CCG-C-12-6693

GROUND INVESTIGATION FOR WAST WREXHAM ARC: SOIL MOUNDS

JULY 2012



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	For and behalf of CC GEOTECHNICAL LTD
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1.0 INTRODUCTION

CC GEOTECHNICAL LTD (CCG) was commissioned by ***BAM Construction Ltd*** to undertake an intrusive investigation on, and adjacent to, four soil mounds of stockpiled materials at the site of the proposed Welsh Ambulance Services NHS Trust (WAST) Wrexham Ambulance Resource Centre (ARC). The layout of the proposed development is shown on Nightingale Associates Drawing No. 09044 in Appendix A.

The purpose of the investigation was to determine the physical and chemical properties of the stockpiled soils in each mound, in relation to their potential re-use as fill material during construction of the proposed development, which includes the ARC building, access roads and various hard standing areas including a staff car park. A factual report was to be produced on the findings of the investigation.

It must be borne in mind that the data and opinions contained in this report should be read in conjunction with the Notes on Limitations, given in Appendix G.

2.0 SITE LOCATION & DESCRIPTION

The site is located to the south of Wrexham Maelor Hospital, at the rear of the existing car park and the overflow car park area (which was the subject of ground investigation report CCG-C-12-6692). Access to the site is via the gated access road adjacent to the rail bridge on Croesnewydd Road, near the A483 in Wrexham, North Wales as shown on Drawing No. 12/6693/1 in Appendix A.

The site comprises grassed open land, on which are four soil mounds of varying dimensions. Mounds 1 & 4 are at the north west of the site, with Mound 2 extending to the south west and Mound 3 lying to the east. The topography of the site at ground level is generally flat, but features a number of drops in level from west to east that aggregate to an approximate 3m change in level. A compacted stone access road bisects the site from west to east.

A body of surface water is present on site. The River Gwenfro runs from the northwest to the south, where it appears to enter a culvert. A reed bed system was observed to be present towards the north westerly limit of the site, adjacent to Mound 4.

3.0 FIELDWORK

The fieldwork was planned in accordance with BS10175: 2011, and carried out in accordance with BS10175: 2011, BS5930: 1999 and TRL Technical Note PR/INT/277/04.

The scope of the fieldwork comprised:

- 24nr Trial Pits (originally 20nr)
- 1nr Cable Percussion borehole
- Surveying to establish the location & elevation of each exploratory hole

The layout of the investigation is shown on Nightingale Associates Drawing No. 09044 Revision CCG in Appendix A which has been amended by ***CCG*** to show the location of the cable percussion borehole and the 4nr additional trial pit positions.

Surveying was carried out with calibrated levelling and GPS equipment. Levels above Ordnance Datum (aOD) and GPS co-ordinates were recorded for each DCP/trial pit position.

Trial pits were mechanically excavated under supervision by ***CCG*** engineers, and the arisings logged on site. Bulk disturbed samples and small disturbed samples were taken from varying strata, for geotechnical and geoenvironmental laboratory testing. Hand Shear Vane (HSV) tests were performed in-situ on cohesive strata. All sampling and in-situ testing was conducted as directed by Arup's representative on site.

Trial pit logs annotated with levels aOD, co-ordinates, sampling regime and HSV results are given in Appendix B.

The cable percussion borehole BH101 was bored with a Dando 150 drilling rig and crew, to a termination depth of 22.0mbgl. A standpipe was installed to enable monitoring of ground gas and groundwater levels.

The cable percussion borehole log annotated with level to OD, co-ordinates, sampling regime, SPT results and standpipe construction details is given in Appendix C.

Photographs taken during the initial site walkover and trial pit excavation works are shown in Appendix D.

4.0 OBSERVED STRATIGRAPHY

The general succession at Mounds 1-4 consisted of varying composition of made ground materials to the base of each mound. Further deposits of made ground were present below ground level at Mounds 1, 2 and 4. Natural strata was encountered immediately underlying Mound 3.

Fully detailed descriptions for each position are given on the trial pit logs in Appendix B.

BH101 commenced on MADE GROUND deposits comprising of very soft silty sandy gravelly clay extending to around 3mbgl. The succession continued into very loose clayey sandy GRAVEL, the base of which was at 4mbgl, before deposits of very soft silty sandy gravelly CLAY were encountered, extending to 4mbgl. Thereafter, the borehole continued in a sequence of medium dense becoming dense then very dense deposits of SAND & GRAVEL varying to sandy GRAVEL and to gravelly SAND, and with low cobble content. Groundwater was monitored to stand at around 7.3mbgl.

Fully detailed descriptions of the strata encountered in the cable percussion borehole are given on the log in Appendix C.

5.0 GEOTECHNICAL / ENGINEERING LABORATORY TESTING

The scope of the geotechnical laboratory testing comprised:

- 11nr Moisture Content analyses in accordance with BS 1377: Part 2: 1990
- 11nr Atterberg Limits analyses in accordance with BS 1377: Part 2: 1990
- 20nr Particle Size Distribution (PSD) analyses in accordance with BS 1377: Part 2: 1990
- 20nr Sedimentation analyses by Hydrometer method in accordance with BS 1377: Part 2: 1990
- 10nr BRE SD1 Full Suite

The results of the testing are given in Appendix E.

6.0 GEOENVIRONMENTAL / CHEMICAL LABORATORY TESTING

The scope of the geoenvironmental laboratory testing comprised:

- 33nr Suite E1- General Soil

- 30nr Suite E2- Asbestos
- 23nr Suite E3- TPH CWG
- 19nr Suite E4- PAH & BTEX
- 14nr Suite E5- SVOC & VOC
- 10nr Suite E6- TPH Carbon Bands
- 32nr Suite I- Leachability (WAC)
- 20nr Suite J- Leachability

The suites are as specified in Arup Specification Document No 213833-65.

The results of the analyses are given in Appendix F.

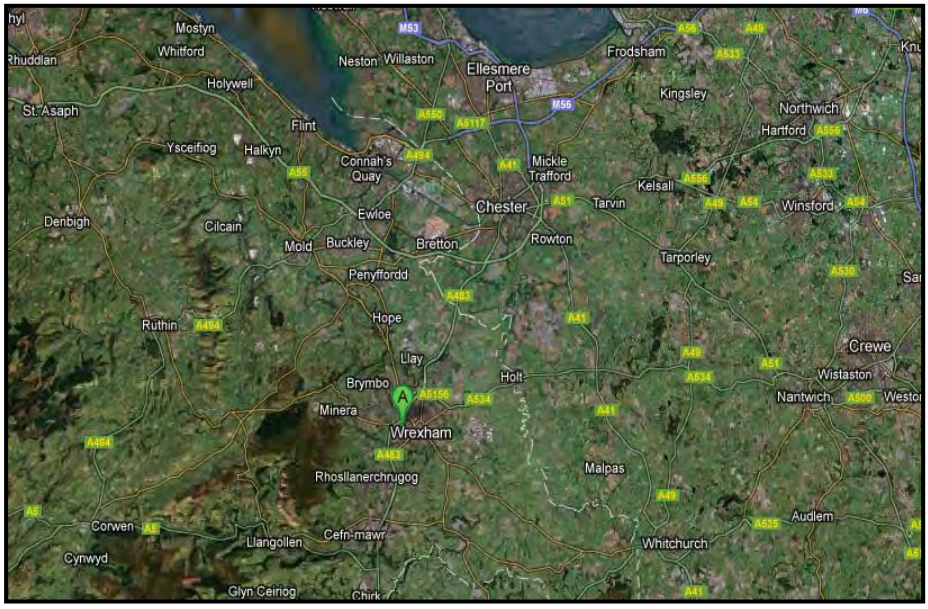
APPENDIX A

DRAWINGS

CC GEOTECHNICAL LTD

N





Drawing Number:	12/6693/1
Site Location:	WAST Wrexham ARC- Soil Mounds
Map Information:	Site Location

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NOTE:
COORDINATES ARE TO WREXHAM COUNTY BOROUGH COUNCIL GRID SET OUT AND DO NOT RELATE TO ORDNANCE SURVEY GRID.

LEVELS ARE TO BENCHMARKS TAKEN FROM CAD DATA PROVIDED BY WREXHAM COUNTY BOROUGH COUNCIL.
ATTENUATION POND LOCATIONS ARE TAKEN WREXHAM COUNTY BOROUGH COUNCIL PROVIDED AND THEREFORE FINAL LOCATION COORDINATES WILL BE REQUIRED TO ALLOW ACCURATE SETOUT. LATEST CAD DRAWING HAS BEEN USED.

Coordinate Schedule

	Ref.	Easting (X)	Northing (Y)	Level
	STATION 1	12095468	20391879	
	STATION 8	12015557	20498199	
OUTER RING MAINTENANCE TRACK	TOB 1			93.050
OUTER RING MAINTENANCE TRACK	TOB 2			93.050
OUTER RING MAINTENANCE TRACK	TOB 3			93.050
OUTER RING MAINTENANCE TRACK	TOB 4			93.050
OUTER RING MAINTENANCE TRACK	TOB 5			93.050
OUTER RING MAINTENANCE TRACK	TOB 6			93.050
OUTER RING MAINTENANCE TRACK	TOB 7			93.050
TOP OF BANK	TOB 8			93.050
TOP OF BANK	TOB 9			93.050
TOP OF BANK	TOB 10			93.050
TOP OF BANK	TOB 11			93.050
BOTTOM OF POND	BOP 1			90.150
BOTTOM OF POND	BOP 2			90.150
BOTTOM OF POND	BOP 3			90.150
BOTTOM OF POND	BOP 4			90.150
OUTER RING MAINTENANCE TRACK	TOB 12			92.250
OUTER RING MAINTENANCE TRACK	TOB 13			92.250
OUTER RING MAINTENANCE TRACK	TOB 14			92.250
OUTER RING MAINTENANCE TRACK	TOB 15			92.250
TOP OF BANK	TOB 16			92.250
TOP OF BANK	TOB 17			92.250
TOP OF BANK	TOB 18			92.250
TOP OF BANK	TOB 19			92.250
BOTTOM OF POND	BOP 5			89.950
BOTTOM OF POND	BOP 6			89.950
BOTTOM OF POND	BOP 7			89.950
BOTTOM OF POND	BOP 8			89.950

No | Design Risk Register

Rev | Date | Revision Notes

Client / Contractor

BAM Construction Limited

NIGHTINGALE associates architects
www.nightingaleassociates.com

Project
WAST AND NWFRS
WREXHAM

Drawing Title
SITE SET OUT

Job No	Date	Scale@A0
09044	24/07/12	1:500

Status
PRELIMINARY

Drawing No						Rev
Origin	Zone	Level	Type	Content	Sequential	
AR	ARC	00	PL	100	020	CCG

SCHEDULE OF TRIAL PIT & BOREHOLE LOCATIONS

LOCATION	NATIONAL GRID REFERENCE / GPS	LEVEL (mAOD)
TPM01	332068E, 350373N	97.407
TPM02	332068E, 350361N	97.193
TPM03	332079E, 350362N	97.103
TPM04	332097E, 350364N	97.050
TPM05	332087E, 350349N	96.915
TPM06	332060E, 350316N	97.040
TPM07	332076E, 350329N	96.825
TPM08	332100E, 350316N	96.498
TPM09	332062E, 350295N	96.822
TPM10	332081E, 350313N	96.759
TPM11	332083E, 350360N	96.819
TPM12	332101E, 350296N	93.163
TPM13	332056E, 350272N	96.818
TPM14	332076E, 350292N	96.874
TPM15	332087E, 350272N	96.575
TPM16	332066E, 350260N	96.787
TPM17	332079E, 350267N	96.818
TPM18	332248E, 350275N	91.295
TPM19	332271E, 350270N	90.679
TPM20	332285E, 350264N	89.461
TPM21	332113E, 350312N	93.268
TPM22	332034E, 350385N	95.153
TPM23	332044E, 350378N	94.989
TPM24	332072E, 350343N	92.705
BH101	332120E, 350330N	92.778

APPENDIX B

TRIAL PIT LOGS

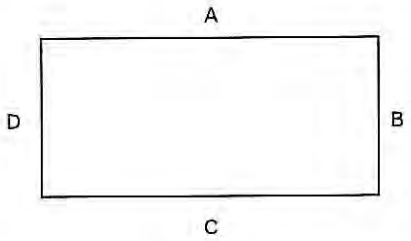
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM01 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	97.047m aOD 332068E, 350373N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
1.90				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
0.70 0.70	BD SD			Light brown mottled dark brown silty gravelly SAND with occasional rootlets. Gravel is fine to coarse angular red brick with low cobble content, tarmac, occasional coal & clinker, rare plastic and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 1) (1.90)		
1.90 1.90	BD SD		1.90	Brown sandy gravelly silty CLAY. Gravel is fine to coarse angular red brick with low cobble content, coal & clinker and sub-angular to rounded sandstone & quartzite (MADE GROUND - MOUND 1)ROUND - MOUND 1)		
3.80 3.80	BD SD					
			4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

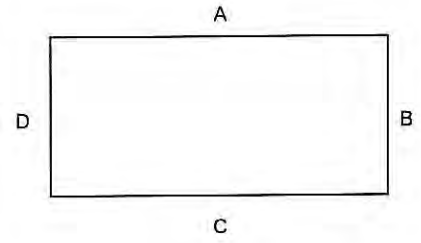
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM02 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

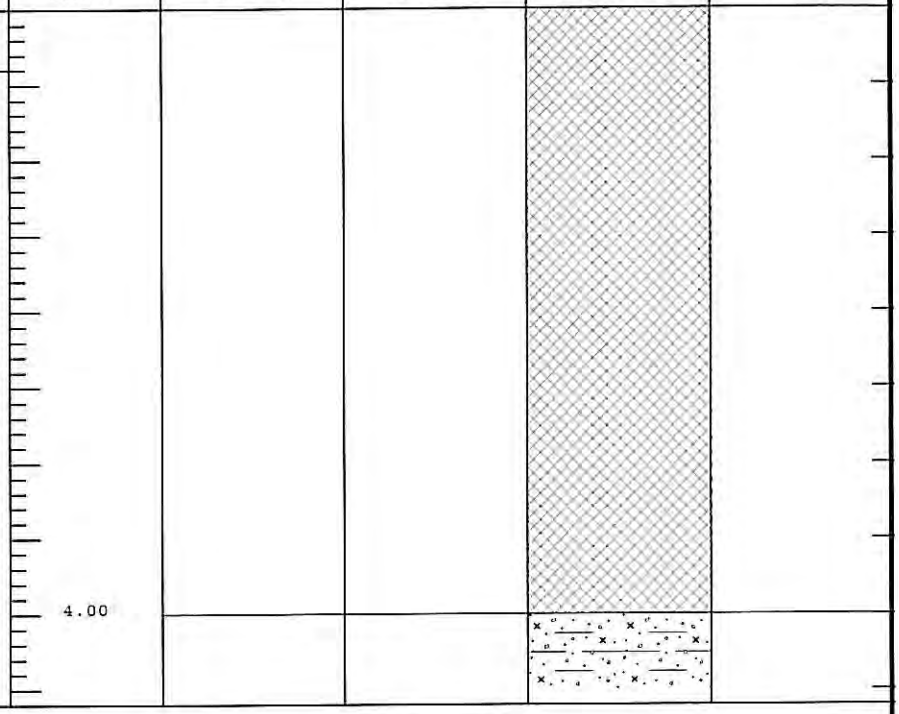
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19/06/12-19/06/12	1:50	97.193m aOD 332068E, 350361N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown silty gravelly slightly clayey SAND with occasional rootlets & brown clay pockets and rare pockets of dense dark brown slightly gravelly sand. Gravel is fine to coarse angular red brick with occasional coal & clinker and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 1) (4.00)		
1.50	BD					
1.50	SD					
3.10	BD					
3.10	SD					
4.00	HSV	65	4.00			
				Brown mottled dark brown slightly sandy slightly gravelly silty CLAY		
4.20	BD					
4.20	SD					
4.40	HSV	80	4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

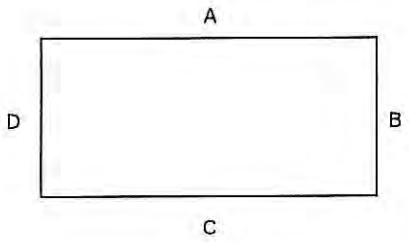
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CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	97.103m aOD 332079E, 350362N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown slightly sandy slightly gravelly silty CLAY with occasional rootlets. Gravel is fine to coarse angular red brick with occasional slag, coal & clinker and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 1)		
1.20	BD					
1.20	SD					
2.50	BD					
2.50	SD					
4.00	BD					
4.00	SD					
4.00	HSV	65		Rare pockets of angular fine grey breeze block from 4.00m		
			4.50			

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

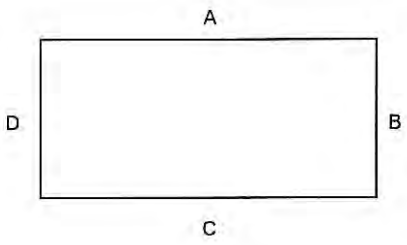
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CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	97.050m aOD 332097E, 350364N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/orange silty slightly gravelly fine and medium SAND with occasional rootlets. Gravel is sub-angular to rounded sandstone & quartzite (MADE GROUND - MOUND 1)		
1.00	BD					
1.00	SD					
				Occasional pockets of brown sandy gravelly clay from 2.00m		
2.50	BD					
2.50	SD					
2.50	HSV	70				
			3.00	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

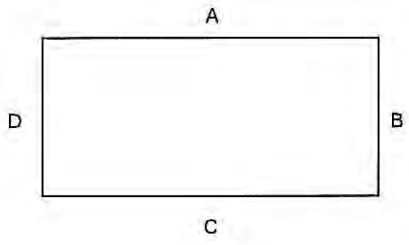
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM05 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	96.915m aOD 332087E, 350349N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown slightly silty slightly gravelly SAND with occasional rootlets. Gravel is angular red brick and sub-angular to rounded natural lithologies including sandstone & quartzite with low cobble content (MADE GROUND - MOUND 1)		
1.10	BD			Rare pockets of brown clay from 1.00m		
1.10	SD					
3.00	BD		3.00	TERMINATED AT 3.00m DUE TO SIDES OF EXCAVATION COLLAPSING		
3.00	SD					
3.00	HSV	65				

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

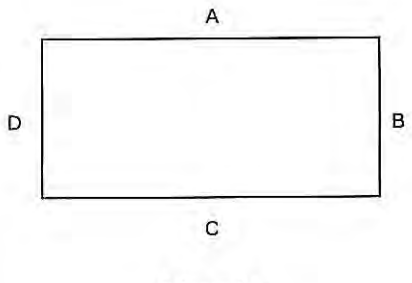
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM06 Sheet 1 of 1

CLIENT	SITE
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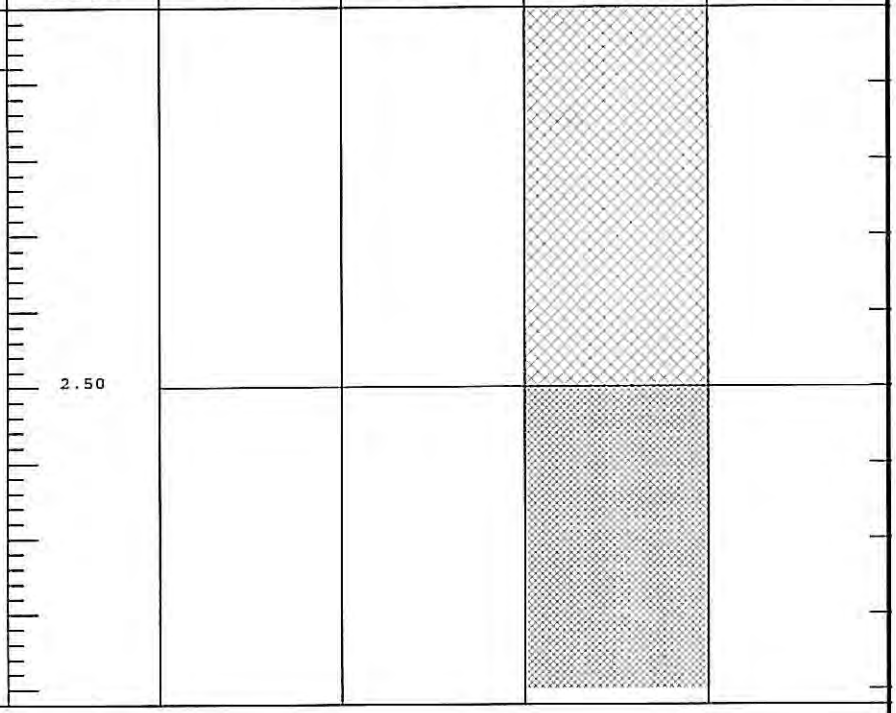
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19/06/12-19/06/12	1:50	97.040m aOD 332060E, 350316N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub-angular red brick & tarmac with occasional coal and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 2) (2.50)		
1.00	BD					
1.00	SD					
2.50	BD		2.50			
2.50	SD			Brown slightly silty SAND with frequent pockets of brown clay (MADE GROUND - MOUND 2)		
3.00	HSV	>120				
4.00	BD					
4.00	SD					
4.50	BD		4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass
HSV tests undertaken on clay pockets

All dimensions are in metres unless otherwise stated

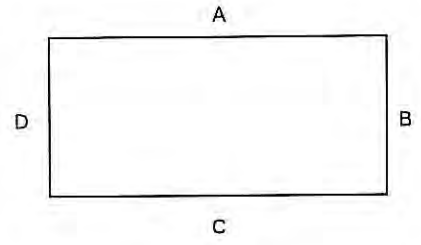
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM07 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

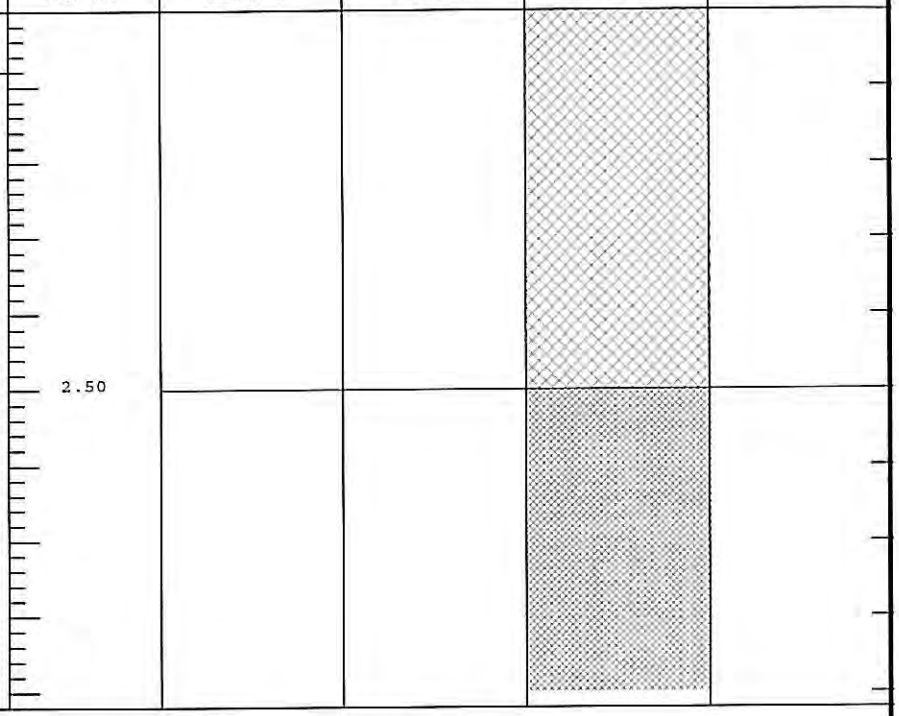
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	96.825m aOD 332076E, 350329N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown sandy slightly gravelly silty CLAY with occasional rootlets. Gravel is fine to coarse angular red brick & ceramics with occasional tarmac & coal and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 2) (2.50)		
1.00	BD					
1.00	SD					
2.50	BD		2.50			
2.50	SD					
2.50	HSV	75		Brown very silty very gravelly clayey SAND with occasional pockets of dark brown sand. Gravel is fine to coarse angular red brick & ceramics with occasional tarmac & coal and sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 2)		
4.00	BD					
4.00	SD					
			4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

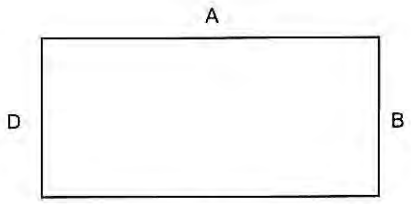
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM08 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
19/06/12-19/06/12	1:50	96.822m aOD 332062E, 350295N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown silty gravelly clayey SAND with occasional rootlets & frequent clay pockets. Gravel is sub-angular to rounded natural lithologies including sandstone & quartzite and occasional angular coal, clinker & plastic with rare tarmac. Plastic includes length of yellow gas pipe.		
1.00	BD					
1.00	SD					
2.20	BD					
2.20	SD					
2.20	PID	0.0ppm				
				Less anthropogenic material below 3.00m		
4.40	BD		4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

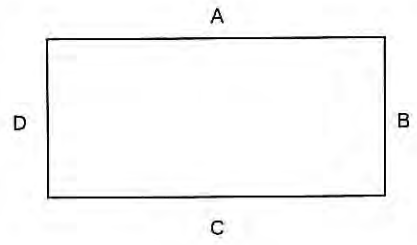
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM09 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.822m aOD 332062E, 350295N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/light reddish brown silty gravelly SAND with occasional rootlets & rare pockets of brown clay. Gravel is medium and coarse sub-angular to sub-rounded sandstone & quartzite with low coble content and rare fine angular red brick (MADE GROUND - MOUND 2)		
1.00	BD					
1.00	SD					
2.00	BD					
2.00	SD					
2.50	HSV	60				
3.00	HSV	80				
3.20	BD		3.20	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING		
3.20	SD					

