or material from the screen has been placed.
- 5.3 The results showed that arsenic levels exceeded the recommended SGV's of 20mg kg⁻¹ in 18 of the soil samples. The results produced a range of 2mg -260mg kg⁻¹ with a calculated mean is 31mg. However, these are still within an acceptable range given that the land is to be developed for industrial use.
- 5.4 The two common oxides of arsenic; arsenate and arsenite, are strongly absorbed onto iron oxides, clay minerals and organic compounds. All 3 of the above being present on site would explain why the attenuation of arsenic to such high levels. It also means that whilst remedial work needs to be carried out to remove the pathway for the arsenic migration so it no longer poses a threat to human health; it is unlikely to pose any risk to the local ground or surface water.

- 5.5 The dominant exposure pathway of arsenic is inhalation and ingestion of arsenic bearing soil and dust

Lead

- 5.6 Lead levels within the soil samples are raised but only actually exceed the SGV in one sample. This however is nearly 3 times greater than the recommended 450mg kg⁻¹ the fact that this level is not reflected by any of the other results would suggest it is localised and could be due to works carried out in the rope shop at the colliery.

Due to its neurotoxic affects, lead contamination is an important consideration in residential developments due to the likely presence of children in some period of its future usage.

Nickel

- 5.7 The nickel concentrations within the samples are raised but only exceed the SGV limit for residential use with plant uptake in 2 of the samples.

The pathway of uptake is highly important when considering nickel as the toxic affects differ accordingly. Ingestion can cause foetotoxic and reproductive effects, inhalation has major repercussions for the respiratory system whilst dermatological absorption/ contact can cause major allergy related problems.

No future residential development is considered at this present time and the proposed remediation strategy will ensure severance of any pollutant linkage between the human source and receptors.

- 5.8 PAH's

PAH's were found to be elevated in trial pits 14 and 16. Reference has been made to the original trial pit location and logs. These trial pits were located near to the adjacent railway land. In trial pit 14, a railway sleeper was encountered. This is considered to be the likely source of the contamination although it is not inconceivable that some of the hydrocarbons are coal derived.

Leachate Results

- 5.9 Leachate testing was carried out on 4 soil samples, the results showed slightly raised levels of Arsenic, zinc and nickel but these were below the UK DWS (drinking water Standard) and therefore indicate low risk of the production of a contaminate containing leachate.

Water sampling results

- 5.10 Four water samples were taken and analysed. The results showed only raised levels in nickel and this was only within one sample which contained 53µg which is above the UK Drinking Water Standard (DWS).

Remediation Works to be Undertaken

- 5.11 The remediation and development of a site should incorporate a programme of works through good management techniques and encapsulating waste or contaminating materials to sever any pathways between contaminants and the surface, both off and on site, or to groundwater on the surface or via drains or spring lines.

- 5.12 The receptors to be considered are those persons involved in the construction and development of the site and the person or persons who make future use of it upon its completion.
- 5.13 The only contaminants present in amounts extensive or high enough to possibly cause future problems is lead and PAH's.
- 5.14 The risks and effects of a contaminant are dependent on length of exposure as well as the quantity of contaminant exposed too. The workers will only be exposed for a short space of time and therefore should be at minimal risk. They will however be required to observe strict hygiene regimes to ensure that this risk is reduced as much as is possible. This would include the use of dust masks when working on the site and the careful washing of hands before contact with food or other possible source: receptor bridging objects.
- 5.15 The remediation will need to sever the source from the receptor in the areas of soft landscaping as these pose the greatest risk and are the most likely pathway. The site will be regraded and levelled up to provide a cross fall for drainage to the sealed and drained former colliery access road. The site should be overlain by a 2m thick barrier consisting of inert construction and demolition material and 1m of clay with a permeability of $1 \times 10^{-7} \text{ms}^{-1}$. This will then be finished with 0.5m of subsoil and in places overlain by 0.2m of topsoil made material.
- 5.16 The material should be laid in layers of 0.25m, for the coarser sized material, and the final 1m layer of the clay material should be laid in the 0.25m layers and compacted with earthmoving plant.
- 5.17 The above should effectively sever all pathways from contaminant to receptor and also prevent the downward percolation of water through the contaminated soil thus also severing the pathway from contaminant to groundwater.

6. SITE MANAGEMENT PROCEDURES

- 6.1 Appropriate paperwork for all excavators and drivers will be checked to ensure fit for use equipment and appropriately trained personnel.

Imported Material and Backfilling

- 6.2 It is not anticipated that there will be a requirement for any additional fill, other than clean imported crushed limestone for the maintenance of the access roads, clean, excavation material and soils, clay to cap off the colliery spoil and green shredded waste for the restoration scheme. However, should any fill material subsequently be deemed necessary the imported material shall NOT contain the following:

- Colliery Shales;
- Ironstone Shales;
- Materials containing sulphates;
- Materials susceptible to frost damage, weathering or mechanical damage;
- Biodegradable materials such as wood.

- 6.6 Any fill areas shall be built up evenly over the entire area, unless the contract requires otherwise, and sufficient camber shall be maintained at all times to enable

surface water to drain from them. The containment or disposal of surface water during the construction period shall be the Company's responsibility. The Company shall ensure that excavations and areas to be filled are free from organic material, loose soil, rubbish and standing water.

Health and Safety

- 6.7 The works should be carried out under the supervision of the Principle Contractor in accordance with the Construction (Design & Management) Regulations 2007(CDM Regulations).

7. MATTERS ARISING DURING REMEDIATION

- 7.1 The reasons for any deviation from the planned remediation strategy will be discussed with the Environmental Engineer.
- 7.2 Additional contamination arising during the course of remediation or the construction phase will be inspected by the Environmental Engineer for extent, magnitude and risk. All details will be recorded for the purposes of validation and samples taken if necessary.
- 7.3 The Environmental Engineer will notify the Planning Officer of any necessary deviation from the Proposed Remediation Strategy or additional remediation requirements that may become apparent arising as a result of unexpected ground conditions or contamination being encountered.

8. VALIDATION OF REMEDIATION

- 8.1 To ensure that the remediation objectives are met the works will be validated for the duration of the redevelopment as follows:
- Works undertaken will be visually inspected and photographed;
 - The source, type and quantity of material brought on to site will be recorded;
 - Soils brought on to site will be sampled and tested appropriately and will not exceed the following clean-up standards:

Contaminant	Quantity (plant uptake)	Quantity (without plant uptake)	Units
Arsenic	20	20	mg/kg
Cadmium	2	30	mg/kg
Chromium	130	200	mg/kg
Copper	111	2080	mg/kg
Mercury	8	15	mg/kg
Nickel	50	75	mg/kg
Lead	450	450	mg/kg
Selenium	35	260	mg/kg
Zinc	330	8250	mg/kg

Ethyl benzene	41	80	mg/kg
Toluene	14	15	mg/kg
Benzo-a-pyrene	1.09	1.32	mg/kg
Dibenzo[a,h]anthracene	1.1	1.32	mg/kg
Fluorene	184	2700	mg/kg
Napthalene	17	33.7	mg/kg
Petroleum Hydrocarbons Aliphatic/Aromatic	As per LQM CIEH GACs	As per LQM CIEH GACs	

8.2 It should be noted, however, that the site is located within a coal mining area in close proximity to coal burning power stations and industries connected with coal. Many of the soils within the district contain greater concentrations of organic compounds, such as benzo[a]pyrene and metals, such as arsenic and copper, than other parts of the country. Soils imported from the local area may contain coal fragments which can increase the level of these compounds in the soil without necessarily increasing the risk to human health due to the compounds being chemically bonded within the coal fragments.

8.3 A validation report will be issued upon complete of works that complies with the Environment Agency Guidance on the requirements for Contaminated Land Reports – Version 1 July 2005 and includes the following elements:

- A description of the site background;
- A summary of all relevant site investigation reports;
- A statement of the remediation objectives;
- A description of the remediation works;
- Any further sample locations, chemical testing;
- Summary data plots and tables relating to clean-up criteria;
- Project photographs;
- As built drawings;
- Records of imported materials.
- Confirmation that remediation objectives have been met

