Our Ref: 20873/DM01
Your Ref:

BURO HAPPOLD LEEDS
JOB No. 022413 | FILE No. FO
FL DB
OC's CO'H
04 JAN 2008
I certify that this is a true, accurate and certified copy of the original document
EXAMINED: EW

FAO: Chris O'Hara
Buro Happold
2 Brewery Place
Brewery Wharf
Leeds
LS10 1NE

3 January 2008

Dear Chris,

Final report, Penistone Grammar School.

We have pleasure in enclosing one copy of our factual report on the above investigation. A master disc of the core photographs is also enclosed.

Would you kindly note it is our standard practice to retain all cores and samples for four weeks from the completion of each investigation. Cores and samples from the above job will therefore become disposable one month from the above date, unless we receive written instructions from you to the contrary. Should you wish cores to be kept longer, a storage charge will be made payable in advance.

The account invoice for the contract will be forwarded under separate cover.

Yours sincerely
Geotechnical Engineering Limited

[redacted]

David Marshall BSc (Hons) MSc (AEG) FGS
Geoenvironmental Engineer

Directors: A. B. Milne BSc MSc DIC CEng MICE A. L. M. Milne
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REPORT

geotechnical

SUBJECT	GROUND INVESTIGATION
SITE	PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY
PROJECT	PROPOSED DEVELOPMENT
CLIENT	LAING O'ROURKE
ENGINEER	BURO HAPPOLD
INSTRUCTION	Verbal Instruction from Engineer
GEL REPORT No.	20873 Volume 1 of 1
Date of Report	2 January 2008

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APPENDIX A	EXPLORATORY HOLE DATA AND IN SITU TESTING
APPENDIX B	LABORATORY TESTING
APPENDIX C	CHEMICAL TESTING

1. INTRODUCTION

It is proposed to develop several school buildings at Penistone Grammar School, Pensitone, Barnsley.
Geotechnical Engineering Limited was instructed to carry out an investigation under the direction and supervision of the Engineer to determine the ground conditions.

This report describes the investigation and presents the findings.

2. SITE LOCATION

The site is situated at Penistone Grammar School, Huddersfield Road, Penistone, Sheffield, S36 7BX and may be located by its National Grid co-ordinates SE241 041.

3. GROUND INVESTIGATION

3.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:1999 during the period 28th August 2007 to 5th September 2007 and comprised three boreholes and eight window sample holes.

The exploratory hole locations were selected by the Engineer and set out by this Company and are shown on Figure 1.

The boreholes, referenced BH01 to BH03 (Appendix A), were formed using a track-mounted Geotechnical Pioneer Rig. Initially, an inspection pit was hand excavated at

each borehole location to a maximum depth of 1.20m to check for buried services. Heavy duty dynamic sampling techniques were employed from the base of the inspection pit to produce a continuous disturbed sample of 112mm nominal diameter reducing to 98mm as the borehole was advanced. The samples were recovered in semi-rigid plastic liner.

On refusal to dynamic sampling the boreholes were continued by rotary core drilling techniques utilising a water flush. A double-tube swivel core barrel with a semi-rigid plastic liner was utilised to recover continuous cores of 93mm diameter.

The dynamic samples and rotary cores were extracted horizontally from the sampler and core barrel respectively, the semi-rigid liner was cut to length and caps placed at each end to retain moisture. All samples and core were retained in sequence in labelled, wooden coreboxes.

Standard penetration tests (SPT) were carried out in general accordance with BS1377: Part 9:1990:3.3. A split barrel or a solid cone was used depending upon the materials encountered and the split barrel samples retained in airtight jars. The SPT N value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Where low penetration was recorded the seating drive was terminated at 25 blows and the test drive completed after a further 50 blows. Detailed SPT results are presented in Appendix A and summarised as N values on the borehole logs.

Boreholes were monitored for groundwater ingress as dynamic sampling proceeded. Water levels were also recorded at the start and finish of each day's work and on completion of the borehole and are presented on the relevant log.

On completion gas/water monitoring standpipes were installed in BH01 to BH03. Each installation consisted of a 50mm ID HDPE slotted tube set in a filter response zone of non-calcareous pea gravel. The installation was sealed below (BH03 only), and above the response zones with a bentonite plug and accessed via a valve assembly. The installations were protected at the surface by a lockable, stopcock cover set in concrete. Installation details are given on the relevant borehole log.

The installations were tested for methane, carbon dioxide, oxygen and hydrogen sulphide using a Gas Analyser GA2000. Installations were monitored for gas flow using a flow pod attached to the instrument and reported as gas flow in litres/hour. Subsequent readings are presented in Appendix A.

On completion slotted standpipes were installed in BH01 to BH03. Each standpipe consisted of a 19mm ID PVC slotted tube set in a granular filter medium and sealed above and below with a bentonite plug. The installations were protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log. Subsequent water level readings are tabulated in Appendix A.

The boreholes, referenced WS01 to WS08 (Appendix A), were formed using a Terrier 2000 rig. Initially, an inspection pit was hand excavated at each borehole location to a maximum depth of 1.20m to check for buried services. Dynamic sampling techniques were employed from the base of the inspection pit to produce a continuous disturbed sample of 83mm diameter reducing to 72mm as the borehole was advanced. The samples were recovered in semi-rigid plastic liner.

The samples were extracted horizontally from the sampler, labelled and caps placed each end to retain moisture.

The boreholes WS01, WS03 and WS06 were terminated within the inspection pits at depths of 0.30m, 0.50m and 0.10m respectively due to the presence of possibly asbestos containing material. The borehole WS05 refused to dynamic sampling at 0.80m on a concrete obstruction.

Boreholes were monitored for groundwater ingress as boring proceeded. Upon encountering water, boring was temporarily stopped to allow the level to stabilise. Water levels were also recorded on completion of the borehole and are presented on the relevant log.

On completion, WS01 to WS08 were backfilled with arisings and the surface reinstated.

On completion of fieldwork all samples were brought to this Company's laboratory for logging, testing and storage.

3.2 Logging

The logging of soils and rocks was carried out by an Engineering Geologist in general accordance with BS5930:1999. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the core and samples are given in the borehole logs, Appendix A, along with details of sampling, in situ testing, groundwater ingress and relevant comments on drilling techniques.

Prior to logging, photographs of the borehole dynamic samples and core were taken and are presented separately.

3.3 Laboratory Testing

A schedule of laboratory tests was prepared by the Engineer.

Point load index tests were carried out on thirty one selected lengths of core in accordance with ISRM (1985).

Two rock cores were tested for their unconfined compressive strength in accordance with ISRM (1981).

3.4 Chemical Testing

Soil samples were dispatched to Alcontrol Geochem, Hawarden under full chain of custody documentation for storage and chemical analysis. The laboratory holds UKAS, ISO 17025 and MCERTS accreditation for some of the analyses undertaken

A schedule of chemical testing was prepared by the Engineer with selected samples subjected to the following in-house chemical analysis.

Eight soil samples were subjected to the following in-house chemical analyses:

- Arsenic (Total)
- Boron (Water Soluble)
- Cadmium (Total)
- Chromium (Total)
- Copper (Total)
- Lead (Total)
- Mercury (Total)
- Nickel (Total)
- Selenium (Total)
- Zinc (Total)
- pH
- Water Soluble Sulphate as SO_4
- Sulphide (Acid Soluble)
- Soil Organic Matter Content
- Total Organic Carbon
- Phenols (Monohydric)
- Cyanide (Total and Free)
- % Stones Greater than 10mm
- Asbestos Presence Screen
- Loss on Ignition
- Extractable Petroleum Hydrocarbons (C10-C40)
- Mineral Oil
- Gasoline Range Organics (C4-C10)
- Gasoline Range Organics (C4-C10)
- Benzene
- Toluene
- Ethyl benzene
- Xylenes (m & p) and (O)
- Methyl-tertiary-butyl-ether (MTBE)
- Coronene
- Polyaromatic Hydrocarbons ($USEPA_{16}$ PAH)
- Poly-Chlorinated bi-Phenyls (PCB's, 7 congeners)

Leachability testing using a 10:1 leachate preparation in accordance with BS EN 12457-2 (single batch 10:1) was undertaken on eight selected samples, which were subjected to the following in-house chemical analysis;

- Arsenic
- Barium
- Boron (Dissolved)
- Cadmium
- Chromium
- Copper
- Mercury
- Molybdenum
- Fluoride
- Sulphate as SO_4
- Total Dissolved Solids
- Phenols (Monohydric)
- Dissolved Organic Carbon
- Gasoline Range Organics (C_4-C_{12})
- Methyl-tertiary-butyl-ether (MTBE)
- Benzene

- Nickel
- Lead
- Antimony
- Selenium
- Zinc
- Chloride
- Toluene
- Ethyl benzene
- Xylenes (m & p) and (o)
- Gasoline Range Organics C5-C12 Aliphatic/Aromatic
- Extractable Petroleum Hydrocarbons
- Polyaromatic Hydrocarbons ($USEPA_{16}$ PAH)

Chemical Results for the soil and leachate analysis are presented in Appendix C.

4. REFERENCES

British Standards Institution (1999): Code of practice for site investigations. BS 5930.

British Standards Institution (1990): Methods of tests for soils for civil engineering purposes. BS 1377 Parts 1-9.

ISRM Suggested methods for rock characterisation, testing and monitoring, edited by E T Brown (1981). Pergamon Press.

ISRM Suggested method for determining point load strength, revision to ISRM suggested method (1985). Pergamon Press.

GEOTECHNICAL ENGINEERING LIMITED

[redacted]

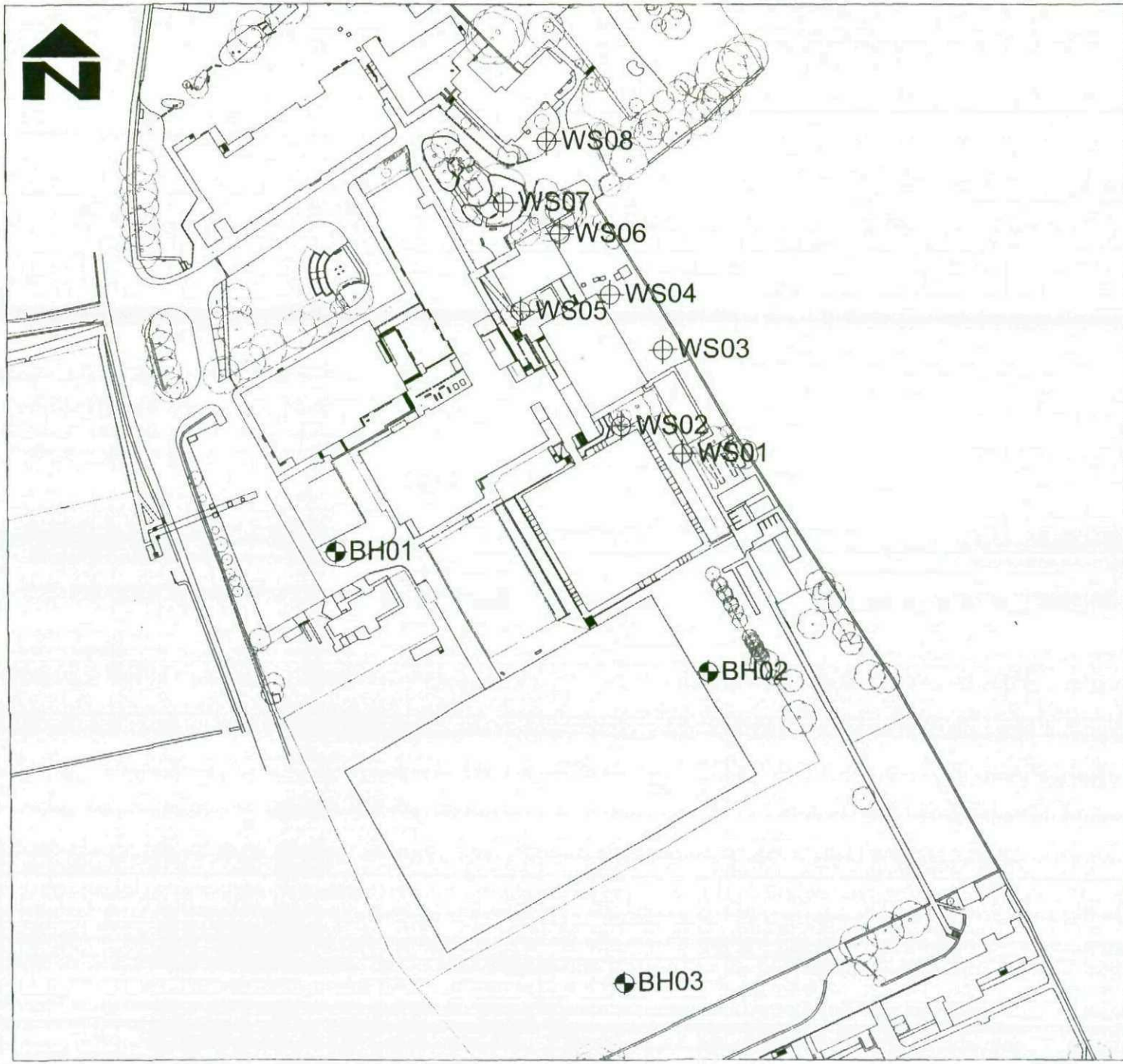
J D Marshall BSc(Hons) MSc(AEG) FGS

Geoenvironmental Engineer

[redacted]

J C W Hanson BSc(Hons) MSc CGeol FGS EurGeol

Director



Notes
Reproduced from the plan supplied by the Engineer

KEY

= Approximate Borehole location

= Approximate Window Sample location

Geotechnical Engineering Limited

SITE PLAN

Client: LAING O'ROURKE

Site: PENISTONE GRAMMER SCHOOL, PENISTONE, BARNSLEY

Scale: 1 : 1,000 @A3

CONTRACT	FIGURE
20873	1

APPENDIX A

EXPLORATORY HOLE DATA AND IN SITU TESTING

Geotechnical Engineering Limited

KEY TO EXPLORATORY HOLE LOGS



Sample type

D	*Small disturbed sample*	D*	Contamination sample		
B	Large disturbed sample	W	Water sample	U	Undisturbed sample
P	Piston sample	X	Dynamic sample	C	Core sample

Test type

S SPT - Split spoon sampler followed by SPT 'N' value
C SPT - Solid cone followed by SPT 'N' value
*250 - Where full test drive not completed, linearly extrapolated N value reported
** - No effective penetration

H *Hand vane – direct reading in kPa – not corrected for BS1377 (1990). Re* denotes refusal.*
M Mackintosh probe result – number of blows to achieve 100mm penetration.
PP Pocket penetrometer result – direct reading in kg/sq.cm.
Vo Headspace vapour readings, uncorrected peak values in ppm, using a PID (calibrated with Isobutylene, using a 10.6 eV bulb).