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass
HSV tests carried out on clay pockets

All dimensions are in metres unless otherwise stated

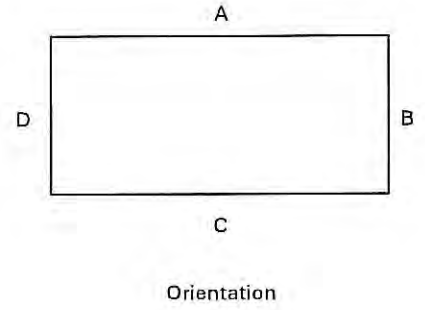
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM10 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.759m aOD 332081E, 350313N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
4.00				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown very silty very gravelly slightly clayey SAND. Gravel is fine to coarse sub-angular to sub-rounded sandstone & quartzite with low cobble content and rare medium and coarse angular red brick (MADE GROUND - MOUND 2) (4.00)		
1.00	BD					
1.00	SD					
2.00	BD					
2.00	SD					
2.00	HSV	50				
3.00	HSV	70				
4.00	BD		4.00			
4.00	SD			Black sandy SILT with occasional brown clay pockets (MADE GROUND)		
			4.50	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass
HSV tests carried out on clay pockets

All dimensions are in metres unless otherwise stated

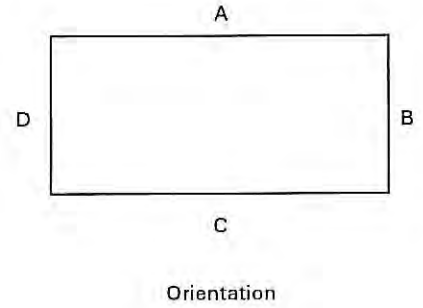
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM11 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.819m aOD 332083E, 350360N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/light reddish brown slightly silty gravelly SAND with occasional rootlets & brown firm clay pockets. Gravel is sub-angular to sub-rounded sandstone & quartzite with low cobble and boulder content (MADE GROUND - MOUND 2)		
1.10	BD					
1.10	SD					
2.00	BD					
2.00	SD			With rare gravel sized fragments of wood, plastic, angular red brick fragments and a plastic bag from 2.00m		
2.00	HSV	70				
			2.50	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING SIGNIFICANTLY		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass
HSV tests performed on clay pockets

All dimensions are in metres unless otherwise stated

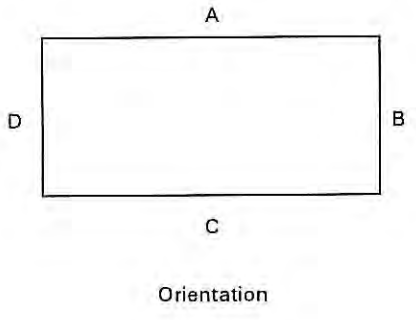
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM12 Sheet 1 of 1

CLIENT	SITE	
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS	

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	93.163m aOD 332101E, 350296N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



DEPTH	FACE A	FACE B	FACE C	FACE D
1.10				
4.00				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Dark brown gravelly SILT with occasional rootlets. Gravel is fine to coarse angular red brick & concrete with rare inclusions of domestic refuse including clothing fabrics, food packets, plastic bags, bin bags, drink cans & rope (MADE GROUND [TOPSOIL] - MOUND 2) (1.10)		
0.90	BD					
0.90	SD		1.10			
				Light brown sandy very silty GRAVEL with rare brown clay pockets. Gravel is fine to coarse rounded to sub-rounded sandstone & quartzite with low cobble & boulder content and rare angular slate & coal fragments (MADE GROUND)the sand matrix. (2.90)		
2.00	BD					
2.00	SD					
2.00	HSV	60				
			4.00			
				Brown slightly clayey slightly sandy GRAVEL. Gravel is fine to coarse sub-rounded to rounded sandstone with low cobble and boulder content TRIAL PIT TERMINATED		
4.50	SD		4.50			

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass. Excavated on surface of lower level/plateau of Mound 2.
HSV tests carried out on clay pockets

All dimensions are in metres unless otherwise stated

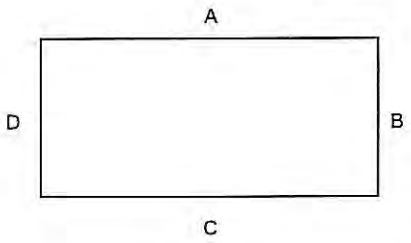
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM13 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.818m aOD 332056E, 350272N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
3.50				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Dark brown very sandy silty slightly clayey GRAVEL with occasional rootlets. Gravel is fine to coarse angular red brick, concrete, cermaics, glass, breeze block, insulation block, tile fragments & rare plastic fragments and sub-angular to rounded sandstone & quartzite (MADE GROUND [TOPSOIL] - MOUND 2) (3.50)		
1.00	BD					
1.00	SD					
1.00	HSV	60				
				Boulders of concrete at 2.00m Significant collapse of Trial Pit sides from 2.00m		
3.00	BD					
3.00	SD					
			3.50	Brown slightly silty very gravelly SAND. Gravel is fine to coarse sub-rounded to rounded sandstone & quartzite (MADE GROUND)		
4.00	BD					
4.00	SD					
			4.50			

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY 3.50-4.50m DAMP

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sprsely vegetated by weeds & grass
HSV tests performed on clay pockets

All dimensions are in metres unless otherwise stated

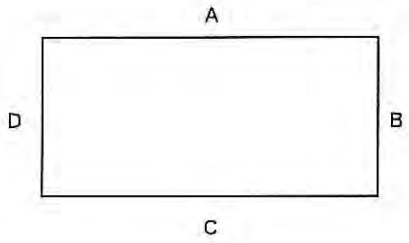
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM14 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.874m aOD 332076E, 350292N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/light reddish brown slightly silty very gravelly SAND with occasional rootlets. Gravel is fine to coarse sub-angular to rounded sandstone & quartzite with low cobble content (MADE GROUND - MOUND 2)		
1.40	BD					
1.40	SD					
3.00	BD		3.00	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLPASING		
3.00	SD					

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

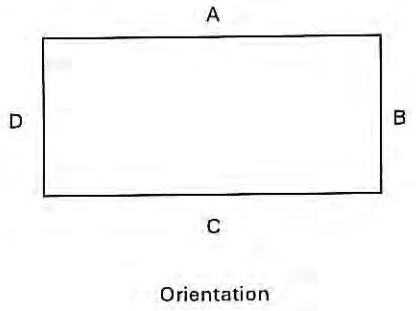
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM15 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.575m aOD 332087E, 350272N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/light reddish brown gravelly slightly silty slightly clayey SAND. Gravel is fine to coarse sub-angular to rounded sandstone & quartzite with low cobble content and rare coarse angular fragments of red brick (MADE GROUND - MOUND 2)		
1.00	BD					
1.00	SD					
2.20	BD		2.20	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING		
2.20	SD					

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of excavation sparsely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

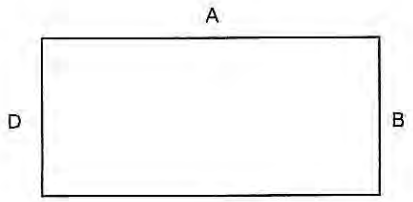
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM16 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.787m aOD 332066E, 350260N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
0.20				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
0.20	BD		0.20	Dark brown gravelly SILT with occasional rootlets (MADE GROUND [TOPSOIL] - MOUND 2) (0.20)		
0.20	SD			Brown slightly clayey slightly silty slightly gravelly fine and medium SAND. Gravel is fine to coarse sub-angular to rounded sandstone & quartzite with rare angular red brick fragments (MADE GROUND - MOUND 2)		
1.00	BD					
1.00	SD					
2.20	BD		2.20	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING		
2.20	SD					

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass

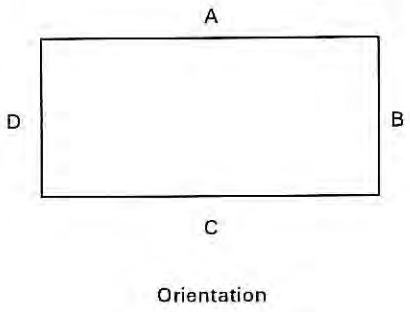
All dimensions are in metres unless otherwise stated

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM17 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
20/06/12-20/06/12	1:50	96.818m aOD 332079E, 350267N	GR	12/6693

PIT DIMENSIONS	A/C : 0.50 B/D : 1.50	DEPTH	FACE A	FACE B	FACE C	FACE D
ORIENTATION	E-W					



Orientation

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/light reddish brown slightly silty gravelly SAND with occasional rootlets and rare dark brown sandy silt pockets. Gravel is fine to coarse angular red brick & breeze block and sub-angular to sub-rounded sanstone with low cobble content and rare inclusions of blue plastic sheeting, plastic bottle & wire fencing (MADE GROUND - MOUND 2)		
1.20 1.20	BD SD					
				Cobbles and boulders of CONCRETE at 1.50m		
			2.00	TRIAL PIT TERMINATED DUE TO SIDES OF EXCAVATION COLLAPSING		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

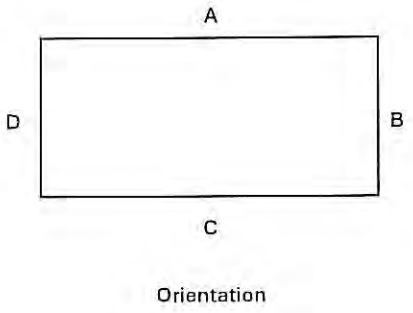
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM18 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

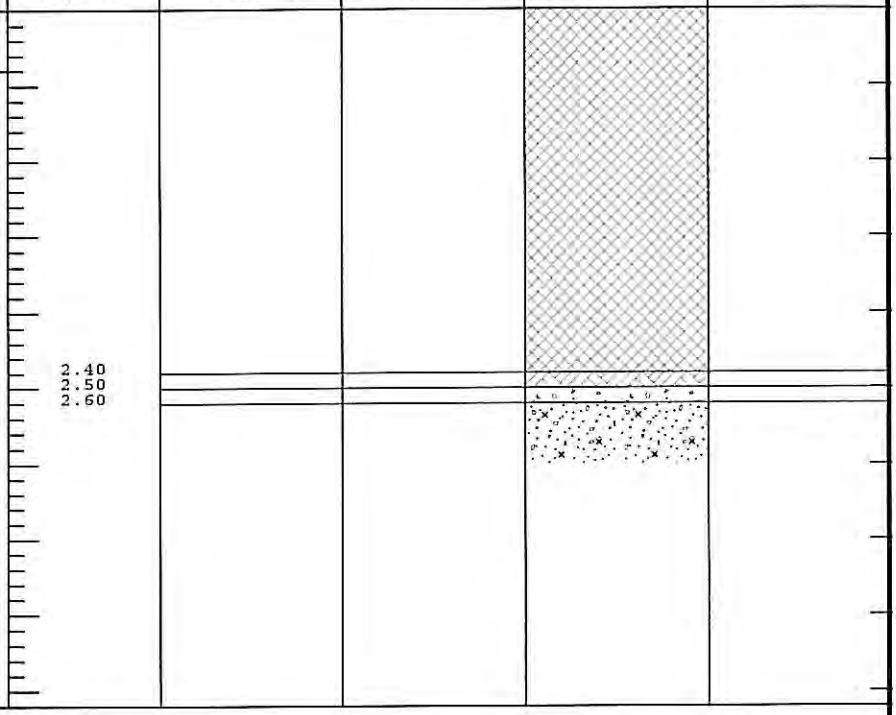
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	91.295m aOD 332248E, 350275N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown silty gravelly SAND with occasional rootlets. Gravel is fine to coarse sub-angular to rounded sandstone with rare fragments of slate & sandstone (MADE GROUND - MOUND 3) (2.40)		
1.30	BD					
1.30	SD					
			2.40			
2.60	BD		2.50			
2.60	SD		2.60	Brown gravelly SILT (MADE GROUND [TOPSOIL] - MOUND 3) (0.10)		
			3.00	Light brown slightly silty sandy GRAVEL. Gravel is fine to coarse sub-rounded sandstone (0.10)		
				Brown slightly silty gravelly SAND. Gravel is fine to coarse sub-rounded sandstone TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound densely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

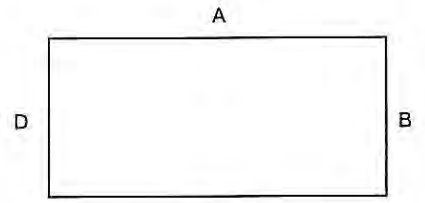
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM19 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

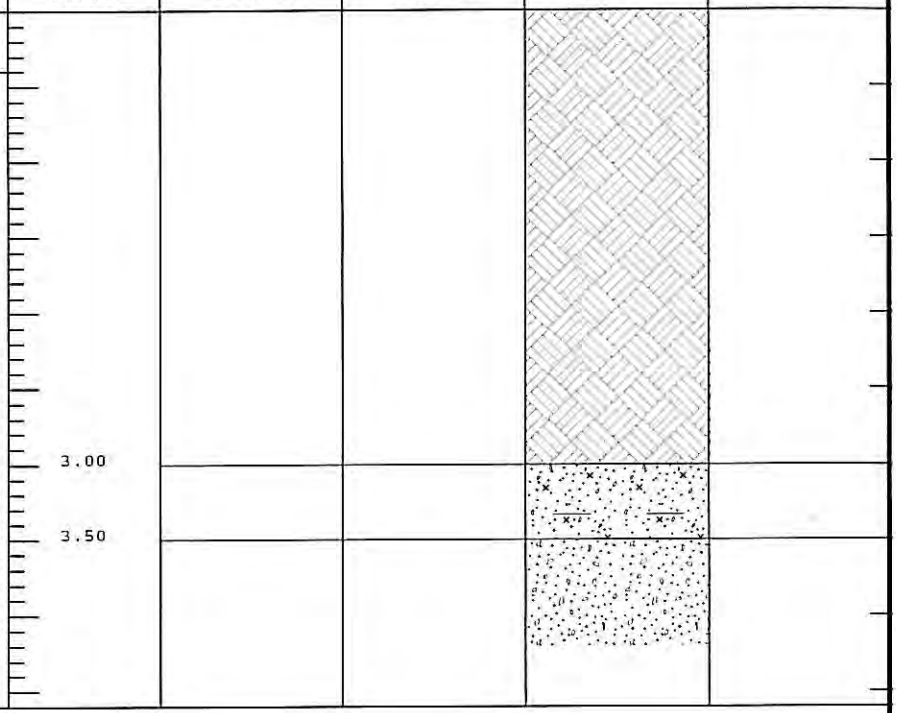
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	90.679m aOD 332271E, 350270N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Dark brown very silty slightly clayey SAND AND GRAVEL with occasional rootlets. Gravel is fine to coarse sub-angular to sub-rounded sandstone & limestone with rare plastic food wrapper (MADE GROUND [TOPSOIL] - MOUND 3) (3.00)		
1.15	BD					
1.15	SD					
			3.00			
				Light brown/orange silty clayey gravelly SAND. Gravel is fine to coarse sub-angular to sub-rounded sandstone (0.50)		
3.20	BD					
3.20	SD					
			3.50			
				Light brown very sandy silty slightly clayey GRAVEL. Gravel is fine to coarse sub-rounded to rounded sandstone with low cobble content		
4.20	BD		4.20	TRIAL PIT TERMINATED		
4.20	SD					

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound densely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

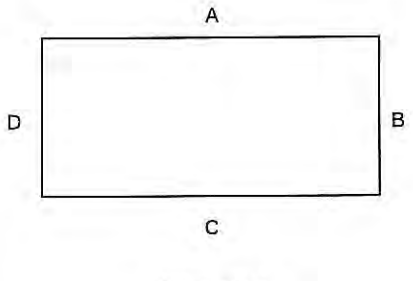
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM20 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	89.461m aOD 332285E, 350264N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
1.00				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Dark brown very sandy silty slightly clayey GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded of sandstone & quartzite with angular fragments of ceramics and rare wood fragments (MADE GROUND [TOPSOIL] - MOUND 3) (1.00)		
0.80	BD					
0.80	SD		1.00			
				Light brown mottled brown and grey slightly gravelly clayey SAND. Gravel is fine to coarse sub-angular to sub-rounded sandstone and occasional angular mudstone & coal fragments.		
3.10	BD					
3.10	SD					
3.10	HSV	80	3.20	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound densely vegetated with weeds & grass
HSV tests carried out on clay pockets

All dimensions are in metres unless otherwise stated

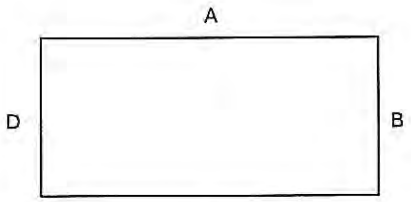
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM21 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

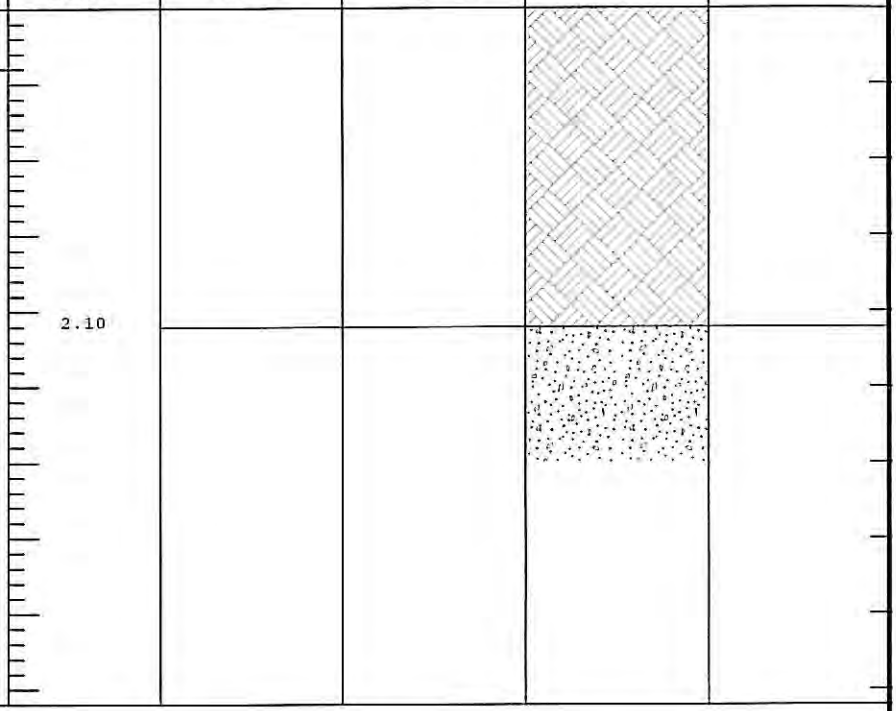
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	93.268m aOD 332113E, 350312N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION N-S



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Dark brown sandy gravelly SILT with occasional rootlets. Gravel is fine to coarse angular red brick & concrete and sub-angular to rounded quartzite & sandstone. Occasional inclusions of domestic refuse including clothing fabric, bin bags, food wrappers, glass, plastic bags, carpet & barbed wire (MADE GROUND [TOPSOIL] - MOUND 2). (2.10)		
				Putrid domestic refuse odour during excavataion GL-2.10m		
			2.10	Light brown/orange clayey SAND AND GRAVEL. Gravel is fine to coarse sub-angular to sub-rounded sandstone with low cobble and boulder content		
			3.00	TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound sparsely vegetated with weeds & grass. Excavated on surface of lower level/plateau of Mound 2.

All dimensions are in metres unless otherwise stated

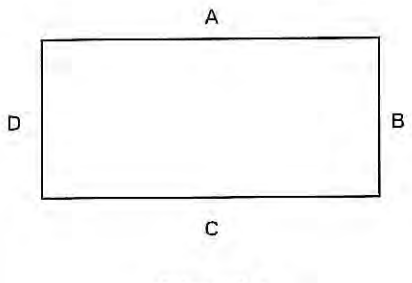
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM22 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	95.153m aOD 332034E, 350385N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation

DEPTH	FACE A	FACE B	FACE C	FACE D
2.80 3.00				

FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
				Brown/reddish brown sandy slightly gravelly silty CLAY with occasional rootlets. Gravel is fine to coarse red brick with angular glass & black ceramic fragments and sub-angular to rounded sandstone, mudstone & quartzite (MADE GROUND - MOUND 4) (2.80)		
1.10	BD					
1.10	SD					
1.10	HSV	75				
			2.80			
			3.00	Grey/brown slightly gravelly sandy SILT with frequent rootlets and occasional black organic inclusions (MADE GROUND) (0.20)		
3.10	BD			Strong putrid organic odour 2.80-3.00m.		
3.10	SD		3.20	Grey silty sandy slightly clayey GRAVEL. Gravel is angular to sub-angular limestone sub-base with rare red brick & tarmac (MADE GROUND)		
				Geotextile layer beneath sub-base		
				TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound densely vegetated with weeds & grass

All dimensions are in metres unless otherwise stated

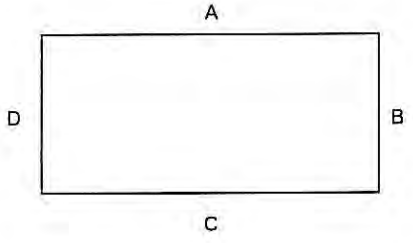
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM23 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

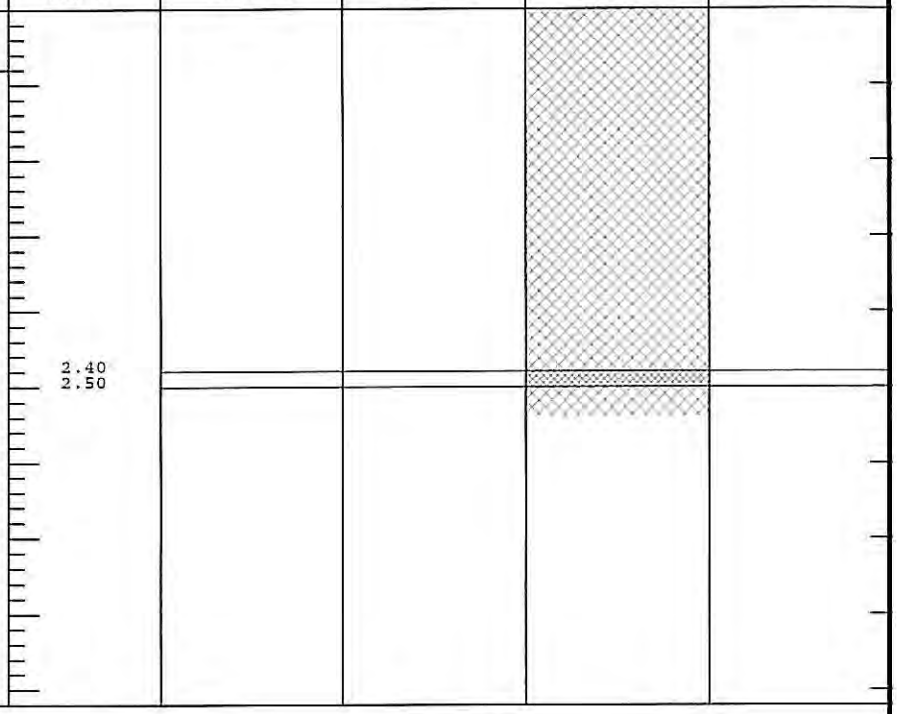
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	94.989m aOD 332044E, 350378N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION B-W



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
1.10	BD			Brown/reddish brown clayey gravelly SAND with occasional rootlets and rare brown clay pockets. Gravel is fine to coarse angular to sub-angular sandstone and angular mudstone lithorelics with rare black ceramic fragments and approximately 50cm length of black plastic pipe (MADE GROUND - MOUND 4) (2.40)		
1.10	SD					
1.10	HSV	65				
2.45	SD		2.40			
2.60	BD		2.50	Grey/brown silty sandy CLAY with occasional rootlets & black organic inclusions (MADE GROUND) Strong putrid organic odour 2.40-2.50m. (0.10)		
2.60	SD		2.70	Grey silty sandy GRAVEL. Gravel is fine and medium angular to sub-angular limestone sub-base with rare angular red brick & tarmac (MADE GROUND)		
				TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Surface of mound densely vegetated with weeds & grass
HSV tests carried out on clay pockets

All dimensions are in metres unless otherwise stated

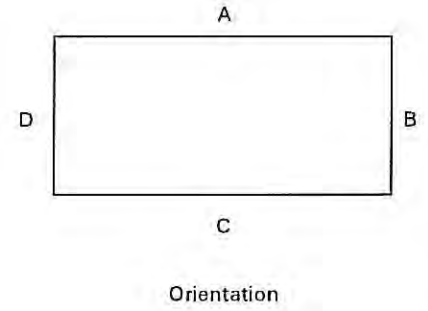
CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	TRIAL PIT LOG	TRIAL PIT NO. TPM24 Sheet 1 of 1