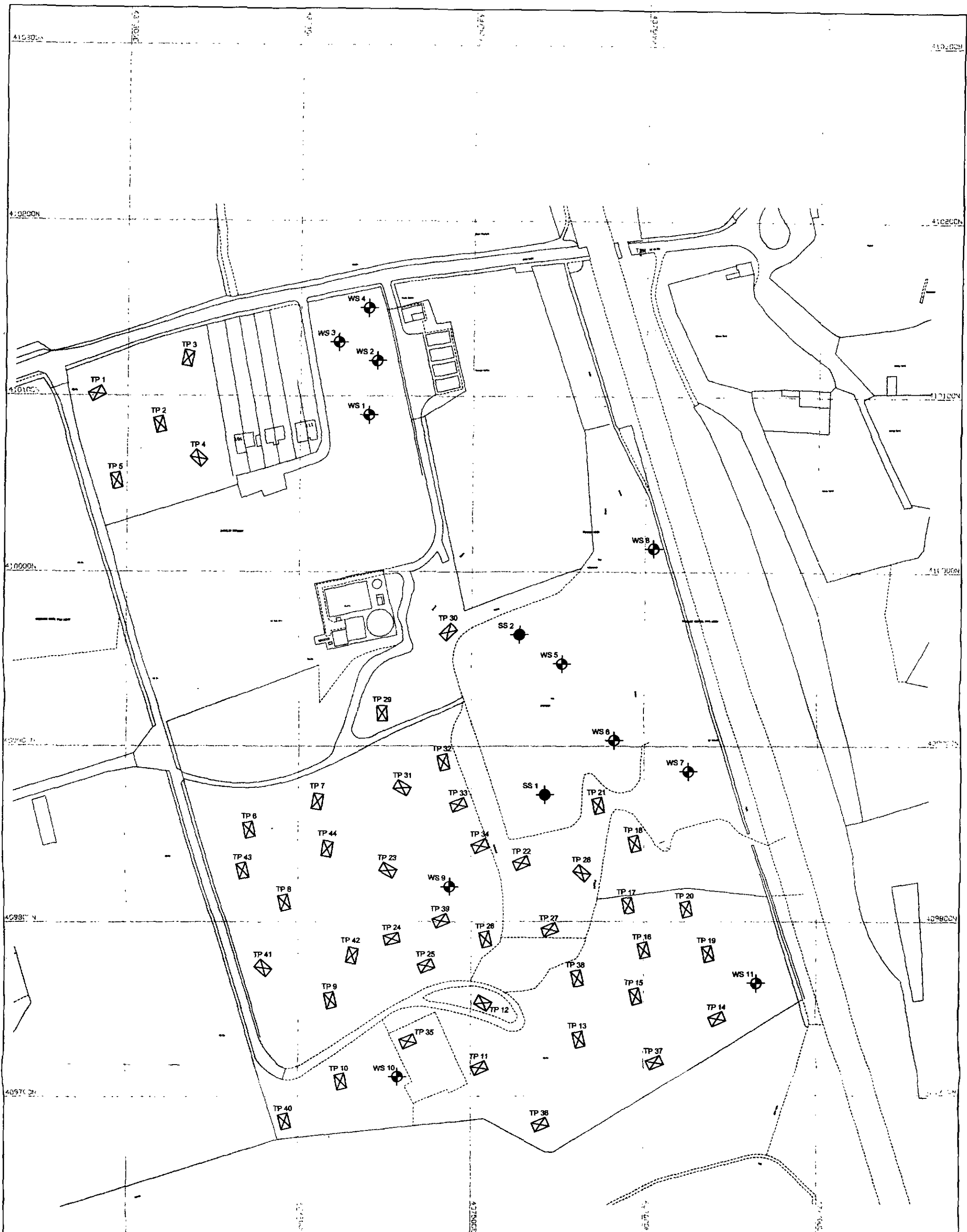
9. LIMITS AND LIABILITY

- 9.1 Fennell, Green and Bates have produced this report on the site at Carlton Colliery solely for the use of the client and his professional advisors on matters appertaining to the application for discharging planning conditions for the redevelopment of the aforementioned site. Both the findings and opinions expressed within the report are relevant to the period of the site visit for the part of the site indicated on the boundary plan. The site may be subject to change over time and the report *therefore should not be relied upon for investigations or remediation undertaken at a later date.*
- 9.2 No part of the report may be reproduced or relied upon by a third party who may subsequently advise of the client or undertake his own investigation within the prior written consent of Fennell, Green and Bates. It is recommended that any other potential developer consult with the writer of this report prior to undertaking any site investigation work.

Author:

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Principal Consulting Engineer
December 2008

APPENDIX A



DTS		SS	JC	
		DTS/TP1-2006-01	March 2006	1:2000
Trial Pit Locations		FENNELL GREEN & BATES 25 Smyth Street Wakefield West Yorkshire WF1 1ED Tel - 01924 372197 Fax - 01924 385559 Email - fgb@fgb-surveyors.co.uk		

Trial Pit Number TP1				Job Number: 61-C4594				ENVIRON			
Date(s): 03/01/01				Project: CARLTON, BARNSELEY							
Ground Level				Excavation Method: Mechanical Excavator						Logged By DD	
Trial Pit Dimensions:											

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D				0.40 Loose brown clayey TOPSOIL.
							Orange/grey CLAY, becoming grey with depth.
	ND	1.10	D	1			1.10 Black laminated CLAY.
							1.50 Grey medium grained SANDSTONE.
	ND	2.10	D	2			1.60 Loose grey MUDSTONE.
				3			
				4			
				5			
				6			
				7			
				8			
				9			
							3.20 End of Trial Pit

Remarks: 1. ND - Not Detected.	Key		Date	Depth to Water (m)
	Water Strike	☒		
	Standing Water	☒		
	Disturbed Sample	0		
	Bulk Sample	8		

[illegible]

Trial Pit Number TP3		Job Number: 61-C4594			ENVIRON		
		Project: CARLTON, BARNSELEY					
Date(s): 03/01/01		Excavation Method: Mechanical Excavator				Logged By	
Ground Level		Trial Pit Dimensions:				DD	

Lab.	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D				Brown clayey TOPSOIL.
							Orange-brown CLAY with occasional coal-like gravel.
							Firm grey CLAY.
	ND	1.00	D	1			Laminated black CLAY.
							Very stiff MUDSTONE. Recovered as silt towards base of pit.
	ND	2.20	D	2			
				3			
				4			
				5			
				6			
				7			
				8			
				9			
End of Trial Pit							

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP4		Job Number: 61-C4594		ENVIRON	
Date(s): 03/01/01		Project: CARLTON, BARNSELEY			
Ground Level		Excavation Method: Mechanical Excavator		Logged By DD	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D			0.20	Light-dark brown clayey TOPSOIL.
	ND	1.00	D	1		1.10	Firm grey silty CLAY.
	ND	2.40	D	2		3.00	Loose grey SILT.
				3			
				4			
				5			
				6			
				7			
				8			
				9			
End of Trial Pit							

Remarks: 1. ND - Not Detected.

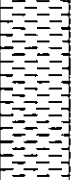
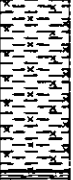
Key	Date	Depth to Water (m)
Water Strike		
Standing Water		
Disturbed Sample		
Bulk Sample		

Trial Pit Number TP5				Job Number: 61-C4594				ENVIRON					
Date(s): 03/01/01				Project: CARLTON, BARNSELEY						Excavation Method: Mechanical Excavator		Logged By	
Ground Level				Trial Pit Dimensions:						DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
	ND	0.20	D				Brown-dark brown loose clayey TOPSOIL.	
							Fairly firm orange/light grey CLAY.	
							Very firm light grey CLAY.	
	ND	1.00	D				Grey MUDSTONE recovered as silt towards base of trial pit.	
	ND	2.70	D				End of Trial Pit	

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike	Σ	
	Standing Water	∇	
	Disturbed Sample	o	
	Bulk Sample	s	

Trial Pit Number TP6		Job Number: 61-C4594		ENVIRON	
Date(s): 03/01/01		Project: CARLTON, BARNSELEY		Excavation Method: Mechanical Excavator	
Ground Level		Trial Pit Dimensions:		Logged By DD	

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.20	D			 0.30	MADE GROUND Loose dark brown/black slightly clayey topsoil with very occasional brick, glass and rubber. Firm orange/brown CLAY.
	ND	1.00	D	1		 1.70 1.75	Very firm MUDSTONE. Loose grey/brown silty CLAY.
	ND	2.40	D	2		 2.90 3.00	Laminated grey MUDSTONE. End of Trial Pit
				3			
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike	▽	
	Standing Water	▮	
	Disturbed Sample	D	
	Bulk Sample	B	

Trial Pit Number TP7		Job Number: 61-C4594		ENVIRON	
		Project: CARLTON, BARNESLEY			
Date(s): 03/01/01		Excavation Method: Mechanical Excavator			Logged By DD
Ground Level		Trial Pit Dimensions:			

Lab.	Soil Gas	Samples		Depth (m)	Well	Legend	Description
Tests	(ppmv)	Depth (m)	Type		Installation		
	ND	0.20	D				0.20 Grass overlying dark brown clayey TOPSOIL with rootlets.
				1			Fairly firm orange silty CLAY becoming brown and then grey with depth.
	ND	1.80	D				1.80 Laminated grey MUDSTONE.
				2			1.90 Loose grey/brown SILT.
	ND	2.40	D				2.40 Very firm brittle fine grained SANDSTONE with clay.
				3			3.00 End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Data	Depth to Water (m)
	Water Strike	▽	
	Standing Water	▽	
	Disturbed Sample	D	
	Bulk Sample	B	

Trial Pit Number TP8		Job Number: 61-C4594		ENVIRON			
Date(s): 03/01/01		Project: CARLTON, BARNESLEY			Excavation Method: Mechanical Excavator		
Ground Level		Trial Pit Dimensions:			Logged By DD		
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
ND	ND	0.50	D	1		0.20	Dark brown/black clayey TOPSOIL.
						0.40	Fairly firm orange CLAY.
							Fairly firm grey/brown CLAY.
ND	ND	1.90	D	2		1.90	Loose brown silty CLAY.
						2.00	Laminated brown/grey CLAY.
ND	ND	2.90	D	3		2.90	Moderately strong light grey SANDSTONE.
						3.40	End of Trial Pit
Remarks: 1. ND - Not Detected. 2. Installation diameter - 19mm.							
Key		Date		Depth to Water (m)			
Water Strike		03/01/01		2.90			
Standing Water							
Disturbed Sample							
Bulk Sample							

Trial Pit Number TP9				Job Number: 61-C4594				E N V I R O N			
Date(s): 03/01/01				Project: CARLTON, BARNSELEY						Logged By:	
Ground Level				Excavation Method: Mechanical Excavator						Trial Pit Dimensions:	
Lab. Tests		Soil Gas (ppmv)	Samples Depth (m) Type		Depth (m)	Well Installation	Legend		Description		
		ND	0.20	D				Grass overlying MADE GROUND comprising gravelly sandy red ash.			
								MADE GROUND comprising dark brown clayey fill with occasional glass.			
		ND	1.80	D				MADE GROUND comprising yellow/orange slightly sandy clay.			
								MADE GROUND comprising reworked shattered grey sandstone.			
								Laminated light brown/grey SILTSTONE with clay.			
		ND	3.00	D				Grey medium grained SANDSTONE becoming stronger with depth.			
End of Trial Pit											
Remarks: 1. ND - Not Detected.											

Key	Data	Depth to Water (m)
Water Strike		
Standing Water		
Disturbed Sample		
Bulk Sample		

Trial Pit Number TP10				Job Number: 61-C4594				ENVIRON					
Date(s): 03/01/01				Project: CARLTON, BARNSELEY						Excavation Method: Mechanical Excavator		Logged By	
Ground Level				Trial Pit Dimensions:						DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D				Grass overlying MADE GROUND comprising loose light-dark brown fill. .
							MADE GROUND comprising sandy gravelly red ash.
				1			MADE GROUND comprising brown slightly sandy CLAY.
	ND	1.90	D	2			MADE GROUND comprising yellow/brown reworked sandstone in slightly clayey sand.
							Brown MUDSTONE in loose brown silty matrix.
	ND	2.60	D	3			Brittle grey SANDSTONE.
							End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike	Σ	
	Standing Water	∇	
	Disturbed Sample	D	
	Bulk Sample	B	

Trial Pit Number TP11		Job Number: 61-C4594		ENVIRON	
		Project CARLTON, BARNSELEY			
Date(s): 04/01/01		Excavation Method: Mechanical Excavator			Logged By
Ground Level		Trial Pit Dimensions:			DD

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.30	D				0.10 0.30 CONCRETE. MADE GROUND comprising dark brown loose gravel with occasional red brick.
	ND	0.90	D				0.70 1.10 Orange/brown very loose slightly clayey SILT. Yellow/brown slightly clayey SILT.
	ND	2.10	D				1.50 2.60 Weathered grey/orange SANDSTONE. Orange brown weathered SILTSTONE. Sweet odour at 2.1m.
							3.00 Weathered orange/grey SANDSTONE.
							End of Trial Pit

Remarks:

1. ND - Not Detected.
2. Installation diameter - 19mm.

Key

Water Strike
Standing Water
Disturbed Sample
Bulk Sample

Date

Depth to Water (m)