Sample/core range/I_f

Dynamic sample

Undisturbed sample

X = Total Core Recovery (TCR) as percentage of core run. Where value significantly exceeds 100%, a note is given in Remarks on log.

Y = Solid Core Recovery (SCR) as percentage of core run. Note: assessment of solid core is based on full diameter.

Z = Rock Quality Designation (RQD). The amount of solid core greater than 100mm expressed as percentage of core run.

Where SPT has been carried out at beginning of core run, disturbed section of core excluded from SCR and RQD assessment.

I_f - fracture spacing – the average fracture spacing (in millimetres) over the indicated length of core. Where spacing varies significantly, the minimum, average and maximum values are given.
NI = non-intact core NA = not applicable

Instrumentation

Porous tip
Perforated standpipe
Gas monitoring standpipe
Granular response zone
Bentonite seal
Concrete
Cement/bentonite grout
Soil backfill

Stratum boundaries

Estimated boundary
Grading boundary

Geotechnical Engineering Limited

KEY TO EXPLORATORY HOLE LOGS



Logging

The logging of soils and rocks has been carried out in general accordance with BS 5930:1999

For mixed soils the proportions of secondary constituents have been described using the following terms:

Description before SOIL NAME	SAND or GRAVEL	CLAY or SILT	Description after SOIL NAME
slightly *	< 5%	< 35%	with a little
*	5 – 20%	35 – 65%	with some
Very *	> 20%	> 65%	with much

* clayey, silty, sandy or gravelly as appropriate

For rocks the term fracture has been used to identify a mechanical break within the core. Where possible incipient and drilling induced fractures have been excluded from the assessment of the fracture state. Where doubt exists, a note has been made in the descriptions.

General Comments

The process of drilling and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

Indicated water levels are those recorded during the progress of drilling in open or cased boreholes and may not represent standing water levels.

Legends are drawn in accordance with BS 5930:1999.

All depths are measured along the axis of the borehole and are related to ground level at the point of entry.

Geotechnical Engineering Limited

BOREHOLE LOG

BH01

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Start Date 28 August 2007

End Date 30 August 2007

Sheet 1 of 3

Scale 1 : 50

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
28/08/07 1030hrs	1B	0.20	-0.30						MADE GROUND: Grass over light grey sandy clayey subangular to subrounded fine to coarse gravel of clinker, mudstone and sandstone.			
	2B	0.50	-0.60									
	3D*	0.50										
	4D*	1.00								1.10		
	5B	1.00	-1.10	Nil	S 27				Stiff friable orange-brown, locally mottled grey CLAY with some subangular medium gravel of sandstone lithorelicts.			
	6D	1.20	-1.65							1.55		
	7X	1.20	-2.20						Stiff becoming hard fissured grey, locally mottled red-brown and orange CLAY.			
	8D	2.20	-2.33	Nil	S*273				2.02m:Becoming friable	2.20		
	9C	2.20	-3.00			98 35 0	1 32 85		Moderately weak to moderately strong brown and grey-brown fine grained SANDSTONE/SILTSTONE Fractures are extremely closely to closely spaced horizontal and subhorizontal planar and irregular open (up to 8mm), with some sandy subangular fine gravel of sandstone infill, with some very dark purple discolouration to fracture planes. 3.00 - 4.50m:Horizontal and subhorizontal cross bedded grey and dark grey bedding planes			
	10C	3.00	-4.50	2.20		93 77 0						
	11C	4.50	-6.00	2.20		97 80 60	NI 150 360		4.50m:Fractures become very closely to medium spaced 4.90 - 5.05m:Recovered as subangular fine to medium gravel of sandstone 5.52 - 5.72m:Locally strong, light grey.			
	12C	6.00	-7.50			103 100 97						
28/08/07 1830hrs 2.77m												
29/08/07 0730hrs 3.25m	13C	7.50	-9.00			102 102 46			7.65 - 8.30m:Subvertical irregular rough (moderately open to open) fracture with orange-brown staining and some			
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-2.20m. Waterflush rotary core drilled (116mm) 2.20-20.50m.

CASING: 140mm diam to 2.20m.

BACKFILL: On completion, a slotted standpipe (50mm) was installed to 20.50m, granular response zone 20.50-2.20m, bentonite seal 2.20-1.50m, a slotted standpipe (19mm) was installed to 1.50m, granular response zone 1.50-0.90m, bentonite seal 0.90-0.20m, concrete and stopcock cover 0.20-0.00m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

AGS

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BOREHOLE LOG



BH01

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 2 of 3

Start Date 28 August 2007

Scale 1 : 50

End Date 30 August 2007

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from	to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
									partially cemented sandstone infill			
	14C	9.00	-9.65			92 85 20			9.20m:Becoming locally strong.	9.65		
	15C	9.65	-10.50			100 42 0	NI		Moderately weak grey-brown SILTSTONE, recovered as subangular fine to coarse gravel of siltstone.	10.25		
	16C	10.50	-11.65			100 72 0	NI 20 80		Moderately weak, locally weak laminated grey-brown SILTSTONE. Fractures are very closely to closely spaced horizontal planar smooth open with some orange-brown staining and rare silt infill. 10.25 - 10.50m:Recovered as subrounded medium to coarse gravel of siltstone 10.50 - 11.75m:With rare subvertical and subhorizontal fractures, locally curvi-planar, locally with some soft silt infill	11.75		
	17C	11.75	-12.00			100 100 0	60 80 95		Moderately strong to strong light grey horizontally laminated SILTSTONE. Fractures are very closely to closely spaced planar and curvi-planar smooth moderately open clean fractures. 12.00 - 13.50m:Fractures are occasionally extremely closely spaced with some orange-brown discolouration 12.40 - 13.27m:Locally moderately weak, approximately 20mm orange-brown penetrative discolouration above and below fracture plane			
	18C	12.00	-13.50			101 100 52	5 100 160			13.50		
	19C	13.50	-15.00			87 37 0	1 20 40		Weak to moderately weak (horizontal and subhorizontal cross bedded) dark grey and grey SILTSTONE. Fractures are extremely closely spaced horizontal (and rare subvertical) curvi-planar smooth open with soft silt infill.	14.20		
							NI		Moderately weak dark grey MUDSTONE, recovered as slightly clayey tabular subangular fine to medium gravel of mudstone, locally discoloured brown and orange-brown.	15.00		
	20C	15.00	-16.55			85 56 0	8 20 35		Weak, locally moderately weak dark grey MUDSTONE. Fractures are very closely to closely spaced horizontal planar and curvi-planar smooth tight to open and clean. 15.47 - 15.64m:Recovered as clayey subrounded medium to coarse gravel of mudstone 15.89 - 16.50m:Recovered as clayey subrounded medium to coarse gravel of mudstone			
							NI 45 70					
	21C	16.55	-18.00			53 17 0	NI 15 42		16.55 - 18.00m:Zone of core loss. 16.70 - 17.05m:Recovered as clayey subrounded to rounded fine to medium gravel of mudstone 17.22 - 18.00m:Recovered as clayey subrounded to rounded fine to medium gravel of mudstone			
									Continued Next Page	(18.00)		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush.	20873	ED

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BOREHOLE LOG



BH01

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 3 of 3

Start Date 28 August 2007

Scale 1 : 50

End Date 30 August 2007

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
	22C	18.00	-19.50			90 40 0	15 25 70					
							NI		18.70 - 19.15m:Recovered as clayey subrounded to rounded fine to medium gravel of mudstone			
29/08/07 1830hrs 9.20m							20 25 40					
30/08/07 0800hrs 13.97m	23C	19.50	-20.50	2.20		110 25 0	NI 35 70					
							NI		19.96 - 20.50m:Recovered as clayey subrounded to rounded fine to medium gravel of mudstone			
30/08/07 1100hrs										20.50		
									Borehole completed at 20.50m			
										(28.00)		

water strike (m) casing (m) rose to (m) time to rise (m) remarks

Groundwater not encountered prior to use of water flush

AGS

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BOREHOLE LOG



BH02

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 3

Start Date 30 August 2007

Scale 1 : 50

End Date 31 August 2007

Depth 20.80 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1100hrs	1B	0.10	-0.20						Grass over brown slightly sandy SILT with rare subangular fine gravel of sandstone, and rare rootlets.	0.35		
	2B	0.50	-0.60						Firm becoming stiff orange-brown CLAY with a little locally some, angular to subangular fine to coarse gravel of sandstone.			
	3D*	0.50										
	4B	1.00	-1.10									
	5D*	1.00										
	6D	1.20	-1.65	Nil	S 19							
	7X	1.20	-2.20							1.95		
	8D	2.20	-2.65	Nil	S 13				Stiff orange-brown SILT with some angular to subangular coarse gravel and cobbles of sandstone, locally with some fine clay partings.	2.15		
	9X	2.20	-3.20							2.50		
									Firm orange-brown CLAY with some angular to subangular fine to coarse gravel of sandstone. 2.35 - 2.50m:Becoming very friable	2.55		
	10D	3.20	-3.65	Nil	S 31				Stiff dark grey-brown slightly organic CLAY.	3.20		
	11X	3.20	-4.20						Stiff brown sandy CLAY with a little locally some, subrounded fine to medium gravel of sandstone.			
									Very stiff sandy SILT with a little locally some, subangular fine to medium (with rare coarse) gravel of sandstone.			
	12D	4.20	-4.65	Nil	S 25							
	13X	4.20	-5.20									
	14D	5.20	-5.65	Nil	S 21							
	15X	5.20	-6.80						5.20 - 6.80m:With rare medium gravel sized pockets of orange fine to medium grained sand			
	16D	6.80	-6.91	Nil	S*273					6.80		
	17C	6.80	-7.30			70 64 0	8 50 110		Moderately weak, locally moderately strong, brown-grey fine grained SANDSTONE. Fractures are very closely (occasionally extremely closely) to closely spaced horizontal planar and curvi-planar rough open to very open, locally with some clayey subangular fine gravel infill and some red-brown discolouration.			
	18C	7.30	-8.80			100 15 7						
									Continued Next Page	{8.00}		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (113mm) 1.20-6.80m. Waterflush rotary core drilled (116mm) 6.80m-20.80m.

CASING: 140mm diam to 6.80m.

On completion, a slotted standpipe (50mm) was installed to 20.80m, granular response zone 20.80-6.80m, bentonite seal 6.80-5.00m, a slotted standpipe (19mm) was installed to 5.00m, granular response zone 5.00-1.80m, bentonite seal 1.80-0.15m, concrete and stopcock cover 0.15-0.00m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks	AGS	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush.		20873	ED

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BOREHOLE LOG



BH02

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY — Sheet 2 of 3

Start Date 30 August 2007 — Scale 1 : 50

End Date 31 August 2007 — Depth 20.80 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I$_f$	instru -ment	description	depth (m)	reduced level (m)	legend
						8 50 110						
	19C	8.80	-10.30			100 0 0	NI		8.65 - 8.80m:Subvertical planar rough open fracture with orange-brown clayey subangular fine gravel infill Moderately weak to moderately strong brown and dark grey SANDSTONE. NI, fractures are extremely closely spaced randomly orientated planar, smooth with slight clay infill, locally recovered as clayey subangular fine to coarse gavel of sandstone.	8.80		
	20C	10.30	-11.80			70 0 0			Very weak MUDSTONE. NI, fractures are extremely closely spaced randomly orientated planar smooth tight, locally with slight clay infill. 10.30 - 11.80m:Locally tending to firm fissured clay	10.30		
30/08/07 1830hrs 7.10m												
31/08/07 0730hrs 7.27m	21C	11.80	-13.30			90 4 0			11.80 - 14.00m:Locally discoloured orange-brown on fracture planes			
	22C	13.30	-14.80			93 29 0			13.30 - 14.00m:Becoming grey	14.00		
							3 42 86		Weak to moderately weak dark grey SILTSTONE. Fractures are extremely closely to closely spaced horizontal planar rough and curvi-planar tight, locally with some clay infill.			
							NI					
	23C	14.80	-16.30			73 34 0	NI		14.40 - 14.80m:Decomposed / disintegrated siltstone, comprising clayey subangular fine to coarse gravel and cobbles of siltstone	14.80		
									Weak to moderately weak dark grey SILTSTONE recovered as slightly silty angular to subrounded medium to coarse gravel and cobbles of siltstone.			
		16.30	-16.38	6.80	C*429							
	24C	16.30	-17.80			80 11 0			17.10 - 17.80m:Recovered as firm silt with some locally much angular to subangular fine to coarse gravel of siltstone			
	25C	17.80	-19.30			55	NI			17.80		
									Continued Next Page	(18.00)		

water strike (m) | casing (m) | rose to (m) | time to rise (m) | remarks

Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG



BH02

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 3 of 3

Start Date 30 August 2007

Scale 1 : 50

End Date 31 August 2007

Depth 20.80 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
						20 0	NI		Moderately strong dark grey MUDSTONE, recovered as slightly clayey subangular fine to coarse gravel and cobbles of mudstone. 19.00m:Becoming weak.			
	26C	19.30	-19.45 -20.80	6.80	C*200	104 68 64	NI 150 240		Moderately weak black SILTSTONE. Fractures are very closely to closely spaced horizontal irregular smooth very open, with some silty subrounded fine gravel of siltstone infill.	19.30 19.60		
31/08/07 1400hrs 7.23m									Moderately strong grey fine grained SANDSTONE. Fractures are very closely to medium spaced horizontal, subhorizontal and vertical irregular rough open clean, with some black discolouration to fracture planes, locally very open with clayey sandy subangular fine gravel of sandstone infill. 20.20 - 20.35m:Recovered as angular coarse gravel and cobbles of sandstone 20.60 - 20.80m:Recovered as angular medium to coarse gravel and cobbles of sandstone	20.80		
									Borehole completed at 20.80m.	{28.00}		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush.	20873	ED

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BOREHOLE LOG

BH03

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Start Date 30 August 2007

End Date 5 September 2007

Sheet 1 of 3

Scale 1 : 50

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1530hrs	1B	0.10	-0.20						TOPSOIL: Grass over firm brown slightly sandy silt with rare fine to medium gravel of sandstone and rare rootlets.	0.40		
	2B	0.50	-0.60						Firm becoming stiff orange-brown CLAY with rare angular to subangular fine to coarse gravel and cobbles of sandstone.			
30/08/07 1630hrs Dry	3B	1.00	-1.10									
03/09/07 1100hrs Dry	4D	1.20	-1.65	Nil	S 19				1.20m:Becoming stiff with rare fine silty partings			
	5X	1.20	-2.20									
	6D	2.20	-2.51	Nil	S*94				1.95m:Becoming very friable			
	7C	2.20	-3.00			50	NA		2.20m:Becoming hard and brown	3.00		
	8C	3.00	-4.50			97 97 64	40 100 185		Moderately weak to moderately strong cross bedded brown and dark grey-brown fine grained SANDSTONE. Fractures are very closely to closely spaced horizontal planar and curvi-planar smooth open and clean, locally with slight silt infill.			
	9C	4.50	-6.00			97 0 0	NI		4.50 - 5.40m:Recovered as clayey subangular fine to medium gravel of sandstone	5.40		
									Moderately weak dark grey SILTSTONE, recovered as silty angular fine to coarse gravel of siltstone.	6.00		
	10C	6.00	-7.50			100 15 0			Very weak dark grey MUDSTONE. NI, fractures are extremely closely spaced randomly orientated planar smooth tight with some soft clay infill.			
03/09/07 1730hrs 3.24m										7.50		
04/09/07 0800hrs 3.53m	11C	7.50	-9.00			87 77 0	NI		Moderately weak to moderately strong dark grey SILTSTONE. Fractures are extremely closely to closely spaced horizontal and subhorizontal stepped smooth tight Continued Next Page	(8.00)		

EQUIPMENT: Geotechnical Pioneer rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (128mm) 1.20-2.20m. Waterflush rotary core drilled (116mm) 2.20-20.50m.