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

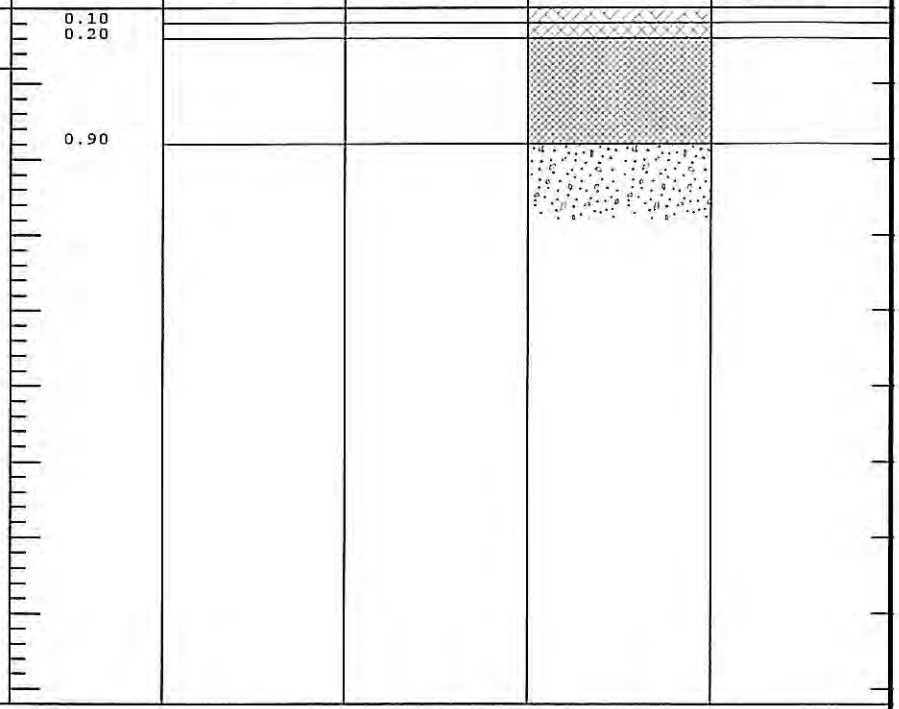
DATE OF FIELDWORK	SCALE	LEVEL/POSITION	LOGGED BY	JOB NO.
21/06/12-21/06/12	1:50	92.705m aOD 332072E, 350343N	GR	12/6693

PIT DIMENSIONS A/C : 0.50
B/D : 1.50

ORIENTATION E-W



Orientation



FACE AND POSITION LOGGED A

SAMPLE AND TEST RECORD DEPTH	TYPE	RESULT	DEPTH	DESCRIPTION OF STRATUM (thickness)	STRATUM NO.	WATER DEPTH
			0.10	Brown slightly sandy gravelly SILT with weeds and moss at surface. (MADE GROUND - TOPSOIL) (0.10)		
			0.20	Grey/brown GRAVEL. Gravel is angular limestone sub-base with rare angular red brick fragments (MADE GROUND) (0.10)		
0.60	BD			Underlain by geotextile and black visqueen sheeting		
0.60	SD					
			0.90	Brown/orange slightly silty sandy GRAVEL with rare dark brown sandy silt pockets. Gravel is fine to coarse sub-angular to sub-rounded sandstone & quartzite and rare angular tarmac fragments (MADE GROUND)(MADE GROUND) (0.70)		
1.40	BD		1.40	Yellow ridged pipe (possible duct) observed sitting in bed of limestone gravel in the exposed southern face of the trial pit at 0.80m		
1.40	SD			Brown sandy slightly silty GRAVEL. Gravel is fine to coarse sub-angular to rounded sandstone & quartzite with medium cobble content		
				TRIAL PIT TERMINATED		

GROUNDWATER INFORMATION

DEPTH STRUCK	ELAPSED TIME	WATER LEVEL	REMARKS ON GROUNDWATER
			TP DRY

EXCAVATION METHOD AND REMARKS

13T Tracked excavator
Sampling and termination depths dictated by Arup engineer
Excavated at southern preimeter of Mound 1 at base of the mound slope

All dimensions are in metres unless otherwise stated

APPENDIX C

BOREHOLE LOG

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	BOREHOLE LOG	HOLE NO. BH101 Sheet 1 of 3

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
22/06/12-22/06/12	1:50	92.778m aOD 332120E, 350330N	CB	GR	12/6693

SAMPLE RECORD DEPTH	TYPE	SPT N (Cu-kN/m^2)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	REDUCED LEVEL	LEGEND
				Very soft dark brown becoming brown slightly sandy slightly gravelly silty CLAY. Gravel is fine medium and coarse of varying angularity & varying lithology (MADE GROUND) (3.00)			
1.00	BD						
1.00 - 1.45	SPT	1					
2.00	BD						
2.00 - 2.45	SPT	2					
3.00	BD				3.00	89.78	
3.00 - 3.45	SPT	2		Very loose brown very clayey very sandy GRAVEL. Gravel is of varying angularity & varying lithology. (1.00)			
4.00	BD				4.00	88.78	
4.00 - 4.45	SPT	3		Very soft brown gravelly slightly sandy silty CLAY. Gravel is of varying angularity & varying lithology. (1.00)			
5.00	BD				5.00	87.78	
5.00 - 5.45	SPT	5		Loose becoming medium dense brown very clayey SAND AND GRAVEL. Gravel is fine medium and coarse of varying angularity & varying lithology with low cobble and boulder content (2.50)			
6.00	BD						
6.00 - 6.45	SPT	11					
7.50	BD				7.50	85.28	
7.50	SPT	12		Medium dense becoming very dense brown very sandy slightly silty GRAVEL. Gravel is fine medium and coarse of varying angularity & varying lithology with low cobble and boulder content (7.50)			
9.00	BD						
9.00 - 9.45	SPT	17					

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
12.00	12.00	20M	9.00		
			7.30		LEVEL AT S.O.S. 23/06/12
			7.80		LEVEL AT E.O.S. 23/06/12

BORING METHOD AND REMARKS

Dando 150 drilling rig & crew
1.5hrs chiselling cobbles & boulders at various depths
Standpipe slotted 1-4mbgl, plain 4-10mbgl & slotted 10-13mbgl. Sealed 10-3mbgl & 1mbgl-GL

All dimensions are in metres unless otherwise stated

CC Geotechnical
Tel: 0151-545-2750
Fax: 0151-548-7892

BOREHOLE LOG

HOLE NO. BH101
Sheet 2 of 3

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
22/06/12-22/06/12	1:50	92.778m aOD 332120E, 350330N	CB	GR	12/6693

SAMPLE RECORD DEPTH	TYPE	SPT N (Cu-kN/m^2)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	REDUCED LEVEL	LEGEND
10.50	BD						
10.50-10.95	SPT	16					
12.00	BD						
12.00-12.45	SPT	37					
13.50	BD						
13.50-13.95	SPT	70					
15.00	BD						
15.00-15.45	SPT	83		Very dense brown very sandy clayey GRAVEL. Gravel is fine medium and coarse of varying angularity & varying lithology with low cobble and boulder content (2.80)	15.00	77.78	
16.50	BD						
17.00-17.45	SPT	81					
18.20-18.65	SPT	50		Very dense brown silty gravelly fine and medium SAND. Gravel is of varying angularity & varying lithology (2.20)	17.80	74.98	
18.50	BD						
19.50-19.95	SPT	57					
20.00	BD				20.00	72.78	

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
12.00	12.00	20M	9.00		
			7.30		LEVEL AT S.O.S. 23/06/12
			7.80		LEVEL AT E.O.S. 23/06/12

BORING METHOD AND REMARKS

Dando 150 drilling rig & crew
1.5hrs chiselling cobbles & boulders at various depths
Standpipe slotted 1-4mbgl, plain 4-10mbgl & slotted 10-13mbgl. Sealed 10-3mbgl & 1mbgl-GL

All dimensions are in metres unless otherwise stated

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	BOREHOLE LOG	HOLE NO. BH101 Sheet 3 of 3

CLIENT	SITE
BAM CONSTRUCTION LTD	WAST WREXHAM ARC - SOIL MOUNDS

DATE OF FIELDWORK	SCALE	LEVEL/POSITION	OPERATOR	LOGGED BY	JOB NO.
22/06/12-22/06/12	1:50	92.778m aOD 332120E, 350330N	CB	GR	12/6693

SAMPLE RECORD DEPTH	TYPE	SPT N (Cu-kN/m^2)	Standp/ Piezo	DESCRIPTION OF STRATUM (thickness)	DEPTH	REDUCED LEVEL	LEGEND
				Dense brown silty SAND AND GRAVEL. Gravel is of varying angularity & varying lithology with low cobble and boulder content (1.50)			
21.00-21.45	SPT	46					
21.50	BD				21.50	71.28	
				Dense becoming very dense brown/grey/yellow/red slightly sandy GRAVEL. Gravel is of varying angularity & varying lithology with low cobble and boulder content			
22.00-22.45	SPT	59		BOREHOLE TERMINATED	22.00	70.78	

GROUNDWATER AND CASING INFORMATION

DEPTH STRUCK	DEPTH CASED	ELAPSED TIME	WATER LEVEL	DEPTH SEALED	REMARKS ON GROUNDWATER AND CASING
12.00	12.00	20M	9.00		
			7.30		LEVEL AT S.O.S. 23/06/12
			7.80		LEVEL AT E.O.S. 23/06/12

BORING METHOD AND REMARKS

Dando 150 drilling rig & crew
1.5hrs chiselling cobbles & boulders at various depths
Standpipe slotted 1-4mbgl, plain 4-10mbgl & slotted 10-13mbgl. Sealed 10-3mbgl & 1mbgl-GL

All dimensions are in metres unless otherwise stated

APPENDIX D

PHOTOGRAPHS



Figure 1: View East from Mound 2 showing gated entrance down access road with bridge over former railway to right and bridge over River Gwenfro to left. Reed beds behind palisade fencing at rear of Mound 4 to right.



Figure 2: View North-East from Mound 1 to Wrexham Maelor Hospital & car park. Standpipes (with no installations) shown in foreground, likely used as gas outlets.



Figure 3: View East across Mound 2 showing residential properties in the background.



Figure 4: View South across Mound 2 showing residential properties in the background.



Figure 5: View North-East from Mound 2 to hospital showing plateau of Mound 2 in foreground. Mound 3 to far right in background.



Figure 6: View North-West from Mound 2 showing stone access road in foreground with Mound 1 to right, Mound 4 to left and overflow car park area in background.



Figure 7: View East from stone access road showing open farmland to both sides with Mound 3 to left and industrial building adjacent to site in background.



Figure 8: View North-East from stone access road to Mound 3.

TPM01


HITACHI



TPM02


HITACHI

TPM03



TPM04



TPM05


THIS MACHINE IS FITTED WITH
AUTOMATIC QUICK HITCH.
NO SAFETY PIN REQUIRED.



TPM06


HITACHI

TPM07



TPM08



TPM09


THIS MACHINE IS FIT
AUTOMATIC QUICK H
NO SAFETY PIN REQ

TPM10



TPM11


THIS MACHINE IS FITTED WITH
AUTOMATIC QUICK HITCH.
NO SAFETY PIN REQUIRED.

TPM12



TPM13



TPM14


THIS MACHINE IS FITTED WITH
AUTOMATIC QUICK HITCH.
NO SAFETY PIN REQUIRED.

TPM15


THIS MACHINE IS FITTED WITH
AUTOMATIC QUICK HITCH.
NO SAFETY PIN REQUIRED.

TPM16



TPM17



TPM18


THIS MAC E IS FITTED WITH
AUTOMAT UICK HITCH.
NO SAFET N REQUIRED.

TPM19


HITACHI

TPM20



TPM21

TPM22


THIS MA
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QUIC
NO SAFE
3
1



TPM23


AUTOMATIC QUICK
NO SAFETY PIN

TPM24





APPENDIX E

GEOTECHNICAL / ENGINEERING LABORATORY TESTING

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
TPM01	BD	3.80	3.80	-	-	-	-	-	-	-	-	-	Y*	Brown sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, red brick, tarmac, coal, clinker. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM02	BD	3.10	3.10	-	-	-	-	-	-	-	-	-	Y*	Brown silty gravelly slightly clayey SAND. Gravel includes quartzite, sandstone, red brick, coal, clinker. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM02	BD	4.20	4.20	27	-	-	-	48	18	30	96	CI	Y	Brown slightly sandy slightly gravelly silty CLAY. (BS1377Pt2:3.2,4.4,5)
TPM03	BD	1.20	1.20	-	-	-	-	-	-	-	-	-	Y*	Brown slightly sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, slag, coal, clinker. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM03	BD	4.00	4.00	-	-	-	-	41	17	24	85	CI	Y*	Brown slightly sandy slightly gravelly silty CLAY. Gravel includes rare breeze block. (MADE GROUND) (BS1377Pt2:3.2,4.4,5,9.2,9.5)
TPM04	BD	2.50	2.50	3.9	-	-	-	-	-	-	-	NP	Y	Brown silty slightly gravelly fine and medium SAND. (BS1377Pt2:3.2,4.4,5)
TPM05	BD	1.10	1.10	-	-	-	-	-	-	-	-	-	Y*	Brown silty gravelly slightly clayey fine and medium SAND. Gravel includes quartzite, sandstone, red brick. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM05	BD	3.00	3.00	13	-	-	-	-	-	-	-	NP	Y	Brown silty slightly gravelly fine and medium SAND. (BS1377Pt2:3.2,4.4,5)
TPM06	BD	1.00	1.00	-	-	-	-	-	-	-	-	-	Y*	Brown slightly sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, red brick, tarmac, coal. (MADE GROUND) (BS1377Pt2:9.2,9.5)

SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693) DATE: 20.07.12

CLIENT: BAM CONSTRUCTION LTD SHEET: 1 of 4

UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* BS1377Pt2:9.5 not accredited)
Sample description not accredited by UKAS

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
TPM07	BD	2.50	2.50	21	-	-	-	31	16	15	91	CL	Y	Brown sandy slightly gravelly silty CLAY. (BS1377Pt2:3.2,4.4,5)
TPM07	BD	4.00	4.00	-	-	-	-	-	-	-	-	-	Y*	Brown very silty very gravelly clayey SAND. Gravel includes quartzite, sandstone, red brick, tarmac, coal. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM09	BD	2.00	2.00	-	-	-	-	-	-	-	-	-	Y*	Brown gravelly slightly silty SAND. Gravel includes quartzite, sandstone, red brick, coal, clinker. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM10	BD	1.00	1.00	-	-	-	-	-	-	-	-	-	Y*	Brown very silty very gravelly slightly clayey SAND. Gravel includes quartzite, sandstone, red brick. (MADE GROUND)(BS1377Pt2:9.2,9.5)
TPM10	BD	4.00	4.00	-	-	-	-	30	19	11	51	CL	Y	Brown slightly sandy slightly gravelly silty CLAY. (BS1377Pt2:3.2,4.4,5)
TPM11	BD	2.00	2.00	13	-	-	-	-	-	-	-	NP	Y	Dark brown very gravelly silty SAND. Gravel includes quartzite, sandstone, occasional red brick. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM12	BD	2.00	2.00	19	-	-	-	39	26	13	35	ML	Y	Brown sandy very silty GRAVEL. Gravel includes quartzite, sandstone, rare slate and coal. (MADE GROUND) (BS1377Pt2:3.2,4.4,5)
TPM13	BD	1.00	1.00	-	-	-	-	-	-	-	-	-	Y*	Dark brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including limestone, sandstone, concrete, red brick, ceramic, glass. (MADE GROUND) (BS1377Pt2:9.2,9.5)

SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693) DATE: 20.07.12

CLIENT: BAM CONSTRUCTION LTD SHEET: 2 of 4

UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* BS1377Pt2:9.5 not accredited)
Sample description not accredited by UKAS

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
TPM14	BD	3.00	3.00	-	-	-	-	-	-	-	-	-	Y*	Brown gravelly slightly silty SAND. Gravel includes sandstone, quartzite. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM15	BD	1.00	1.00	-	-	-	-	-	-	-	-	-	Y*	Brown gravelly slightly silty slightly clayey SAND. Gravel includes quartzite, sandstone, red brick. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM16	BD	2.20	2.20	-	-	-	-	-	-	-	-	-	Y*	Brown slightly clayey slightly silty slightly gravelly fine and medium SAND. (BS1377Pt2:9.2,9.5)
TPM19	BD	1.15	1.15	-	-	-	-	-	-	-	-	-	Y*	Brown very silty slightly clayey SAND and GRAVEL. Gravel is of varying angularity and lithology including sandstone. (BS1377Pt2:9.2,9.5)
TPM19	BD	4.20	4.20	-	-	-	-	-	-	-	-	-	Y*	Light brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including sandstone. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM20	BD	0.80	0.80	-	-	-	-	-	-	-	-	-	Y*	Dark brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including sandstone, quartzite, ceramic. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM20	BD	3.10	3.10	24	-	-	-	-	-	-	-	NP	Y*	Brown slightly gravelly clayey SAND. (BS1377Pt2:3.2,4.4,5)

SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693) DATE: 20.07.12

CLIENT: BAM CONSTRUCTION LTD SHEET: 3 of 4

UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* BS1377Pt2:9.5 not accredited)
Sample description not accredited by UKAS

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m^3)	Dry Density (Mg/m^3)	Shear Strength (kN/m^2)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425mm (%)	Soil Classification	UKAS accredited test (Y/N)	Description / Test Method Samples described in accordance with BS EN ISO 14688-2 2004
TPM22	BD	1.10	1.10	24	-	-	-	28	17	11	88	CL	Y	Brown sandy slightly gravelly silty CLAY. (BS1377Pt2:3.2,4.4,5)
TPM22	BD	3.10	3.10	-	-	-	-	-	-	-	-	-	Y*	Grey silty sandy slightly clayey GRAVEL. Gravel is angular to subangular limestone, red brick, tarmac. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM23	BD	1.10	1.10	20	-	-	-	-	-	-	-	NP	Y	Brown clayey gravelly SAND. (BS1377Pt2:3.2,4.4,5)
TPM23	BD	2.60	2.60	-	-	-	-	-	-	-	-	-	Y*	Grey silty sandy GRAVEL. Gravel is angular to subangular limestone, red brick, tarmac. (MADE GROUND) (BS1377Pt2:9.2,9.5)
TPM24	BD	1.40	1.40	-	-	-	-	-	-	-	-	-	Y*	Brown sandy slightly silty GRAVEL with medium cobble content. Gravel and cobbles are of varying angularity and lithology including quartzite and sandstone. (BS1377Pt2:9.2,9.5)

SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693) DATE: 20.07.12

CLIENT: BAM CONSTRUCTION LTD SHEET: 4 of 4

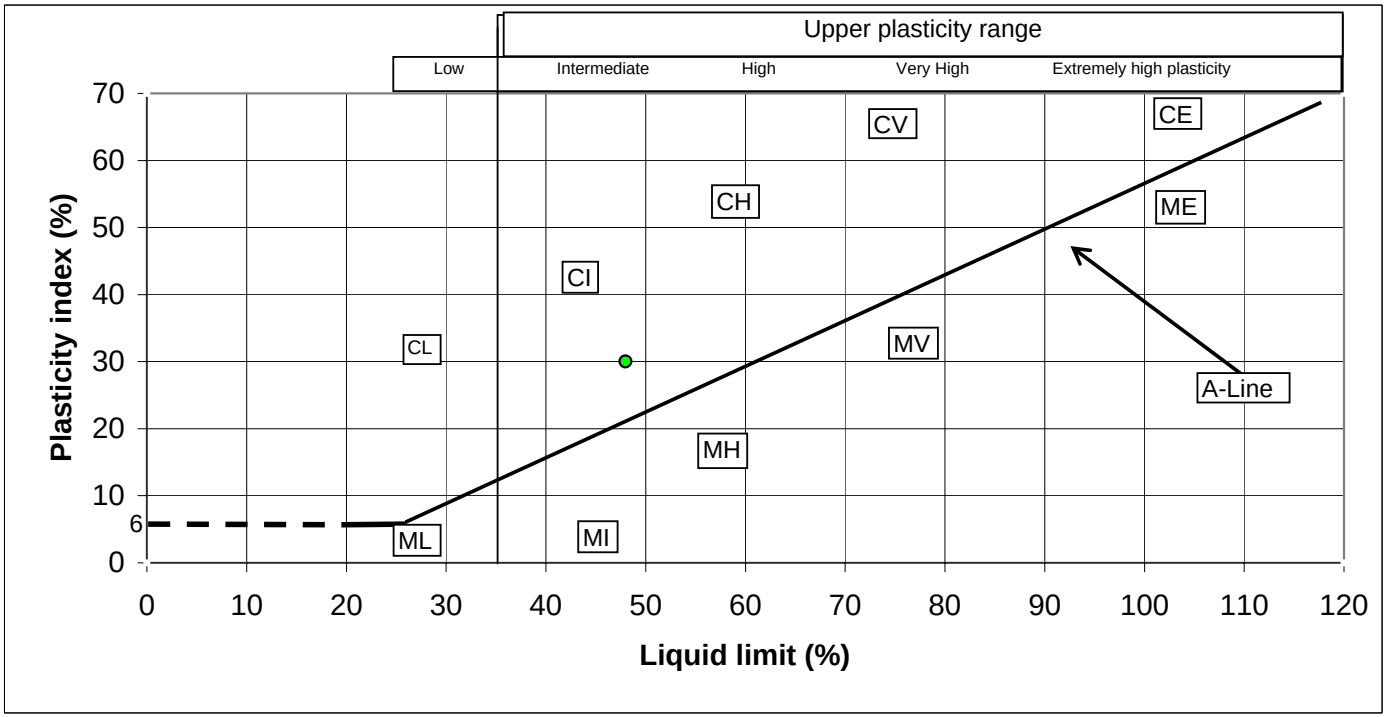
UKAS TESTING 4514

Key:- BD = Bulk Disturbed; SD = Small Disturbed; U100 = Undisturbed 100mm; WS = Window Sample
CL = Low Plasticity; CI = Intermediate; CH = High; CV = Very high; CE = Extremely high; NP = Non-plastic
(* BS1377Pt2:9.5 not accredited)
Sample description not accredited by UKAS

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



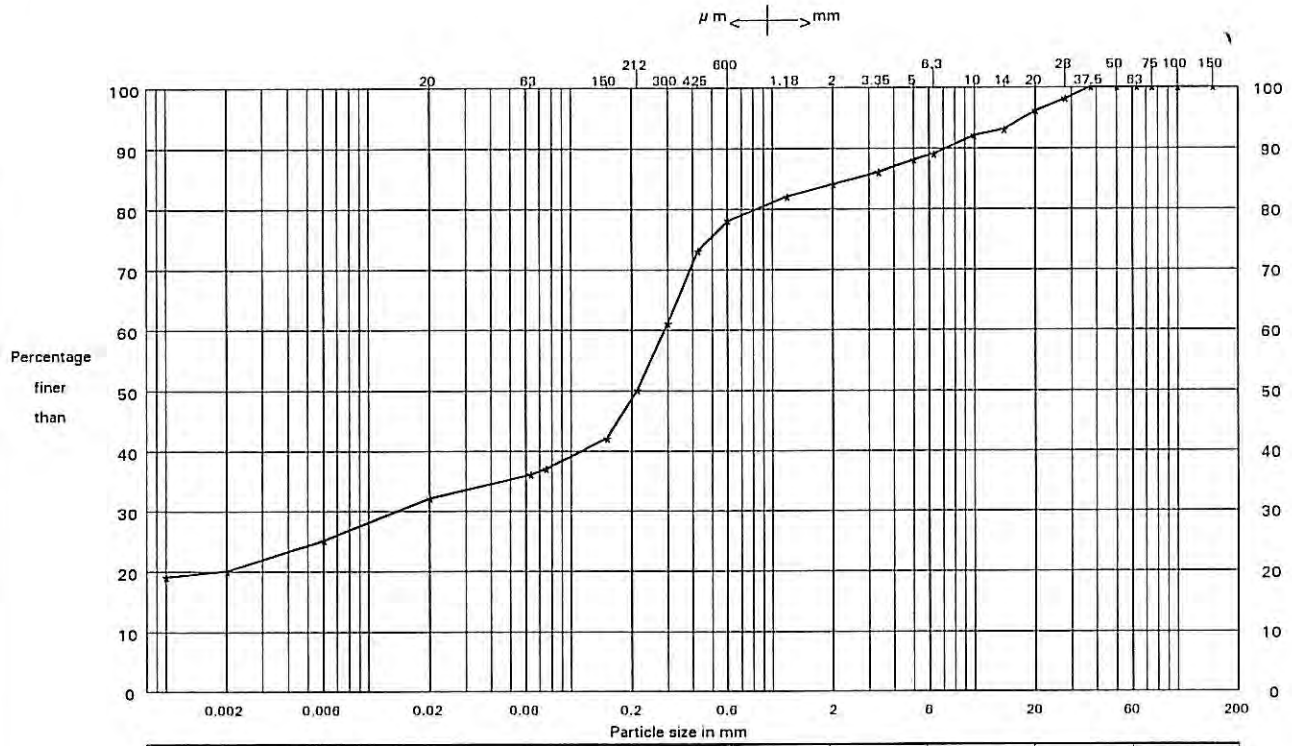
BH	Sample Depth	Liquid limit	Plasticity index
TPM02	4.20	48.0	30.0

UKAS TESTING
4514

CLIENT: BAM CONSTRUCTION LTD	SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693)

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM01
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	3.80 - 3.80	SAMPLE REF 3	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	19	20	25	32	36	37	42	50	61	73	78	82	84	86	88	89	92	93	96	98	100	100	100	100	100	100