Trial Pit Number TP12		Job Number: 61-C4594		ENVIRON																	
		Project: CARLTON, BARNSELEY																			
Date(s): 04/01/01		Excavation Method: Mechanical Excavator			Logged By DD																
Ground Level		Trial Pit Dimensions:																			
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description														
		Depth (m)	Type																		
	ND	0.50	D	0.40		Grass over brown slightly clayey TOPSOIL.															
				0.60		MADE GROUND comprising dark grey/black clayey fill with occasional brick.															
				0.80		Dark grey/black CLAY.															
				1.00		Yellow/brown clayey SILT.															
				1.20		Orange clayey SILT.															
				1.60		Grey clayey SILT.															
	ND	2.20	D	2.60		Grey/brown clayey SILT.															
	ND	3.10	D	3.50		Grey/brown MUDSTONE.															
							End of Trial Pit														
4 5 6 7 8 9																					
Remarks: 1. ND - Not Detected.						<table border="1"> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> <tr> <td>Water Strike</td> <td>▽</td> <td></td> </tr> <tr> <td>Standing Water</td> <td>▽</td> <td></td> </tr> <tr> <td>Disturbed Sample</td> <td>0</td> <td></td> </tr> <tr> <td>Bulk Sample</td> <td>8</td> <td></td> </tr> </table>	Key	Date	Depth to Water (m)	Water Strike	▽		Standing Water	▽		Disturbed Sample	0		Bulk Sample	8	
Key	Date	Depth to Water (m)																			
Water Strike	▽																				
Standing Water	▽																				
Disturbed Sample	0																				
Bulk Sample	8																				

Trial Pit Number TP13				Job Number: 61-C4594				ENVIRON			
				Project: CARLTON, BARNSLEY							
Date(s): 04/01/01				Excavation Method: Mechanical Excavator						Logged By	
Ground Level				Trial Pit Dimensions:						DD	

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.20	D			0.40 0.80 1.70	MADE GROUND comprising brick and concrete.
				1			MADE GROUND comprising dark brown/black fill with rubble, ash and occasional clinker.
							MADE GROUND comprising black silty clay.
	ND	1.40	D				
	ND	2.00	D	2		2.70 3.50	Red silty CLAY with yellow mottling.
				3			Laminated dark brown/grey CLAY.
				4			End of Trial Pit
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)	
	Water Strike	▽		
	Standing Water	▼		
	Disturbed Sample	□		
	Bulk Sample	⊗		

Trial Pit Number TP14		Job Number: 61-C4594		ENVIRON	
Date(s): 04/01/01		Project: CARLTON, BARNSELEY			
Ground Level		Excavation Method: Mechanical Excavator		Logged By DD	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.30	Ø	0.20			Grass over yellow/brown clayey TOPSOIL.
				0.60			MADE GROUND comprising brown/black sandy gravel with wood (railway sleepers) and occasional brick and cables.
				0.70			MADE GROUND comprising red brick.
							MADE GROUND comprising brown/black slightly clayey sandy gravel. Wet at 3.0m.
	ND	2.00	Ø				
	ND	3.00	Ø				
							End of Trial Pit

Remarks:

1. ND - Not Detected.

2. Two walls in the trial pit restricted excavation.

3. Trial pit caving in.

Key

Water Strike

Standing Water

Disturbed Sample

Bulk Sample

Date

04/01/01

Depth to Water (m)

3.00

Trial Pit Number TP15		Job Number: 61-C4594		ENVIRON																		
Date(s): 04/01/01		Project: CARLTON, BARNSELEY																				
Excavation Method: Mechanical Excavator		Logged By DD																				
Ground Level		Trial Pit Dimensions:																				
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description															
		Depth (m)	Type																			
	ND	0.50	D	0.10			Grass over dark brown clayey TOPSOIL.															
	ND	1.30	D	1.50			MADE GROUND comprising red brick/concrete rubble and metal in a brown clayey matrix.															
End of Trial Pit																						
Remarks: - ND - Not Detected. - Cables exposed at 1.3m. Presumed to be dead but trial pit stopped. - Brick wall exposed in trial pit. <table border="1"> <thead> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> </thead> <tbody> <tr> <td>Water Strike</td> <td></td> <td></td> </tr> <tr> <td>Standing Water</td> <td></td> <td></td> </tr> <tr> <td>Disturbed Sample</td> <td></td> <td></td> </tr> <tr> <td>Bulk Sample</td> <td></td> <td></td> </tr> </tbody> </table>								Key	Date	Depth to Water (m)	Water Strike			Standing Water			Disturbed Sample			Bulk Sample		
Key	Date	Depth to Water (m)																				
Water Strike																						
Standing Water																						
Disturbed Sample																						
Bulk Sample																						

Trial Pit Number TP16		Job Number: 61-C4594		ENVIRON	
Date(s): 04/01/01		Project: CARLTON, BARNSELEY			
Ground Level		Excavation Method: Mechanical Excavator		Logged By DD	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D	0.80			Grass over light brown slightly gravelly clayey TOPSOIL.
				1.50			MADE GROUND comprising red brick fill in a dark brown clayey matrix.
	ND	1.90	D	2.50			MADE GROUND comprising black coarse sandy gravel with occasional brick. Hydrocarbon odour.
	ND	2.90	D	3.00			Yellow/orange/grey CLAY. Slight hydrocarbon odour. Damp at 2.9m.
End of Trial Pit							

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP17				Job Number: 61-C4594				ENVIRON			
				Project: CARLTON, BARNSLEY							
Date(s): 04/01/01				Excavation Method: Mechanical Excavator				Logged By			
Ground Level				Trial Pit Dimensions:				DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D			 0.40	Grass over brown clayey TOPSOIL.
						 0.70  0.80	MADE GROUND comprising dark brown/black sandy gravel with ash. MADE GROUND comprising red brick.
				1			MADE GROUND comprising black sandy gravel with ash and clinker.
	ND	1.70	D			 2.00	MADE GROUND comprising loose red ash with large cobbles/boulders.
	ND	2.40	D			 3.00	
				3			End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike 		
	Standing Water 		
	Disturbed Sample 		
	Bulk Sample 		

Trial Pit Number TP18		Job Number: 61-C4584		ENVIRON			
Date(s): 04/01/01		Project: CARLTON, BARNSELEY			Logged By DD		
Ground Level		Excavation Method: Mechanical Excavator			Trial Pit Dimensions: DD		
Lab. Tests	Soil Gas (ppmv)	Samples Depth (m) Type		Depth (m)	Well Installation	Legend	Description
	ND	0.50	D	0.50			Grass over dark brown clayey TOPSOIL.
				1.10			MADE GROUND comprising black gravelly sandy ash.
	ND	1.60	D				
				3.20			MADE GROUND comprising red gravelly sandy ash. Brick and clinker at 2.8m.
	ND	3.00	D				End of Trial Pit
Remarks: 1. ND - Not Detected.							
		Key		Date		Depth to Water (m)	
		Water Strike					
		Standing Water					
		Disturbed Sample					
		Bulk Sample					

Trial Pit Number TP19				Job Number: 61-C4594				ENVIRON			
Date(s): 04/01/01				Project: CARLTON, BARNSELEY						Logged By 	
Ground Level				Excavation Method: Mechanical Excavator						Trial Pit Dimensions:	
Lab. Tests		Soil Gas (ppmv)	Samples Depth (m) Type		Depth (m)	Well Installation	Legend		Description		
		ND	0.50	D				0.40	Grass over MADE GROUND comprising dark brown sandy gravel with ash and brick.		
								0.80	MADE GROUND comprising red/brown ashy gravelly sand with brick.		
									MADE GROUND comprising red ash.		
								1.40			
								1.60	MADE GROUND comprising light brown/brown ash.		
		ND	1.90	D				1.70	Red slightly clayey SAND.		
									Light brown/yellow SAND and GRAVEL.		
		ND	2.60	D				2.50	Black SAND and GRAVEL. Wet.		
								2.60	Grey brown silty CLAY.		
								3.70	End of Trial Pit		
Remarks: 1. ND - Not Detected.											
						Key		Date		Depth to Water (m)	
						Water Seek		04/01/01		2.50	
						Standing Water					
						Disturbed Sample					
						Bulk Sample					

Trial Pit Number TP20				Job Number: 81-C4594				ENVIRON			
Date(s): 04/01/01				Project: CARLTON, BARNLEY				Excavation Method: Mechanical Excavator			
Ground Level				Trial Pit Dimensions:				Logged By DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.50	D			0.50	Grass over loose brown clayey TOPSOIL.
				1		1.20	MADE GROUND comprising black/brown clayey sandy gravel and ash.
	ND	1.60	D				MADE GROUND comprising red clayey sandy gravel and ash with clinker. Brick at 2.3m.
	ND	2.20	D	2			
				3		3.00	End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected. 2. Evidence of brick wall 2.2-3.0m.	Key	Date	Depth to Water (m)
	Water Strike ▽		
	Standing Water ▼		
	Disturbed Sample D		
	Bulk Sample B		

Trial Pit Number TP21		Job Number: 61-C4594		ENVIRON	
Date(s): 04/01/01		Project: CARLTON, BARNSELEY			
Excavation Method: Mechanical Excavator		Logged By DD		Ground Level	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
							Grass over dark brown TOPSOIL, with brick and concrete rubble.
							MADE GROUND comprising dark brown clayey sandy gravel.
	ND	1.00	D	1			MADE GROUND comprising laminated dark grey clay.
							MADE GROUND comprising dark brown clayey gravel with a little sand and some clinker.
	ND	2.00	D	2			
							MADE GROUND comprising purple sandstone and ash. Becoming red/brown with depth.
	ND	3.10	D	3			
							End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Shire		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP22		Job Number: 61-C4594		ENVIRON	
Date(s): 04/01/01		Project: CARLTON, BARNSELEY			Excavation Method: Mechanical Excavator
Ground Level		Trial Pit Dimensions:			Logged By DD

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
							Grass over TOPSOIL.
							MADE GROUND comprising brickwork.
	ND	1.00	D	1			
	ND	1.50	D				MADE GROUND comprising slightly damp black clayey sandy gravel.
							MADE GROUND comprising brown loose clayey sand with occasional ash.
							MADE GROUND comprising reworked coal deposits with coal, silt and mudstone.
							MADE GROUND comprising brown/black clayey sandy gravel with ash.
	ND	2.80	D				
							Light brown/grey firm silty CLAY.
							Laminated grey CLAY becoming looser with depth.
							End of Trial Pit

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)	
	Water Strike	☒		
	Standing Water	☒		
	Disturbed Sample	☐		
	Bulk Sample	☐		

Trial Pit Number TP24		Job Number: 61-C4594		ENVIRON	
Date(s): 05/01/01		Project: CARLTON, BARNSELEY			
Ground Level		Excavation Method: Mechanical Excavator			Logged By DD
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.50	D	0.50			Grass over grey gravelly CLAY.
	ND	1.70	D	1.70			Orange/brown/gray gravelly CLAY becoming browner with depth.
	ND	2.40	D	2.40			Laminated clayey MUDSTONE.
				3.00			End of Trial Pit

Remarks:

- ND - Not Detected.
- Water inflow at 0.5m - linked to nearby standing surface water.
- Slight organic sulphurous smell.