CASING: 140mm diam to 2.20m.

On completion, a slotted standpipe (50mm) was installed to 10.00m, bentonite seal 20.50-10.00m, granular response zone 10.50-3.80m, bentonite seal 3.80-2.00m, a slotted standpipe (19mm) was installed to 2.00m, granular response zone 2.00-0.80m, bentonite seal 0.80-0.15m, concrete and stopcock cover 0.15-0.00m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered prior to use of water flush.

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BOREHOLE LOG

BH03

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 2 of 3

Start Date 30 August 2007

Scale 1 : 50

End Date 5 September 2007

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from to	casing depth (m)	test type & value	samp. /core range	If	instru -ment	description	depth (m)	reduced level (m)	legend
						NI 20 30		to moderately open with slight clay infill and some brown discolouration to fracture planes Fractures are locally very open with clayey subangular to subrounded fine rounded gravel infill.			
	12C	9.00 -10.50			97 7 0	NI		7.50 - 7.90m:Drilling disturbed, recovered as clayey subangular to subrounded fine to medium gravel of siltstone 9.00 - 11.25m:Recovered as angular to subangular fine to coarse gravel and cobbles of siltstone			
	13C	10.50 -12.00			97 27 0	45 55 85					
	14C	12.00 -13.50			103 37 0	NI		11.75 - 12.55m:Recovered as clayey angular fine to coarse gravel of siltstone			
	15C	13.50 -15.00			97 27 0	NI 10 20 80		13.50 - 14.40m:Recovered as clayey angular fine to coarse gravel and cobbles of siltstone 14.40 - 15.00m:With sub-vertical moderately open clean fractures			
	16C	15.00 -16.50			100 60 60	NI 187		14.85 - 14.90m:Firm grey clay Moderately strong horizontally laminated dark grey MUDSTONE. 15.00 - 15.25m:Recovered as clayey subangular fine to coarse gravel of mudstone	15.00 15.50		
						NI 20 100		Moderately strong light grey non-calcareous LIMESTONE with randomly orientated undulating 0.5 to 1mm thick black organic laminations.	15.90		
	17C	16.50 -18.00			100 32 7	NI 35 190		Moderately strong horizontally laminated grey non-calcareous LIMESTONE (Dolomite). Fractures are very closely to closely spaced subvertical undulating rough moderately open, with some orange-brown discolouration to fracture planes. Locally NI 15.90 - 16.00m:Recovered as grey, discoloured orange-brown angular fine to medium gravel of limestone 16.50 - 16.75m:Recovered as grey subangular to subrounded coarse gravel and cobbles of limestone	17.20 17.70		
04/09/07 1730hrs 10.87m						NI			17.90		
								Continued Next Page	{18.00}		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush	20873	

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BOREHOLE LOG



BH03

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 3 of 3

Start Date 30 August 2007

Scale 1 : 50

End Date 5 September 2007

Depth 20.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	I_f	instru -ment	description	depth (m)	reduced level (m)	legend
05/09/07 0800hrs 13.35m	18C	18.00	-19.50			100 42 25	NI 60 210		16.75 - 17.20m:With some orange-brown discolouration along fracture planes			
									Very strong orange-brown non-calcareous LIMESTONE. Fractures are very closely to closely spaced horizontal and subvertical undulating rough moderately open to open, locally with red-brown discolouration to fracture planes.			
									Very weak laminated dark grey MUDSTONE, recovered as angular fine to coarse gravel of mudstone.			
	19C	19.50	-20.50			100 83 33			Moderately strong to strong thinly interbedded horizontally laminated light grey non-calcareous LIMESTONE and MUDSTONE. Fractures are very closely to closely (occasionally medium) spaced undulating and planar smooth, rough tight to open. Locally with a little clay infill and orange-brown discolouration.			
05/09/07 1300hrs										20.50		
									Borehole completed at 20.50m.			
										(28.00)		

water strike (m)	casing (m)	rose to (m)	time to rise (m)	remarks	CONTRACT	CHECKED
				Groundwater not encountered prior to use of water flush.	20873	

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STANDARD PENETRATION TEST

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

borehole no.	borehole depth (m)	casing depth (m)	water level (m)	seating drive blows	seating drive pen (mm)	test drive blows	test drive pen (mm)	test type	N	remarks
BH01	1.20	Nil	Dry	3 5	75 75	5 7 7 8	75 75 75 75	S	27	
BH01	2.20	Nil	Dry	25	75	50	55	S	273	
BH02	1.20	Nil	Dry	3 2	75 75	4 4 5 6	75 75 75 75	S	19	
BH02	2.20	Nil	Dry	2 4	75 75	3 3 3 4	75 75 75 75	S	13	
BH02	3.20	Nil	Dry	7 7	75 75	7 7 9 8	75 75 75 75	S	31	
BH02	4.20	Nil	Dry	8 8	75 75	6 6 7 6	75 75 75 75	S	25	
BH02	5.20	Nil	Dry	5 5	75 75	5 6 5 5	75 75 75 75	S	21	
BH02	6.80	Nil	Dry	25	55	50	55	S	273	
BH02	16.30	6.80	7.19	25	45	50	35	C	429	
BH02	19.30	6.80	7.23	25	75	50	75	C	200	
BH03	1.20	Nil	Dry	3 3	75 75	4 4 5 6	75 75 75 75	S	19	
BH03	2.20	Nil	Dry	10 12	75 75	15 27 8	75 75 10	S	94	

notes:

1. *Test carried out in general accordance with BS.1377 : Part 9 : 3.3*
2. Test carried out using split spoon S, solid cone C.
3. Where full test drive not completed, linearly extrapolated N value reported.

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH01	19/09/07 11:47:00										DRY	

remarks
# denotes result exceeding capacity of gas monitoring equipment
19mm pipe.

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH01	19/09/07 11:30:00	989	2.1	0.9	0.0	12.3	0.0	0		17		
BH01	19/09/07 11:30:30			0.9	0.0	12.6	0.0	0				
BH01	19/09/07 11:31:00			1.0	0.0	12.6	0.0	0				
BH01	19/09/07 11:32:00			0.9	0.0	13.1	0.0	0				
BH01	19/09/07 11:33:00			1.0	0.0	14.5	0.0	0				
BH01	19/09/07 11:34:00			1.0	0.0	13.8	0.0	0				
BH01	19/09/07 11:35:00								0.0			
BH01	19/09/07 11:36.00								-0.1			
BH01	19/09/07 11:37:00								-0.1			
BH01	19/09/07 11:38:00								0.0			
BH01	19/09/07 11:39:00								0.0			
BH01	19/09/07 11:40:00								0.0			
BH01	19/09/07 11:41:00								-0.1			
BH01	19/09/07 11:42:00								-0.1			
BH01	19/09/07 11:43:00								0.0			
BH01	19/09/07 11:44:00								-0.1			
BH01	19/09/07 11:45:00											
BH01	19/09/07 11:46:00	989									16.72	

remarks
# denotes result exceeding capacity of gas monitoring equipment
50mm pipe

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20873	OM

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH02	19/09/07 12:27:00										DRY	

remarks
# denotes result exceeding capacity of gas monitoring equipment
19mm pipe.

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH02	19/09/07 12:10:00	988	2.1	0.3	0.0	12.9	0.0	0		17		
BH02	19/09/07 12:10:30			0.3	0.0	12.5	0.0	0				
BH02	19/09/07 12:11:00			0.3	0.0	12.5	0.0	0				
BH02	19/09/07 12:12:00			0.3	0.0	12.3	0.0	0				
BH02	19/09/07 12:13:00			0.3	0.0	12.4	0.0	0				
BH02	19/09/07 12:14:00			0.3	0.0	12.4	0.0	0				
BH02	19/09/07 12:15:00								0.4			
BH02	19/09/07 12:16:00								0.4			
BH02	19/09/07 12:17:00								0.5			
BH02	19/09/07 12:18:00								0.4			
BH02	19/09/07 12:19:00								0.5			
BH02	19/09/07 12:20:00								0.5			
BH02	19/09/07 12:21:00								0.4			
BH02	19/09/07 12:22:00								0.5			
BH02	19/09/07 12:23:00								0.4			
BH02	19/09/07 12:24:00								0.4			
BH02	19/09/07 12:25:00											
BH02	19/09/07 12:26:00	988									16.01	

remarks
# denotes result exceeding capacity of gas monitoring equipment
50mm pipe.

CONTRACT 20873

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH03	19/09/07 12:06:00										DRY	

remarks
# denotes result exceeding capacity of gas monitoring equipment
19mm pipe.

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GAS AND GROUNDWATER LEVELS

CLIENT: LAING O'ROURKE

SITE: PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Borehole /trial pit no.	date and time	barometric pressure (mb)	pressure differentiation (mm H_2O)	carbon dioxide (%)	methane (%)	oxygen (%)	LEL (%)	hydrogen sulphide (ppm)	gas flow (ltr/hr)	temperature (°C)	water level (m - bgl)	remarks
BH03	19/09/07 11:50:00	989	2.9	0.8	0.0	20.5	0.0	0		18		
BH03	19/09/07 11:50:30			0.7	0.0	20.5	0.0	0				
BH03	19/09/07 11:51:30			0.8	0.0	20.5	0.0	0				
BH03	19/09/07 11:52:30			0.5	0.0	20.5	0.0	0				
BH03	19/09/07 11:53:30			0.7	0.0	20.7	0.0	0				
BH03	19/09/07 11:54:30			0.8	0.0	20.6	0.0	0				
BH03	19/09/07 11:55:30								0.1			
BH03	19/09/07 11:56:30								0.0			
BH03	19/09/07 11:57:30								0.0			
BH03	19/09/07 11:58:30								0.1			
BH03	19/09/07 11:59:30								0.0			
BH03	19/09/07 12:00:30								0.0			
BH03	19/09/07 12:01:30								0.1			
BH03	19/09/07 12:02:30								0.0			
BH03	19/09/07 12:03:30								0.1			
BH03	19/09/07 12:04:30								0.1			
BH03	19/09/07 12:05:30											
BH03	19/09/07 12:06:30	989									6.59	

remarks
# denotes result exceeding capacity of gas monitoring equipment
50mm pipe

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BOREHOLE LOG



WS01

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 1

Start Date 30 August 2007

Scale 1 : 25

End Date 30 August 2007

Depth 0.30 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07									MADE GROUND: Grass over firm grey slightly sandy clay with some subrounded fine to coarse gravel and cobbles of brick, flint limestone and sandstone, with rare coarse gravel and cobble sized fragments of corrugated cement tile, possible Asbestos containing material.	0.30		
									Borehole completed at 0.30m	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-0.30m

CASING: Not installed.

BACKFILL. On completion, hole backfilled with local materials.

REMARKS: Borehole terminated at 0.30m due to the presence of (possible) Asbestos containing material.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

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BOREHOLE LOG



WS02

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 1

Start Date 30 August 2007

Scale 1 : 25

End Date 30 August 2007

Depth 0.90 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1200hrs								MADE GROUND: Grey clayey subangular fine to coarse gravel of flint and limestone.	0.05		
	1D*	0.20						MADE GROUND: Stiff friable orange-brown mottled grey clay with some subangular to rounded fine to coarse gravel of flint and sandstone.	0.25		
	2D*	0.60						Stiff friable brown and light brown CLAY with some subangular fine to coarse gravel of sandstone.	0.70		
30/08/07 1245hrs Dry	X	0.70	-0.80					Light brown sandy angular to subangular fine to coarse GRAVEL and cobbles of sandstone.	0.90		
	X	0.80	-0.90	Nil				Borehole completed at 0.90m.	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-0.70m. Dynamic sampled (98mm) 0.70-0.80m, (86mm) 080-0.90m.

CASING: Not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole refused at 0.90m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

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BOREHOLE LOG



WS03

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 1

Start Date 30 August 2007

Scale 1 : 25

End Date 30 August 2007

Depth 0.50 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1100hrs									MADE GROUND: Grey subangular to subrounded fine to coarse gravel of brick, concrete, flint and sandstone.	0.05		
30/08/07 1130hrs Dry	1D*	0.25							MADE GROUND: Dark brown sandy clayey subangular fine to coarse gravel and cobbles of brick, flint and sandstone.	0.35		
									MADE GROUND: Geotextile sheet over cobble sized fragments of corrugated cement tile, possible Asbestos containing material.	0.50		
									Borehole completed at 0.50m.	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-0.50m.

CASING: Not installed.

BACKFILL. On completion, hole backfilled with local materials.

REMARKS: Borehole terminated at 0.50m due to the presence of (possible) Asbestos containing material.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

AGS

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BOREHOLE LOG

WS04

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Start Date 30 August 2007

End Date 30 August 2007

Sheet 1 of 1

Scale 1 : 25

Depth 3.00 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp./core range	instru-ment	description	depth (m)	reduced level (m)	legend
30/08/07 0930hrs								MADE GROUND: Grey subangular to subrounded fine to coarse gravel of flint and limestone.	0.07		
								MADE GROUND: Firm brown slightly sandy clay with some, locally much angular to subangular fine to coarse gravel and cobbles of brick, flint and sandstone, with rare cobble sized fragments of timber.	0.55		
	1D*	0.50						MADE GROUND: Geotextile sheeting over firm dark brown slightly peaty clay with some subangular fine to medium gravel of brick and sandstone, with rare fine gravel sized black pockets of decomposed organics.	0.80		
	2D*	0.65						Firm friable light brown slightly sandy CLAY with rare subangular to subrounded medium gravel of sandstone.	1.00		
	3D*	1.00						Firm brown CLAY with rare black fine and medium gravel sized pockets of partially decomposed organics.			
	X	1.20	-2.00								
	4D*	1.40						1.50m:Becoming orange-brown			
									1.80		
								Orange-brown clayey subangular to subrounded fine and medium GRAVEL of sandstone.			
	X	2.00	-3.00	Nil							
	5D*	2.50									
30/08/07 1100hrs Dry								2.80m:Becoming dark orange-brown	3.00		
								Borehole completed at 3.00m	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-2.00m, (86mm) 2.00-3.00m.