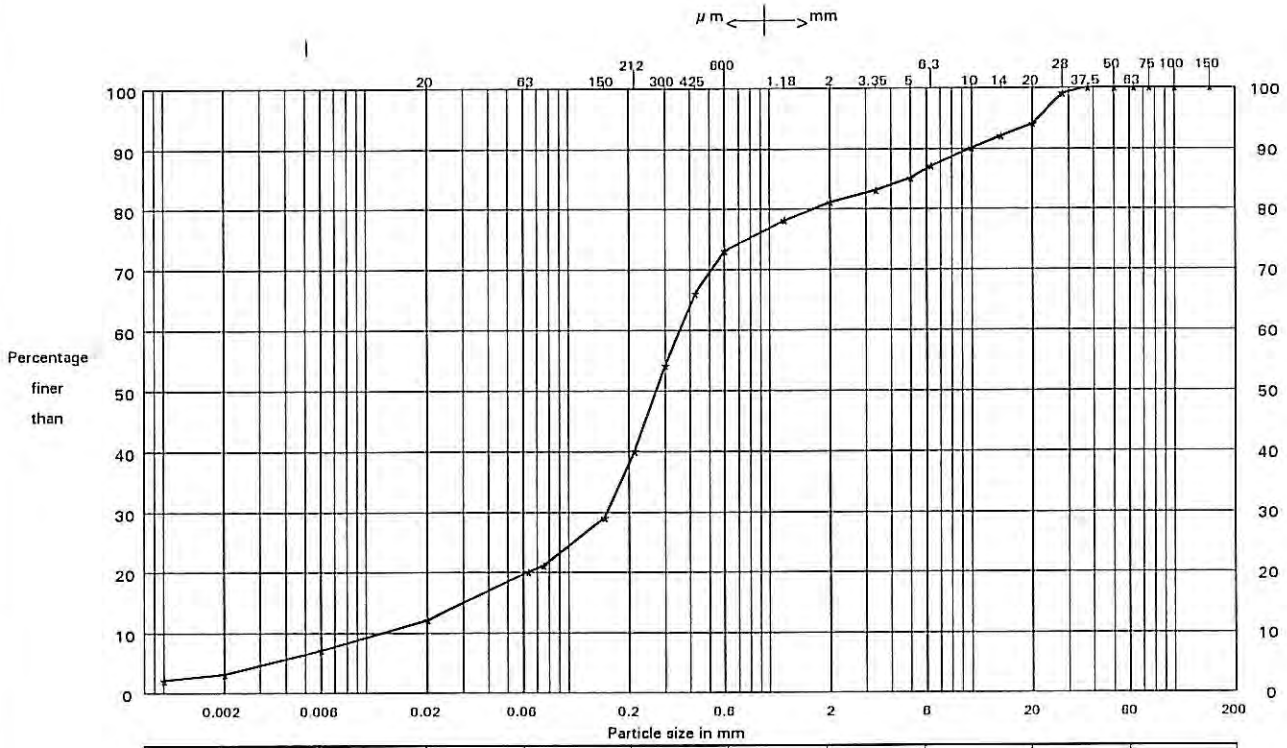


	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	20	16			48			16			0

SAMPLE DESCRIPTION	REMARKS
Brown sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, coal, clinker. (MADE GROUND)	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPH02
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	3.10 - 3.10	SAMPLE REF 3	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	2	3	7	12	20	21	29	40	54	66	73	78	81	83	85	87	90	92	94	99	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	3	17			61			19			0

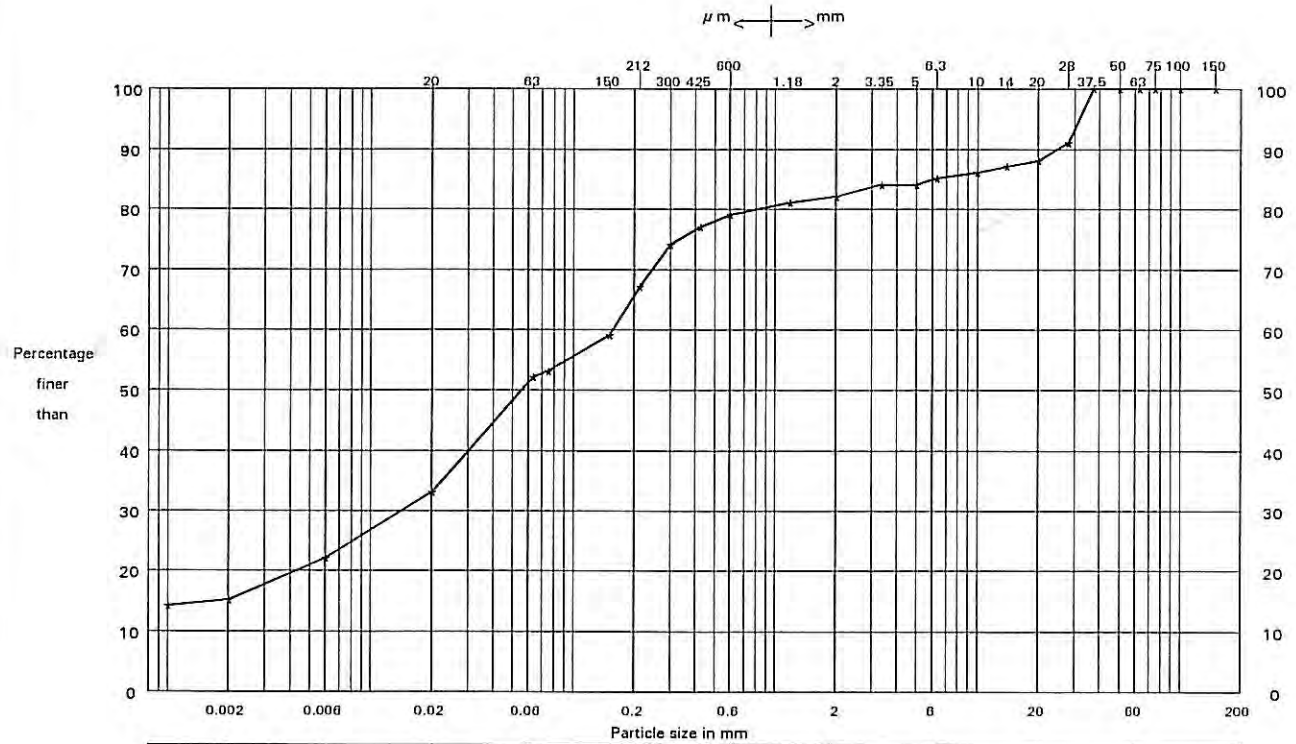
SAMPLE DESCRIPTION

Brown silty gravelly slightly clayey SAND. Gravel includes quartzite, sandstone, red brick, coal, clinker. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPH03
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.20 - 1.20	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	14	15	22	33	52	53	59	67	74	77	79	81	82	84	84	85	86	87	88	91	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	15	37			30			18			0

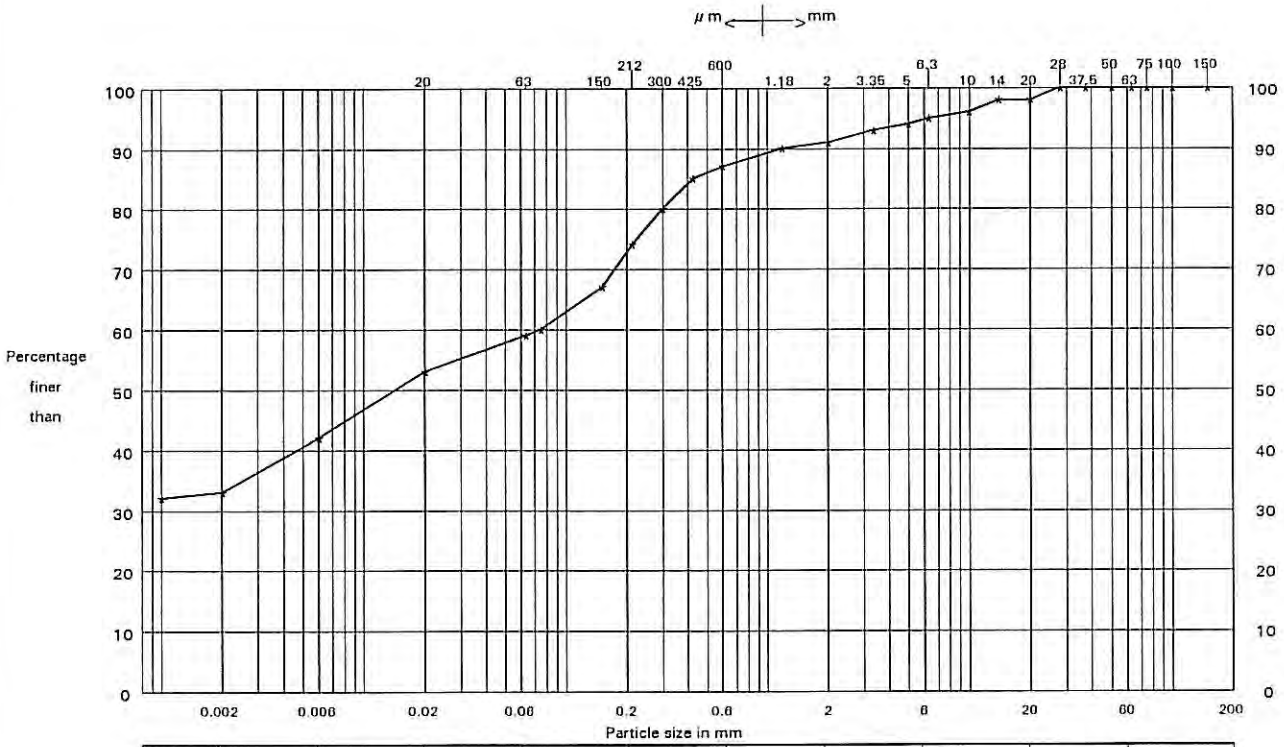
SAMPLE DESCRIPTION

Brown slightly sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, slag, coal, clinker. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM03
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	4.00 - 4.00	SAMPLE REF	4
			JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	32	33	42	53	59	60	67	74	80	85	87	90	91	93	94	95	96	98	98	100	100	100	100	100	100	100

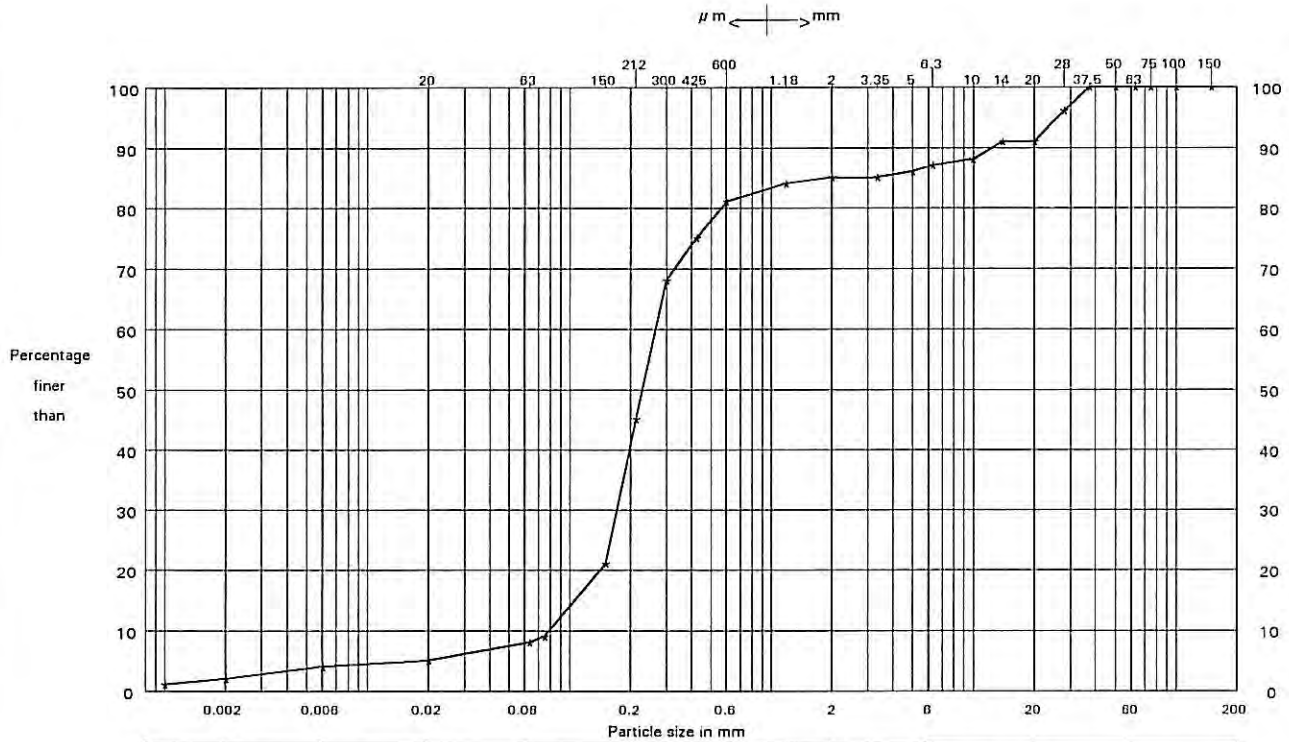


	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	33	26			32			9			0

SAMPLE DESCRIPTION	REMARKS
Brown slightly sandy slightly gravelly silty CLAY. Gravel includes rare breeze block. (MADE GROUND)	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM05
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.10 - 1.10	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	1	2	4	5	8	9	21	45	68	75	81	84	85	85	86	87	88	91	91	96	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	2	6			77			15			0

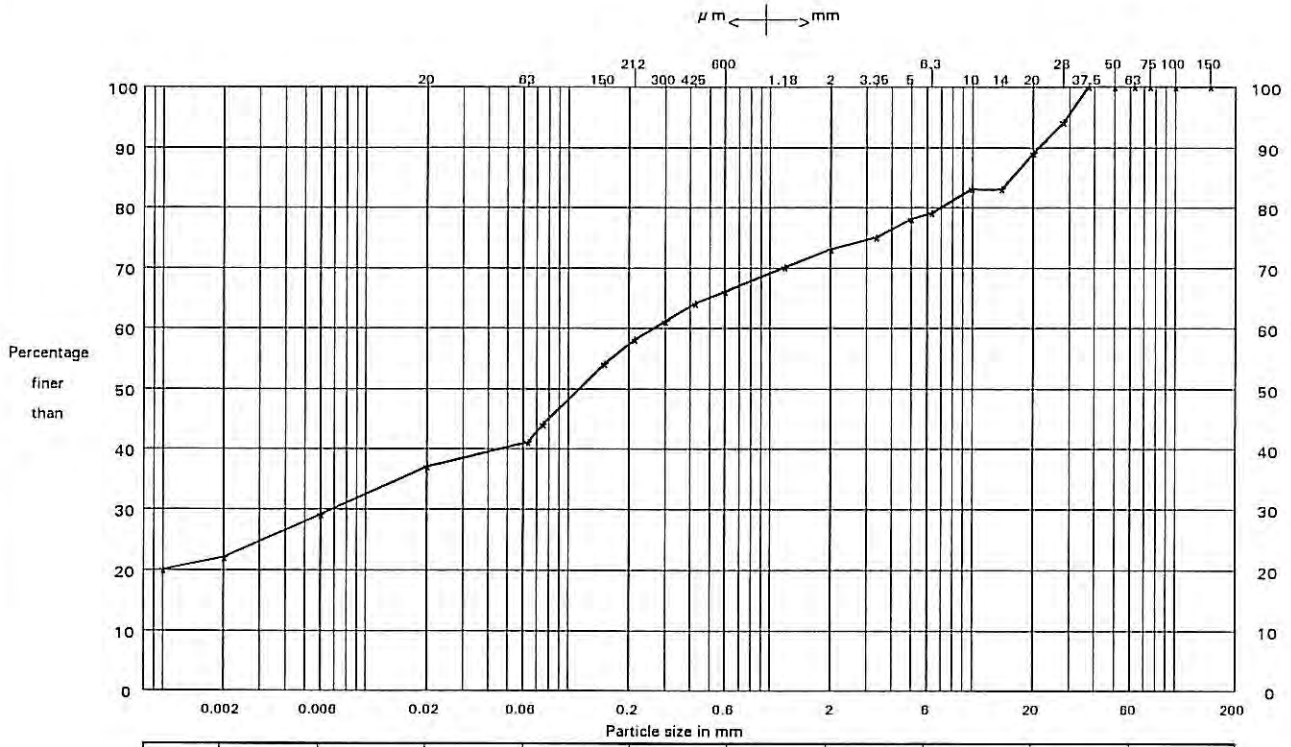
SAMPLE DESCRIPTION

Brown silty gravelly slightly clayey fine and medium SAND. Gravel includes quartzite, sandstone, red brick. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM06
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.00 - 1.00	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	20	22	29	37	41	44	54	58	61	64	66	70	73	75	78	79	83	83	89	94	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	22	19			32			27			0

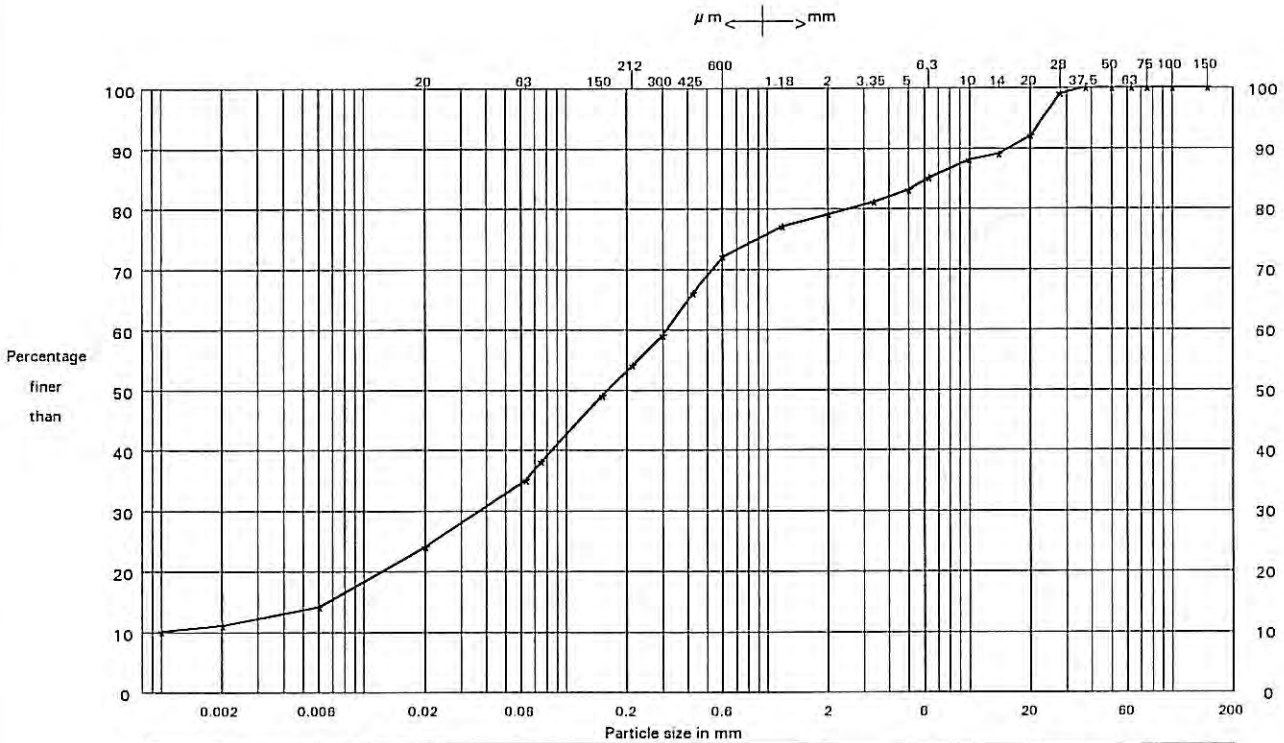
SAMPLE DESCRIPTION

Brown slightly sandy slightly gravelly silty CLAY. Gravel includes quartzite, sandstone, red brick, tarmac, coal. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM07
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	4.00 - 4.00	SAMPLE REF	4
			JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	10	11	14	24	35	38	49	54	59	66	72	77	79	81	83	85	88	89	92	99	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	11	24			44			21			0

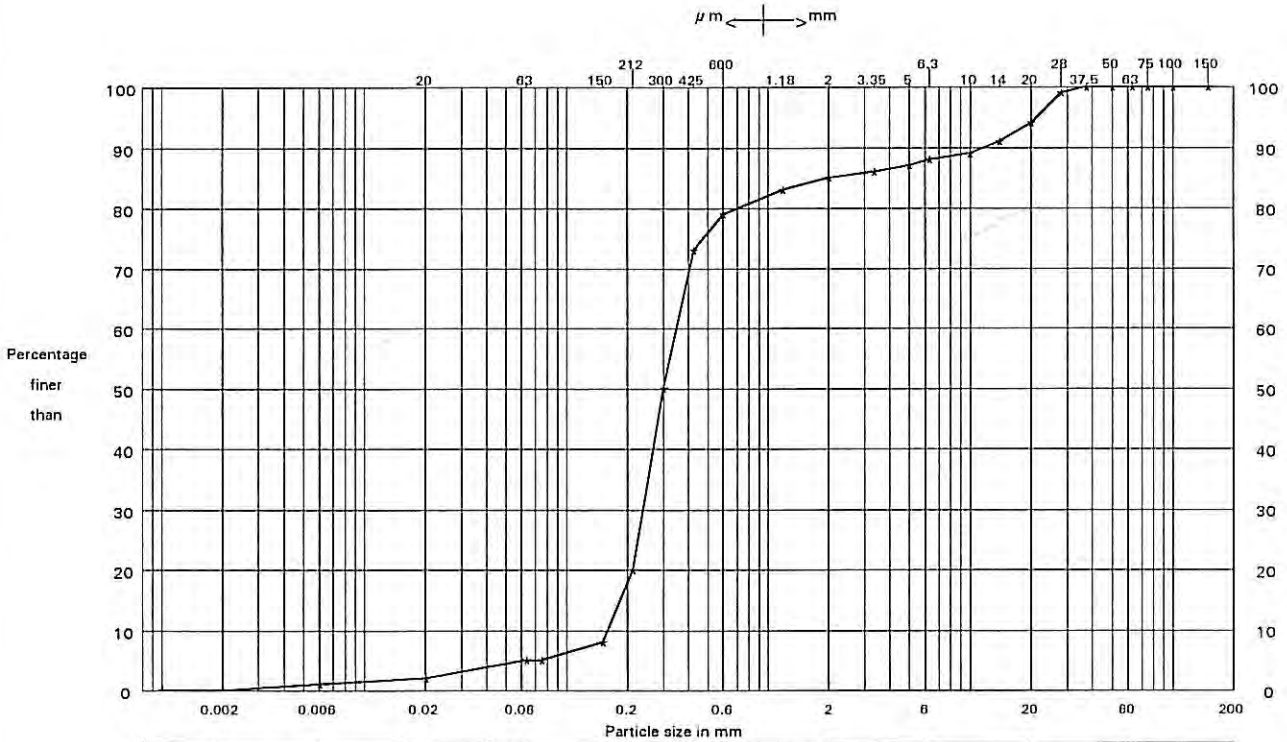
SAMPLE DESCRIPTION

Brown very silty very gravelly clayey SAND. Gravel includes quartzite, sandstone, red brick, tarmac, coal. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM09
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	2.00 - 2.00	SAMPLE REF	2
JOB NO.	12/6693		
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	0	1	2	5	5	8	20	50	73	79	83	85	86	87	88	89	91	94	99	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	-	5			80			15			0

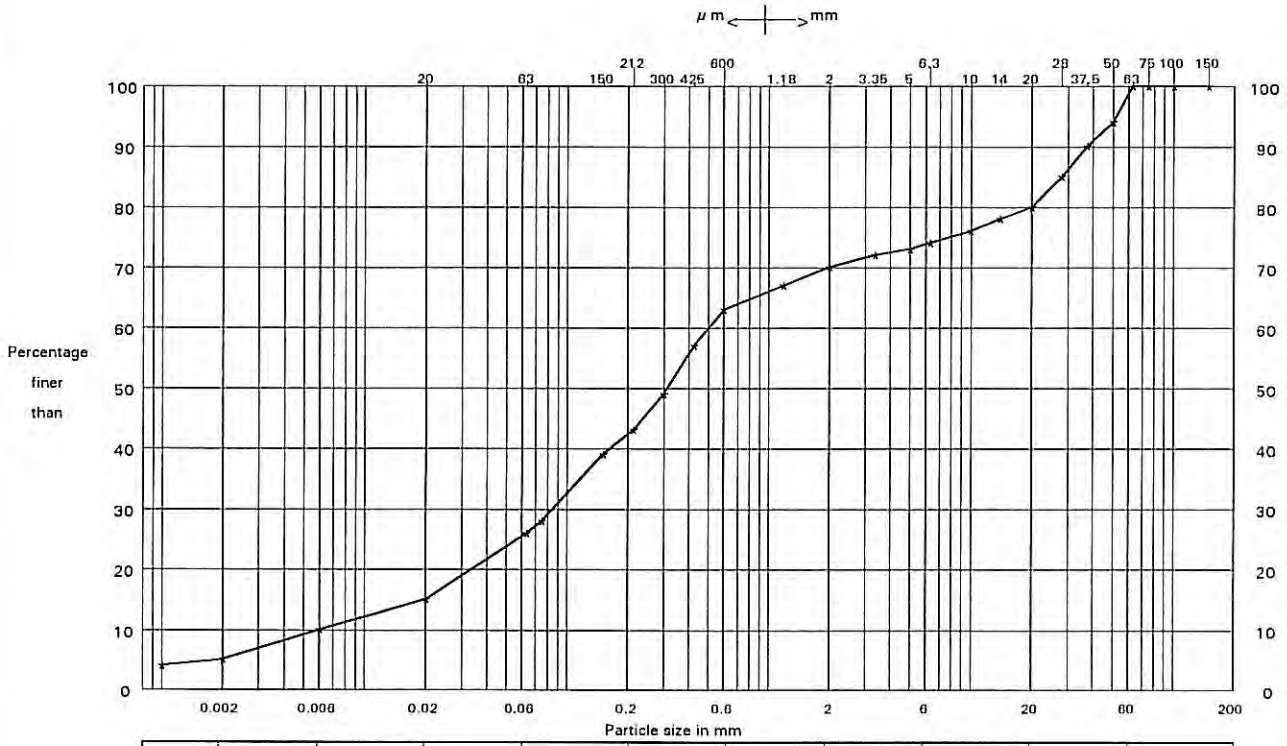
SAMPLE DESCRIPTION

Brown gravelly slightly silty SAND. Gravel includes quartzite, sandstone, red brick, coal, clinker. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM10
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.00 - 1.00	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	4	5	10	15	26	28	39	43	49	57	63	67	70	72	73	74	76	78	80	85	90	94	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	5	21			44			30			0

SAMPLE DESCRIPTION

Brown very silty very gravelly slightly clayey SAND. Gravel includes sandstone, quartzite, red brick. (MADE GROUND)