Key	Date	Depth to Water (m)
Water Table ▽		
Standing Water Y		
Disturbed Sample D		
Bulk Sample B		

Trial Pit Number TP25		Job Number: 61-C4594		ENVIRON	
Date(s): 05/01/01		Project: CARLTON, BARNSELEY			Logged By DD
Ground Level		Excavation Method: Mechanical Excavator			Trial Pit Dimensions: DD
Lab. Tests	Soil Gas (ppmv)	Samples Depth (m) Type		Well Installation	Description
	ND	0.50	D		Grass over TOPSOIL. MADE GROUND comprising brown gravelly sandy clay with glass, pottery, and occasional brick, becoming gravelly with depth.
	ND	1.30	D		MADE GROUND comprising grey silty clayey gravel with occasional mudstone.
	ND	2.60	D		Brown CLAY. Laminated clayey MUDSTONE with occasional sand specks.
					End of Trial Pit
Remarks: 1. ND - Not Detected.					

Trial Pit Number TP26		Job Number: 81-C4594		ENVIRON																	
		Project: CARLTON, BARNSELEY																			
Date(s): 05/01/01		Excavation Method: Mechanical Excavator			Logged By DD																
Ground Level		Trial Pit Dimensions:																			
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description														
		Depth (m)	Type																		
	ND	0.50	D	1		0.30	Grass over MADE GROUND comprising sandy gravelly clay.														
						0.50	MADE GROUND comprising red ashy clay with sand and gravel. Made ground comprising Grey gravelly clay with occasional lustrous coal.														
	ND	1.50	D	2		2.40	Very firm grey/brown/yellow CLAY.														
						2.80	Black silty CLAY.														
	ND	2.50	D	3		3.10	Very firm grey/brown/yellow CLAY.														
						3.60	Orange/brown/grey laminated CLAY.														
	ND	2.80	D	4		3.90	End of Trial Pit														
Remarks: 1. ND - Not Detected.						<table border="1"> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> <tr> <td>Water Scribe</td> <td>▽</td> <td></td> </tr> <tr> <td>Standing Water</td> <td>■</td> <td></td> </tr> <tr> <td>Disturbed Sample</td> <td>D</td> <td></td> </tr> <tr> <td>Bulk Sample</td> <td>S</td> <td></td> </tr> </table>	Key	Date	Depth to Water (m)	Water Scribe	▽		Standing Water	■		Disturbed Sample	D		Bulk Sample	S	
Key	Date	Depth to Water (m)																			
Water Scribe	▽																				
Standing Water	■																				
Disturbed Sample	D																				
Bulk Sample	S																				

Trial Pit Number TP27				Job Number: 61-C4594				E N V I R O N			
Date(s): 05/01/01				Project: CARLTON, BARNSELY						Logged By:	
Ground Level				Excavation Method: Mechanical Excavator						Trial Pit Dimensions:	
Date(s):				Trial Pit Dimensions:						DD	

Lab.	Soil Gas	Samples		Depth (m)	Well	Legend	Description
Tests	(ppmv)	Depth (m)	Type	Installation			
	ND	0.50	D				Grass over MADE GROUND comprising black gravelly sandy ash.
						0.70	MADE GROUND comprising red ash with gravels. Winch cables at 0.7m. Red brickwork at 1.4m.
	ND	1.70	D				
						2.20	
	ND	2.70	D			2.30	MADE GROUND comprising large yellow brown stones and metal. Winch cables. Brown/grey CLAY.
						3.20	
	ND	3.90	D			3.90	Wet black/grey clayey GRAVEL with hydrocarbon odour and staining.
							End of Trial Pit

Remarks: 1. ND - Not Detected.				Key	Date	Depth to Water (m)
				Water Strike	05/01/01	3.20
				Standing Water		
				Disturbed Sample		
				Bulk Sample		

Trial Pit Number TP28		Job Number: 61-C4594		ENVIRON	
Date(s): 05/01/01		Project: CARLTON, BARNSLEY			Logged By DD
Excavation Method: Mechanical Excavator		Trial Pit Dimensions:			
Ground Level					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.50	D	0.10			Grass over TOPSOIL. MADE GROUND comprising red brown slightly gravelly sand.
	ND	1.40	D	0.70			MADE GROUND comprising black sandy gravel, ash and clinker.
	ND	2.40	D	1.40			MADE GROUND comprising grey/pink sandstone cobbles and boulders in a grey/brown ashy matrix.
	ND			2.10			MADE GROUND comprising red ash, cobbles and boulders in a brown/red sandy ash matrix.
				4.30 4.40			Grey/yellow silty CLAY. Dry. End of Trial Pit

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike	05/01/01	3.10
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP29				Job Number: 61-C4594				ENVIRON			
Date(s): 05/01/01				Project: CARLTON, BARNSELEY				Excavation Method: Mechanical Excavator			
Ground Level				Trial Pit Dimensions:				Logged By DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.60	D			 0.40	Grass over MADE GROUND comprising grey/brown/yellow clay.
				1			MADE GROUND comprising black sandy ash with occasional brick fragments.
	ND	1.70	D			 1.40	Firm grey/brown silty CLAY.
				2			
	ND	2.90	D			 2.80	Very firm grey CLAY with orange mottling.
				3			
				4		 3.60 3.80	Loose brown clayey SILT with grey laminated clay bands.
				5			End of Trial Pit
				6			
				7			
				8			
				9			

Remarks: - ND - Not Detected. - Very slow water ingress at 1.4m.	Key	Date	Depth to Water (m)
	Water Strike 	05/01/01	1.40
	Standing Water 		
	Disturbed Sample 		
	Bulk Sample 		

Trial Pit Number TP30				Job Number: 61-C4594				ENVIRON			
Date(s): 05/01/01				Project: CARLTON, BARNSELY							
Ground Level				Excavation Method: Mechanical Excavator						Logged By DD	
Trial Pit Dimensions:											

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.30	D			0.10	Grass over grey/red clayey TOPSOIL.
						0.60	MADE GROUND comprising red shaley ash.
	ND	1.20	D	1		1.10	MADE GROUND comprising black clayey sandy gravelly ash.
						1.40	MADE GROUND comprising grey clayey fill with occasional coal fragments.
						2.00	Light brown/yellow CLAY.
	ND	2.10	D	2		2.00	Laminated grey occasionally brown CLAY. Black from 3.7m.
				3			
				4			
				5			
				6			
				7			
				8			
				9			
End of Trial Pit							

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Sinks ▽		
	Standing Water ▮		
	Disturbed Sample D		
	Bulk Sample B		

Trial Pit Number TP31				Job Number: 61-C4594				E N V I R O N			
Date(s): 05/01/01				Project: CARLTON, BARNESLEY						Logged By	
Ground Level				Excavation Method: Mechanical Excavator						Trial Pit Dimensions:	
DD											

Lab.	Soil Gas	Samples		Depth (m)	Well	Installation	Legend	Description
		Depth (m)	Type					
	ND	0.30	D					Grass/moss over grey gravelly clayey TOPSOIL, with brick, glass and rubble.
	ND	1.50	D					MADE GROUND comprising grey clayey spoil with occasional mudstone and lustrous coal fragments.
	ND	2.90	D					
								End of Trial Pit

Remarks: 1. ND - Not Detected.				Key		Date		Depth to Water (m)	
				Water Strike					
				Standing Water					
				Disturbed Sample					
				Bulk Sample					

Trial Pit Number TP32		Job Number: 61-C4594			ENVIRON		
		Project: CARLTON, BARNSELEY					
Date(s): 05/01/01		Excavation Method: Mechanical Excavator				Logged By: DD	
Ground Level		Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
	ND	0.50	D			 0.60	Grass over MADE GROUND comprising brick rubble in brown clayey sand matrix.	
	ND	1.00	D	1			 3.10 3.80	MADE GROUND comprising grey clayey gravelly spoil.
	ND	2.70	D	3				Firm grey/orange mottled CLAY.
				4			End of Trial Pit	
				5				
				6				
				7				
				8				
				9				

Remarks: 1. ND - Not Detected.	Key	Data	Depth to Water (m)
	Water Strike	▽	
	Standing Water	▼	
	Disturbed Sample	D	
	Bulk Sample	B	

Trial Pit Number TP33		Job Number: 81-C4594		ENVIRON	
Date(s): 05/01/01		Project: CARLTON, BARNSELEY			
Excavation Method: Mechanical Excavator		Logged By DD		Ground Level	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.40	D	0		3.80	MADE GROUND comprising grey clayey spoil with gravel and mudstone/siltstone fragments.
	ND	1.50	D	1			
	ND	3.50	D	3			
				4			End of Trial Pit
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP34		Job Number: 61-C4594		ENVIRON	
Date(s): 05/01/01		Project: CARLTON, BARNSELEY			Logged By DD
Ground Level		Excavation Method: Mechanical Excavator			Trial Pit Dimensions: DD
Lab. Tests	Soil Gas (ppmv)	Samples Depth (m) Type		Well Installation	Description
	ND	0.40	D		Grass over MADE GROUND comprising gray/black clayey spoil with mudstone/shale.
	ND	1.40	D		Fairly firm orange/brown CLAY.
	ND	2.50	D		Firm orange/grey mottled CLAY. Looser at 2.3m and laminated at 3.0m.
					End of Trial Pit
1 2 3 4 5 6 7 8 9 1.00 1.50 3.50					
Remarks:				Key	Date
1. ND - Not Detected. 2. Bricks at eastern end of trial pit between 1.3m and 2.0m. 3. Water seepage at 2.0m.				Water Table  Standing Water  Disturbed Sample  Bulk Sample 	05/01/01
					Depth to Water (m) 2.00

Trial Pit Number TP36		Job Number: 61-C4594		ENVIRON				
Date(s): 09/01/01		Project: CARLTON, BARNSLEY			Excavation Method: Mechanical Excavator			
Ground Level		Trial Pit Dimensions:			Logged By DD			
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
							CONCRETE over red brick building foundation.	
							MADE GROUND comprising grey/black sandy gravelly ash with red brick fragments.	
	ND	0.80	D	1			Brown/orange silty CLAY.	
	ND	1.20	D	2			Grey/orange sandy SILT with weathered sandstone/siltstone.	
	ND	2.50	D	3			Weathered brown/grey SANDSTONE.	
				4			End of Trial Pit	
				5				
				6				
				7				
				8				
				9				
Remarks: 1. ND - Not Detected.						Key Water Strike  Standing Water  Disturbed Sample  Bulk Sample 	Date 	Depth to Water (m)