CASING: Not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole refused at 3.00m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered

AGS

CONTRACT 20873

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BOREHOLE LOG



WS05

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Start Date 30 August 2007

End Date 30 August 2007

Sheet 1 of 1

Scale 1 : 25

Depth 0.80 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1245hrs								MADE GROUND: Firm grey-brown clay over friable grey-brown clay with some subangular fine to medium gravel of clinker, flint and sandstone.			
	1D*	0.30						MADE GROUND: Firm orange-brown slightly sandy CLAY with some subangular fine to coarse gravel of sandstone.	0.35		
30/08/07 1330hrs Dry	2D*	0.75						Borehole completed at 0.80m.	0.80		
									(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-0.80m.

CASING: Not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole refused at 0.80m on concrete.

water strike (m) casing (m) rose to (m) time to rise (min) remarks

Groundwater not encountered.

AGS

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Geotechnical Engineering Limited

BOREHOLE LOG



WS06

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 1

Start Date 30 August 2007

Scale 1 : 25

End Date 30 August 2007

Depth 0.10 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range		instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07									MADE GROUND: Grey-brown subangular fine to coarse gravel and cobbles of brick, flint and sandstone, with rare cobble sized fragments of corrugated cement tile, possible Asbestos containing material.	0.10		
									Borehole completed at 0.10m.	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-0.10m.

CASING: Not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole terminated at 0.10m due to the presence of (possible) Asbestos containing material.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

AGS

CONTRACT 20873

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Geotechnical Engineering Limited

BOREHOLE LOG



WS07

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Sheet 1 of 1

Start Date 30 August 2007

Scale 1 : 25

End Date 30 August 2007

Depth 2.10 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1330hrs								MADE GROUND: Wood chippings over firm friable brown clay with rare subangular fine to medium gravel of flint and sandstone, with frequent roots and rootlets and rare fine to medium gravel sized pockets of partially decomposed organics.			
	1D*	0.50							0.80		
								Firm becoming stiff orange-brown, mottled grey and brown CLAY with some subangular fine to medium gravel of sandstone.			
	2D*	1.00									
	X	1.20	-2.00								
								1.75m:10mm diameter tree root			
	3D*	1.80									
30/08/07 1415hrs Dry	X	2.00	-2.10						2.10		
								Borehole completed at 2.10m.			
									(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-2.00m, (86mm) 2.00-2.10m.

CASING: Not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole refused at 2.10m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

AGS

CONTRACT 20873

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Geotechnical Engineering Limited

BOREHOLE LOG



WS08

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

Start Date 30 August 2007

End Date 30 August 2007

Sheet 1 of 1

Scale 1 : 25

Depth 2.20 m

progress date/time water depth	sample no & type	depth (m) from	depth (m) to	casing depth (m)	test type & value	samp. /core range	instru -ment	description	depth (m)	reduced level (m)	legend
30/08/07 1415hrs								MADE GROUND: Grass over firm brown clay with rare rootlets.			
									0.25		
								Firm becoming stiff orange-brown slightly sandy CLAY with some subangular fine to coarse gravel and cobbles of sandstone.			
	1D*	0.50									
								0.75m:Becoming light orange-brown			
									1.00		
	2D*	1.00						Firm friable orange-brown CLAY with some subangular to subrounded fine to medium gravel of sandstone.			
	X	1.20	-2.00								
								1.80m:With rare black fine to medium gravel sized pockets of decomposed organics			
	3D*	1.90							2.00		
30/08/07 1520hrs Dry	X	2.00	-2.20					Firm orange-brown becoming red-brown slightly sandy CLAY with some angular to subangular fine to coarse gravel and cobbles of sandstone.	2.20		
								Borehole completed at 2.20m.	(4.00)		

EQUIPMENT: Geotechnical Terrier 2000 rig.

METHOD: Hand dug inspection pit 0.00-1.20m. Dynamic sampled (98mm) 1.20-2.00m, (86mm) 2.00-2.20m.

CASING: not installed.

BACKFILL: On completion, hole backfilled with local materials.

REMARKS: Borehole refused at 2.20m.

water strike (m)	casing (m)	rose to (m)	time to rise (min)	remarks
				Groundwater not encountered.

AGS

CONTRACT 20873

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APPENDIX B

LABORATORY TESTING

UKAS TESTING
2718

geotechnical

GEOTECHNICAL ENGINEERING

For the attention of Gary Purnell

Date of Issue: 28 September 2007

TEST REPORT

Project:	Penistone Grammar School, Penistone, Barnsley	Samples Received	13/09/07
GEL Report No:	20873	Instruction Received	13/09/07
Your Reference		Testing Commenced	21/09/07

SUMMARY OF RESULTS ATTACHED

Test Method and Description	Quantity	UKAS Accredited
ISRM: Suggested Methods:1981: Uniaxial Compressive Strength of Rock	2	No
ISRM: 1985: Point Load Strength Test	31	No

Remarks
The report should not be reproduced except in full without written permission from this Laboratory.

Approved signatories: M Adams (Dep. Lab Manager) A Rose (Dep. Lab Manager) K Hector (Quality Manager)

[redacted]

Doc No. TR01 Rev. No. 3 Revision date 01/08/06 DC:JH

Directors: A. B. Milne BSc MSc DIC CEng MICE A. L. M. Milne
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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. 1985

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
BH01	2.60	D		N		90	91	0.50	91.00	0.06	1.31	0.08	Brown MUDSTONE
BH01	2.60	A		N	90		60	0.10	82.92	0.01	1.26	0.02	Brown MUDSTONE
BH01	3.30	D		N		65	92	0.10	92.00	0.01	1.32	0.02	Brown SANDSTONE
BH01	3.30	A		N	92		38	3.00	66.72	0.67	1.14	0.77	Brown SANDSTONE
BH01	3.70	D		N		52	90	0.10	90.00	0.01	1.30	0.02	Brown SANDSTONE
BH01	3.70	A		N	90		37	1.50	65.11	0.35	1.13	0.40	Brown SANDSTONE
BH01	5.20	D		N		130	92	3.00	92.00	0.35	1.32	0.47	Brown SANDSTONE
BH01	5.20	A		N	92		70	10.00	90.55	1.22	1.31	1.59	Brown SANDSTONE
BH01	7.60	D		N		115	92	2.00	92.00	0.24	1.32	0.31	Brown SANDSTONE
BH01	7.60	A		N	92		73	11.00	92.47	1.29	1.32	1.70	Brown SANDSTONE
BH01	9.20	D		N		115	91	5.00	91.00	0.60	1.31	0.79	Brown SANDSTONE
BH01	9.20	A		N	91		64	17.00	86.11	2.29	1.28	2.93	Brown SANDSTONE
BH01	11.50	D		N		43	90	0.50	90.00	0.06	1.30	0.08	Grey SILTSTONE
BH01	11.50	A		N	90		38	0.50	65.99	0.11	1.13	0.13	Grey SILTSTONE
BH01	13.50	D		N		45	90	0.10	90.00	0.01	1.30	0.02	Grey SILTSTONE
BH01	13.50	A		N	90		30	2.50	58.63	0.73	1.07	0.78	Grey SILTSTONE
BH01	15.50	D		N		70	87	0.10	87.00	0.01	1.28	0.02	Grey MUDSTONE
BH01	15.50	A		N	87		43	3.00	69.02	0.63	1.16	0.73	Grey MUDSTONE
BH01	18.10	D		N		60	89	1.00	89.00	0.13	1.30	0.16	Grey MUDSTONE
BH01	18.10	A		N	89		36	2.00	63.87	0.49	1.12	0.55	Grey MUDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(1985): Suggested Methods for Determining Point Load Strength Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2.
* test orientation given relative to discontinuities

ORIGINATOR

test type:
D - diametral
A - axial
I - irregular lump

test orientation:
X - perpendicular
Y - parallel
Z - oblique

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

CONTRACT **20873**

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POINT LOAD STRENGTH TEST RESULTS

I.S.R.M. 1985

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep. D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
BH01	20.00	D		N		70	88	1.00	88.00	0.13	1.29	0.17	Grey MUDSTONE
BH01	20.00	A		N	88		68	1.00	87.29	0.13	1.28	0.17	Grey MUDSTONE
BH02	6.80	D		N		45	91	4.50	91.00	0.54	1.31	0.71	Brown SANDSTONE
BH02	6.80	A		N	91		32	9.00	60.89	2.43	1.09	2.65	Brown SANDSTONE
BH02	7.50	D		N		50	90	2.00	90.00	0.25	1.30	0.32	Brown SANDSTONE
BH02	7.50	A		N	90		46	8.00	72.60	1.52	1.18	1.80	Brown SANDSTONE
BH02	8.00	D		N		105	90	2.50	90.00	0.31	1.30	0.40	Brown SANDSTONE
BH02	8.00	A		N	90		54	6.00	78.66	0.97	1.23	1.19	Brown SANDSTONE
BH02	8.50	D		N		45	89	0.50	89.00	0.06	1.30	0.08	Brown SANDSTONE
BH02	8.50	A		N	89		48	6.50	73.75	1.20	1.19	1.42	Brown SANDSTONE
BH02	9.30	D		N		40	90	0.10	90.00	0.01	1.30	0.02	Brown SANDSTONE
BH02	9.30	A		N	90		32	2.50	60.56	0.68	1.09	0.74	Brown SANDSTONE
BH02	11.70	I		N	80	50	50	0.10	71.36	0.02	1.17	0.02	Grey CLAY
BH02	14.20	D		N		40	90	0.10	90.00	0.01	1.30	0.02	Grey SILTSTONE
BH02	14.20	A		N	90		32	2.00	60.56	0.55	1.09	0.59	Grey SILTSTONE
BH02	16.30	D		N		80	90	2.00	90.00	0.25	1.30	0.32	Grey SILTSTONE
BH02	16.30	A		N	90		52	2.50	77.19	0.42	1.22	0.51	Grey SILTSTONE
BH02	19.00	D		N		60	80	0.50	80.00	0.08	1.24	0.10	Grey MUDSTONE
BH02	19.00	A		N	80		40	1.00	63.83	0.25	1.12	0.27	Grey MUDSTONE
BH02	19.80	D		N		60	90	5.00	90.00	0.62	1.30	0.80	Grey SANDSTONE

remarks: Tests carried out in accordance with I.S.R.M.(1985): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol 22 No. 2.
* test orientation given *relative to discontinuities*

ORIGINATOR

test type:
D - diametral
A - axial
I - irregular lump

test orientation:
X - perpendicular
Y - parallel
Z - oblique

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

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POINT LOAD STRENGTH TEST RESULTS



I.S.R.M. 1985

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMAR SCHOOL, PENISTONE, BARNSLEY

borehole /trial pit no.	sample depth (m)	test type	test orientation	moisture condition	width W (mm)	length L (mm)	platen sep D (mm)	failure load P (kN)	equiv. dia. De (mm)	Is (MPa)	size factor F	Is(50) (MPa)	rock type
BH02	19.80	A		N	90		47	2.50	73.39	0.46	1.19	0.55	Grey SANDSTONE
BH03	2.50	D		N		40	90	0.10	90.00	0.01	1.30	0.02	Brown CLAY
BH03	2.50	A		N	90		21	0.10	49.06	0.04	0.99	0.04	Brown CLAY
BH03	3.50	D		N		100	90	1.50	90.00	0.19	1.30	0.24	Brown SANDSTONE
BH03	3.50	A		N	90		55	8.50	79.39	1.35	1.23	1.66	Brown SANDSTONE
BH03	4.30	D		N		110	91	1.50	91.00	0.18	1.31	0.24	Brown SANDSTONE
BH03	4.30	A		N	91		40	6.00	68.08	1.29	1.15	1.49	Brown SANDSTONE
BH03	6.50	D		N		35	90	0.10	90.00	0.01	1.30	0.02	Brown MUDSTONE
BH03	6.50	A		N	90		38	0.50	65.99	0.11	1.13	0.13	Brown MUDSTONE
BH03	8.50	D		N		38	91	0.10	91.00	0.01	1.31	0.02	Brown SILTSTONE
BH03	8.50	A		N	91		32	0.50	60.89	0.13	1.09	0.15	Brown SILTSTONE
BH03	11.50	D		N		60	90	2.00	90.00	0.25	1.30	0.32	Grey SILTSTONE
BH03	11.50	A		N	90		60	2.00	82.92	0.29	1.26	0.37	Grey SILTSTONE
BH03	12.50	I		N	75	45	45	2.00	65.55	0.47	1.13	0.53	Grey SILTSTONE
BH03	14.50	D		N		50	86	1.00	86.00	0.14	1.28	0.17	Grey SILTSTONE
BH03	14.50	A		N	86		41	1.50	67.00	0.33	1.14	0.38	Grey SILTSTONE
BH03	16.80	D		N		85	91	9.00	91.00	1.09	1.31	1.42	Grey LIMESTONE
BH03	16.80	A		N	91		92	19.00	103.25	1.78	1.39	2.47	Grey LIMESTONE
BH03	18.50	D		N		160	90	4.50	90.00	0.56	1.30	0.72	Grey LIMESTONE
BH03	18.50	A		N	90		49	7.00	74.93	1.25	1.20	1.50	Grey LIMESTONE

remarks: Tests carried out in accordance with I.S.R.M.(1985): Suggested Methods for Determining Point Load Strength. Int. J. Rock Mech. Min. Sci. and Geotech. Abstr. Vol.22 No. 2

* test orientation given relative to discontinuities

ORIGINATOR

test type:
D - diametral
A - axial
I - irregular lump

test orientation:
X - perpendicular
Y - parallel
Z - oblique

moisture condition:
N - natural moisture content
P - partially air dried
S - soaked

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Geotechnical Engineering Limited

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK

I.S.R.M. Suggested Method : 1981

CLIENT LAING O'ROURKE

SITE PENISTONE GRAMMER SCHOOL, PENISTONE, BARNSLEY

borehole no.	sample no./type	sample depth (m)	specimen depth (m)	diameter D (mm)	height H (mm)	H/D	moisture content (%)	bulk density (Mg/m³)	loading rate (kN/min)	time to failure (min:sec)	UCS (MPa)	description and coding test remarks
BH01	11C	4.50	5.50	90.1	190.9	2.12	3.8	2.57	20	16:59	52.74	Grey-brown SANDSTONE Ax, Ca
BH03	8C	3.00	4.00	88.1	171.3	1.94	3.3	2.53	30	8:39	42.17	Brown SANDSTONE Ax, Ca

general remarks:

Sample obtained from vertically drilled core (unless specified).