REMARKS

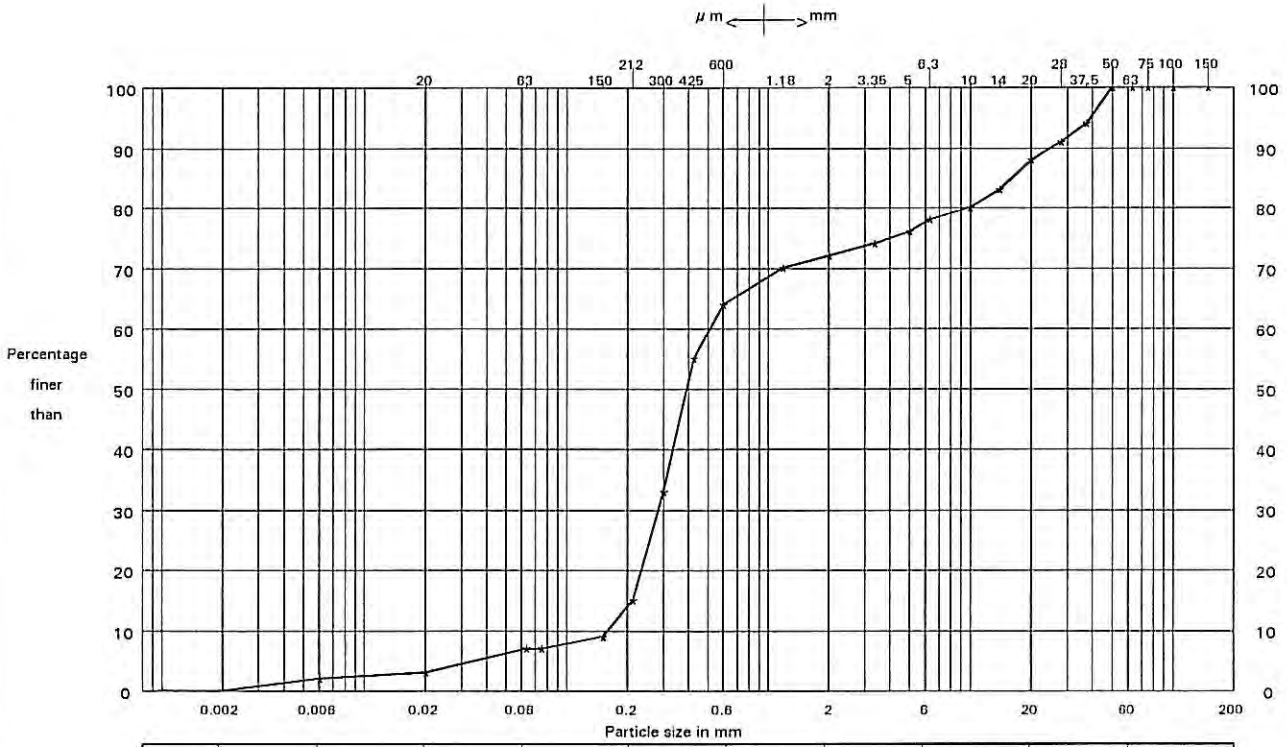
CC Geotechnical
Tel: 0151-545-2750
Fax: 0151-548-7892

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

HOLE NO. TPM11

CLIENT: BAM CONSTRUCTION	SITE: WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH: 2.00 - 2.00	SAMPLE REF: 2
JOB NO.: 12/6693	
METHOD OF PRETREATMENT:	METHOD OF TEST: Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	0	2	3	7	7	9	15	33	55	64	70	72	74	76	78	80	83	88	91	94	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	-	7			65			28			0

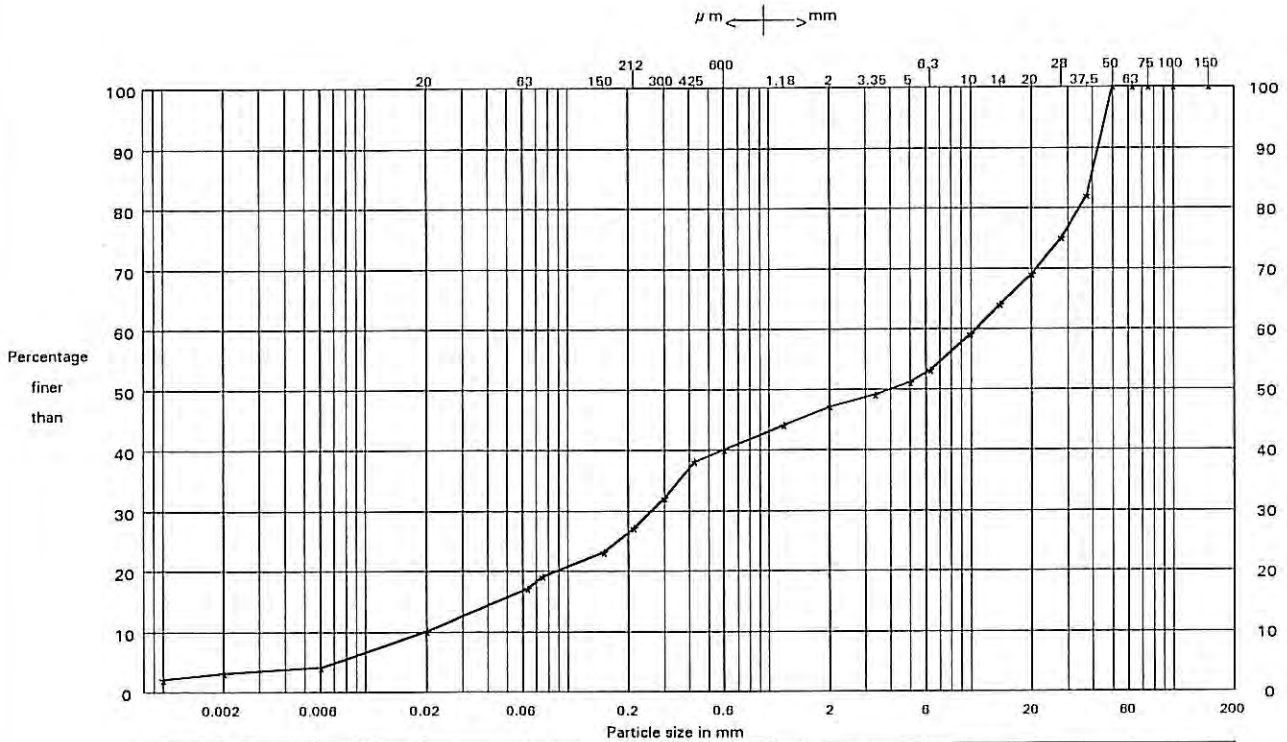
SAMPLE DESCRIPTION

Dark brown very gravelly silty SAND. Gravel includes sandstone, quartzite, occasional red brick. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM13
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.00 - 1.00	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	2	3	4	10	17	19	23	27	32	38	40	44	47	49	51	53	59	64	69	75	82	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	3	14			30			53			0

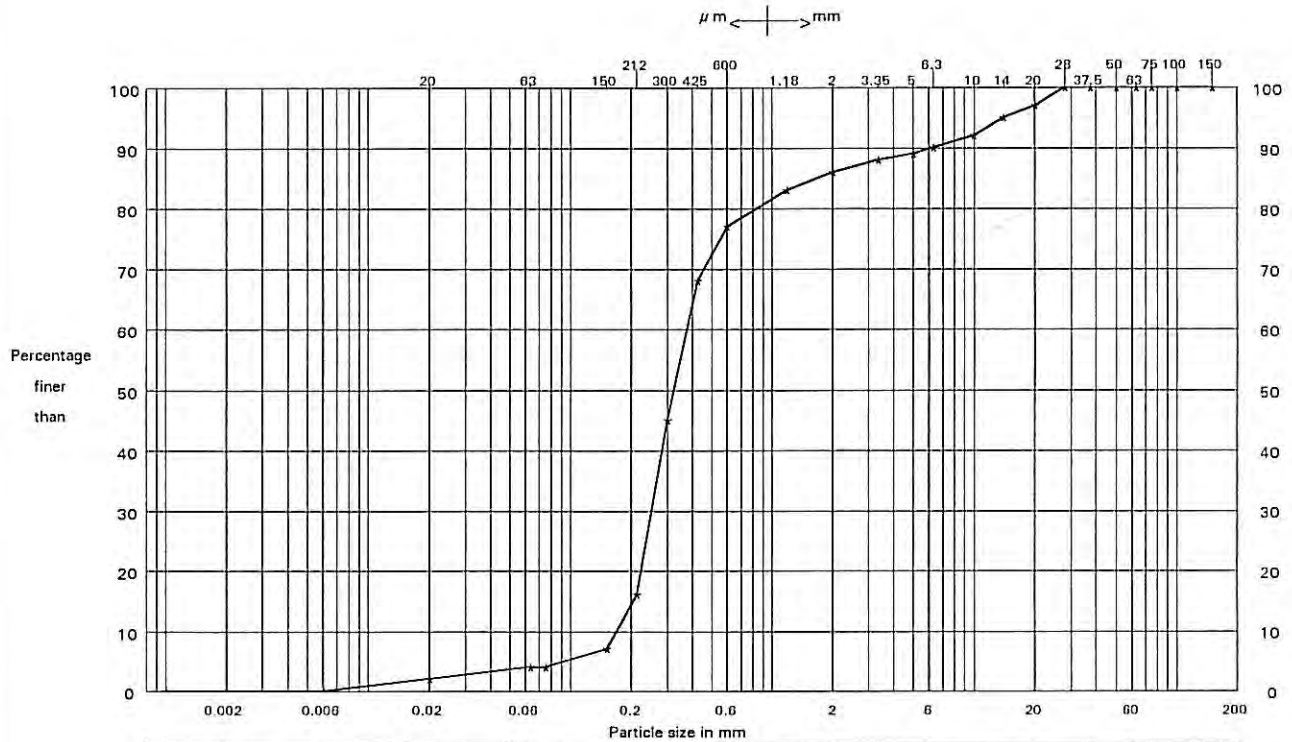
SAMPLE DESCRIPTION

Dark brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including limestone, sandstone, concrete, red brick, ceramic, glass. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM14
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	3.00 - 3.00	SAMPLE REF 3	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	0	0	2	4	4	7	16	45	68	77	83	86	88	89	90	92	95	97	100	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	-	4			82			14			0

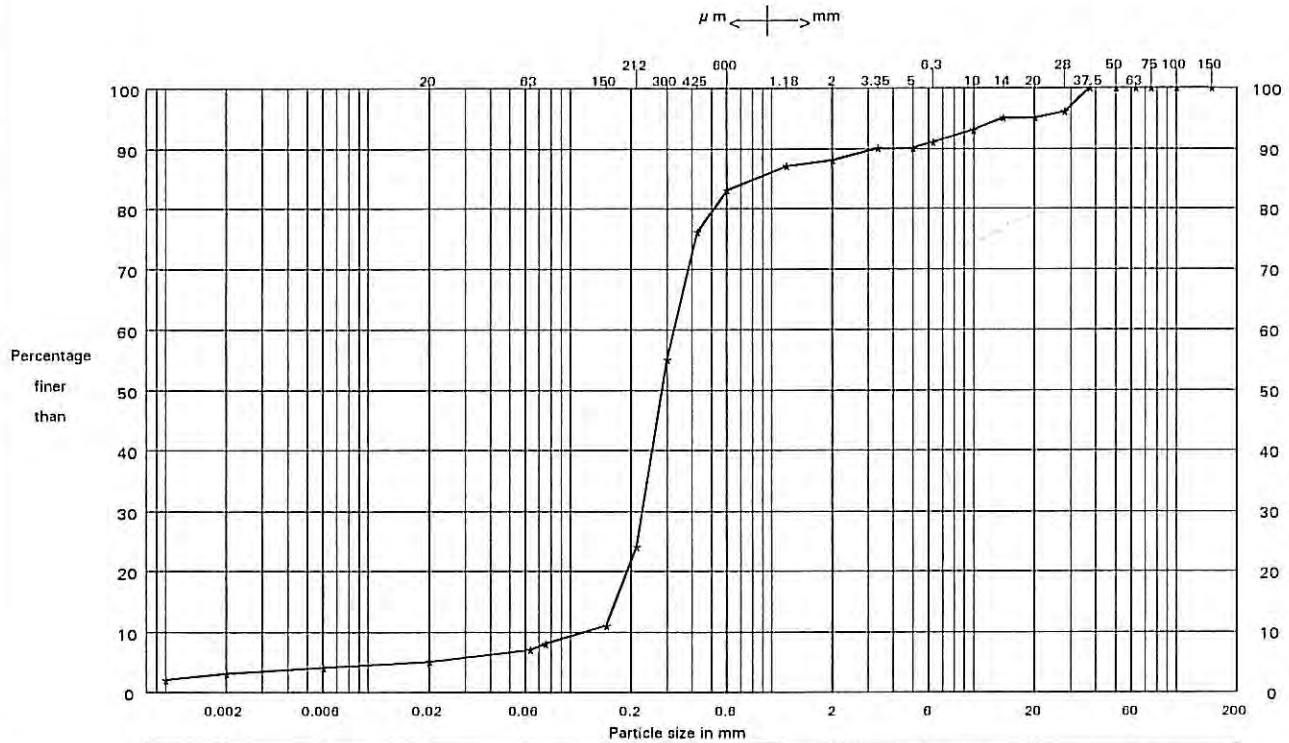
SAMPLE DESCRIPTION

Brown gravelly slightly silty SAND. Gravel includes sandstone, quartzite. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM15
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.00 - 1.00	SAMPLE REF	1
			JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	2	3	4	5	7	8	11	24	55	76	83	87	88	90	90	91	93	95	95	96	100	100	100	100	100	100

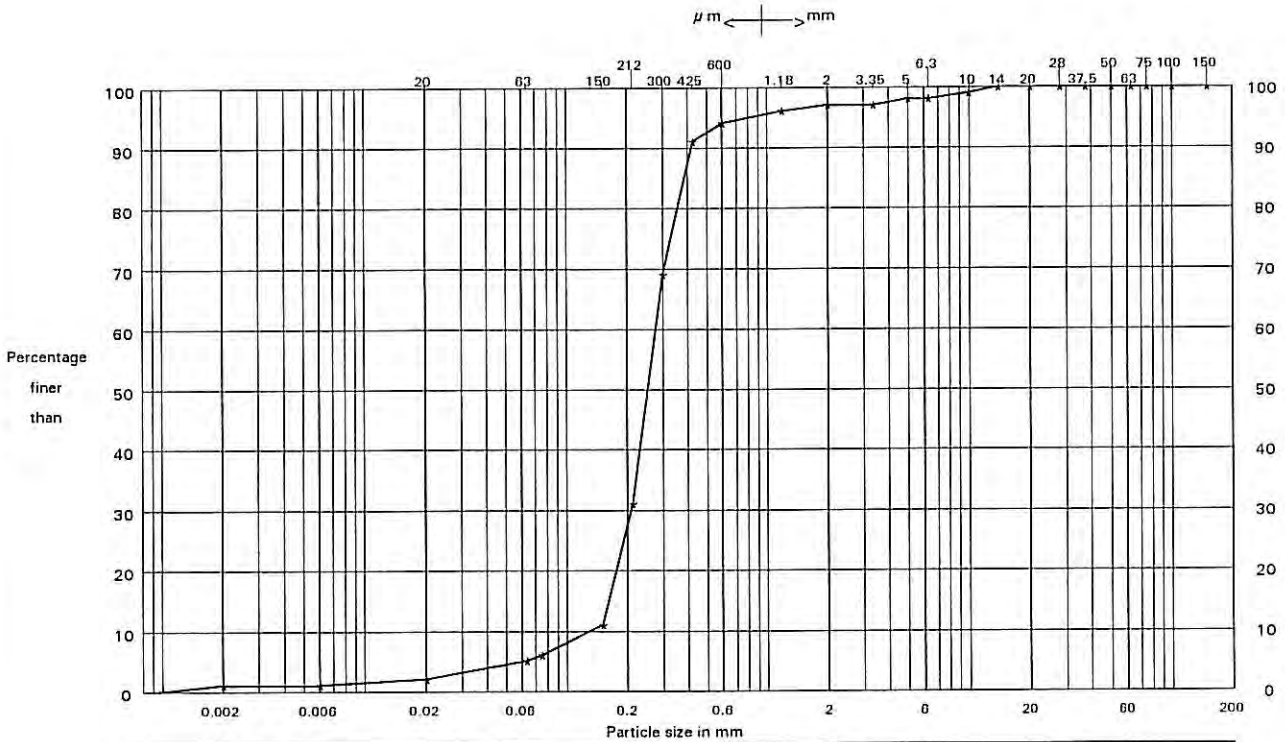


	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	3	4			81			12			0

SAMPLE DESCRIPTION	REMARKS
Brown gravelly slightly clayey slightly silty SAND. Gravel includes sandstone, quartzite, red brick. (MADE GROUND)	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM16
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	2.20 - 2.20	SAMPLE REF 2	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	1	1	2	5	6	11	31	69	91	94	96	97	97	98	98	99	100	100	100	100	100	100	100	100	100

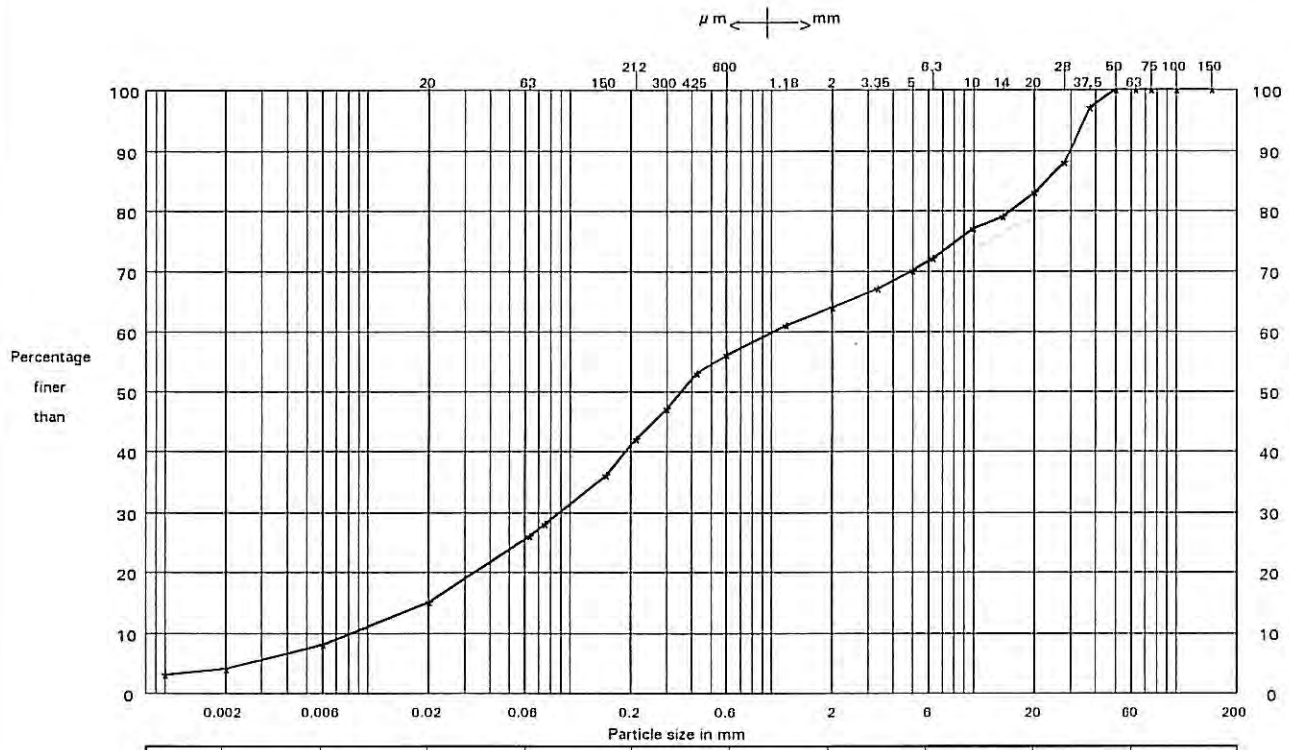


	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	1	4			92			3			0

SAMPLE DESCRIPTION	REMARKS
Brown slightly silty slightly clayey slightly gravelly fine and medium SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM19
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.15 - 1.15	SAMPLE REF	1
JOB NO.	12/6693		
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	3	4	8	15	26	28	36	42	47	53	56	61	64	67	70	72	77	79	83	88	97	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	4	22			38			36			0

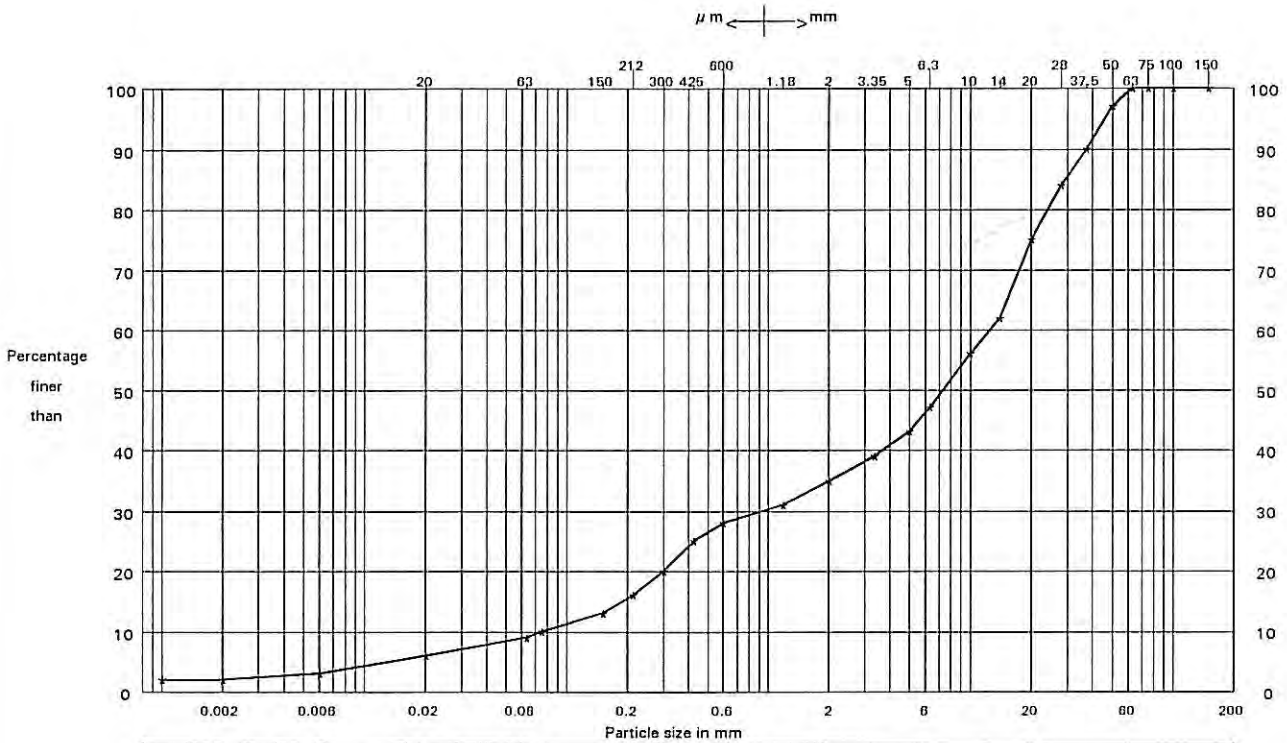
SAMPLE DESCRIPTION

Brown very silty slightly clayey SAND and GRAVEL. Gravel is of varying angularity and lithology including sandstone, limestone

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM19
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	4.20 - 4.20	SAMPLE REF 4	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	2	2	3	6	9	10	13	16	20	25	28	31	35	39	43	47	56	62	75	84	90	97	100	100	100	100

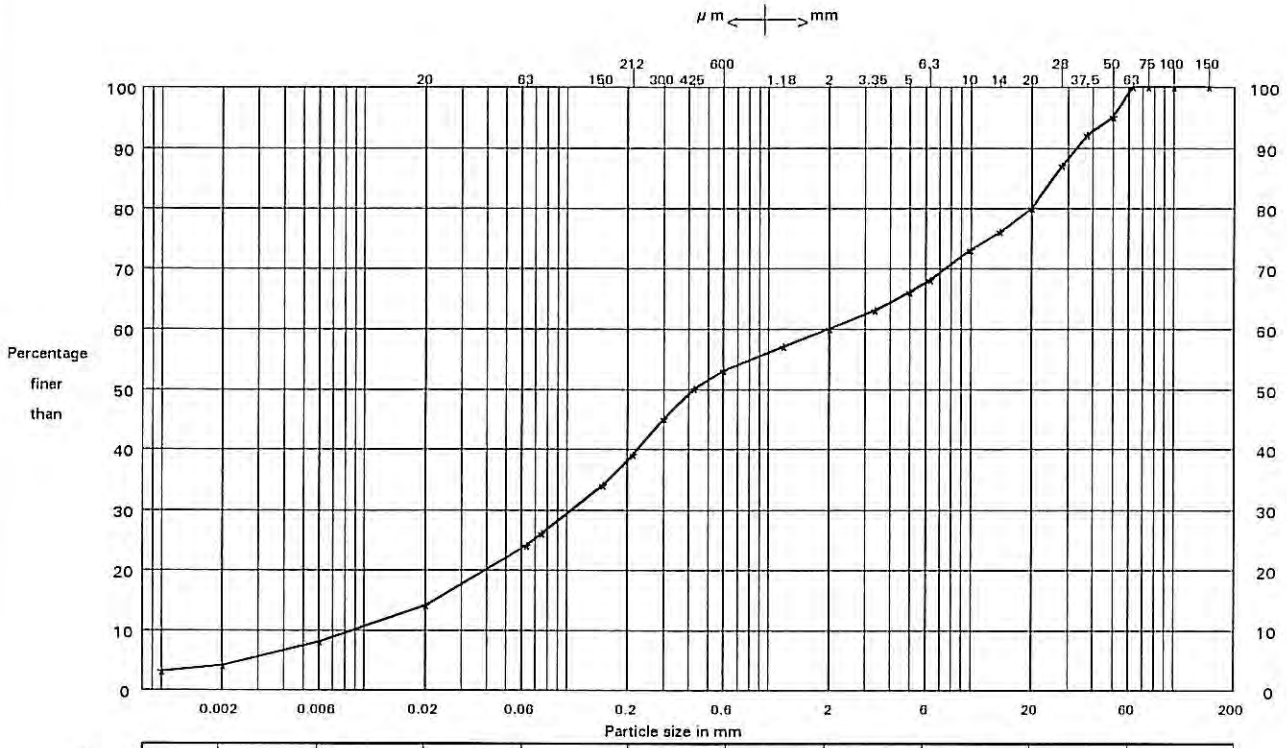


	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	2	7			26			65			0

SAMPLE DESCRIPTION	REMARKS
Light brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including sandstone	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM20
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	0.80 - 0.80	SAMPLE REF	1
JOB NO.	12/6693		
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	3	4	8	14	24	26	34	39	45	50	53	57	60	63	66	68	73	76	80	87	92	95	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	4	20			36			40			0