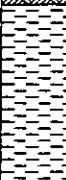
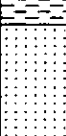
Trial Pit Number TP37		Job Number: 61-C4594		ENVIRON				
		Project CARLTON, BARNSELEY						
Date(s): 09/01/01		Excavation Method: Mechanical Excavator			Logged By			
Ground Level		Trial Pit Dimensions:			DD			
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
	ND	0.50	D	0.20			Grass over light brown clayey sand TOPSOIL.	
				0.40			Reinforced CONCRETE.	
				1.20			MADE GROUND comprising red brick rubble in brown clayey sand matrix.	
				1.50			Fairly firm light brown/yellow silty CLAY.	
	ND	2.00	D	2.90			Loose brittle orange/brown mottled silty CLAY.	
				3.30			Firm laminated light brown/grey CLAY in a silty matrix.	
	ND	3.00	D	3.50			Weathered grey/brown SANDSTONE.	
							End of Trial Pit	
1 2 3 4 5 6 7 8 9								
Remarks: 1. ND - Not Detected.						Key Water Sink Standing Water Disturbed Sample Bulk Sample	Date 	Depth to Water (m)

Trial Pit Number TP38		Job Number: 81-C4594		ENVIRON																		
		Project: CARLTON, BARNSELEY																				
Date(s): 09/01/01		Excavation Method: Mechanical Excavator			Logged By DD																	
Ground Level		Trial Pit Dimensions:																				
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description															
		Depth (m)	Type																			
	ND	0.60	D	0.60			MADE GROUND comprising concrete over red brick in loose light brown sandy matrix.															
	ND	1.60	D	1.70			MADE GROUND comprising light brown/grey sandy silty shaly angular gravel with occasional red brick fragments. Becoming gravel at 0.9m.															
	ND	2.80	D	2.10			Firm grey/orange mottled CLAY.															
				2.30			Loose grey silty CLAY.															
				3.70			Laminated brown clayey MUDSTONE.															
				3.80			Weathered orange/grey/brown SANDSTONE.															
							End of Trial Pit															
Remarks: 1. ND - Not Detected. <table border="1" style="width: 100%;"> <thead> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> </thead> <tbody> <tr> <td>Water Strike</td> <td></td> <td></td> </tr> <tr> <td>Standing Water</td> <td></td> <td></td> </tr> <tr> <td>Disturbed Sample</td> <td></td> <td></td> </tr> <tr> <td>Bulk Sample</td> <td></td> <td></td> </tr> </tbody> </table>								Key	Date	Depth to Water (m)	Water Strike			Standing Water			Disturbed Sample			Bulk Sample		
Key	Date	Depth to Water (m)																				
Water Strike																						
Standing Water																						
Disturbed Sample																						
Bulk Sample																						

Trial Pit Number TP39				Job Number: 61-C4594				ENVIRON					
Date(s): 09/01/01				Project: CARLTON, BARNSLEY						Excavation Method: Mechanical Excavator		Logged By DD	
Ground Level				Trial Pit Dimensions:									

Lab. Tests	Soil Gas (ppm ^v)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.70	D	0.70			Grass over MADE GROUND comprising grey clay fill with concrete rubble, metal and brick.
	ND	2.20	D	2.20			Grey CLAY becoming grey/brown and laminated with depth.
	ND	3.70	D	3.70			Firm grey MUDSTONE.
				4.20			End of Trial Pit

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Sinks		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP40				Job Number: 61-C4594				ENVIRON																	
Date(s): 09/01/01				Excavation Method: Mechanical Excavator				Logged By																	
Ground Level				Trial Pit Dimensions:				DD																	
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend		Description																	
		Depth (m)	Type																						
	ND	0.30	D	0.60			0.60	Grass over dark brown sandy TOPSOIL with occasional red brick.																	
				1.90			1.90	Orange/brown CLAY.																	
	ND	2.00	D	2.70			2.70	Weathered grey/yellow/brown SANDSTONE in fine sand matrix.																	
		2.70	D	3.00			3.00	Yellow/brown/grey SANDSTONE.																	
								End of Trial Pit																	
Remarks: 1. ND - Not Detected. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> </thead> <tbody> <tr> <td>Water Strike </td> <td></td> <td></td> </tr> <tr> <td>Standing Water </td> <td></td> <td></td> </tr> <tr> <td>Disturbed Sample </td> <td></td> <td></td> </tr> <tr> <td>Bulk Sample </td> <td></td> <td></td> </tr> </tbody> </table>											Key	Date	Depth to Water (m)	Water Strike 			Standing Water 			Disturbed Sample 			Bulk Sample 		
Key	Date	Depth to Water (m)																							
Water Strike 																									
Standing Water 																									
Disturbed Sample 																									
Bulk Sample 																									

Trial Pit Number TP41				Job Number: 61-C4594				E N V I R O N			
Date(s): 09/01/01				Project: CARLTON, BARNSELEY				Excavation Method: Mechanical Excavator			
Ground Level				Trial Pit Dimensions:				Logged By DD			

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.30	D				Grass over brown clayey TOPSOIL.
							MADE GROUND comprising red gravelly sandy ash.
				1			
	ND	1.40	D				Brown silty CLAY.
							Yellow/brown silty CLAY.
				2			
							Laminated grey CLAY.
	ND	2.90	D				Weathered brown/yellow/grey SANDSTONE.
				3			Brown/yellow/grey SANDSTONE. Wet.
							End of Trial Pit
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike	09/01/01	2.90
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Trial Pit Number TP42		Job Number: 61-C4594						<u>E N V I R O N</u>	
Date(s): 09/01/01		Project: CARLTON, BARNSELEY							
Ground Level		Excavation Method: Mechanical Excavator						Logged By DD	
Trial Pit Dimensions:									
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m) Installation	Well	Legend	Description		
		Depth (m)	Type						
	ND	0.30	D						Grass over MADE GROUND comprising red gravelly sandy ash.
	ND	0.80	D	1			0.60		Loose soft brown CLAY.
	ND	2.00	D	2			1.20		Orange/grey mottled CLAY, becoming laminated grey/brown in a silty matrix.
	ND	3.10	D	3			2.90		Weathered grey/orange SANDSTONE.
				4			3.20		End of Trial Pit
Remarks: 1. ND - Not Detected.									
Key							Date	Depth to Water (m)	
Water Sinks									
Standing Water									
Disturbed Sample									
Bulk Sample									

Trial Pit Number TP44		Job Number: 81-C4594		ENVIRON	
Date(s): 09/01/01		Project: CARLTON, BARNSELEY			
Excavation Method: Mechanical Excavator		Logged By: DD		Ground Level	
Trial Pit Dimensions:					

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
ND	0.50	D	1	1	 0.30  0.60 	Grass over MADE GROUND comprising red gravelly sandy ash and brick fill.	
						Yellow/brown CLAY.	
						Orange/grey mottled CLAY.	
ND	2.10	D	2	2	 1.80  2.70  3.10	Laminated grey clayey MUDSTONE in a silty clay matrix.	
Very firm grey MUDSTONE.							
End of Trial Pit							
ND	3.00	D	3	3			
				4			
				5			
				6			
				7			
				8			
				9			

Remarks:

1. ND - Not Detected.

Key	Date	Depth to Water (m)
Water Strike		
Standing Water		
Disturbed Sample		
Sub Sample		

Borehole Number:		WS1		Job Number:		61-C4594		ENVIRON				
		Project: CARLTON, BARNSELEY										
Date(s):		08/01/01		Drilling Method:				Window Sampler		Logged By		
Ground Level				Borehole Dimensions:						DD		
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description					
		Depth (m)	Type									
	ND	0.20-0.40	D				0.50	Grass overlying brown clayey TOPSOIL.				
				1				Orange/grey firm CLAY. Becoming brown with depth.				
	ND	1.20-1.40	D				1.45 1.50	Light grey fine grained SANDSTONE.				
				2				End of borehole				
				3								
				4								
				5								
				6								
				7								
				8								
				9								
Remarks:						1 ND - Not Detected						
						Key		Data		Depth to Water (m)		
						Water Strike						
						Standing Water						
						Disturbed Sample		D				
						Bulk Sample		S				

Borehole Number: WS2				Job Number: 61-C4594				ENVIRON					
Date(s): 08/01/01				Project: CARLTON, BARNSELEY						Drilling Method: Window Sampler		Logged By: DD	
Ground Level				Borehole Dimensions:									

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.50-0.70	D	0.50			Grass overlying brown clayey TOPSOIL.
				1			Grey/orange firm CLAY becoming brown with depth.
	ND	1.60-1.80	D	1.60			Brown slightly silty MUDSTONE.
				1.65			Grey/brown fairly soft CLAY.
				1.95			Dark brown very firm MUDSTONE.
				2.00			End of borehole
				3			
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.			
---------------------------------------	--	--	--

Key	Data	Depth to Water (m)
Water Strike	▽	
Standing Water	▽	
Disturbed Sample	D	
Bulk Sample	B	

Borehole Number: WS3				Job Number: 61-C4594				ENVIRON			
Date(s): 08/01/01				Project: CARLTON, BARNSELEY						Logged By:	
Ground Level:				Drilling Method: Window Sampler						Borehole Dimensions:	
										DO	

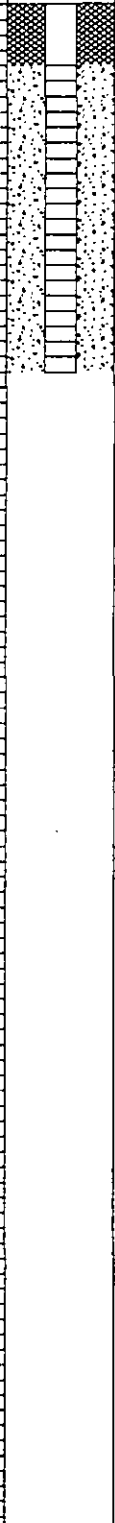
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
	ND	0.30-0.50	D			0.40 0.50	Grass overlying brown clayey TOPSOIL.	
				1			1.00	Brown slightly silty CLAY. Grey/orange fairly firm CLAY.
	ND	1.30-1.50	D				2.20	Gray firm CLAY
	ND	2.20-2.40	D				2.40	Dark grey firm MUDSTONE.
				3			2.60	Gray firm CLAY.
				4			2.70	Dark brown firm MUDSTONE.
				5				End of borehole
				6				
				7				
				8				
				9				

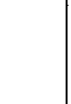
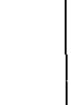
Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)	
	Water Strike	▽		
	Standing Water	▼		
	Disturbed Sample	D		
	Bulk Sample	B		

Borehole Number: WS4		Job Number: 81-C4594			ENVIRON		
		Project: CARLTON, BARNSELY					
Date(s): 08/01/01		Drilling Method: Window Sampler				Logged By:	
Ground Level		Borehole Dimensions:				DD	