Test machine - ELE 1500

CODING

moisture condition :
N - natural moisture content
F - fully saturated
S - soaked
P - air/partially dried

sample storage :
U - sample not wrapped
F - sample wrapped in cling film/foil
W - sample waxed
G - sample contained in sealed Geoline

failure mode:
Ax - axial cleavage
Ca - cataclasis
Sh - shear
Ex - explosive

ORIGINATOR

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APPENDIX C

CHEMICAL TESTING

ALcontrol Geochem

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

Geotechnical Eng. Ltd
Centurion House
Olympus Park
Quedgeley
Gloucester
GL2 4NF

ATTN: Jonathan Russell

CERTIFICATE OF ANALYSIS

Date:	09 October, 2007
Our Reference:	07/15258/02/01
Your Reference:	20873
Location:	Penistone Grammer

A total of 44 samples was received for analysis on Saturday, 01 September 2007 and completed on Monday, 01 October 2007. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

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

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

Signed

[redacted]

Diane Whittlestone	**Jane Seymour**	**David O'Hare**	**Caroline Suttie**
Customer Services	Customer Services	Customer Services	Customer Services

Valid if signed by any of the above signatories.

Compiled By

Reah Holmes

1291
GROUP

ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : *Jonathan Russell*
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

					UKAS Accredited ?																								
Sample Number	Sample Identity	P / V	Depth	Sample Type	% Stones >10mm	Soil Organic Matter (S)	TOC (S)	Loss on Ignition (S)	Asbestos Screen (ID)	Metals ICP. 9 (S)	Cyanide Total (S)	Cyanide Free (S)	Boron Water Soluble (S)	Sulphide Acid Soluble (S)	pH (S)	Sulphate Soluble Kone 2:1 (S)	Phenols HPLC (S)	PAH 16 EPA GC-FID (S)	Coronene EZ (S)	PCB 7 Congeners (S)	EPH (DRO) (S)	Mineral Oil C10-40 (S)	GRO BTEX MTBE GC (S)	CEN Leach 10:1	Metals ICP-MS 9 (CEN 10:1)	Mercury (CEN 10:1) (CVAA)	Barium (CEN 10:1) (ICP-MS)	Molybdenum (CEN 10:1) (ICP-MS)
1	BH01	1KGTub	0.50	SOLID	Sample on Hold																								
2	BH01	JAR 250g	0.50	SOLID	Sample on Hold																								
3	BH01	1KGTub	1.00	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
4	BH01	JAR 250g	1.00	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						
5	BH02	1KGTub	0.50	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
6	BH02	JAR 250g	0.50	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						
7	BH02	1KGTub	1.00	SOLID	Sample on Hold																								
8	BH02	JAR 250g	1.00	SOLID	Sample on Hold																								
9	BH03	1KGTub	0.50	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
10	BH03	JAR 250g	0.50	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						
11	BH03	1KGTub	1.00	SOLID	Sample on Hold																								
12	BH03	JAR 250g	1.00	SOLID	Sample on Hold																								
13	WS02	1KGTub	0.20	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
14	WS02	JAR 250g	0.20	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						
15	WS02	1KGTub	0.60	SOLID	Sample on Hold																								
16	WS02	JAR 250g	0.60	SOLID	Sample on Hold																								
17	WS03	1KGTub	0.25	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
18	WS03	JAR 250g	0.25	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						
19	WS04	1KGTub	0.50	SOLID	Sample on Hold																								
20	WS04	JAR 250g	0.50	SOLID	Sample on Hold																								
21	WS04	1KGTub	0.65	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
22	WS04	JAR 250g	0.65	SOLID	X	X	X			X			X			X		X	X	X	X	X	X						

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ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Jonathan Russell
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

		UKAS Accredited ?			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓				✓	✓	✓					
Sample Number	Sample Identity	P / V	Depth	Sample Type	% Stones >10mm	Soil Organic Matter (S)	TOC (S)	Loss on Ignition (S)	Asbestos Screen (ID)	Metals ICP. 9 (S)	Cyanide Total (S)	Cyanide Free (S)	Boron Water Soluble (S)	Sulphide Acid Soluble (S)	pH (S)	Sulphate Soluble Kone 2:1 (S)	Phenols HPLC (S)	PAH 16 EPA GC-FID (S)	Coronene EZ (S)	PCB 7 Congeners (S)	EPH (DRO) (S)	Mineral Oil C10-40 (S)	GRO BTEX MTBE GC (S)	CEN Leach 10:1	Metals ICP-MS 9 (CEN 10:1)	Mercury (CEN 10:1) (CVAA)	Barium (CEN 10:1) (ICP-MS)	Molybdenum (CEN 10:1) (ICP-MS)
23	WS04	1KGTub	1.00	SOLID	Sample on Hold																						
24	WS04	JAR 250g	1.00	SOLID	Sample on Hold																						
25	WS04	1KGTub	1.40	SOLID	Sample on Hold																						
26	WS04	JAR 250g	1.40	SOLID	Sample on Hold																						
27	WS04	1KGTub	2.50	SOLID	Sample on Hold																						
28	WS04	JAR 250g	2.50	SOLID	Sample on Hold																						
29	WS05	1KGTub	0.30	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
30	WS05	JAR 250g	0.30	SOLID	X	X	X			X			X			X		X	X	X	X	X	X					
31	WS05	1KGTub	0.75	SOLID	Sample on Hold																						
32	WS05	JAR 250g	0.75	SOLID	Sample on Hold																						
33	WS07	1KGTub	0.50	SOLID				X	X		X	X		X	X		X							X	X	X	X	X
34	WS07	JAR 250g	0.50	SOLID	X	X	X			X			X			X		X	X	X	X	X	X					
35	WS07	1KGTub	1.00	SOLID	Sample on Hold																						
36	WS07	JAR 250g	1.00	SOLID	Sample on Hold																						
37	WS07	1KGTub	1.80	SOLID	Sample on Hold																						
38	WS07	JAR 250g	1.80	SOLID	Sample on Hold																						
39	WS08	1KGTub	0.50	SOLID	Sample on Hold																						
40	WS08	JAR 250g	0.50	SOLID	Sample on Hold																						
41	WS08	1KGTub	1.00	SOLID	Sample on Hold																						
42	WS08	JAR 250g	1.00	SOLID	Sample on Hold																						
43	WS08	1KGTub	1.90	SOLID	Sample on Hold																						
44	WS08	JAR 250g	1.90	SOLID	Sample on Hold																						

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ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Jonathan Russell
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	% Stones >10mm	Soil Organic Matter (S)	TOC (S)	Loss on Ignition (S)	Asbestos Screen (ID)	Metals ICP. 9 (S)	Cyanide Total (S)	Cyanide Free (S)	Boron Water Soluble (S)	Sulphide Acid Soluble /S)	pH (S)	Sulphate Soluble Kone 2:1 (S)	Phenols HPLC (S)	PAH 16 EPA GC-FID (S)	Coronene EZ (S)	PCB 7 Congeners (S)	EPH (DRO) (S)	Mineral Oil C10-40 (S)	GRO BTEX MTBE GC (S)	CEN Leach 10:1	Metals ICP-MS 9 (CEN 10:1)	Mercury (CEN 10:1) /CVAA)	Barium (CEN 10:1) (ICP-MS)	Molybdenum (CEN 10:1) (ICP-MS)
	UKAS Accredited ?					✓	✓	✓		✓	✓	✓	✓		✓	✓	✓				✓	✓	✓					
	Total Number of Tests				8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8

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ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Jonathan Russell
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

		UKAS Accredited ?																																				
Sample Number	Sample Identity	P / V	Depth	Sample Type	Antimony (CEN 10:1) /ICP MS)	Chloride Kone (CEN 10:1)	Fluoride Kone (CEN 10:1)	Sulphate Kone (CEN 10:1)	Phenols HPLC (CEN 10:1)	DOC (CEN 10:1)	TDS (CEN 10:1)	PAH Spec MS (CEN 10:1)	EPH (DRO) (CEN 10:1)	GRO CWG GC (CEN 10:1)																										
1	BH01	1KGTub	0.50	SOLID	Sample on Hold																																			
2	BH01	JAR 250g	0.50	SOLID	Sample on Hold																																			
3	BH01	1KGTub	1.00	SOLID	X	X	X	X	X	X	X	X	X	X																									
4	BH01	JAR 250g	1.00	SOLID																																			
5	BH02	1KGTub	0.50	SOLID	X	X	X	X	X	X	X	X	X	X																									
6	BH02	JAR 250g	0.50	SOLID																																			
7	BH02	1KGTub	1.00	SOLID	Sample on Hold																																			
8	BH02	JAR 250g	1.00	SOLID	Sample on Hold																																			
9	BH03	1KGTub	0.50	SOLID	X	X	X	X	X	X	X	X	X	X																									
10	BH03	JAR 250g	0.50	SOLID																																			
11	BH03	1KGTub	1.00	SOLID	Sample on Hold																																			
12	BH03	JAR 250g	1.00	SOLID	Sample on Hold																																			
13	WS02	1KGTub	0.20	SOLID	X	X	X	X	X	X	X	X	X	X																									
14	WS02	JAR 250g	0.20	SOLID																																			
15	WS02	1KGTub	0.60	SOLID	Sample on Hold																																			
16	WS02	JAR 250g	0.60	SOLID	Sample on Hold																																			
17	WS03	1KGTub	0.25	SOLID	X	X	X	X	X	X	X	X	X	X																									
18	WS03	JAR 250g	0.25	SOLID																																			
19	WS04	1KGTub	0.50	SOLID	Sample on Hold																																			
20	WS04	JAR 250g	0.50	SOLID	Sample on Hold																																			
21	WS04	1KGTub	0.65	SOLID	X	X	X	X	X	X	X	X	X	X																									
22	WS04	JAR 250g	0.65	SOLID																																			

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ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Jonathan Russell
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

		UKAS Accredited ?												
Sample Number	Sample Identity	P / V	Depth	Sample Type	Antimony (CEN 10:1) (ICP-MS)	Chloride Kone (CEN 10:1)	Fluoride Kone (CEN 10:1)	Sulphate Kone (CEN 10:1)	Phenols HPLC (CEN 10:1)	DOC (CEN 10:1)	TDS (CEN 10:1)	PAH Spec MS (CEN 10:1)	EPH (DRO) (CEN 10:1)	GRO CWG GC (CEN 10:1)
23	WS04	1KGTub	1.00	SOLID	Sample on Hold									
24	WS04	JAR 250g	1.00	SOLID	Sample on Hold									
25	WS04	1KGTub	1.40	SOLID	Sample on Hold									
26	WS04	JAR 250g	1.40	SOLID	Sample on Hold									
27	WS04	1KGTub	2.50	SOLID	Sample on Hold									
28	WS04	JAR 250g	2.50	SOLID	Sample on Hold									
29	WS05	1KGTub	0.30	SOLID	X	X	X	X	X	X	X	X	X	X
30	WS05	JAR 250g	0.30	SOLID										
31	WS05	1KGTub	0.75	SOLID	Sample on Hold									
32	WS05	JAR 250g	0.75	SOLID	Sample on Hold									
33	WS07	1KGTub	0.50	SOLID	X	X	X	X	X	X	X	X	X	X
34	WS07	JAR 250g	0.50	SOLID										
35	WS07	1KGTub	1.00	SOLID	Sample on Hold									
36	WS07	JAR 250g	1.00	SOLID	Sample on Hold									
37	WS07	1KGTub	1.80	SOLID	Sample on Hold									
38	WS07	JAR 250g	1.80	SOLID	Sample on Hold									
39	WS08	1KGTub	0.50	SOLID	Sample on Hold									
40	WS08	JAR 250g	0.50	SOLID	Sample on Hold									
41	WS08	1KGTub	1.00	SOLID	Sample on Hold									
42	WS08	JAR 250g	1.00	SOLID	Sample on Hold									
43	WS08	1KGTub	1.90	SOLID	Sample on Hold									
44	WS08	JAR 250g	1.90	SOLID	Sample on Hold									

Printed : 09/10/07 10:13:50

ALcontrol Geochem
TEST SCHEDULE

JOB NUMBER : 07/15258/02
CLIENT : Geotechnical Eng. Ltd
CONTACT : Jonathan Russell
DATE OF RECEIPT : 01/09/07
LOCATION : Penistone Grammer

BATCH NUMBER : 1
CLIENT REF/CODE : 20873
ORDER NUMBER :
TURNAROUND : 10 days

Numeric values indicate additional scheduling

* indicates test subcontracted

Sample Number	Sample Identity	P / V	Depth	Sample Type	Antimony (CEN 10:1) (ICP-MS)	Chloride Kone (CEN 10:1)	Fluoride Kone (CEN 10:1)	Sulphate Kone (CEN 10:1)	Phenols HPLC (CEN 10:1)	DOC (CEN 10:1)	TDS (CEN 10:1)	PAH Spec MS (CEN 10:1)	EPH (DRO) (CEN 10:1)	GRO CWG GC (CEN 10:1)													
UKAS Accredited ?																											
Total Number of Tests					8	8	8	8	8	8	8	8	8	8													

Printed : 09/10/07 10:13:50

ALcontrol Geochem

Extractable Petroleum Hydrocarbons (EPH) By GC-FID

Carbon Range C10-C40

Job Number : 07/15258/02/01
Client : Geotechnical Eng. Ltd
Client Ref : 20873
Matrix [Units] : SOLID [mg/kg]

All results expressed on a dry weight basis.

Sample No	Sample Identity	Depth	EPH	Interpretation
4	BH01	1.00	150	unknown pattern detected
6	BH02	0.50	44	biodegraded diesel / humic acids
10	BH03	0.50	<35	no identification possible
14	WS02	0.20	35	PAHs/humic acids
18	WS03	0.25	3100	PAHs/Bitumen/Tar/Humic acids
22	WS04	0.65	420	PAHs/Bitumen/Tar/Humic acids
30	WS05	0.30	160	PAHs/Bitumen/Tar/Humic acids
34	WS07	0.50	340	PAHs/Bitumen/Tar/Humic acids

Extractable Petroleum Hydrocarbons (formally Diesel Range Organics) - Any compound extractable in n-hexane within the carbon range C10-C40. includes Aliphatic (Min Oil), Aromatic (PAHs) and naturally occurring compounds.