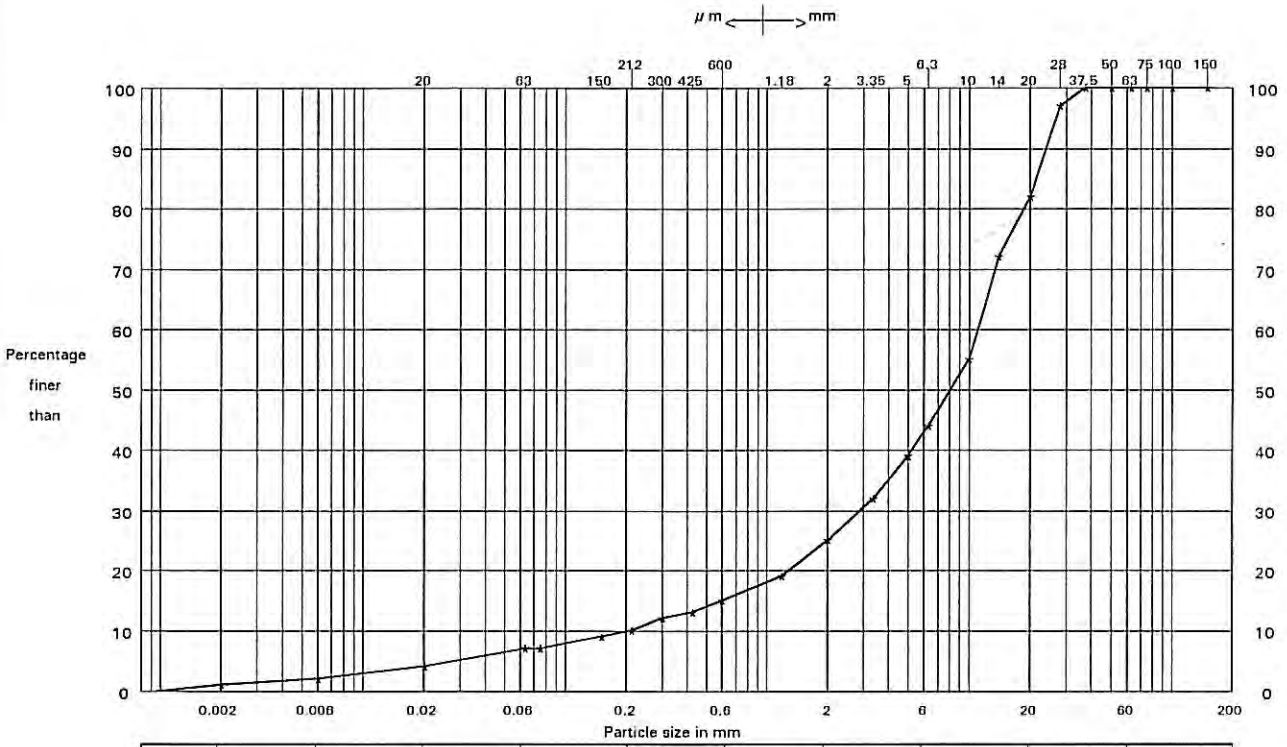
SAMPLE DESCRIPTION

Dark brown very sandy silty slightly clayey GRAVEL. Gravel is of varying angularity and lithology including sandstone, quartzite, ceramic. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM22
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 3.10 - 3.10		SAMPLE REF 3	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	1	2	4	7	7	9	10	12	13	15	19	25	32	39	44	55	72	82	97	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	1	6			18			75			0

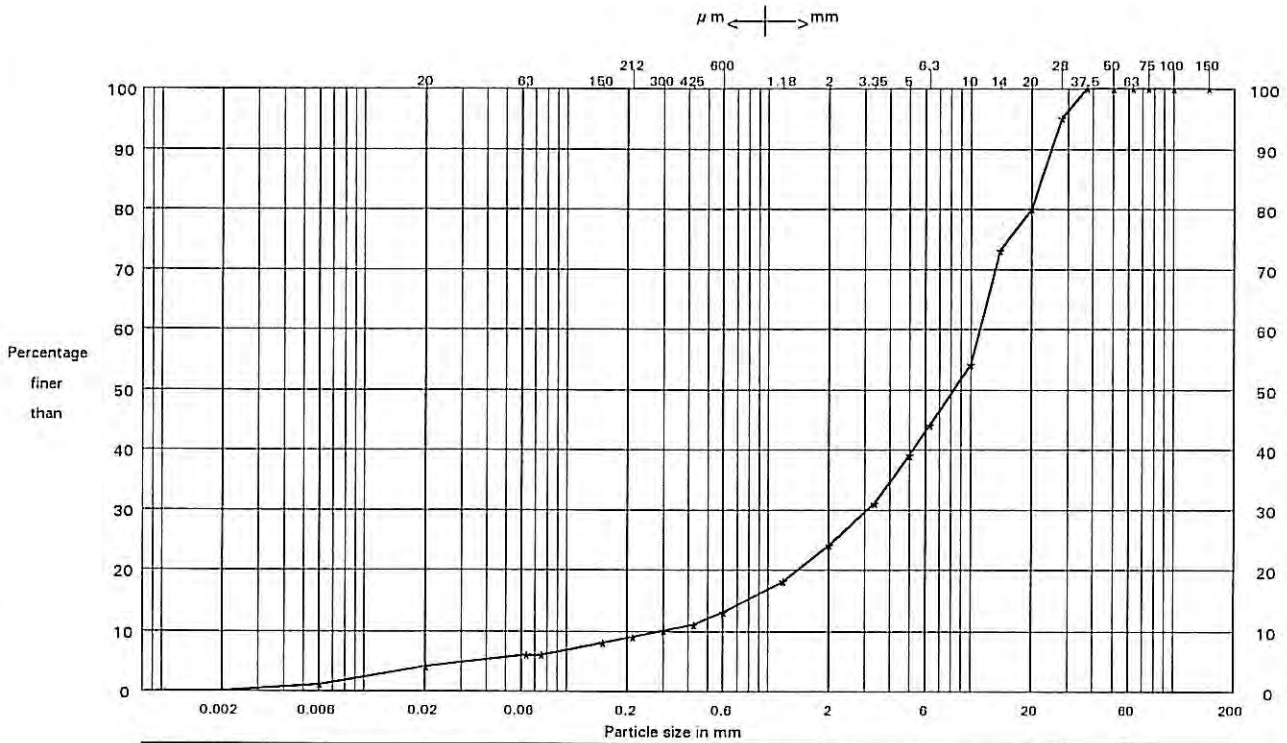
SAMPLE DESCRIPTION

Grey silty sandy slightly clayey GRAVEL. Gravel is angular to subangular limestone, red brick, tarmac. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM23
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	2.60 - 2.60	SAMPLE REF 2	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)													
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	0	1	4	6	6	8	9	10	11	13	18	24	31	39	44	54	73	80	95	100	100	100	100	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	-	6			18			76			0

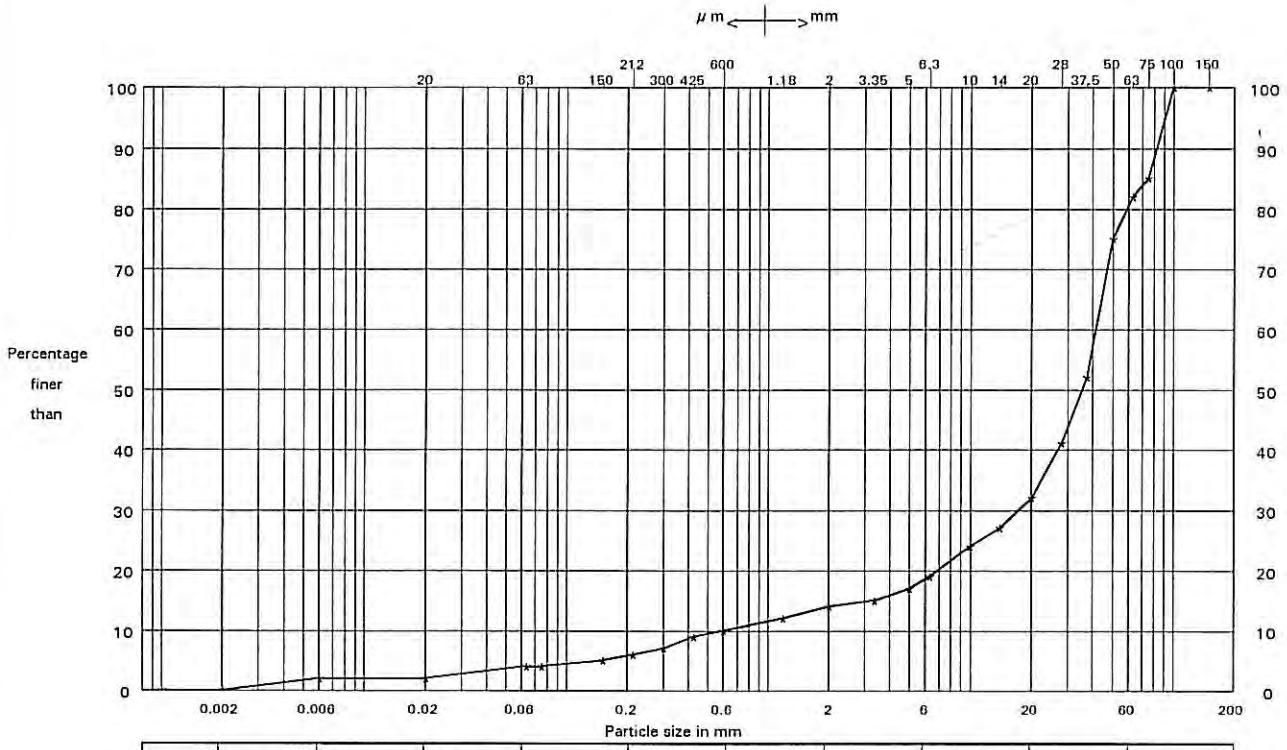
SAMPLE DESCRIPTION

Grey silty sandy GRAVEL. Gravel is angular to subangular limestone, red brick, tarmac. (MADE GROUND)

REMARKS

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DETERMINATION OF PARTICLE SIZE DISTRIBUTION	HOLE NO. TPM24
CLIENT	BAM CONSTRUCTION	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.40 - 1.40	SAMPLE REF 1	JOB NO. 12/6693
METHOD OF PRETREATMENT		METHOD OF TEST	Wet Sieve + Hydrometer

	Size (microns)											Size (mm)														
Sieve Size	1	2	6	20	63	75	150	212	300	425	600	1.18	2	3.35	5	6.3	10	14	20	28	37.5	50	63	75	100	150
% by Mass passing Sieve	0	0	2	2	4	4	5	6	7	9	10	12	14	15	17	19	24	27	32	41	52	75	82	85	100	100



	CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES
		SILT			SAND			GRAVEL			
%	-	4			10			68			18

SAMPLE DESCRIPTION

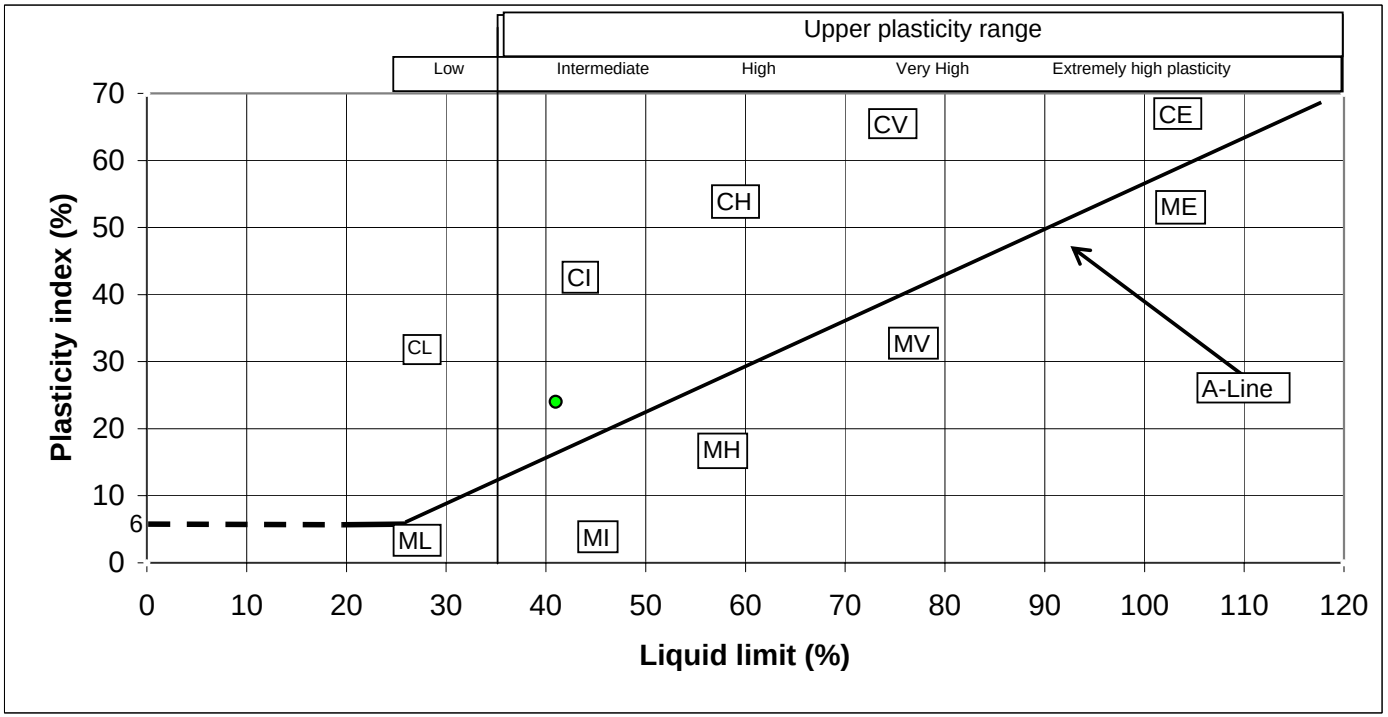
Brown sandy slightly silty GRAVEL with medium cobble content. Gravel and cobbles are of varying angularity and lithology including quartzite and sandstone

REMARKS

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
TPM03	4.00	41.0	24.0

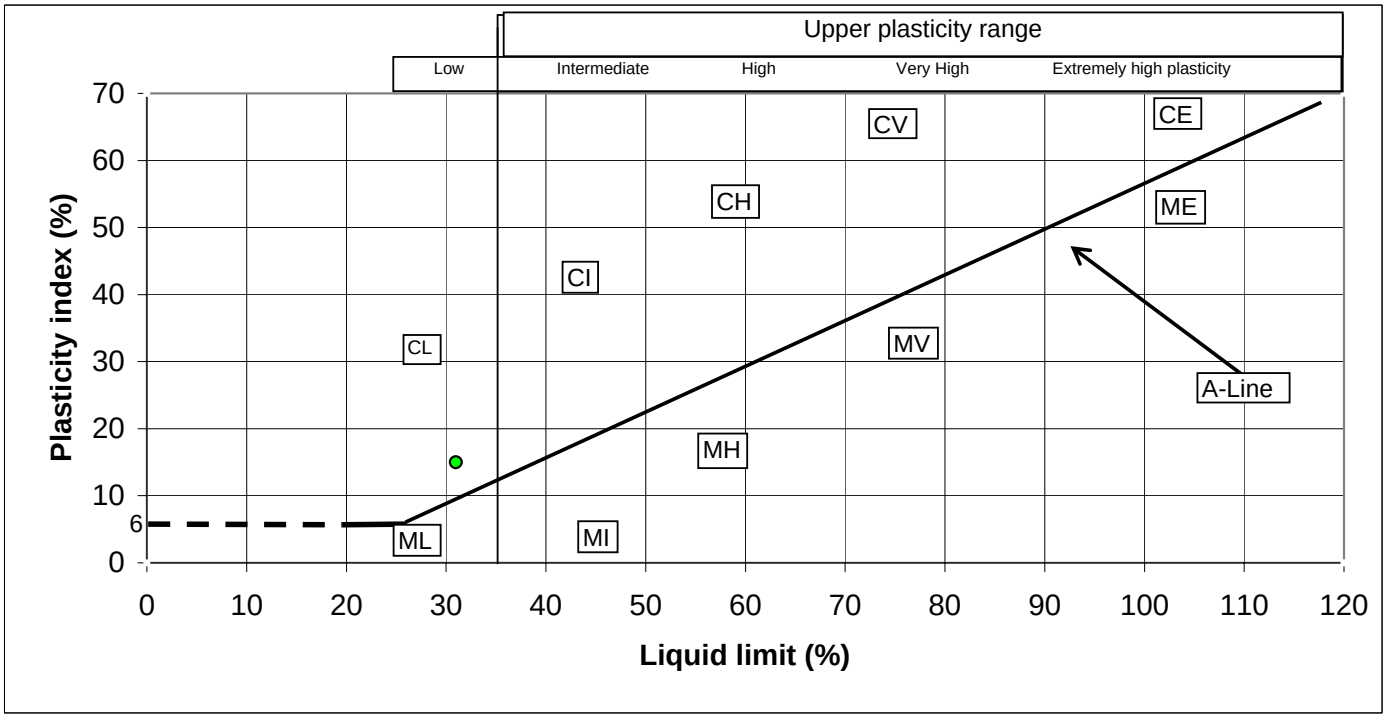
UKAS TESTING
4514

CLIENT: BAM CONSTRUCTION LTD	SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693)

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
TPM07	2.50	31.0	15.0

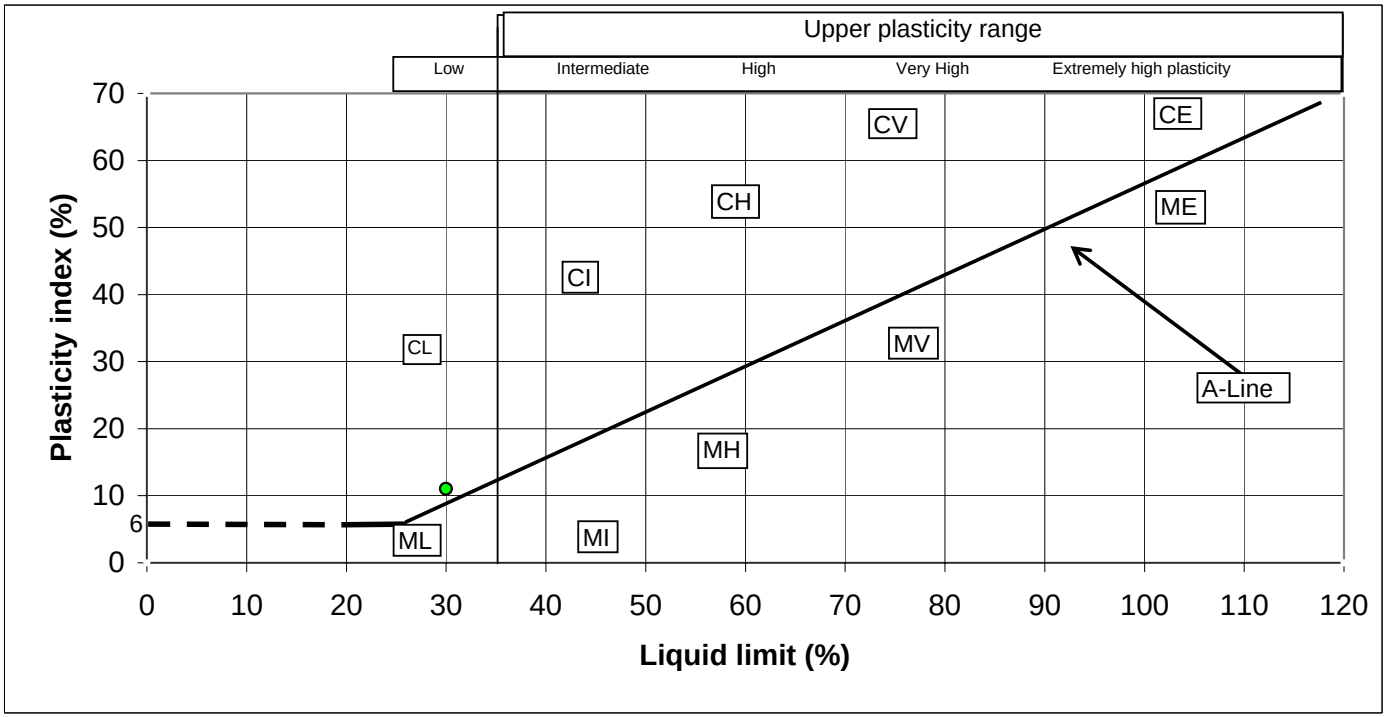
UKAS TESTING
4514

CLIENT: BAM CONSTRUCTION LTD	SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693)

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.



BH	Sample Depth	Liquid limit	Plasticity index
TPM10	4.00	30.0	11.0

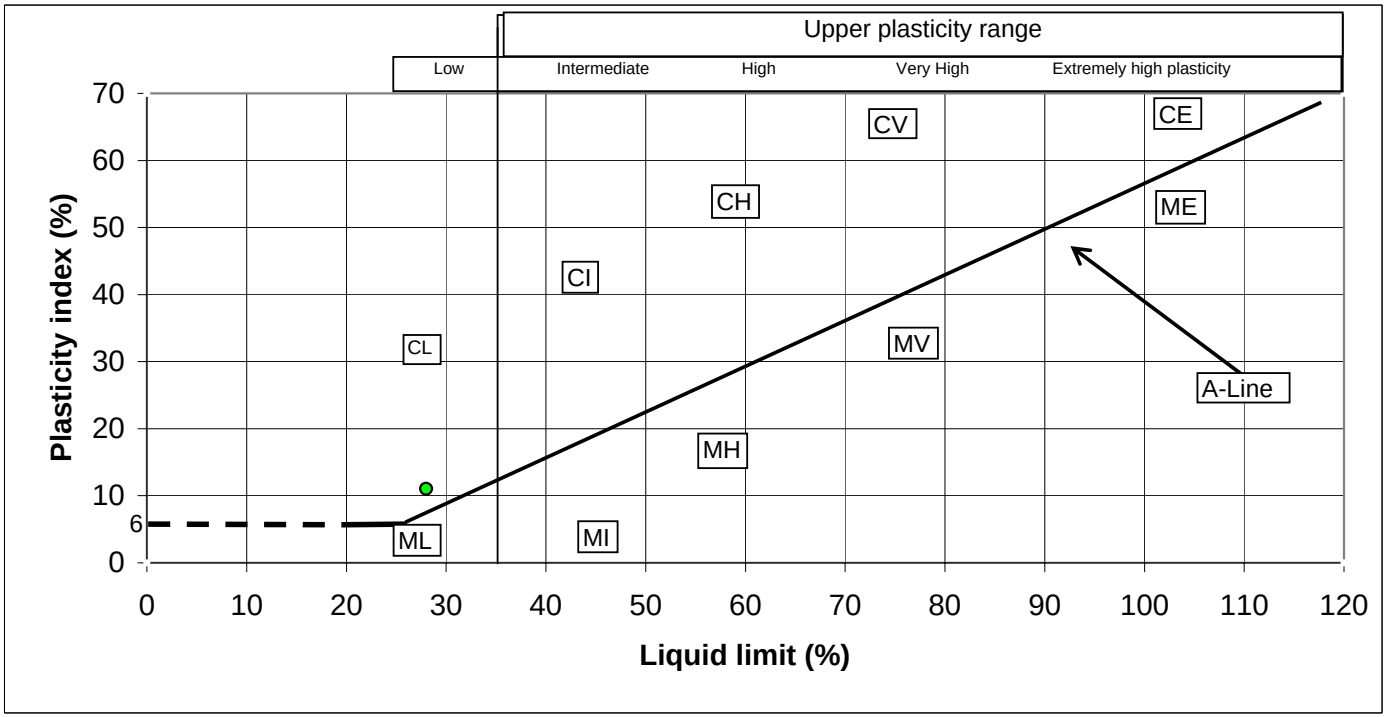
UKAS TESTING
4514

CLIENT: BAM CONSTRUCTION LTD	SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693)

ATTERBERG TEST RESULT SHEET

BS 1377:Part 2:1990:cl 4.4,5

SILT (M-SOIL), M plots below A-Line , CLAY,C, plots above A-Line, M and C may be combined as FINE SOIL, F.