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.20-0.40	D			0.20 0.50	Grass overlying brown clayey TOPSOIL. Brown/Orange slightly silty firm CLAY. Orange/gray fairly firm CLAY. Becoming greyer with depth.
	ND	1.40-1.70	D				
	ND	2.50-2.70	D			2.40 2.70	Very firm grey MUDSTONE. End of borehole

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

Borehole Number: WS5		Job Number: 61-C4594		ENVIRON	
Project: CARLTON, BARNSELEY					
Date(s): 08/01/01		Drilling Method: Window Sampler		Logged By: DD	
Ground Level		Borehole Dimensions:			
Lab. Tests	Soil Gas (ppmv)	Samples Depth (m) Type	Well Installation	Legend	Description
	ND	0.20-0.40 D		 0.20	Grass overlying brown clayey gravelly TOPSOIL.
				 0.50	MADE GROUND comprising sandy gravelly red ash.
	ND	1.00-1.20 D		 1.20	MADE GROUND comprising slightly clayey sandy gravel spoil with ash. Becoming wet with depth.
	ND	2.10-2.30 D		 2.40	Dark grey firm MUDSTONE.
					End of borehole
Remarks: 1. ND - Not Detected.					
Key		Date		Depth to Water (m)	
Water Table 		08/01/01		0.80	
Standing Water 					
Disturbed Sample 					
Bulk Sample 					

Borehole Number: WS6		Job Number: 61-C4594		ENVIRON			
Date(s): 08/01/01		Project: CARLTON, BARNSELEY			Logged By		
Ground Level		Drilling Method: Window Sampler			DD		
Borehole Dimensions:							
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.50-0.70	D	0.20		 0.20  0.50  1.00  2.00  2.80  3.00	MADE GROUND comprising sandy gravel red ash.
				MADE GROUND comprising grey clayey gravel spoil.			
				MADE GROUND comprising black fine sand.			
	ND	1.60-1.80	D	1			MADE GROUND Black sandy gravelly ash.
				2			MADE GROUND comprising gravelly sand red ash.
				3			Light brown very firm CLAY.
	ND	2.40-2.50	D	2			End of borehole
				3			
				4			
				5			
Remarks: 1. ND - Not Detected.							
Key: Water Strike  Standing Water  Disturbed Sample  Bulk Sample 						Date	Depth to Water (m)

Borehole Number: WS7		Job Number: 61-C4594		ENVIRON																
Date(s): 08/01/01		Project: CARLTON, BARNSLEY			Logged By															
Ground Level		Borehole Dimensions:			DD															
Lab. Tests	Soil Gas (ppmv)	Samples Depth (m) Type		Well Installation	Description															
	ND	0.10-0.30	D		0.30	Grass overlying MADE GROUND comprising grey sandy gravelly ash.														
					0.50	MADE GROUND comprising fairly firm grey clay.														
					0.80	MADE GROUND comprising dark grey sandy gravelly ash.														
						MADE GROUND comprising light grey silty clay with occasional gravels.														
	ND	1.90-2.10	D		2.20	End of borehole														
Remarks: 1. ND - Not Detected.					<table border="1"> <tr> <th>Key</th> <th>Date</th> <th>Depth to Water (m)</th> </tr> <tr> <td>Water Strike</td> <td>▽</td> <td></td> </tr> <tr> <td>Standing Water</td> <td>◡</td> <td></td> </tr> <tr> <td>Disturbed Sample</td> <td>D</td> <td></td> </tr> <tr> <td>Bulk Sample</td> <td>B</td> <td></td> </tr> </table>	Key	Date	Depth to Water (m)	Water Strike	▽		Standing Water	◡		Disturbed Sample	D		Bulk Sample	B	
Key	Date	Depth to Water (m)																		
Water Strike	▽																			
Standing Water	◡																			
Disturbed Sample	D																			
Bulk Sample	B																			

Borehole Number: WS8				Job Number: 61-C4594				ENVIRON			
Date(s): 08/01/01				Project: CARLTON, BARNSELY							
Ground Level				Drilling Method: Window Sampler						Logged By DD	
Borehole Dimensions:											

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.10-0.30	D	0.10			Grass overlying MADE GROUND comprising black sandy gravel ash with clinker.
	ND	1.50-1.70	D	1.50			MADE GROUND comprising grey silty clay with occasional gravel.
	ND	2.60-2.80	D	2.60			End of borehole
				3.00			
				4.00			
				5.00			
				6.00			
				7.00			
				8.00			
				9.00			

Remarks: 1. ND - Not Detected.	Key	Date	Depth to Water (m)
	Water Strike		
	Standing Water		
	Disturbed Sample		
	Bulk Sample		

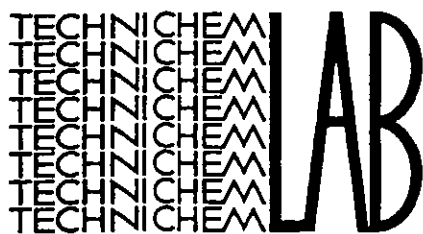
Borehole Number: WS9		Job Number: 61-C4594		ENVIRON	
Date(s): 08/01/01		Drilling Method: Window Sampler		Project: CARLTON, BARNSLEY	
Ground Level		Borehole Dimensions:		Logged By DD	

Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description
		Depth (m)	Type				
	ND	0.20-0.40	D	0			Grass overlying MADE GROUND comprising grey silty clayey gravelly spoil. Becoming very firm towards base.
	ND	1.20-1.90	D	1			
	ND	2.80-3.00	D	3			
						3.00	End of borehole
				4			
				5			
				6			
				7			
				8			
				9			

Remarks: 1. ND - Not Detected.	Key	Data	Depth to Water (m)
	Water Strike	▽	
	Standing Water	▽	
	Disturbed Sample	□	
	Bulk Sample	■	

Borehole Number: WS10		Job Number: 61-C4594		ENVIRON				
		Project: CARLTON, BARNSELEY						
Date(s): 08/01/01		Drilling Method: Window Sampler			Logged By			
Ground Level		Borehole Dimensions:			DD			
Lab. Tests	Soil Gas (ppmv)	Samples		Depth (m)	Well Installation	Legend	Description	
		Depth (m)	Type					
	ND	0.50-0.70	D			0.20 0.30 0.40 0.50 0.70	Grass overlying brown clayey TOPSOIL. MADE GROUND comprising red brick. CONCRETE. MADE GROUND comprising reworked brown clay. Orange/brown fairly firm CLAY.	
	ND	1.30-1.50	D			1.60	Grey/orange weathered SANDSTONE.	
End of borehole								
1 2 3 4 5 6 7 8 9								
Remarks: 1. ND - Not Detected.						Key Water Strike Standing Water Disturbed Sample Bulk Sample ▽ ▼ D S	Date	Depth to Water (m)

APPENDIX B



Analytical and Consulting Chemists - Soil, Water and Environmental Scientists

TechniChem Laboratories Ltd.

Brunel Science Park, Kingston Lane,
Uxbridge, Middlesex. UB8 3PQ

Tel: 01895 271271 Fax: 01895 271272 E-mail: enquiries@technichem.co.uk



1141

Dominic Daly
ENVIRON UK Ltd
4a Queens Street
Leeds
LS1 2TW

Page 1 of 12 pages

22nd January 2001

TEST REPORT

Our Report No: 1102

Your Order No: Instns. of 04.01.2001

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

Project Name: Carlton

Project Code: 61-C4594

Results enclosed: Pages 2-12

Dr. Andy Dengel
Operations Manager

TECHNICHEM LABORATORIES LTD.

Tracy Gibbs
Technical Manager

TECHNICHEM LABORATORIES LTD.

Test Methods are Documented In House Procedures or where appropriate Standard Methods

All samples connected with this report, including any 'on hold', will be stored and disposed of according to Company policy. A copy of this policy is available on request.

TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1152 Re-Issue No.1 Dated 25/01/01

Page 2 of 7 pages

Your Order No: Instns. of 09.01.2001

CLIENT: ENVIRON UK Ltd

23 no. soil samples submitted for analysis on 10.01.2001

DATE OF ISSUE: 24th January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	Guide Value
Sample Depth (m)	0.2-0.4	1.6-1.8	2.2-2.4	0.2-0.4	1.0-1.2	0.5-0.7	1.9-2.1	0.1-0.3	1.2-1.9	0.5-0.7	
Sample No.	WS1	WS2	WS3	WS4	WS5	WS6	WS7	WS8	WS9	WS10	
Sample Description	S	S	S	S	S	S	S	S	S	S	
009 pH	6.6	6.2	7.4	6.7	4.7	5.8	4.9	5.1	3.9	6.3	>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	650	2700	1100	470	6200	5200	500	820	12000	370	2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5#/1000+
005 Total Cyanide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	<20	<20	<20	<20	<20	<20	<20	59	<20	<20	
*PAH Screen by Flash GC								<20			
*001a Asbestos Screen	ND							ND		ND	
*043 Radiation Screen											
016 Arsenic	33	64	8	27	68	8	9	19	32	6	40*
016 Cadmium	0.9	4.8	4.0	0.7	0.9	<0.5	<0.5	0.5	0.5	<0.5	15*
016 Chromium	17	49	26	22	7	9	8	8	7	7	1000*
016 Lead	90	160	53	64	35	44	28	18	36	21	2000*
016 Mercury	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	20*
016 Selenium	4.0	22	10	1.9	1.5	2.9	1.6	2.6	2.1	2.2	
016 Copper	66	180	74	52	61	100	45	84	52	14	130*
016 Nickel	18	180	72	18	25	42	30	36	19	11	70*
016 Zinc	180	190	160	71	35	20	91	70	68	68	300*

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH.

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
*	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

A.C. Dwyer

TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1152 Re-Issue No.1 Dated 25/01/01

Page 3 of 7 pages

Your Order No: Instns. of 09.01.2001

CLIENT: ENVIRON UK Ltd

23 no. soil samples submitted for analysis on 10.01.2001

DATE OF ISSUE: 24th January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	Guide Value
Sample Depth (m)	0.5-0.7	0.5	1.2	0.5	1.6	0.7	0.3	1.4	0.8	0.5	
Sample No.	WS11	TP35	TP36	TP37	TP38	TP39	TP40	TP41	TP42	TP43	
Sample Description	S	S	S	S	S	S	S	S	S	S	
009 pH	6.9	6.9	7.4	8.7	7.6	6.2	7.2	5.7	6.1	6.8	>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	2100	<200	730	2100	8800	7000	660	320	720	250	2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5#/1000+
005 Total Cyanide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	56	<20	<20	58	73	<20	<20	<20	<20	<20	
*PAH Screen by Flash GC	<20			<20	<20						
*001a Asbestos Screen	ND	ND		ND		ND					
*043 Radiation Screen											
016 Arsenic	28	6	9	45	23	39	22	9	56	8	40*
016 Cadmium	0.6	<0.5	<0.5	1.4	<0.5	0.6	<0.5	<0.5	1.0	<0.5	15*
016 Chromium	<2	10	9	10	14	10	9	7	17	13	1000*
016 Lead	66	17	25	1670	140	41	120	30	89	24	2000*
016 Mercury	<0.3	<0.3	<0.3	<0.3	0.5	0.3	<0.3	<0.3	<0.3	<0.3	20*
016 Selenium	3.6	1.5	1.4	2.0	1.9	2.3	1.9	1.4	1.9	1.7	
016 Copper	71	14	15	820	46	53	61	15	68	12	130*
016 Nickel	20	17	9	26	27	15	25	8	31	10	70*
016 Zinc	93	46	57	850	83	69	51	66	140	43	300*

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH.