ALcontrol Geochem Analytical Services
Sample Descriptions

Job Number: 07/15258/02/01
Client: Geotechnical Eng. Ltd
Client Ref : 20873

Grain sizes

<0.063mm	Very Fine
0.1mm - 0.063mm	Fine
0.1mm - 2mm	Medium
2mm - 10mm	Coarse
>10mm	Very Coarse

Sample Identity	Depth (m)	Colour	Grain Size	Description	Batch
BH01	1.00	Light Brown	<0.063mm	Clay with some Stones	1
BH02	0.50	Light Brown	0.1mm - 0.063mm	Silty Clay with some Stones	1
BH03	0.50	Light Brown	0.1mm - 0.063mm	Silty Clay with some Stones	1
WS02	0.20	Brown	0.1mm - 2mm	Sand with some Stones	1
WS03	0.25	Brown	0.1mm - 2mm	Sand with some Stones	1
WS04	0.65	Dark Brown	<0.063mm	Clay with some Stones	1
WS05	0.30	Brown	0.1mm - 0.063mm	Silty Clay with some Stones	1
WS07	0.50	Brown	0.1mm - 0.063mm	Silty Clay with some Vegetation	1

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

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

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

* ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 07/15258/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Penistone Grammer
Client Ref. No.: 20873 **Client Contact:** Jonathan Russell

Sample Identity	BH01	BH02	BH03	WS02	WS03	WS04	WS05	WS07		Method Code	LoD/Units
Depth (m)	1.00	0.50	0 50	0.20	0.25	0.65	0.30	0.50			
Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID			
Sampled Date											
Sample Received Date	01 09.07	01 09.07	01.09 07	01.09 07	01 09 07	01 09 07	01 09.07	01.09 07			
Batch	1	1	1	1	1	1	1	1			
Sample Number(s)	3-4	5-6	9-10	13-14	17-18	21-22	29-30	33-34			
Boron Water Soluble	<3 5	<3.5	<3 5	<3.5	<3.5	<3.5	<3.5	<3.5		TM129*M	<3 5 mg/kg
Arsenic	<3	<3	3	4	<3	10	15	10		TM129*M	<3.0 mg/kg
Cadmium	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		TM129	<0 3 mg/kg
Chromium	27	26	25	31	290	210	27	27		TM129*M	<4.5 mg/kg
Copper	28	22	17	31	17	31	69	36		TM129*	<6 mg/kg
Lead	23	15	17	230	28	64	71	71		TM129*M	<2 mg/kg
Mercury	<0 6	<0 6	<0.6	<0 6	<0.6	<0 6	<0.6	<0.6		TM129*M	<0.6 mg/kg
Nickel	32	30	28	41	14	24	40	21		TM129*M	<0.9 mg/kg
Selenium	<3	<3	<3	<3	<3	<3	<3	<3		TM129*M	<3 mg/kg
Zinc	93	83	86	99	66	110	99	120		TM129*M	<2.5 mg/kg
Water Soluble Sulphate as SO4 2 1 Extract	0.052	0.003	0 007	0.020	0 30	0.082	0.063	0.067		TM098*M	<0.003 g/l
Acid Soluble Sulphide	<50	<50	<50	<50	74	810	<50	<50		TM101	<50 mg/kg
Soil Organic Matter	0 71	0 50	0.80	2.6	3.0	4 8	18	5 5		TM132*	<0 35 %
Total Organic Carbon	0.4	0.3	0.5	1.5	1.7	3.8	10	3 2		TM132*M	<0.2 %
Phenols Monohydric	<0 15	<0.15	<0 15	<0.15	<0.15	<0.15	<0 15	<0 15		TM062*M	<0.15 mg/kg
Total Cyanide	<1	<1	<1	<1	<1	<1	<1	<1		TM153*	<1 mg/kg
Free Cyanide	<1	<1	<1	<1	<1	<1	<1	<1		TM153*	<1 mg/kg
% Stones Greater then 10mm	19	20	7 3	6.3	70	<0.1	3.9	21		TM008	<0.1 %
Asbestos Presence Screen	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected	No Fibres Detected		TM001	NONE
Loss on Ignition	3 7	2.8	2.6	2.7	5.0	5 4	12	6.7		TM018*M	<0.3 %
pH Value	6 66	7 35	7 07	7 90	9.65	7 65	7 63	7 49		TM133*M	<1.00 pH Units
EPH (DRO) (C10-C40)	150	44	<35	35	3100	420	160	340		TM061*M	<35 mg/kg
EPH (DRO) (C10-C40) % Surrogate Recovery	100	100	89	98	100	96	100	98		TM061*M	%
Mineral Oil	81	58	8	47	1100	150	29	66		TM061*	<1 mg/kg
Mineral Oil % Surrogate Recovery	82	92	81	87	86	84	86	87		TM061*	%
GRO (C4-C10)	<10	<10	<10	<10	<10	<10	<10	<10		TM089	<10 ug/kg
GRO (C10-C12)	<10	<10	<10	<10	<10	<10	<10	<10		TM089	<10 ug/kg
Benzene	<10	<10	<10	<10	<10	<10	<10	<10		TM089*M	<10 ug/kg
Toluene	<10	<10	<10	<10	<10	<10	<10	<10		TM089*M	<10 ug/kg
Ethy. benzene	<10	<10	<10	<10	<10	<10	<10	<10		TM089*M	<10 ug/kg
m & p Xylene	<10	<10	<10	<10	<10	<10	<10	<10		TM089*M	<10 ug/kg

All results expressed on a dry weight basis.

Date 09.10.2007

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

" ISO 17025 accredited
M MCERTS accredited
* Subcontracted test
» Shown on prev. report

Job Number: 07/15258/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Penistone Grammer
Client Ref. No.: 20873 **Client Contact:** Jonathan Russell

Sample Identity	BH01	BH02	BH03	WS02	WS03	WS04	WS05	WS07		Method Code	LoD/Units
Depth (m)	1 00	0 50	0 50	0 20	0 25	0.65	0.30	0 50			
Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID			
Sampled Date											
Sample Received Date	01 09.07	01 09 07	01 09 07	01 09.07	01 09 07	01 09 07	01 09.07	01 09 07			
Batch	1	1	1	1	1	1	1	1			
Sample Number(s)	3-4	5-6	9-10	13-14	17-18	21-22	29-30	33-34			
o Xylene	<10	<10	<10	<10	<10	<10	<10	<10		TM089$^{"}_{M}$	<10 ug/kg
Sum m&p and o Xylene	<10	<10	<10	<10	<10	<10	<10	<10		TM089	<10 ug/kg
Sum of BTEX	<10	<10	<10	<10	<10	<10	<10	<10		TM089	<10 ug/kg
MTBE	<10	<10	<10	<10	<10	<10	<10	<10		TM089"	<10 ug/kg
Coronene	<2	<2	<2	<2	110	<2	<2	<2		TM154	<2 mg/kg
PAH by GC-FID											
Naphthalene	0.36	0.11	<0 05	<0 05	<0.5	<0 05	<0 05	<0.05		TM142	<0 05 mg/kg
Acenaphthylene	0.32	0 08	<0.05	0.15	<0.5	0.08	0.19	0 12		TM142	<0.05 mg/kg
Acenaphthene	<0.05	<0 05	<0.05	0.07	<0.5	0 05	<0.05	0 19		TM142	<0 05 mg/kg
Fluorene	<0 05	<0.05	<0 05	<0.05	<0 5	<0 05	<0.05	0 17		TM142	<0 05 mg/kg
Phenanthrene	<0 05	<0.05	<0 05	0.45	3.7	0 47	0.10	1 8		TM142	<0 05 mg/kg
Anthracene	<0.05	<0 05	<0 05	0.10	<0.5	0.12	<0.05	0.40		TM142	<0 05 mg/kg
Fluoranthene	0.85	<0.05	0 16	0.71	12	1.4	0 19	2 5		TM142	<0.05 mg/kg
Pyrene	<0.05	<0 05	0 09	0 71	9 6	1 2	0 22	1.9		TM142	<0.05 mg/kg
Benz(a)anthracene	<0.05	<0.05	<0 05	0 30	3.1	<0.05	<0.05	0.87		TM142	<0.05 mg/kg
Chrysene	<0.05	<0 05	<0 05	0 31	4.3	<0.05	0.07	0 98		TM142	<0.05 mg/kg
Benzo(b)fluoranthene	<0.05	<0 05	<0 05	0 19	4 0	0.57	0,06	0.85		TM142	<0.05 mg/kg
Benzo(k)fluoranthene	<0.05	<0 05	<0 05	0 19	2 3	0.42	<0.05	0.57		TM142	<0.05 mg/kg
Benzo(a)pyrene	<0.05	<0 05	<0.05	<0 05	6.0	2.9	<0.05	2 9		TM142	<0.05 mg/kg
Indeno(123cd)pyrene	<0.05	<0 05	<0.05	0 14	4.0	0 41	0 21	0.55		TM142	<0.05 mg/kg
Dibenzo(ah)anthracene	<0.05	<0.05	0 14	<0 05	1 8	0 09	<0 05	0.08		TM142	<0 05 mg/kg
Benzo(ghi)perylene	0.25	<0.05	<0.05	0.28	0 6	0.65	0.49	0 60		TM142	<0 05 mg/kg
PAH 16 Total	1 8	0.19	0 39	3 6	51	8.3	1 5	15		TM142	<0.05 mg/kg
PCB 7 Congeners											
PCB congener 28	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
PCB congener 52	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
PCB congener 101	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
PCB congener 118	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
PCB congener 153	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg

All results expressed on a dry weight basis.

Date 09.10.2007

Validated ☑
Preliminary ☐

ALcontrol Geochem Analytical Services
Table Of Results

* ISO 17025 accredited
M MCERTS accredited
\+ Subcontracted test
» Shown on prev. report

Job Number: 07/15258/02/01 **Matrix:** SOLID
Client: Geotechnical Eng. Ltd **Location:** Penistone Grammer
Client Ref. No.: 20873 **Client Contact:** Jonathan Russell

Sample Identity	BH01	BH02	BH03	WS02	WS03	WS04	WS05	WS07		Method Code	LoD/Units
Depth (m)	1.00	0.50	0.50	0.20	0.25	0.65	0.30	0.50			
Sample Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID			
Sampled Date											
Sample Received Date	01.09.07	01.09.07	01.09.07	01.09.07	01.09.07	01.09.07	01.09.07	01.09.07			
Batch	1	1	1	1	1	1	1	1			
Sample Number(s)	3-4	5-6	9-10	13-14	17-18	21-22	29-30	33-34			
PCB 7 Congeners (cont)											
PCB congener 138	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
PCB congener 180	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg
Total of 7 Congener PCBs	<1	<1	<1	<1	<10	<5	<1	<5		TM070	<1 ug/kg

All results expressed on a dry weight basis.

Date 09/10/2007

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10225	Moisture Content Ratio (%) =	13.11
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	88.41
Particle Size <4mm =	>95%		

Job Number	**200715258**	**Landfill Waste Acceptance Criteria Limits**		
Batch	**1**			
Sample Number(s)	**3-4**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	-			
Sample Identity	**BH01**			
Depth (m)	**1.00**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.4	-	-	-
Loss on Ignition (%)	3.7	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	<0.001	-	-	-
Mineral Oil (mg/kg)	81	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	6.66	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc[a] in 10:1 eluate** C_2 mg/l		**10:1 conc[a] leached** A_2 mg/kg		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
Arsenic	<0.001		<0.01		-	-	-
Barium	0.003		0.03		-	-	-
Cadmium	<0.0004		<0.004		-	-	-
Chromium	<0.001		<0.01		-	-	-
Copper	0.006		0.06		-	-	-
Mercury	<0.00005		<0.0005		-	-	-
Molybdenum	<0.001		<0.01		-	-	-
Nickel	<0.001		<0.01		-	-	-
Lead	<0.001		<0.01		-	-	-
Antimony	<0.005		<0.05		-	-	-
Selenium	<0.001		<0.01		-	-	-
Zinc	0.005		0.05		-	-	-
Chloride	<1		<10		-	-	-
Fluoride	<0.5		<5		-	-	-
Sulphate as SO_4	10		100		-	-	-
Total Dissolved Solids	84		840		-	-	-
Phenols Monohydric	0.01		0.1		-	-	-
Dissolved Organic Carbon	4		40		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	160.4	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.888	-
Volume of Eluate VE1 (Litres)	-	

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.1037	Moisture Content Ratio (%) =	16.09
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.14
Particle Size <4mm =	>95%		

Job Number	200715258
Batch	1
Sample Number(s)	5-6
Sampled Date	-
Sample Identity	BH02
Depth (m)	0.50

Solid Waste Analysis	
Total Organic Carbon (%)	0.3
Loss on Ignition (%)	2.8
Sum of BTEX (mg/kg)	<0.01
Sum of 7 PCBs (mg/kg)	<0.001
Mineral Oil (mg/kg)	58
PAH Sum of 17(mg/kg)	-
pH (pH Units)	7.35
ANC to pH 7 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc[a] in 10:1 eluate		10:1 conc[a] leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Arsenic	<0.001		<0.01		-	-	-
Barium	0.002		0.02		-	-	-
Cadmium	<0.0004		<0.004		-	-	-
Chromium	0.002		0.02		-	-	-
Copper	0.004		0.04		-	-	-
Mercury	<0.00005		<0.0005		-	-	-
Molybdenum	0.002		0.02		-	-	-
Nickel	<0.001		<0.01		-	-	-
Lead	0.002		0.02		-	-	-
Antimony	0.009		0.09		-	-	-
Selenium	<0.001		<0.01		-	-	-
Zinc	0.007		0.07		-	-	-
Chloride	<1		<10		-	-	-
Fluoride	<0.5		<5		-	-	-
Sulphate as SO_4	<3		<30		-	-	-
Total Dissolved Solids	<10		<100		-	-	-
Phenols Monohydric	<0.01		<0.1		-	-	-
Dissolved Organic Carbon	2		20		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.69	-
Conductivity (µS/cm)	32.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.886	-
Volume of Eluate VE1 (Litres)	-	

Landfill Waste Acceptance Criteria Limits		
Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.1032	Moisture Content Ratio (%) =	14.67
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.20
Particle Size <4mm =	>95%		

Job Number	200715258			Landfill Waste Acceptance Criteria Limits		
Batch	1					
Sample Number(s)	9-10			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-					
Sample Identity	BH03					
Depth (m)	0.50					
Solid Waste Analysis						
Total Organic Carbon (%)	0.5			-	-	-
Loss on Ignition (%)	2.6			-	-	-
Sum of BTEX (mg/kg)	<0.01			-	-	-
Sum of 7 PCBs (mg/kg)	<0.001			-	-	-
Mineral Oil (mg/kg)	8			-	-	-
PAH Sum of 17(mg/kg)	-			-	-	-
pH (pH Units)	7.07			-	-	-
ANC to pH 7 (mol/kg)	-			-	-	-
ANC to pH 4 (mol/kg)	-			-	-	-
Eluate Analysis	Conc^n in 10:1 eluate		10:1 conc^n leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Arsenic	<0.001		<0.01		-	-	-
Barium	0.003		0.03		-	-	-
Cadmium	<0.0004		<0.004		-	-	-
Chromium	0.001		0.01		-	-	-
Copper	0.005		0.05		-	-	-
Mercury	<0.00005		<0.0005		-	-	-
Molybdenum	<0.001		<0.01		-	-	-
Nickel	<0.001		<0.01		-	-	-
Lead	0.004		0.04		-	-	-
Antimony	<0.005		<0.05		-	-	-
Selenium	<0.001		<0.01		-	-	-
Zinc	0.007		0.07		-	-	-
Chloride	1		10		-	-	-
Fluoride	<0.5		<5		-	-	-
Sulphate as SO_4	<3		<30		-	-	-
Total Dissolved Solids	<10		<100		-	-	-
Phenols Monohydric	<0.01		<0.1		-	-	-
Dissolved Organic Carbon	2		20		-	-	-
Leach Test Information							
Date Prepared	13/09/07	-					
pH (pH Units)	7.79	-					
Conductivity (µS/cm)	18.69	-					
Temperature (°C)	20.0	-					
Volume Leachant (Litres)	0.887	-					
Volume of Eluate VE1 (Litres)	-						