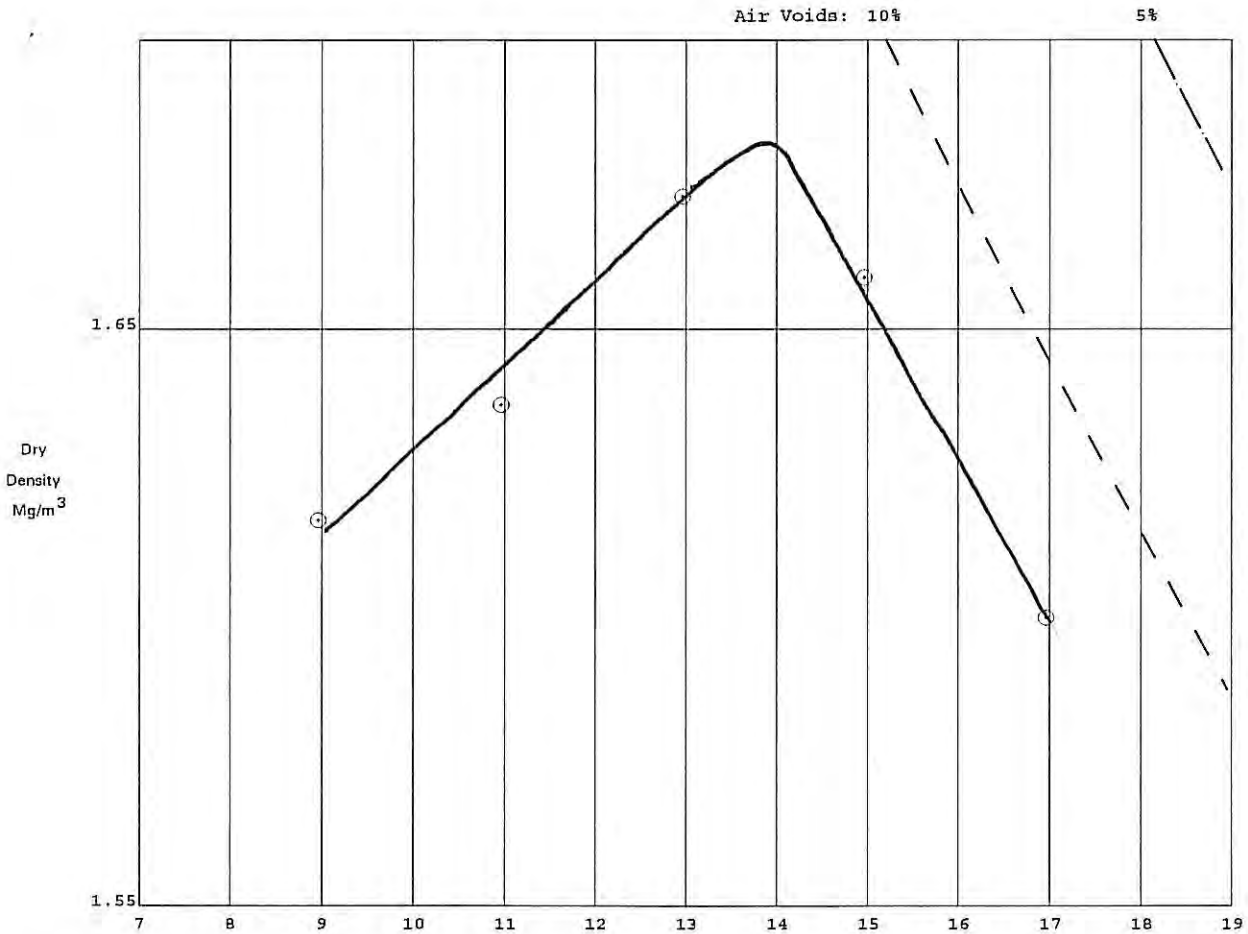


BH	Sample Depth	Liquid limit	Plasticity index
TPM22	1.10	28.0	11.0

UKAS TESTING
4514

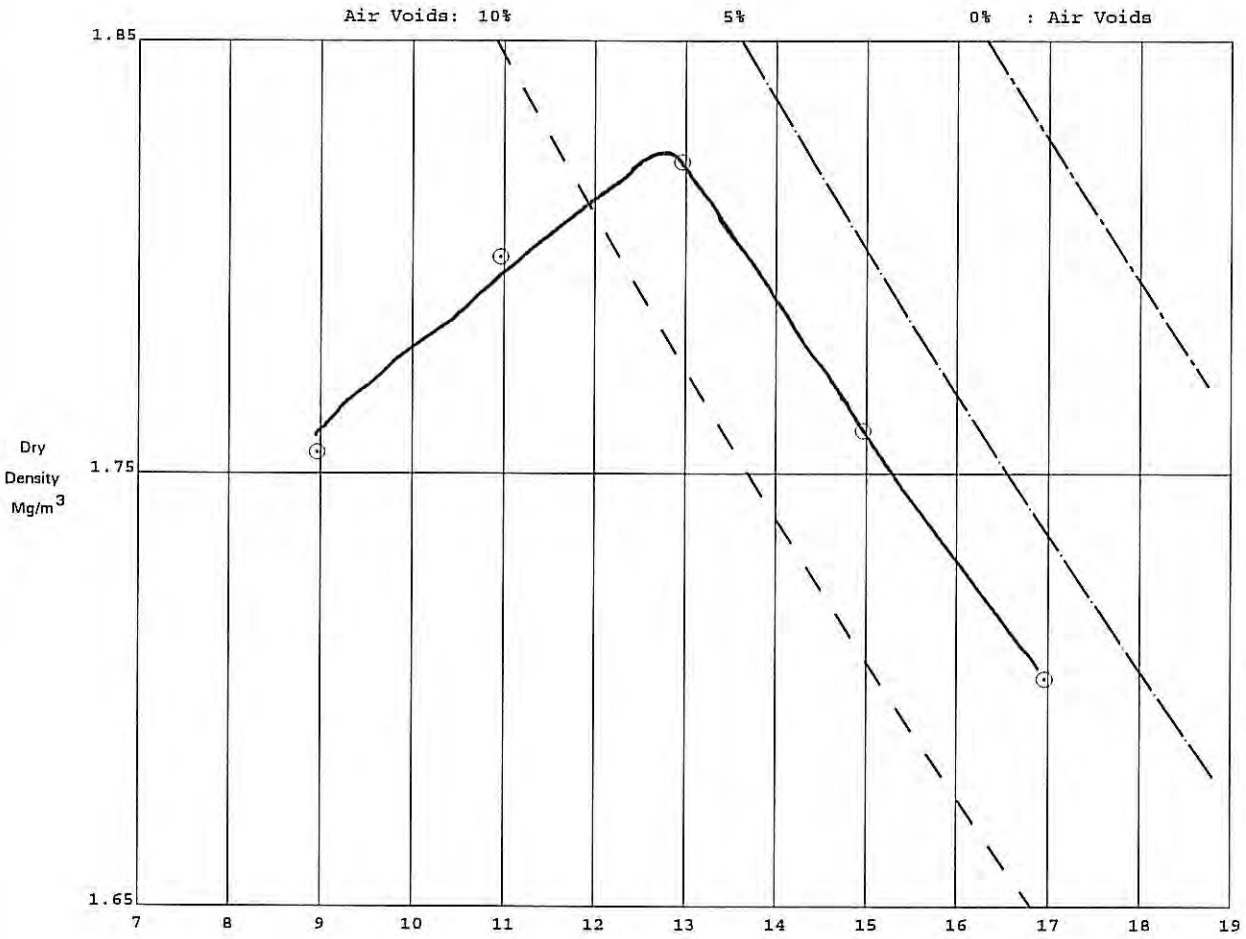
CLIENT: BAM CONSTRUCTION LTD	SITE: WAST WREXHAM ARC - SOIL MOUNDS (CCG-C-12-6693)

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM02
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 4.20 - 4.20		SAMPLE REF 4	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	0.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	27 %
MAXIMUM DRY DENSITY	1.68 Mg/m^3	OPTIMUM MOISTURE CONTENT	14 %



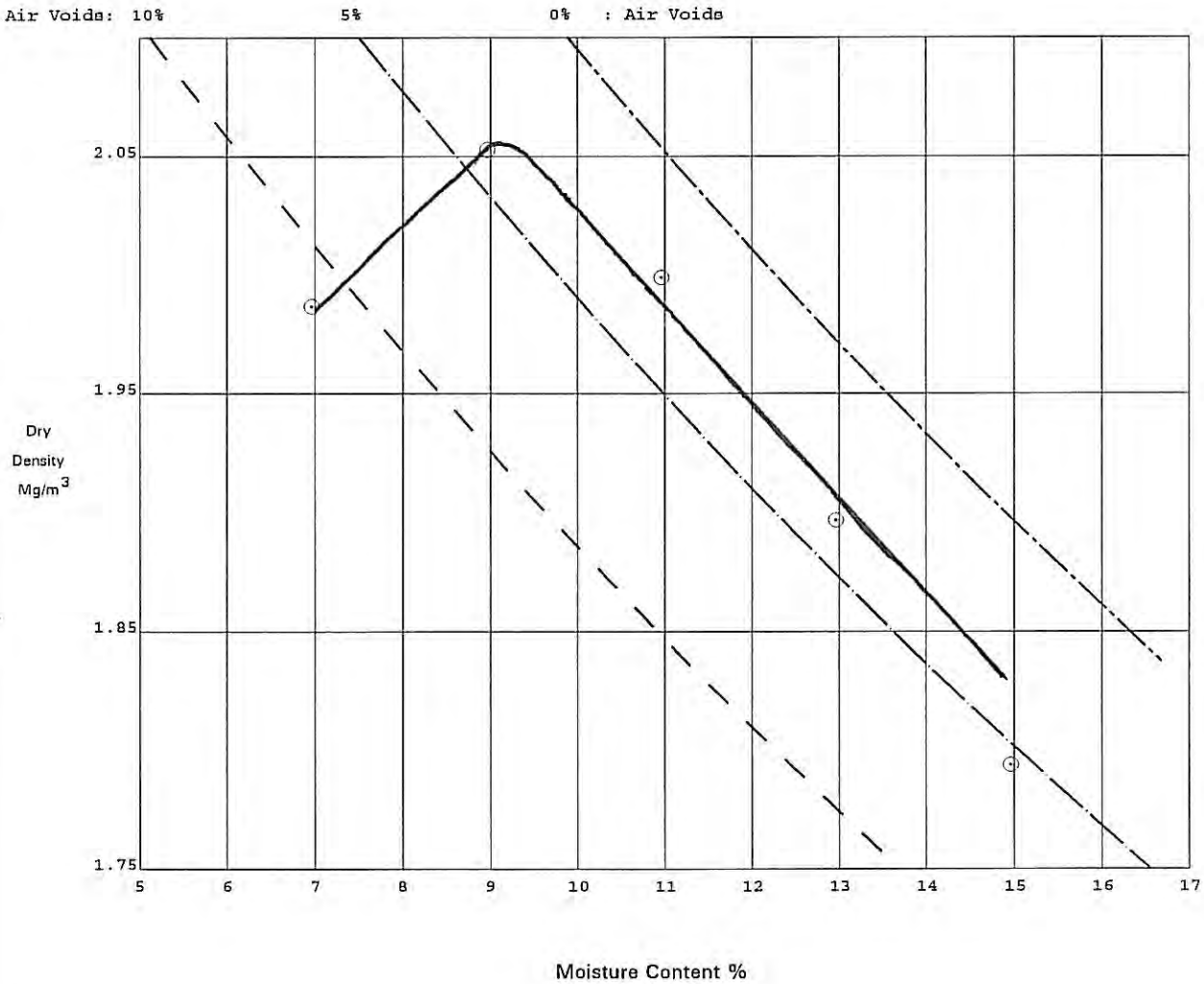
SAMPLE DESCRIPTION	REMARKS
Brown slightly sandy slightly gravelly silty CLAY	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM04
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - -SOIL MOUNDS
SAMPLE DEPTH 1.00 - 1.00		SAMPLE REF 1	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	3.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Single.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	9.6 %
MAXIMUM DRY DENSITY	1.83 Mg/m^3	OPTIMUM MOISTURE CONTENT	13 %



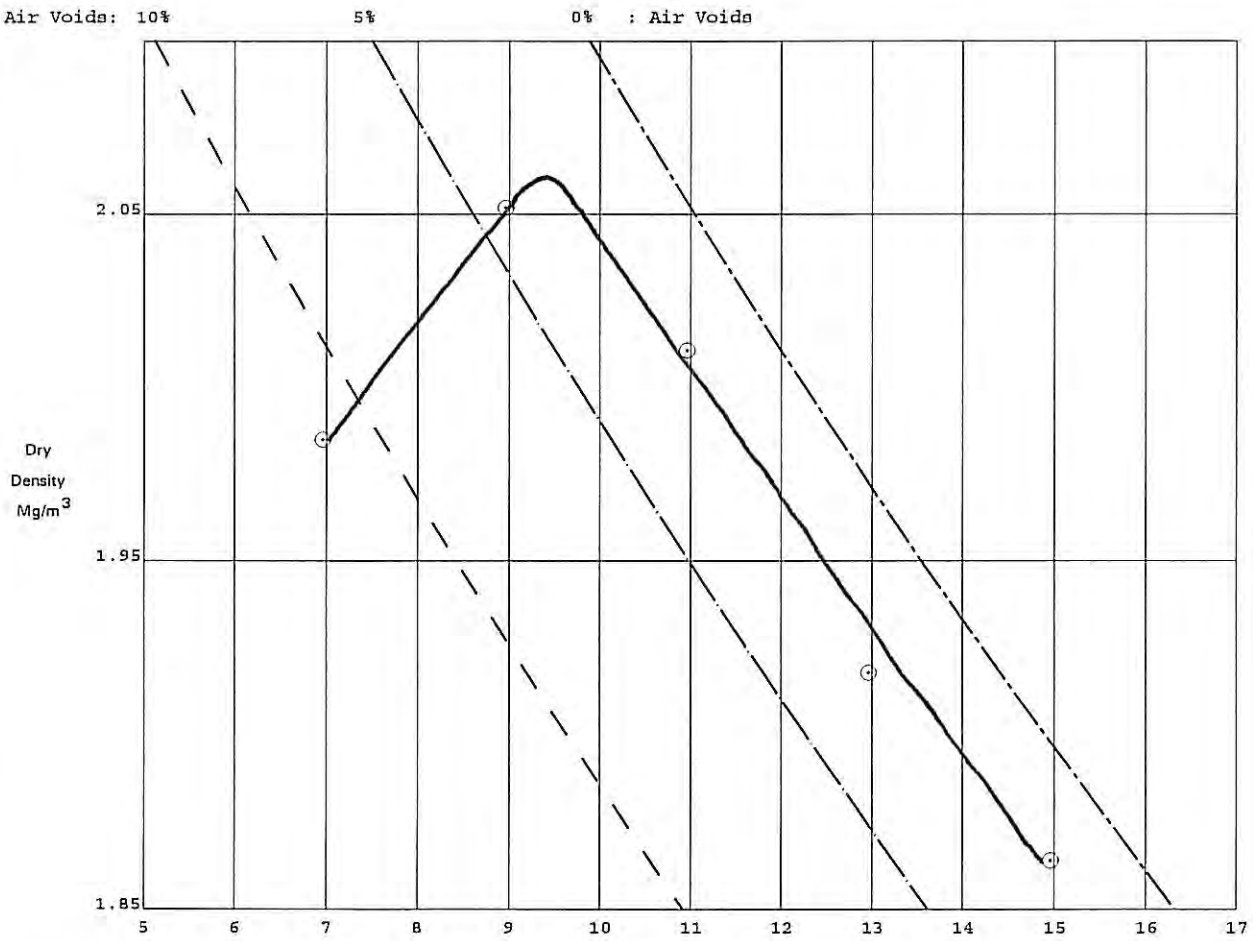
SAMPLE DESCRIPTION	REMARKS
Brown silty slightly gravelly SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM06
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 4.50 - 4.50		SAMPLE REF 4	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	5.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	14 %
MAXIMUM DRY DENSITY	2.06 Mg/m^3	OPTIMUM MOISTURE CONTENT	9.0 %



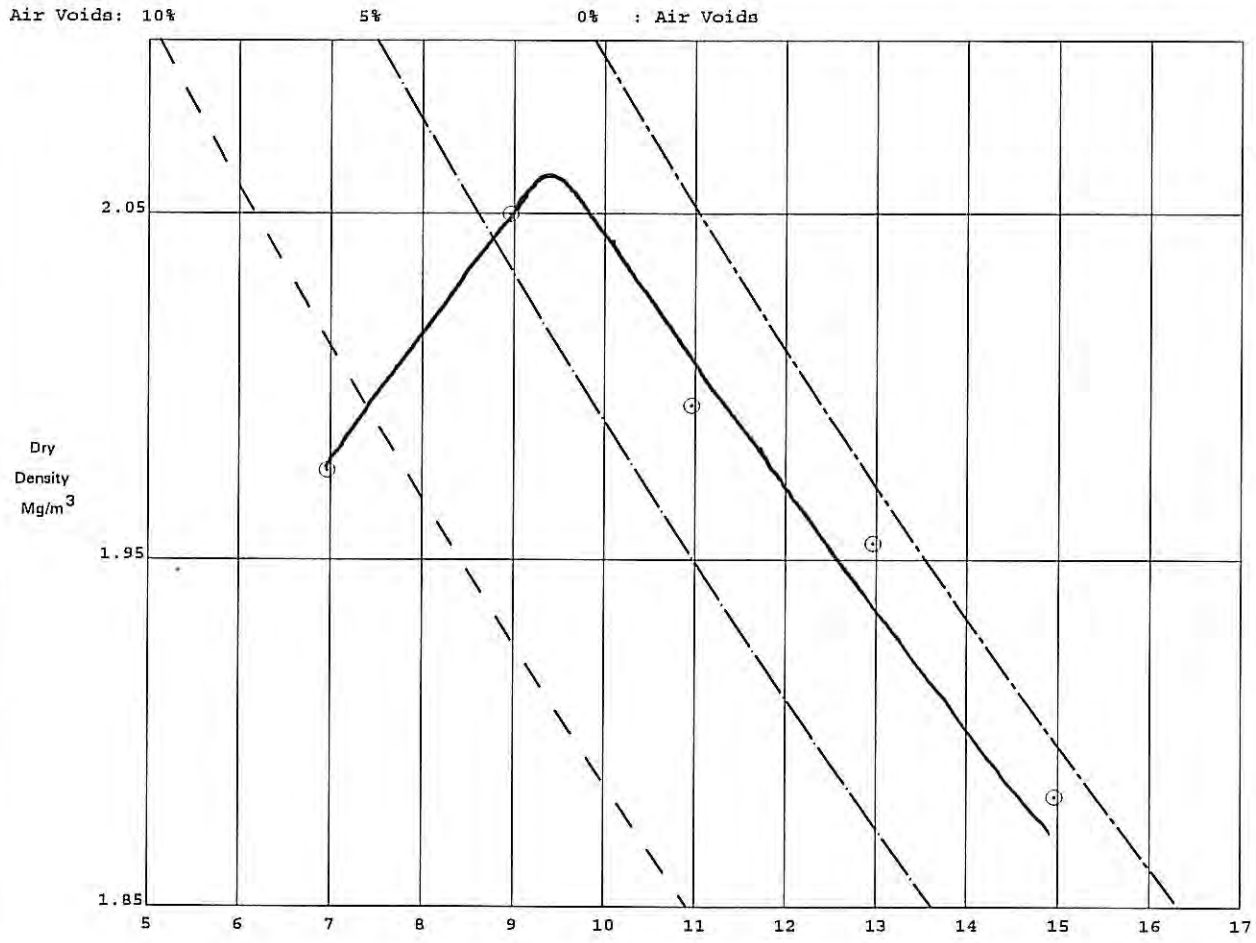
SAMPLE DESCRIPTION	REMARKS
Brown silty slightly gravelly SAND with frequent pockets of clay	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM10
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 2.00 - 2.00		SAMPLE REF 2	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	6.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	19 %
MAXIMUM DRY DENSITY	2.07 Mg/m^3	OPTIMUM MOISTURE CONTENT	10 %



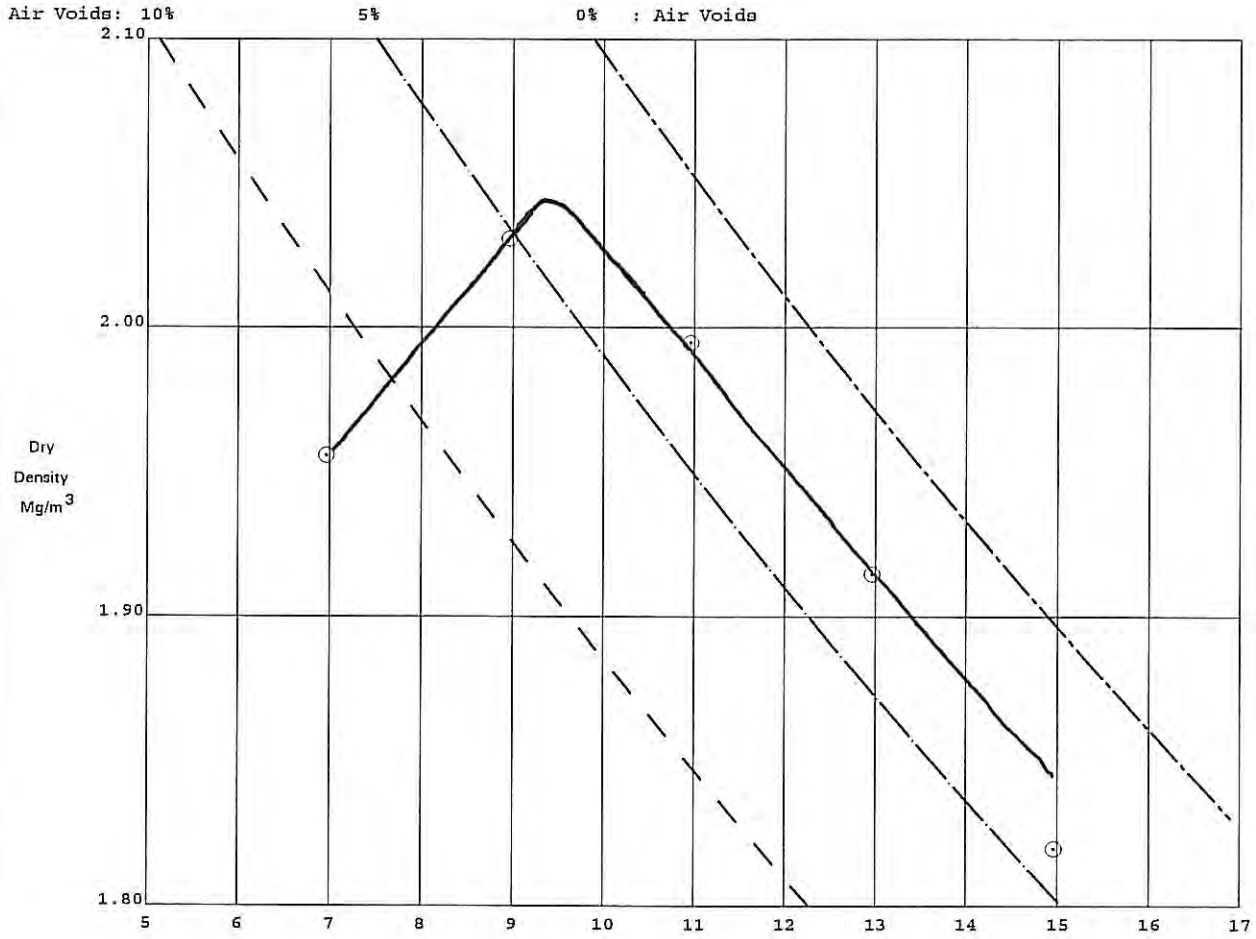
SAMPLE DESCRIPTION	REMARKS
Brown silty slightly gravelly SAND with frequent pockets of clay	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM13
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 3.00 - 3.00		SAMPLE REF 3	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	10	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	14 %
MAXIMUM DRY DENSITY	2.06 Mg/m^3	OPTIMUM MOISTURE CONTENT	9.0 %



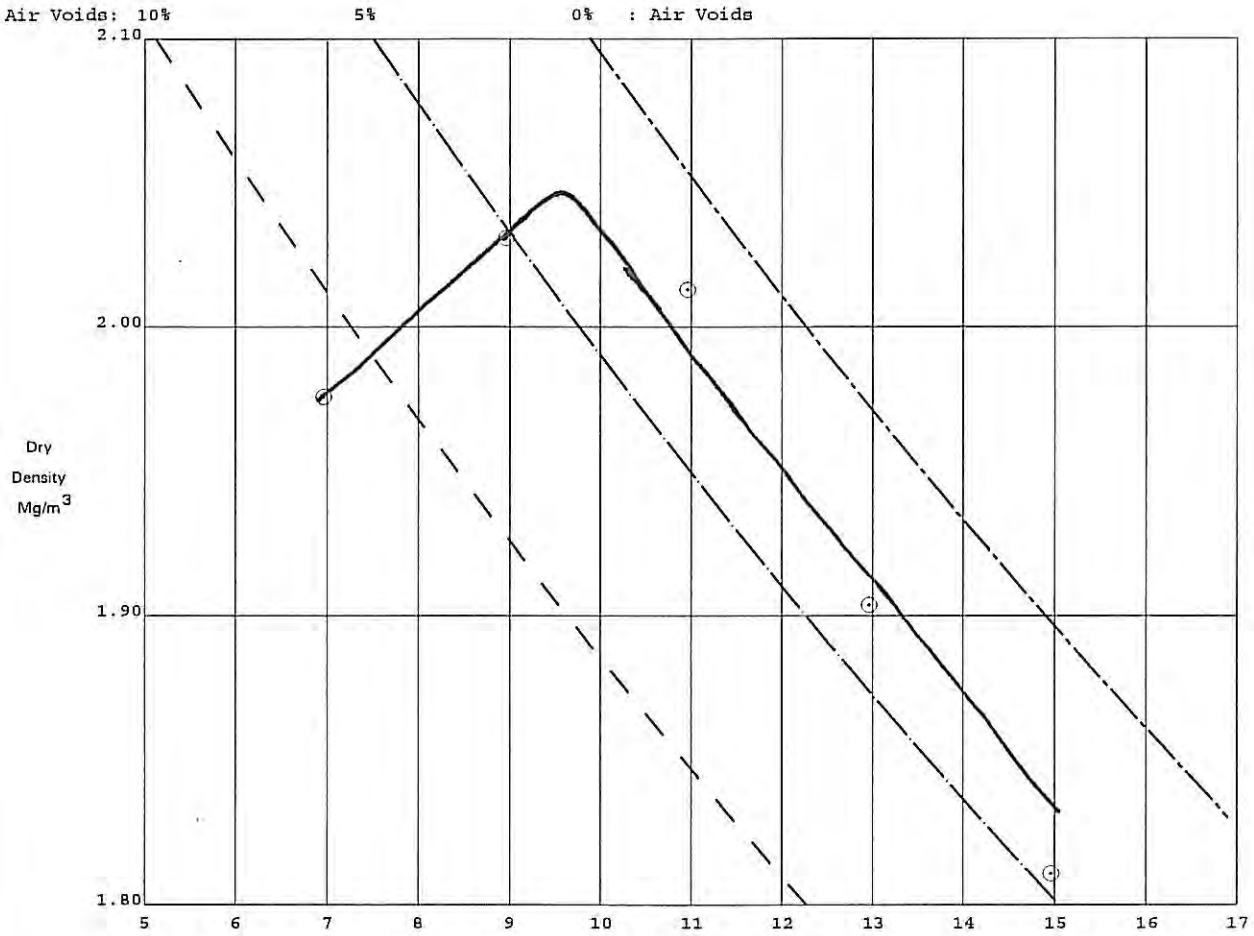
SAMPLE DESCRIPTION	REMARKS
Brown clayey slightly gravelly SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM16
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 0.20 - 0.20		SAMPLE REF 1	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	7.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	15 %
MAXIMUM DRY DENSITY	2.05 Mg/m^3	OPTIMUM MOISTURE CONTENT	9.4 %