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
*	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

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TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1152 Re-Issue No.1 Dated 25/01/01

Page 4 of 7 pages

Your Order No: Instns. of 09.01.2001

CLIENT: ENVIRON UK Ltd

23 no. soil samples submitted for analysis on 10.01.2001

DATE OF ISSUE: 24th January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E875	E876	E877							Guide Value
Sample Depth (m)	2.1	Surface	0.0							
Sample No.	TP44	SU1	SU2							
Sample Description	S	S	S							
009 pH	6.5	3.4	4.1							>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	280	15000	53000							2000#/50000+
014 Monohydric Phenol	<3	<3	<3							5#/1000+
005 Total Cyanide	<5	<5	<5							250(1)/5000+
012 TEM										5000(2)
032 PAH Screen by HPLC										1000*
030 Hydrocarbon Oils by IR										
*TPH Screen by Flash GC	<20	<20	<20							
*PAH Screen by Flash GC										
*001a Asbestos Screen										
*043 Radiation Screen										
016 Arsenic	7	84	120							40*
016 Cadmium	<0.5	1.1	1.5							15*
016 Chromium	20	7	21							1000*
016 Lead	20	54	33							2000*
016 Mercury	<0.3	<0.3	<0.3							20*
016 Selenium	1.3	2.6	0.6							
016 Copper	28	73	18							130*
016 Nickel	36	32	6							70*
016 Zinc	81	77	12							300*

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH.

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
*	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

A.C. Doyle

TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 2 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E534	E535	E536	E537	E538	E539	E540	E541	E542	E543	Guide Value
Sample Depth (m)	2.1	0.9	0.4	1.0	1.0	1.0	0.2	2.9	0.2	2.6	
Sample No.	TP1	TP2	TP3	TP4	TP5	TP6	TP7	TP8	TP9	TP10	
Sample Description	S	S	S	S	S	S	S	S	S	S	
009 pH	5.6	4.7	7.1	5.4	6.3	7.3	7.3	6.5	6.6	6.2	>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	220	1500	640	400	220	<200	220	<200	1600	300	2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5#/1000+
005 Total Cyanide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	
*PAH Screen by Flash GC											
*001a Asbestos Screen											
*043 Radiation Screen											
016 Arsenic	3	26	36	22	2	8	8	8	11	8	40**
016 Cadmium	<0.5	1.7	1.4	0.7	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	15**
016 Chromium	<2	10	61	22	14	17	25	24	12	18	1000**
016 Lead	14	42	71	40	11	18	19	52	14	19	2000**
016 Mercury	<0.3	0.5	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	20**
016 Selenium	1.0	1.7	9.3	3.5	0.8	1.1	0.7	<0.5	1.0	0.5	
016 Copper	75	25	170	43	42	22	20	30	21	26	130**
016 Nickel	21	32	110	16	18	23	22	49	16	24	70**
016 Zinc	9	19	130	32	39	73	73	130	28	39	300**

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
**	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

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TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 3 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E544	E545	E546	E547	E548	E549	E550	E551	E552	E553	Guide Value
Sample Depth (m)	2.1	0.5	1.4	3.0	1.3	1.9	0.4	1.6	2.6	0.5	
Sample No.	TP11	TP12	TP13	TP14	TP15	TP16	TP17	TP18	TP19	TP20	
Sample Description	S	S	S	S	S	S	S	S	S	S	
009 pH	6.6	7.5	7.6	7.6	7.9	6.0	7.9	7.9	7.9	7.6	>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	<200	940	380	900	2300	2000	920	19000	1700	1000	2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3	<3	<3	<3	3.9	9.6	<3	5#/1000+
005 Total Cyanide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	110	<20	<20	92	150	11900	41	<20	<20	<20	
*PAH Screen by Flash GC	<20			<20	<20	<1000					
*001a Asbestos Screen											
*043 Radiation Screen											
016 Arsenic	6	32	12	17	33	20	36	32	35	58	40**
016 Cadmium	<0.5	1.3	<0.5	0.6	7.5	0.6	2.2	0.8	1.0	2.6	15**
016 Chromium	11	13	7	15	14	5	15	15	17	19	1000**
016 Lead	16	370	82	180	220	39	45	10	19	67	2000**
016 Mercury	<0.3	<0.3	0.6	0.5	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	20**
016 Selenium	0.8	1.8	1.0	1.0	1.2	1.6	1.3	0.7	0.5	0.6	
016 Copper	15	100	38	150	89	43	99	110	59	150	130**
016 Nickel	21	34	24	36	34	17	33	30	38	53	70**
016 Zinc	38	230	80	170	370	27	170	89	34	240	300**

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
**	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

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TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 4 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E554	E555	E557	E558	E559	E560	E561	E562	E563	E564	Guide Value
Sample Depth (m)	1.0	1.0	2.6	0.5	1.3	2.8	3.2	0.5	0.4	1.2	
Sample No.	TP21	TP22	TP23	TP24	TP25	TP26	TP27	TP28	TP29	TP30	
Sample Description	S	S	S	S	S	S	S	S	S	S	
009 pH	7.6	7.9	6.7	6.6	4.0	7.0	7.3	8.0	4.7	3.7	>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	4800	2700	1900	4400	6900	2500	580	1100	7600	17000	2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	5#/1000+
005 Total Cyanide	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	<20	<20	<20	<20	<20	<20	<20	110	170	<20	
*PAH Screen by Flash GC								<20	<20		
*001a Asbestos Screen											
*043 Radiation Screen											
016 Arsenic	55	33	260	38	33	13	15	30	42	36	40**
016 Cadmium	1.9	0.9	7.2	1.2	1.0	0.7	0.7	1.6	1.2	1.0	15**
016 Chromium	13	11	5	13	11	24	24	22	14	7	1000**
016 Lead	63	38	74	96	35	66	84	67	150	29	2000**
016 Mercury	<0.3	<0.3	0.4	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	20**
016 Selenium	1.8	1.4	3.3	1.8	1.3	1.6	<0.5	0.9	2.7	1.7	
016 Copper	68	51	56	100	63	60	35	100	330	37	130**
016 Nickel	29	22	35	40	30	52	52	43	140	12	70**
016 Zinc	160	57	55	120	100	200	190	140	93	27	300**

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
**	=	ICRCL "open space" Threshold		=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	+	=	Widely Accepted Guideline
3	=	Dutch B Guideline	2	=	
			4	=	Dutch I Guideline

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TABLE XXX SOIL ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 5 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E565	E566	E567	E568							Guide Value
Sample Depth (m)	0.5	1.0	3.5	0.4							
Sample No.	TP31	TP32	TP33	TP34							
Sample Description	S	S	S	S							
009 pH	5.5	4.8	8.4	3.5							>9(2)
*025a Total (acid soluble) Sulphate as SO ₄	4400	12000	1100	7500							2000#/50000+
014 Monohydric Phenol	<3	<3	<3	<3							5#/1000+
005 Total Cyanide	<5	<5	<5	<5							250(1)/5000+
012 TEM											5000(2)
032 PAH Screen by HPLC											1000*
030 Hydrocarbon Oils by IR											
*TPH Screen by Flash GC	<20	55	34	<20							
*PAH Screen by Flash GC		<20									
*001a Asbestos Screen											
*043 Radiation Screen											
016 Arsenic	51	27	30	40							40**
016 Cadmium	1.6	0.8	1.0	1.1							15**
016 Chromium	12	10	8	10							1000**
016 Lead	79	45	140	36							2000**
016 Mercury	<0.3	<0.3	<0.3	<0.3							20**
016 Selenium	1.8	1.5	3.5	1.8							
016 Copper	93	63	55	57							130**
016 Nickel	38	27	28	28							70**
016 Zinc	110	85	79	84							300**

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis except for pH

-	=	No Analysis Undertaken	ND	=	Not detected above Analytical Detection Limit
#	=	ICRCL Industrial Threshold		=	(<0.01% for Asbestos & <2 c/s for Radiation)
**	=	ICRCL "open space" Threshold	+	=	ICRCL Industrial Action Guideline
1	=	Guideline for Complex Cyanide	2	=	Widely Accepted Guideline
3	=	Dutch B Guideline	4	=	Dutch I Guideline

T. Williams

TABLE XXX SOIL ANALYTICAL RESULTS - 040 VOC BY HEAD SPACE GC-MS Results in µg/kg dry weight basis

Our Report No: 1102

Page 6 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E535	E542	E544	E547	E549	E553	E555	E557	E561	
Sample Depth (m)	0.9	0.2	2.1	3.0	1.9	0.5	1.0	2.6	3.2	
Sample No.	TP2	TP9	TP11	TP14	TP16	TP20	TP22	TP23	TP27	
Sample Description	S	S	S	S	S	S	S	S	S	
Vinyl chloride	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Chloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Trichlorofluoromethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,1-Dichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,1,2-trichloro-1,2,2-trifluoroethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	
Dichloromethane	<25	<25	<25	<25	<25	<25	<25	<25	<25	
trans-1,2 Dichloroethene	<10	<10	<10	<10	<10	<10	<10	<10	<10	
MTBE	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,1 -Dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	
cis-1,2 dichloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	
Chloroform	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,1,1-Trichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2-Dichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Benzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Carbon tetrachloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Trichloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Bromodichloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	
cis-1,3 Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Toluene	2	<2	<2	<2	2	2	<2	6	<2	
trans-1,3 dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,1,2-Trichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Dibromochloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Tetrachloroethene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Chlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
Ethyl benzene	9	<2	<2	4	7	7	<2	5	2	
m,p-Xylenes	13	<2	<2	8	10	15	4	12	5	
Bromoform	<10	<10	<10	<10	<10	<10	<10	<10	<10	
o-Xylene	6	<2	<2	5	6	5	<2	5	3	
1,1,2,2 Tetrachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	
1,3,5 Trimethylbenzene	<2	<2	<2	<2	<2	<2	<2	2	<2	
1,2,4 Trimethylbenzene	<2	<2	<2	<2	<2	<2	<2	3	<2	
1,3 Dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,4 Dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	
1,2 Dichlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	