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10254	Moisture Content Ratio (%) =	14.10
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.64
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	13-14	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS02			
Depth (m)	0.20			
Solid Waste Analysis				
Total Organic Carbon (%)	1.5	-	-	-
Loss on Ignition (%)	2.7	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	<0.001	-	-	-
Mineral Oil (mg/kg)	47	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	7.90	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate	10:1 conc^n leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2	A_2			
	mg/l	mg/kg			
Arsenic	0.001	0.01	-	-	-
Barium	0.003	0.03	-	-	-
Cadmium	<0.0004	<0.004	-	-	-
Chromium	<0.001	<0.01	-	-	-
Copper	0.004	0.04	-	-	-
Mercury	<0.00005	<0.0005	-	-	-
Molybdenum	0.008	0.08	-	-	-
Nickel	<0.001	<0.01	-	-	-
Lead	<0.001	<0.01	-	-	-
Antimony	0.011	0.11	-	-	-
Selenium	0.002	0.02	-	-	-
Zinc	0.005	0.05	-	-	-
Chloride	3	30	-	-	-
Fluoride	0.8	8	-	-	-
Sulphate as SO_4	<3	<30	-	-	-
Total Dissolved Solids	62	620	-	-	-
Phenols Monohydric	<0.01	<0.1	-	-	-
Dissolved Organic Carbon	3	30	-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.96	-
Conductivity (µS/cm)	118.7	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10292	Moisture Content Ratio (%) =	14.32
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.48
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
Job Number	**200715258**			
Batch	**1**			
Sample Number(s)	**17-18**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	-			
Sample Identity	**WS03**			
Depth (m)	**0.25**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.7	-	-	-
Loss on Ignition (%)	5.0	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	<0.01	-	-	-
Mineral Oil (mg/kg)	1100	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	9.65	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^n in 10:1 eluate** C_2 mg/l	**10:1 conc^n leached** A_2 mg/kg	*Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg*		
Arsenic	0.002	0.02	-	-	-
Barium	0.011	0.11	-	-	-
Cadmium	<0.0004	<0.004	-	-	-
Chromium	0.008	0.08	-	-	-
Copper	0.008	0.08	-	-	-
Mercury	<0.00005	<0.0005	-	-	-
Molybdenum	0.004	0.04	-	-	-
Nickel	0.001	0.01	-	-	-
Lead	<0.001	<0.01	-	-	-
Antimony	<0.005	<0.05	-	-	-
Selenium	<0.001	<0.01	-	-	-
Zinc	<0.003	<0.03	-	-	-
Chloride	1	10	-	-	-
Fluoride	0.7	7	-	-	-
Sulphate as SO_4	76	760	-	-	-
Total Dissolved Solids	120	1200	-	-	-
Phenols Monohydric	0.01	0.1	-	-	-
Dissolved Organic Carbon	6	60	-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	10.35	-
Conductivity (µS/cm)	381	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.11231	Moisture Content Ratio (%) =	24.69
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	80.20
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	21-22	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS04			
Depth (m)	0.65			

Solid Waste Analysis				
Total Organic Carbon (%)	3.8	-	-	-
Loss on Ignition (%)	5.4	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	<0.005	-	-	-
Mineral Oil (mg/kg)	150	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	7.65	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate	10:1 conc^n leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2	A_2			
	mg/l	mg/kg			
Arsenic	0.003	0.03	-	-	-
Barium	0.015	0.15	-	-	-
Cadmium	<0.0004	<0.004	-	-	-
Chromium	<0.001	<0.01	-	-	-
Copper	0.007	0.07	-	-	-
Mercury	<0.00005	<0.0005	-	-	-
Molybdenum	0.006	0.06	-	-	-
Nickel	0.002	0.02	-	-	-
Lead	<0.001	<0.01	-	-	-
Antimony	<0.005	<0.05	-	-	-
Selenium	0.002	0.02	-	-	-
Zinc	0.004	0.04	-	-	-
Chloride	2	20	-	-	-
Fluoride	0.8	8	-	-	-
Sulphate as SO_4	34	340	-	-	-
Total Dissolved Solids	130	1300	-	-	-
Phenols Monohydric	0.01	0.1	-	-	-
Dissolved Organic Carbon	10	100	-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	261	-
Temperature (°C)	19.9	-
Volume Leachant (Litres)	0.878	-
Volume of Eluate VE1 (Litres)	-	

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10458	Moisture Content Ratio (%) =	16.19
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.07
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
Job Number	**200715258**			
Batch	**1**			
Sample Number(s)	**29-30**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sample Identity	**WS05**			
Depth (m)	**0.30**			
Solid Waste Analysis				
Total Organic Carbon (%)	10	-	-	-
Loss on Ignition (%)	12	-	-	-
Sum of BTEX (mg/kg)	<0.01	-	-	-
Sum of 7 PCBs (mg/kg)	<0.001	-	-	-
Mineral Oil (mg/kg)	29	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	7.63	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc° in 10:1 eluate		10:1 conc° leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Arsenic	0.002		0.02		-	-	-
Barium	0.009		0.09		-	-	-
Cadmium	<0.0004		<0.004		-	-	-
Chromium	<0.001		<0.01		-	-	-
Copper	0.003		0.03		-	-	-
Mercury	<0.00005		<0.0005		-	-	-
Molybdenum	0.015		0.15		-	-	-
Nickel	0.001		0.01		-	-	-
Lead	<0.001		<0.01		-	-	-
Antimony	<0.005		<0.05		-	-	-
Selenium	<0.001		<0.01		-	-	-
Zinc	<0.003		<0.03		-	-	-
Chloride	4		40		-	-	-
Fluoride	0.8		8		-	-	-
Sulphate as SO_4	17		170		-	-	-
Total Dissolved Solids	84		840		-	-	-
Phenols Monohydric	0.01		0.1		-	-	-
Dissolved Organic Carbon	4		40		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	162.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.885	-
Volume of Eluate VE1 (Litres)	-	

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

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.11047	Moisture Content Ratio (%) =	21.71
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	82.16
Particle Size <4mm =	>95%		

Job Number	200715258
Batch	1
Sample Number(s)	33-34
Sampled Date	-
Sample Identity	WS07
Depth (m)	0.50

Solid Waste Analysis	
Total Organic Carbon (%)	3.2
Loss on Ignition (%)	6.7
Sum of BTEX (mg/kg)	<0.01
Sum of 7 PCBs (mg/kg)	<0.005
Mineral Oil (mg/kg)	66
PAH Sum of 17(mg/kg)	-
pH (pH Units)	7.49
ANC to pH 7 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc^n in 10:1 eluate		10:1 conc^n leached	
	C_2		A_2	
	mg/l		mg/kg	
Arsenic	0.001		0.01	
Barium	0.012		0.12	
Cadmium	<0.0004		<0.004	
Chromium	0.001		0.01	
Copper	0.008		0.08	
Mercury	<0.00005		<0.0005	
Molybdenum	0.006		0.06	
Nickel	<0.001		<0.01	
Lead	<0.001		<0.01	
Antimony	<0.005		<0.05	
Selenium	0.001		0.01	
Zinc	<0.003		<0.03	
Chloride	1		10	
Fluoride	0.9		9	
Sulphate as SO_4	<3		<30	
Total Dissolved Solids	84		840	
Phenols Monohydric	0.01		0.1	
Dissolved Organic Carbon	8		80	

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	161.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.88	-
Volume of Eluate VE1 (Litres)	-	

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

Landfill Waste Acceptance Criteria Limits		
Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.10225	Moisture Content Ratio (%) =	13.11
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	88.41
Particle Size <4mm =	>95%		

Job Number	***200715258***	**Landfill Waste Acceptance Criteria Limits**		
Batch	**1**			
Sample Number(s)	**3-4**	***Inert* Waste Landfill**	**Stable Non-reactive *Hazardous* Waste in Non-Hazardous Landfill**	***Hazardous* Waste Landfill**
Sampled Date	-			
Sample Identity	**BH01**			
Depth (m)	**1.00**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc^n in 10:1 eluate** C_2 mg/l		**10:1 conc^n leached** A_2 mg/kg		**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
Boron Dissolved (CEN 10:1) (ICP-MS)	0.02		0.2		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	0.000029		0.00029		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	160.4	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.888	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10225	Moisture Content Ratio (%) =	13.11
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	88.41
Particle Size <4mm =	>95%		

Job Number	200715258
Batch	1
Sample Number(s)	3-4
Sampled Date	-
Sample Identity	BH01
Depth (m)	1.00

Solid Waste Analysis		Landfill Waste Acceptance Criteria Limits: Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc* in 10:1 eluate		10:1 conc* leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	<0.000011		<0.00011		-	-	-
Acenaphthene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluorene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Phenanthrene (CEN 10:1)	<0.000022		<0.00022		-	-	-
Anthracene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluoranthene (CEN 10:1)	0.00014		0.0014		-	-	-
Pyrene (CEN 10:1)	0.00011		0.0011		-	-	-
Benz(a)anthracene (CEN 10:1)	0.000022		0.00022		-	-	-
Chrysene (CEN 10:1)	0.000015		0.00015		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	<0.000023		<0.00023		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027		-	-	-
Benzo(a)pyrene (CEN 10:1)	<0.000009		<0.00009		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	<0.000016		<0.00016		-	-	-
PAH 16 Total (CEN 10:1)	0.00031		0.0031		-	-	-
	-				-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	160.4	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.888	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.1037	Moisture Content Ratio (%) =	16.09
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.14
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	5-6	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	BH02			
Depth (m)	0.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc° in 10:1 eluate		10:1 conc° leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Boron Dissolved (CEN 10:1) (ICP-MS)	0.03		0.3		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	0.00011		0.0011		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.69	-
Conductivity (µS/cm)	32.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.886	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.1037	Moisture Content Ratio (%) =	16.09
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.14
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	5-6	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	BH02			
Depth (m)	0.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc[b] in 10:1 eluate		10:1 conc[b] leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	<0.000011		<0.00011		-	-	-
Acenaphthene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluorene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Phenanthrene (CEN 10:1)	<0.000022		<0.00022		-	-	-
Anthracene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluoranthene (CEN 10:1)	0.000023		0.00023		-	-	-
Pyrene (CEN 10:1)	0.000016		0.00016		-	-	-
Benz(a)anthracene (CEN 10:1)	<0.000017		<0.00017		-	-	-
Chrysene (CEN 10:1)	<0.000013		<0.00013		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	<0.000023		<0.00023		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027		-	-	-
Benzo(a)pyrene (CEN 10:1)	<0.000009		<0.00009		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	<0.000016		<0.00016		-	-	-
PAH 16 Total (CEN 10:1)	0.00015		0.0015		-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.69	-
Conductivity (µS/cm)	32.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.886	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.1032	Moisture Content Ratio (%) =	14.67
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.20
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	9-10	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	BH03			
Depth (m)	0.50			

Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate		10:1 conc^n leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Boron Dissolved (CEN 10:1) (ICP-MS)	0.02		0.2		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	0.000041		0.00041		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.79	-
Conductivity (µS/cm)	18.69	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.1032	Moisture Content Ratio (%) =	14.67
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.20
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Job Number	200715258			
Batch	1			
Sample Number(s)	9-10			
Sampled Date	-			
Sample Identity	BH03			
Depth (m)	0.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc[a] in 10:1 eluate		10:1 conc[a] leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	<0.000011		<0.00011		-	-	-
Acenaphthene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluorene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Phenanthrene (CEN 10:1)	<0.000022		<0.00022		-	-	-
Anthracene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluoranthene (CEN 10:1)	<0.000017		<0.00017		-	-	-
Pyrene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Benz(a)anthracene (CEN 10:1)	<0.000017		<0.00017		-	-	-
Chrysene (CEN 10:1)	<0.000013		<0.00013		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	<0.000023		<0.00023		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027		-	-	-
Benzo(a)pyrene (CEN 10:1)	<0.000009		<0.00009		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	<0.000016		<0.00016		-	-	-
PAH 16 Total (CEN 10:1)	0.000041		0.00041		-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.79	-
Conductivity (µS/cm)	18.69	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10254	Moisture Content Ratio (%) =	14.10
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.64
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	13-14	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS02			
Depth (m)	0.20			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate	10:1 conc^n leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2	A_2			
	mg/l	mg/kg			
Boron Dissolved (CEN 10:1) (ICP-MS)	0.03	0.3	-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01	<0.1	-	-	-
MTBE (CEN 10:1)	<0.01	<0.1	-	-	-
Benzene (CEN 10:1)	<0.01	<0.1	-	-	-
Toluene (CEN 10:1)	<0.01	<0.1	-	-	-
Ethyl benzene (CEN 10:1)	<0.01	<0.1	-	-	-
m & p Xylene (CEN 10:1)	<0.01	<0.1	-	-	-
o Xylene (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01	<0.1	-	-	-
EPH (CEN 10:1)	<0.01	<0.1	-	-	-
Naphthalene (CEN 10:1)	0.000044	0.00044	-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.96	-
Conductivity (µS/cm)	118.7	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10254	Moisture Content Ratio (%) =	14.10
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.64
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	13-14	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS02			
Depth (m)	0.20			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc* in 10:1 eluate		10:1 conc* leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	<0.000011		<0.00011		-	-	-
Acenaphthene (CEN 10:1)	0.00016		0.0016		-	-	-
Fluorene (CEN 10:1)	0.000081		0.00081		-	-	-
Phenanthrene (CEN 10:1)	0.00022		0.0022		-	-	-
Anthracene (CEN 10:1)	0.00010		0.0010		-	-	-
Fluoranthene (CEN 10:1)	0.00025		0.0025		-	-	-
Pyrene (CEN 10:1)	0.00017		0.0017		-	-	-
Benz(a)anthracene (CEN 10:1)	0.000020		0.00020		-	-	-
Chrysene (CEN 10:1)	0.000021		0.00021		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	<0.000023		<0.00023		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027		-	-	-
Benzo(a)pyrene (CEN 10:1)	0.000016		0.00016		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	<0.000016		<0.00016		-	-	-
PAH 16 Total (CEN 10:1)	0.0011		0.011		-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.96	-
Conductivity (µS/cm)	118.7	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.10292	Moisture Content Ratio (%) =	14.32
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.48
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	17-18	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS03			
Depth (m)	0.25			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate	10:1 conc^n leached	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2	A_2			
	mg/l	mg/kg			
Boron Dissolved (CEN 10:1) (ICP-MS)	0.09	0.9	-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01	<0.1	-	-	-
MTBE (CEN 10:1)	<0.01	<0.1	-	-	-
Benzene (CEN 10:1)	<0.01	<0.1	-	-	-
Toluene (CEN 10:1)	<0.01	<0.1	-	-	-
Ethyl benzene (CEN 10:1)	<0.01	<0.1	-	-	-
m & p Xylene (CEN 10:1)	<0.01	<0.1	-	-	-
o Xylene (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01	<0.1	-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01	<0.1	-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01	<0.1	-	-	-
EPH (CEN 10:1)	<0.01	<0.1	-	-	-
Naphthalene (CEN 10:1)	0.000099	0.00099	-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	10.35	-
Conductivity (µS/cm)	381	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.10292	Moisture Content Ratio (%) =	14.32
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	87.48
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	17-18	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS03			
Depth (m)	0.25			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc[a] in 10:1 eluate		10:1 conc[a] leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	0.000038		0.00038		-	-	-
Acenaphthene (CEN 10:1)	0.00086		0.0086		-	-	-
Fluorene (CEN 10:1)	0.00044		0.0044		-	-	-
Phenanthrene (CEN 10:1)	0.0012		0.012		-	-	-
Anthracene (CEN 10:1)	0.00053		0.0053		-	-	-
Fluoranthene (CEN 10:1)	0.0012		0.012		-	-	-
Pyrene (CEN 10:1)	0.00081		0.0081		-	-	-
Benz(a)anthracene (CEN 10:1)	0.000091		0.00091		-	-	-
Chrysene (CEN 10:1)	0.000095		0.00095		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	0.00010		0.0010		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	0.000041		0.00041		-	-	-
Benzo(a)pyrene (CEN 10:1)	0.000089		0.00089		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	0.000049		0.00049		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	0.000061		0.00061		-	-	-
PAH 16 Total (CEN 10:1)	0.0057		0.057		-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	10.35	-
Conductivity (µS/cm)	381	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.887	-
Volume of Eluate VE1 (Litres)	-	