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TEST REPORT

SOIL ANALYTICAL RESULTS - *SVOC BY GC-MS Results in µg/kg dry weight basis

Our Report No: 1102

Page 7 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E547	E549	E561		
Sample Depth (m)	3.0	1.9	3.2		
Sample No.	TP14	TP16	TP27		
Sample Description	S	S	S		
PAH	naphthalene	1600	1400	130	
	2-chloronaphthalene	<10	<10	<10	
	acenaphthylene	19	<10	<10	
	acenaphthene	83	110	<10	
	fluorene	140	350	26	
	phenanthrene	1500	2200	110	
	anthracene	130	570	100	
	fluoranthene	850	1400	<10	
	pyrene	710	1200	<10	
	benz(a)anthracene	280	560	<10	
	chrysene	510	1300	37	
	benzo(b)fluoranthene	160	<10	<10	
	benzo(k)fluoranthene	97	<10	<10	
	benzo(a)pyrene	140	<10	<10	
	indeno(123-cd)pyrene	98	<10	<10	
	dibenzo(ah)anthracene	<10	<10	<10	
	benzo(ghi)perylene	160	<10	<10	
PHENOLS	phenol	30	280	<10	
	2-chlorophenol	<10	<10	<10	
	2-methylphenol	38	460	<10	
	4-methylphenol	67	960	<10	
	2-nitrophenol	<10	<10	<10	
	2,4-dimethylphenol	75	390	<10	
	2,4-dichlorophenol	<10	<10	<10	
	2,6-dichlorophenol	<10	<10	<10	
	4-chloro-3-methyl phenol	<10	<10	<10	
	2,4,6-trichlorophenol	<10	<10	<10	
	2,4,5-trichlorophenol	<10	<10	<10	
	4-nitrophenol	<10	<10	<10	
	2,3,4,6-tetrachlorophenol	<10	<10	<10	
	pentachlorophenol	<10	<10	<10	
PHTHALATES	dimethylphthalate	<10	<10	<10	
	diethyl phthalate	<10	<10	<10	
	di-n-butyl phthalate	<10	<10	<10	
	butyl benzyl phthalate	<10	<10	<10	
	di-n-octyl phthalate	<10	<10	<10	
ETHERS	bis(2-chloroethyl)ether	<10	<10	<10	
	bis(2-chloroisopropyl)ether	<10	<10	<10	
	4-chlorophenyl phenyl ether	<10	<10	<10	
	bromo phenyl phenyl ether	<10	<10	<10	
BENZENES	1,3-dichlorobenzene	<10	<10	<10	
	1,2-dichlorobenzene	<10	<10	<10	
	1,4-dichlorobenzene	<10	<10	<10	
	nitrobenzene	<10	<10	<10	
	1,2,4-trichlorobenzene	<10	<10	<10	
	2,6-dinitrotoluene	<10	<10	<10	
	2,4-dinitrotoluene	<10	<10	<10	
	azobenzene	<10	<10	<10	
	hexachlorobenzene	<10	<10	<10	
OTHERS	hexachloroethane	<10	<10	<10	
	n-nitroso-di-n-propyl-1-propanamine	<10	<10	<10	
	isophorone	<10	<10	<10	
	bis(2-chloroethoxy)methane	<10	<10	<10	
	hexachlorobutadiene	<10	<10	<10	
	hexachlorocyclopentadiene	<10	<10	<10	

*Denotes analysis outside the scope of our UKAS accreditation.

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TABLE XXX SOIL ANALYTICAL RESULTS - *039 POLYCHLORINATED BIPHENYLS

Our Report No: 1102

Page 8 of 12 pages

Your Order No: Insns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E550	E558								
Sample Depth (m)	0.4	0.5								
Sample No.	TP17	TP24								
Sample Description	S	S								
Polychlorinated Biphenyls (PCB's)										
PCB Congener 28	<0.005	<0.005								
PCB Congener 52	<0.005	<0.005								
PCB Congener 101	<0.005	<0.005								
PCB Congener 118	<0.005	<0.005								
PCB Congener 138	<0.005	<0.005								
PCB Congener 153	<0.005	<0.005								
PCB Congener 180	<0.005	<0.005								
Total PCBs	ND	ND								

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in mg/kg dry weight basis

ND denotes Not Detected

Total PCB = Sum of 7 identified components

TechniChem Laboratories Ltd.

Results

TEST REPORT

SOIL ANALYTICAL RESULTS - Bulk Identification - Method 001 based upon MDHS 77 (Asbestos Screening Method *001a)

Our Report No: 1102

Page 9 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

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Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	Sample Depth (m)	Sample No.	Sample Description	Description	Result of Asbestos Type(s)
E536	0.4	TP3	S		No Asbestos Detected
E540	0.2	TP7	S		No Asbestos Detected
E542	0.2	TP9	S		No Asbestos Detected
E545	0.5	TP12	S		No Asbestos Detected
E548	1.3	TP15	S		No Asbestos Detected
E550	0.4	TP17	S		No Asbestos Detected
E553	0.5	TP20	S		No Asbestos Detected
E556	0.5	TP23	S		No Asbestos Detected
E563	0.4	TP29	S		No Asbestos Detected
E565	0.5	TP31	S		No Asbestos Detected
E568	0.4	TP34	S		No Asbestos Detected

Notes:- Estimates of asbestos content are defined as Trace (<2%), Significant (2 - 50%), and Substantial (>50%)

Any estimate of asbestos content within bulk materials is outside the scope of accreditation

* denotes analysis outside the scope of our UKAS accreditation

TechniChem Laboratories Ltd.

M. White

TABLE XXX GROUNDWATER ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 10 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E569	E570	E571	E572						
Sample Depth (m)										
Sample No.	SW1	SW2	TP8	TP19						
Sample Description	W	W	W	W						
009 pH	6.7	6.2	6.3	7.3						
*Electrical Conductivity $\mu\text{S/cm}$										
*Dissolved Oxygen										
*Ammonia as N										
*025a Sulphate as SO_4 mg/l	220	530	160	790						
014 Monohydric Phenol	<20	<20	<20	<20						
005 Total Cyanide	<30	<30	<30	<30						
030 Hydrocarbon Oil by IR	<100	<100	<100	<100						
022 Total PAH by GC										
016 Arsenic	11	12	8	15						
016 Cadmium	<1	<1	<1	<1						
016 Chromium	19	35	20	40						
016 Lead	<10	<10	<10	<10						
028 Mercury	<0.05	<0.05	<0.05	<0.05						
016 Copper	<5	<5	<5	<5						
016 Nickel	9	53	10	<5						
016 Zinc	14	100	7	<5						
016 Iron										

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in $\mu\text{g/l}$ except for pH and sulphate (mg/l)

-	=	No Analysis Undertaken
DWQ	=	Drinking Water Quality Standards
.	=	Dutch C Guideline
NG	=	No Guideline
"shaded"	=	In excess of Dutch I (DWQ for sulphate)

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TEST REPORT

TABLE XXX GROUNDWATER ANALYTICAL RESULTS - GENERAL SUITE

Our Report No: 1102

Page 11 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E569	E570	E571	E572						
Sample Depth (m)										
Sample No.	SW1	SW2	TP8	TP19						
Sample Description	W	W	W	W						
009 pH	6.7	6.2	6.3	7.3						
*033 Electrical Conductivity $\mu\text{S/cm}$										
*Total Dissolved Solids										
*025a Sulphate as SO_4	220000	530000	160000	790000						
011 Chloride	27000	28000	35000	<10000						
011 Nitrate as N	380	1100	1100	1300						
*Nitrite as N										
*Ammonia as N	730	740	77	68						
*Phosphate as P										
*Fluoride as F										
*Hardness as CaCO_3 mg/l										
*Alkalinity as CaCO_3 mg/l	150	50	100	380						
016 Sodium	29000	37000	21000	54000						
016 Potassium	9100	9200	4200	28000						
016 Calcium	91000	140000	57000	300000						
016 Magnesium	30000	58000	34000	100000						
016 Copper										
016 Zinc										
016 Iron										

*Denotes analysis outside the scope of our UKAS accreditation.

All results expressed in $\mu\text{g/l}$ except for pH unless stated.

-	=	No Analysis Undertaken
DWQ	=	Drinking Water Quality Standards
*	=	Dutch C Guideline
NG	=	No Guideline
"shaded"	=	In excess of Dutch I (DWQ for sulphate)

M. Smith

TABLE XXX GROUNDWATER ANALYTICAL RESULTS - 040 VOC BY HEAD SPACE GC-MS Results in µg/l

Our Report No: 1102

Page 12 of 12 pages

Your Order No: Instns. of 04.01.2001

CLIENT: ENVIRON UK Ltd

35 no. soil & 4 no. water samples submitted for analysis on 04.01.2001

DATE OF ISSUE: 22nd January 2001

Project Name: Carlton

Project Code: 61-C4594

Lab Ref No.	E569	E570	E571	E572						
Sample Depth (m)										
Sample No.	SW1	SW2	TP8	TP19						
Sample Description	W	W	W	W						
Vinyl chloride	<10	<10	<10	<10						
Chloroethane	<1	<1	<1	<1						
Trichlorofluoromethane	<1	<1	<1	<1						
1,1-Dichloroethene	<1	<1	<1	<1						
1,1,2-trichloro-1,2,2-trifluoroethane	<25	<25	<25	<25						
Dichloromethane	<25	<25	<25	<25						
trans-1,2 Dichloroethene	<1	<1	<1	<1						
MTBE	<1	<1	<1	<1						
1,1 -Dichloroethane	<1	<1	<1	<1						
Cis-1,2 dichloroethene	<1	<1	<1	<1						
Chloroform	<1	<1	<1	<1						
1,1,1-Trichloroethane	<1	<1	<1	<1						
1,2-Dichloroethane	<1	<1	<1	<1						
Benzene	<1	<1	<1	<1						
Carbon tetrachloride	<1	<1	<1	<1						
Trichloroethene	<1	<1	<1	<1						
Bromodichloromethane	<1	<1	<1	<1						
cis-1,3 Dichloropropene	<1	<1	<1	<1						
Toluene	<1	<1	<1	<1						
trans-1,3 dichloropropene	<1	<1	<1	<1						
1,1,2-Trichloroethane	<1	<1	<1	<1						
Dibromochloromethane	<1	<1	<1	<1						
Tetrachloroethene	<1	<1	<1	<1						
Chlorobenzene	<1	<1	<1	<1						
Ethyl benzene	<1	<1	<1	<1						
m,p-Xylenes	<1	<1	<1	<1						
Bromoform	<1	<1	<1	<1						
o-Xylene	<1	<1	<1	<1						
1,1,2,2 Tetrachloroethane	<1	<1	<1	<1						
1,3,5 Trimethylbenzene	<1	<1	<1	<1						
1,2,4 Trimethylbenzene	<1	<1	<1	<1						
1,3 Dichlorobenzene	<1	<1	<1	<1						
1,4 Dichlorobenzene	<1	<1	<1	<1						
1,2 Dichlorobenzene	<1	<1	<1	<1						

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