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

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CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.11231	Moisture Content Ratio (%) =	24.69
Mass of dry sample (kg) =	0 09	Dry Matter Content Ratio (%) =	80.20
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	21-22	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS04			
Depth (m)	0.65			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate		10:1 conc^n leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Boron Dissolved (CEN 10:1) (ICP-MS)	0.06		0.6		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	0.000034		0.00034		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	261	-
Temperature (°C)	19.9	-
Volume Leachant (Litres)	0.878	-
Volume of Eluate VE1 (Litres)	-	

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

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CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.11231	Moisture Content Ratio (%) =	24.69
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	80.20
Particle Size <4mm =	>95%		

		Landfill Waste Acceptance Criteria Limits		
Job Number	**200715258**			
Batch	**1**			
Sample Number(s)	**21-22**	**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Sampled Date	-			
Sample Identity	**WS04**			
Depth (m)	**0.65**			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	**Conc° in 10:1 eluate** C_2 mg/l	**10:1 conc° leached** A_2 mg/kg	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
Acenaphthylene (CEN 10:1)	<0.000011	<0.00011	-	-	-
Acenaphthene (CEN 10:1)	0.000032	0.00032	-	-	-
Fluorene (CEN 10:1)	<0.000014	<0.00014	-	-	-
Phenanthrene (CEN 10:1)	<0.000022	<0.00022	-	-	-
Anthracene (CEN 10:1)	0.000031	0.00031	-	-	-
Fluoranthene (CEN 10:1)	0.00012	0.0012	-	-	-
Pyrene (CEN 10:1)	0.000091	0.00091	-	-	-
Benz(a)anthracene (CEN 10:1)	0.000026	0.00026	-	-	-
Chrysene (CEN 10:1)	0.000026	0.00026	-	-	-
Benzo(b)fluoranthene (CEN 10:1)	0.000039	0.00039	-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027	<0.00027	-	-	-
Benzo(a)pyrene (CEN 10:1)	0.000033	0.00033	-	-	-
Indeno(123cd)pyrene (CEN 10:1)	0.000019	0.00019	-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016	<0.00016	-	-	-
Benzo(ghi)perylene (CEN 10:1)	0.000030	0.00030	-	-	-
PAH 16 Total (CEN 10:1)	0.00048	0.0048	-	-	-
			-	-	-
			-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	261	-
Temperature (°C)	19.9	-
Volume Leachant (Litres)	0.878	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.10458	Moisture Content Ratio (%) =	16.19
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.07
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	29-30	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS05			
Depth (m)	0.30			

Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate C_2 mg/l		10:1 conc^n leached A_2 mg/kg		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
Boron Dissolved (CEN 10:1) (ICP-MS)	0.02		0.2		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	<0.000026		<0.00026		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	162.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.885	-
Volume of Eluate VE1 (Litres)	-	

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

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ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS REF:CEN12457-2

Mass Sample taken (kg) =	0.10458	Moisture Content Ratio (%) =	16.19
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	86.07
Particle Size <4mm =	>95%		

Job Number	200715258
Batch	1
Sample Number(s)	29-30
Sampled Date	-
Sample Identity	WS05
Depth (m)	0.30

Solid Waste Analysis		
Total Organic Carbon (%)	-	
Loss on Ignition (%)	-	
Sum of BTEX (mg/kg)	-	
Sum of 7 PCBs (mg/kg)	-	
Mineral Oil (mg/kg)	-	
PAH Sum of 17(mg/kg)	-	
pH (pH Units)	-	
ANC to pH 7 (mol/kg)	-	
ANC to pH 4 (mol/kg)	-	

Eluate Analysis	Conc° in 10:1 eluate		10:1 conc° leached	
	C_2		A_2	
	mg/l		mg/kg	
Acenaphthylene (CEN 10:1)	<0.000011		<0.00011	
Acenaphthene (CEN 10:1)	<0.000015		<0.00015	
Fluorene (CEN 10:1)	<0.000014		<0.00014	
Phenanthrene (CEN 10:1)	<0.000022		<0.00022	
Anthracene (CEN 10:1)	<0.000015		<0.00015	
Fluoranthene (CEN 10:1)	<0.000017		<0.00017	
Pyrene (CEN 10:1)	<0.000015		<0.00015	
Benz(a)anthracene (CEN 10:1)	<0.000017		<0.00017	
Chrysene (CEN 10:1)	<0.000013		<0.00013	
Benzo(b)fluoranthene (CEN 10:1)	<0.000023		<0.00023	
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027	
Benzo(a)pyrene (CEN 10:1)	<0.000009		<0.00009	
Indeno(123cd)pyrene (CEN 10:1)	<0.000014		<0.00014	
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016	
Benzo(ghi)perylene (CEN 10:1)	<0.000016		<0.00016	
PAH 16 Total (CEN 10:1)	<0.000027		<0.00027	

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	8.01	-
Conductivity (µS/cm)	162.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.885	-
Volume of Eluate VE1 (Litres)	-	

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

Landfill Waste Acceptance Criteria Limits		
Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

Supplemental Report

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.11047	Moisture Content Ratio (%) =	21.71
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	82.16
Particle Size <4mm =	>95%		

Job Number	200715258	Landfill Waste Acceptance Criteria Limits		
Batch	1			
Sample Number(s)	33-34	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Sampled Date	-			
Sample Identity	WS07			
Depth (m)	0.50			
Solid Waste Analysis				
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc[a] in 10:1 eluate		10:1 conc[a] leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Boron Dissolved (CEN 10:1) (ICP-MS)	0.03		0.3		-	-	-
GRO (C4-C12) (CEN 10:1)	<0.01		<0.1		-	-	-
MTBE (CEN 10:1)	<0.01		<0.1		-	-	-
Benzene (CEN 10:1)	<0.01		<0.1		-	-	-
Toluene (CEN 10:1)	<0.01		<0.1		-	-	-
Ethyl benzene (CEN 10:1)	<0.01		<0.1		-	-	-
m & p Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
o Xylene (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics C5-C6 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C6-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C8-C10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aliphatics >C10-C12 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics C6-C7 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >C7-C8 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC8-EC10 (CEN 10:1)	<0.01		<0.1		-	-	-
Aromatics >EC10-EC12 (CEN 10:1)	<0.01		<0.1		-	-	-
EPH (CEN 10:1)	<0.01		<0.1		-	-	-
Naphthalene (CEN 10:1)	0.000034		0.00034		-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	161.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.88	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Geochem Analytical Services

CEN 10:1 ONE STAGE BATCH TEST

WAC ANALYTICAL RESULTS — REF:CEN12457-2

Mass Sample taken (kg) =	0.11047	Moisture Content Ratio (%) =	21.71
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	82.16
Particle Size <4mm =	>95%		

Job Number	200715258
Batch	1
Sample Number(s)	33-34
Sampled Date	-
Sample Identity	WS07
Depth (m)	0.50

Solid Waste Analysis		Landfill Waste Acceptance Criteria Limits		
		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Total Organic Carbon (%)	-	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	-	-	-	-
Sum of 7 PCBs (mg/kg)	-	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17(mg/kg)	-	-	-	-
pH (pH Units)	-	-	-	-
ANC to pH 7 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc^n in 10:1 eluate		10:1 conc^n leached		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	C_2		A_2				
	mg/l		mg/kg				
Acenaphthylene (CEN 10:1)	0.000012		0.00012		-	-	-
Acenaphthene (CEN 10:1)	<0.000015		<0.00015		-	-	-
Fluorene (CEN 10:1)	<0.000014		<0.00014		-	-	-
Phenanthrene (CEN 10:1)	0.000043		0.00043		-	-	-
Anthracene (CEN 10:1)	0.000021		0.00021		-	-	-
Fluoranthene (CEN 10:1)	0.000058		0.00058		-	-	-
Pyrene (CEN 10:1)	0.000043		0.00043		-	-	-
Benz(a)anthracene (CEN 10:1)	0.000018		0.00018		-	-	-
Chrysene (CEN 10:1)	0.000018		0.00018		-	-	-
Benzo(b)fluoranthene (CEN 10:1)	0.000035		0.00035		-	-	-
Benzo(k)fluoranthene (CEN 10:1)	<0.000027		<0.00027		-	-	-
Benzo(a)pyrene (CEN 10:1)	0.000023		0.00023		-	-	-
Indeno(123cd)pyrene (CEN 10:1)	0.000015		0.00015		-	-	-
Dibenzo(ah)anthracene (CEN 10:1)	<0.000016		<0.00016		-	-	-
Benzo(ghi)perylene (CEN 10:1)	0.000026		0.00026		-	-	-
PAH 16 Total (CEN 10:1)	0.00035		0.0035		-	-	-
					-	-	-
					-	-	-

Leach Test Information		
Date Prepared	13/09/07	-
pH (pH Units)	7.91	-
Conductivity (µS/cm)	161.9	-
Temperature (°C)	20.0	-
Volume Leachant (Litres)	0.88	-
Volume of Eluate VE1 (Litres)	-	

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

Supplemental Report

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 07/15258/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 20873

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	»	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM001	In - house Method	Screening of Soils for Fibres			WET	
TM008	BS 1377:Part 1977	Particle size distribution of solid samples			DRY	
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition	✓	✓	WET	
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	✓		DRY	
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)	✓	✓	DRY	
TM062	MEWAM BOOK 124 1988.HMSO Method 17 7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection			NA	
TM062	MEWAM BOOK 124 1988.HMSO Method 17 7, Second Site property, March 2003	Determination of Phenolic compounds by HPLC with electro-chemical detection	✓	✓	WET	
TM070	Modified. US EPA Method 8250 & 625	Determination of Total Polychlorinated Biphenyls (PCB's) as Aroclor 1254 and the ICE 7 Congeners by GC-MS			DRY	
TM074	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS MCERTS Accreditation on Soils for Naphthalene except when Kerosene present.			NA	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)			WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)	✓		WET	
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by *Headspace GC-FID (C4-C12)*	✓	✓	WET	
TM090	Method 5310, AWWA-APHA, 20th Ed., 1999 : Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water			NA	
TM097	Modified: US EPA Method 325.1 & 325.2	Determination of Chloride using the Kone Analyser			NA	

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

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 07/15258/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 20873

Report Key :

Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03×10^{-7}

NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	»	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM098	Method 4500E, AWWA/APHA. 20th Ed., 1999	Determination of Sulphate using the Kone Analyser			NA	
TM098	Method 4500E, AWWA/APHA, 20th Ed., 1999	Determination of Sulphate using the Kone Analyser	✓	✓	DRY	
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser			WET	
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser			NA	
TM123	BS 2690: Part 121:1981	The Determination of Total dissolved Solids in Water			NA	
TM127	Method 3112B, AWWA/APHA, 20th Ed., 1999	The Determination of Trace Level Mercury in Aqueous Media and Soil Extracts by Atomic Absorption Spectroscopy			NA	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer			DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓		DRY	
TM129	Method 3120B, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 3050B	Determination of Metal Cations by IRIS Emission Spectrometer	✓	✓	DRY	
TM132	In - house Method	ELTRA CS800 Operators Guide	✓		DRY	
TM132	In - house Method	ELTRA CS800 Operators Guide	✓	✓	DRY	
TM133	BS 1377: Part 3 1990	Determination of pH in Soil and Water using the GLpH pH Meter	✓	✓	WET	
TM142	In house method	Analysis of Polynuclear Aromatic Hydrocarbons (PAH) by GC-FID			DRY	
TM152	Method 3125B. AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS			NA	

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

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 07/15258/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 20873

Report Key :

			Results expressed as (e.g.) 1.03E-07 is equivalent to $1.03x10^{-7}$
NDP	No Determination Possible	*	Subcontracted test
NFD	No Fibres Detected	»	Result previously reported (Incremental reports only)
#	ISO 17025 accredited	M	MCERTS Accredited
PFD	Possible Fibres Detected	EC	Equivalent Carbon (Aromatics C8-C35)

Note: Method detection limits are not always achievable due to various circumstances beyond our control.

Summary of Method Codes contained within report :

Method No.	Reference	Description	ISO 17025 Accredited	MCERTS Accredited	Wet/Dry Sample [1]	Surrogate Corrected
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the "Skalar SANS+ System" Segmented Flow Analyser	✓		WET	
TM154	In - house Method	Determination of Petroleum Hydrocarbons by EZ Flash GC-FID in the Carbon range C6- C40			WET	
TM172		EPH in Waters			NA	

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

ALcontrol Geochem Analytical Services
Table Of Results - Appendix

Job Number: 07/15258/02/01
Client: Geotechnical Eng. Ltd
Client Ref. No.: 20873

Summary of Coolbox temperatures

Batch No.	Coolbox Temperature (°C)
1	18

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Geochem reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If asbestos is detected, then identification is carried out by ALcontrol Shutler. If a sample is suspected of containing asbestos, then further preparation and analysis will be suspended on that sample until the asbestos result is known. If asbestos is present, then no further analysis will be undertaken.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
8. If no preserved sample is received for cyanide or phenol analysis (HPLC), the laboratory will preserve on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. **Surrogate recoveries** – Currently the only analysis, which is surrogate corrected, is PAHs on soils. For EPH on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).
15. Total of 8 speciated phenols by HPLC includes Resorcinol, Catechol, Phenol, Napthol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.