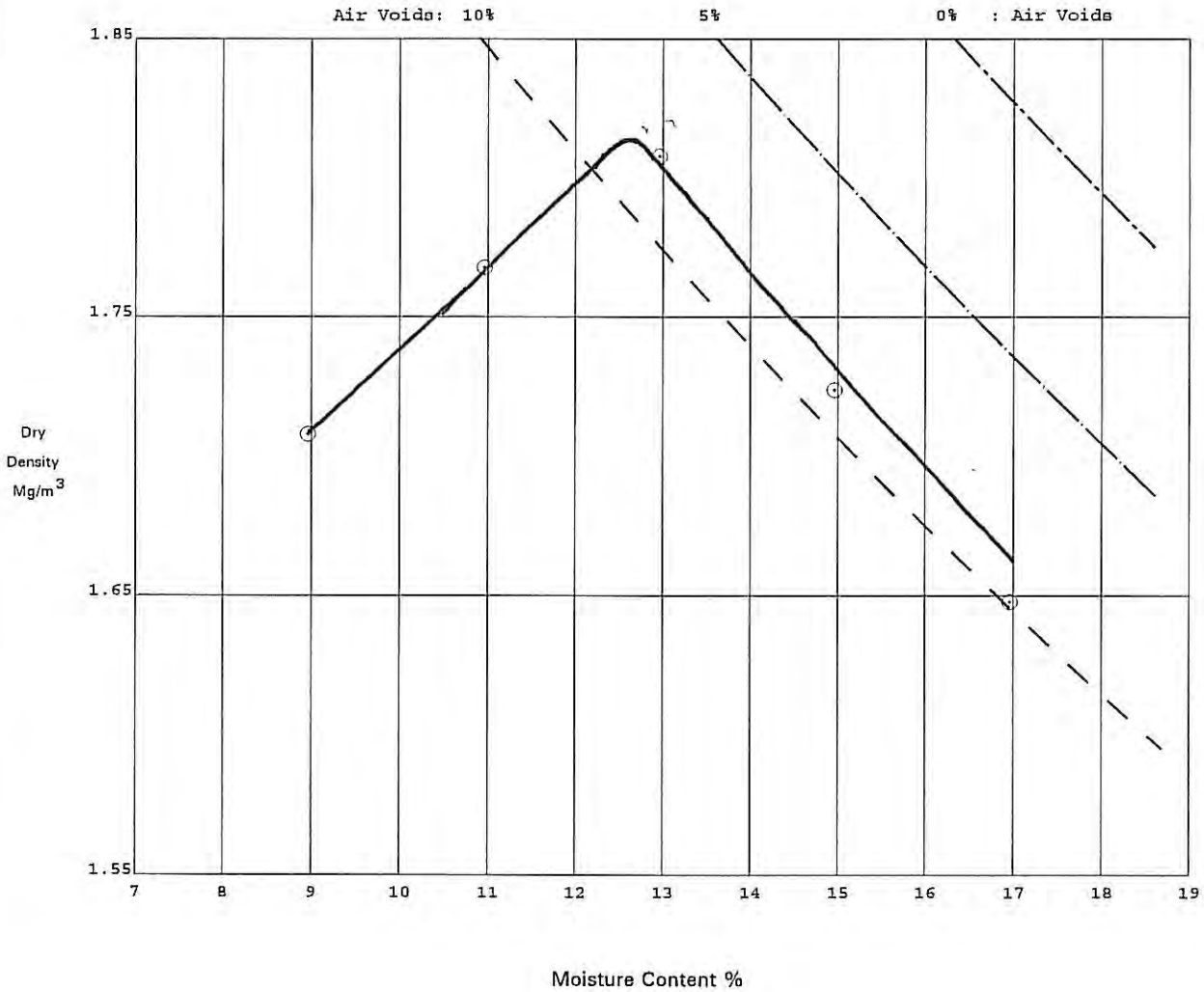
SAMPLE DESCRIPTION	REMARKS
Brown silty slightly gravelly SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM18
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH	1.30 - 1.30	SAMPLE REF	1
			JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	6.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION	2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).	AS RECEIVED MOISTURE CONTENT	15 %
MAXIMUM DRY DENSITY	2.05 Mg/m^3	OPTIMUM MOISTURE CONTENT	9.7 %



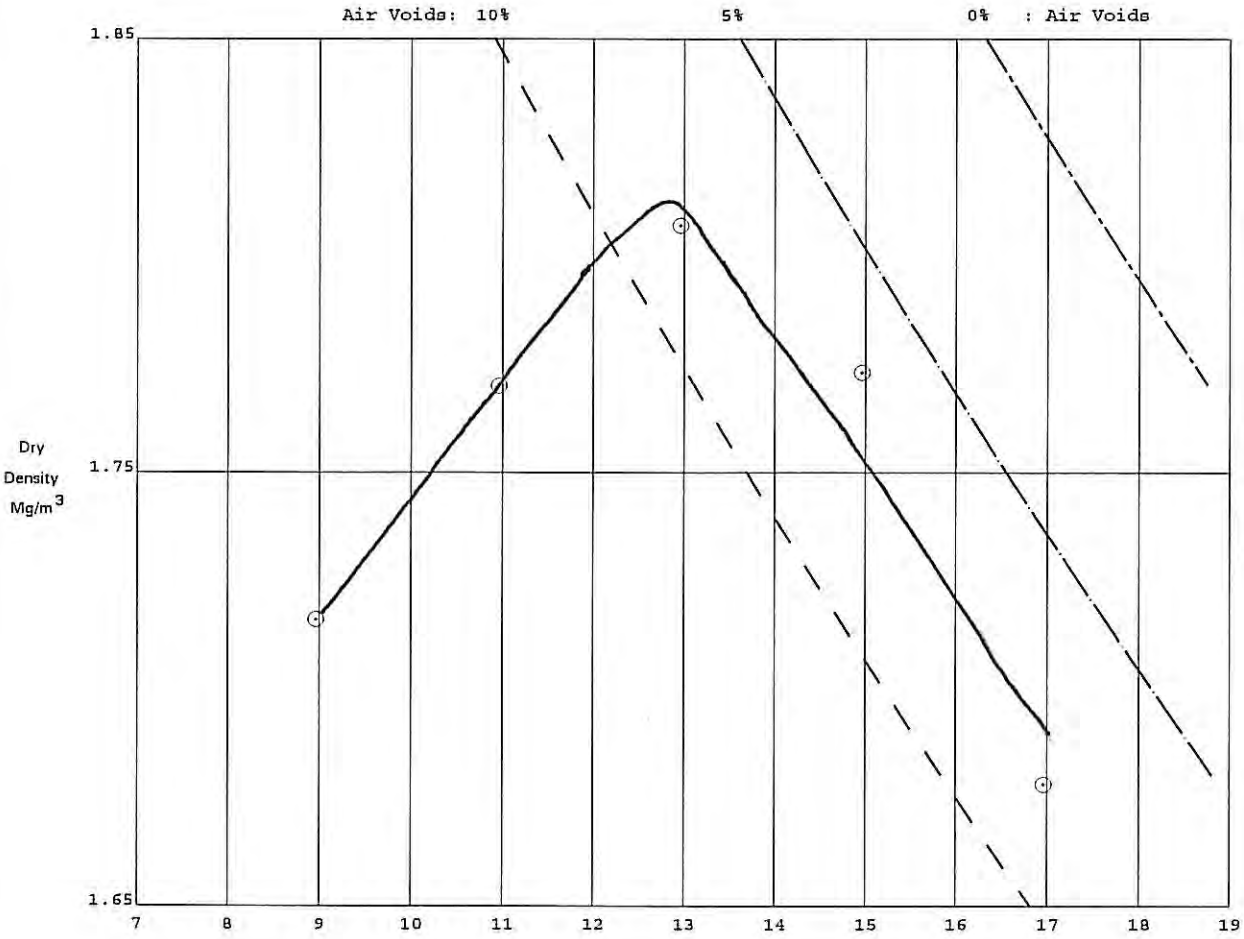
SAMPLE DESCRIPTION	REMARKS
Brown silty gravelly SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM20
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 3.10 - 3.10		SAMPLE REF 3	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	3.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	24 %
MAXIMUM DRY DENSITY	1.81 Mg/m^3	OPTIMUM MOISTURE CONTENT	13 %



SAMPLE DESCRIPTION	REMARKS
Brown clayey slightly gravelly SAND	

CC Geotechnical	Tel: 0151-545-2750 Fax: 0151-548-7892	DRY DENSITY/MOISTURE CONTENT RELATIONSHIP	HOLE NO. TPM22
CLIENT	BAM CONSTRUCTION LTD	SITE	WAST WREXHAM ARC - SOIL MOUNDS
SAMPLE DEPTH 1.10 - 1.10		SAMPLE REF 1	JOB NO. 12/6693
% MATERIAL RETAINED ON 20mm SIEVE	7.0	MAXIMUM SIZE OF COHESIVE LUMPS	20 mm
% MATERIAL RETAINED ON 37.5mm SIEVE	0.0	SINGLE OR SEPARATE SUBSAMPLES	Separate.
PARTICLE DENSITY	Assumed 2.65 Mg/m^3	TYPE OF MOULD	Proctor.
METHOD OF COMPACTION 2.5 kg Rammer Method (BS 1377:Part 4:1990 3.3).		AS RECEIVED MOISTURE CONTENT	24 %
MAXIMUM DRY DENSITY	1.81 Mg/m^3	OPTIMUM MOISTURE CONTENT	13 %



SAMPLE DESCRIPTION	REMARKS
Brown sandy slightly gravelly silty CLAY	

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
Telephone (01424) 718618
Facsimile (01424) 729911

2683 2683

THE ENVIRONMENTAL LABORATORY LTD

F.A.O. Daniel O'Regan
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Reporting Date: 23/07/12

ANALYTICAL REPORT No. AR39523

Samples Received By:-	Courier
Samples Received:-	11/07/12
Your Project No:	CCG-C-12-6693
Site Location:	Wast Arc Wrexham Soil Mounds
No Samples Received:-	10

Report Checked By:-

Steve Knight
Director

Authorised By:-

Mike Varley BSc, CChem, CSci, FRSC
Chief Chemist

Any comments, opinions, or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683)

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonard's on Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39523

Location: Wast Arc Wrexham Soil Mounds

Your Project No: 12/6693

Reporting Date: 23/07/12

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F.A.O. Daniel O'Regan
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils	Characteristic	Silt loam	Loamy sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Silt loam
	TP/BH	TPM02	TPM03	TPM05	TPM11	TPM13	TPM15	TPM07	TPM09	TPM20	TPM23
	Depth (m)	4.20	2.50	1.10	1.10	4.00	1.00	1.00	3.20	3.10	1.00
	Our ref	41932	41933	41934	41935	41936	41937	41938	41939	41940	41941
Stone Content	(%)	<1	9	3	15	19	6	16	11	<1	6
pH Value**	(Units)	9.3	8.6	8.4	8.3	8.4	8.2	8.3	8.3	7.8	7.2
Total Sulphate	(% as SO_4)	0.10	0.06	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	0.05	0.06
Total Sulphur	(% as S)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05
Water Soluble Sulphate**	(mg/l as SO_4)	150	60	<10	22	100	<10	14	<10	21	35
Water Soluble Chloride	(mg/l)	13	11	<5	7	<5	<5	8	<5	7	6
Water Soluble Nitrate	(mg/l)	10	<1	1	3	4	<1	<1	<1	<1	35
Water Soluble Magnesium	(mg/l)	1.2	0.7	0.2	0.2	0.3	<0.1	0.2	0.1	0.2	0.5
Ammonium	(mg/l)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

All results expressed on dry weight basis

** - MCERTS accredited test

* = UKAS accredited test

DK

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THE ENVIRONMENTAL LABORATORY LTD

SAMPLE RECEIPT AND TEST DATES

Our Analytical Report Number	AR39523
Your Job No:	12/6693
Sample Receipt Date:	11/07/12
Reporting Date:	23/07/12
Registered:	11/07/12
Prepared:	12/07/12
Analysis complete:	23/07/12

TEST METHOD SUMMARY

PARAMETER	Analysis Undertaken on	Date Tested	Method Number	Technique
pH Value**	Air dried sample	16/07/12	113	BRE SD1
Total Sulphate	Air dried sample	16/07/12	115	BRE SD1
Total Sulphur	Air dried sample	17/07/12	216	BRE SD1
Water Soluble Sulphate**	Air dried sample	16/07/12	172	BRE SD1
Water Soluble Nitrate	Air dried sample	16/07/12	172	BRE SD1
Water Soluble Chloride	Air dried sample	16/07/12	172	BRE SD1
Water Soluble Magnesium	Air dried sample	16/07/12	101	BRE SD1
Ammonium	As submitted sample	20/07/12	151	BRE SD1

* = UKAS Accredited test

** - MCERTS Accredited test

Determinands not marked with * or ** are non accredited

MCERTS accreditation covers samples which are predominantly sand, clay, loam or combinations of these three soil types

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APPENDIX F

GEOENVIRONMENTAL / CHEMICAL LABORATORY TESTING

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THE ENVIRONMENTAL LABORATORY LTD

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Reporting Date: 19/07/12

ANALYTICAL REPORT No. AR39548

Samples Received By:-	Courier
Samples Received:-	21/6/12 - 22/6/12
Your Job No:	12/6693
Site Location:	Wast Arc Wrexham Soil Mounds
No Samples Received:-	33
Date of Sampling	19 - 21/06/12

Report Checked By:-

Steve Knight
Director

Authorised By:-

Mike Varley BSc, CChem, CSci, FRSC
Chief Chemist

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THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils		Date Sampled	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	--
		TP/BH	TPM01	TPM02	TPM03	TPM04	TPM05	TPM06	TPM07	TPM08	TPM08	TPM09
		Depth (m)	1.90	4.20	2.50	1.00	3.00	1.00	2.50	1.00	4.40	2.00
		Our ref	42075	42076	42077	42078	42079	42080	42081	42082	42083	42084
Stone Content	(%)		11	<1	<1	5	6	7	17	19	11	9
Arsenic**	(mg/kg)		7.8	9.1	8.6	<5	5.2	15.7	6.6	10.1	6.2	5.6
Cadmium**	(mg/kg)		1.0	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium**	(mg/kg)		12	19	15	6	10	26	13	20	11	10
Lead**	(mg/kg)		52	57	48	24	27	99	29	55	25	31
Mercury**	(mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel**	(mg/kg)		12	19	15	8	13	39	14	20	14	12
Copper**	(mg/kg)		14	19	16	10	11	32	18	20	14	12
Zinc**	(mg/kg)		47	69	59	26	38	84	46	61	40	38
Selenium**	(mg/kg)		2.0	1.2	0.7	<0.5	<0.5	1.1	0.5	0.6	<0.5	<0.5
Hexavalent Chromium	(mg/kg)		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water Soluble Boron	(mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH Value**	(Units)		7.9	7.9	8.1	8.2	8.0	8.0	8.1	8.2	8.0	8.2
Total Cyanide**	(mg/kg)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Monohydric Phenols**	(mg/kg)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Organic Carbon	(%)		0.8	1.3	2.2	0.2	0.4	0.4	1.2	0.8	0.3	0.3

All results expressed on dry weight basis

** - MCERTS accredited test

* - UKAS accredited test

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Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

2683 2683

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils

		TP/BH	TPM10	TPM10	TPM11	TPM11	TPM12	TPM13	TPM13	TPM14	TPM14	TPM15
		Depth (m)	1.00	4.00	1.10	2.00	4.50	1.00	4.00	1.40	3.00	2.20
		Our ref	42085	42086	42087	42088	42089	42090	42091	42092	42093	42094
Stone Content	(%)		14	17	24	11	33	<1	18	12	10	10
Arsenic**	(mg/kg)		6.8	10.3	7.3	12.1	15.5	15.5	<5	<5	8.1	<5
Cadmium**	(mg/kg)		<0.5	<0.5	<0.5	<0.5	0.8	0.7	<0.5	<0.5	<0.5	<0.5
Chromium**	(mg/kg)		14	21	27	11	21	24	7	8	24	8
Lead**	(mg/kg)		29	91	24	26	69	134	26	21	28	31
Mercury**	(mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel**	(mg/kg)		17	20	30	13	49	123	11	10	32	11
Copper**	(mg/kg)		16	26	18	16	22	32	12	10	22	13
Zinc**	(mg/kg)		51	97	51	39	91	116	32	36	60	35
Selenium**	(mg/kg)		<0.5	1.3	<0.5	<0.5	1.1	1.8	<0.5	<0.5	<0.5	<0.5
Hexavalent Chromium	(mg/kg)		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water Soluble Boron	(mg/kg)		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH Value**	(Units)		8.0	8.2	8.2	8.2	8.3	8.1	8.3	8.2	8.1	8.0
Total Cyanide**	(mg/kg)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Monohydric Phenols**	(mg/kg)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Organic Carbon	(%)		0.5	1.6	0.4	0.4	0.5	1.9	0.3	0.2	0.2	<0.1

All results expressed on dry weight basis

** - MCERTS accredited test

* - UKAS accredited test

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THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils												
	Date Sampled	---	---	---	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12
	TP/BH	TPM16	TPM16	TPM17	TPM18	TPM19	TPM19	TPM20	TPM22	TPM22	TPM23
	Depth (m)	0.20	2.00	1.20	1.30	1.15	4.20	0.80	1.10	3.10	1.10
	Our ref	42095	42107	42096	42097	42098	42099	42100	42101	42102	42103
Stone Content	(%)	16	9	10	10	14	31	6	<1	39	<1
Arsenic**	(mg/kg)	7.4	7.1	<5	6.5	5.1	7.9	10.6	6.5	<5	6.4
Cadmium**	(mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5
Chromium**	(mg/kg)	11	8	8	10	17	16	17	6	10	17
Lead**	(mg/kg)	50	51	29	201	129	54	341	56	11	47
Mercury**	(mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel**	(mg/kg)	15	12	10	16	27	18	33	14	8	13
Copper**	(mg/kg)	15	15	12	17	26	11	40	16	33	15
Zinc**	(mg/kg)	47	43	39	92	95	39	314	69	10	13
Selenium**	(mg/kg)	1.4	1.5	0.5	1.5	1.7	0.6	2.1	0.8	0.9	0.8
Hexavalent Chromium	(mg/kg)	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Water Soluble Boron	(mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
pH Value**	(Units)	8.0	8.0	8.0	8.1	7.8	7.7	7.2	7.2	8.3	7.3
Total Cyanide**	(mg/kg)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Monohydric Phenols**	(mg/kg)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Organic Carbon	(%)	0.2	1.1	0.5	0.4	3.3	2.4	0.5	1.8	1.0	1.6

All results expressed on dry weight basis

** - MCERTS accredited test

* - UKAS accredited test

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THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils		Date Sampled	21/06/12	21/06/12	21/06/12
		TP/BH	TPM23	TPM24	TPM24
		Depth (m)	2.45	0.60	1.40
		Our ref	42104	42105	42106
Stone Content	(%)		<1	19	36
Arsenic**	(mg/kg)		6.2	10.7	6.4
Cadmium**	(mg/kg)		<0.5	<0.5	<0.5
Chromium**	(mg/kg)		12	12	11
Lead**	(mg/kg)		45	36	391
Mercury**	(mg/kg)		<0.5	<0.5	<0.5
Nickel**	(mg/kg)		14	22	15
Copper**	(mg/kg)		15	20	11
Zinc**	(mg/kg)		60	68	43
Selenium**	(mg/kg)		0.6	1.5	0.9
Hexavalent Chromium	(mg/kg)		<2	<2	<2
Water Soluble Boron	(mg/kg)		<0.5	<0.5	<0.5
pH Value**	(Units)		7.5	8.3	8.2
Total Cyanide**	(mg/kg)		<1	<1	<1
Total Monohydric Phenols**	(mg/kg)		<1	<1	<1
Total Organic Carbon	(%)		0.8	2.2	3.9

All results expressed on dry weight basis

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ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693
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F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils

	Date Sampled	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	---	---	---
	TP/BH	TPM02	TPM03	TPM04	TPM05	TPM06	TPM07	TPM08	TPM09	TPM10	TPM11
	Depth (m)	4.20	2.50	1.00	3.00	1.00	2.50	4.40	2.00	4.00	2.00
	Our ref	42076	42077	42078	42079	42080	42081	42083	42084	42086	42088
Naphthalene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	<0.1
Anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.7	<0.1
Pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.4	<0.1
Benz(a)anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	<0.1
Chrysene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.0	<0.1
Benzo(b)fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.9	<0.1
Benzo(k)fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.9	<0.1
Benzo(a)pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.9	<0.1
Indeno(123-cd)pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.7	<0.1
Dibenz(ah)anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.6	<0.1
Total PAH**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	19.1	<0.1

All results expressed on dry weight basis

** - MCERTS accredited test

MP

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY
Tel: 01424 718618 Fax: 01424 729911

UKAS TESTING 2683 mCERTS 2683

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils

	Date Sampled	---	---	---	---	---	21/06/12	21/06/12	21/06/12	21/06/12
	TP/BH	TPM12	TPM13	TPM14	TPM16	TPM17	TPM18	TPM19	TPM20	TPM24
	Depth (m)	4.50	4.00	3.00	0.20	1.20	1.30	4.20	0.80	1.40
	Our ref	42089	42091	42093	42095	42096	42097	42099	42100	42106
Naphthalene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	1.6	<0.1
Pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	1.4	<0.1
Benz(a)anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.0	<0.1
Chrysene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	1.6	<0.1
Benzo(b)fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	1.2	<0.1
Benzo(k)fluoranthene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.1	1.4	<0.1
Benzo(a)pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.2	<0.1
Indeno(123-cd)pyrene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.1	<0.1
Dibenz(ah)anthracene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.0	<0.1
Total PAH**	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	3.1	<0.1	11.4	<0.1

All results expressed on dry weight basis

** - MCERTS accredited test

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THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonard's on Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Soils

	Date Sampled	19/06/12	19/06/12	19/06/12	---	---	---	21/06/12	21/06/12	21/06/12	21/06/12
	TP/BH	TPM04	TPM05	TPM08	TPM11	TPM12	TPM15	TPM18	TPM19	TPM22	TPM24
	Depth (m)	1.00	3.00	4.40	2.00	4.50	2.20	1.30	4.20	1.10	1.40
	Our ref	42078	42079	42083	42088	42089	42094	42097	42099	42101	42106
C_6-C_{10}	(mg/kg)	<0.1	2.3	1.2	1.3	1.9	2.1	1.8	2.1	1.9	2.2
>C_{10}-C_{20}	(mg/kg)	2.8	3.6	2.9	1.6	3.2	3.6	3.0	2.3	3.5	3.5
>C_{20}-C_{30}	(mg/kg)	0.3	0.3	12.5	2.4	1.1	1.3	2.4	0.6	0.3	1.1
>C_{30}-C_{40}	(mg/kg)	0.2	1.5	2.6	0.6	0.2	0.4	0.1	0.4	0.2	0.3
Total Petroleum Hydrocarbons**	(mg/kg)	3.3	7.7	19.2	5.9	6.4	7.4	7.3	5.4	5.9	7.1

Accredited for TPH only, not banding
** - MCERTS Accredited test
All results expressed on dry weight basis

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ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

TPH CWG - Soil		Date Sampled	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	19/06/12	---	---	---	---
		TP/BH	TPM01	TPM02	TPM03	TPM06	TPM07	TPM08	TPM09	TPM10	TPM10	TPM11
		Depth (m)	1.90	4.20	2.50	1.00	2.50	1.00	2.00	1.00	4.00	1.10
		Our ref	42075	42076	42077	42080	42081	42082	42084	42085	42086	42087
Aromatic												
>EC_5-EC_7	(mg/kg)		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_7-EC_8	(mg/kg)		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_8-EC_{10}	(mg/kg)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{10}-EC_{12}	(mg/kg)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{12}-EC_{16}	(mg/kg)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1
>EC_{16}-EC_{21}	(mg/kg)		0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	3.2	<0.1
>EC_{21}-EC_{35}	(mg/kg)		4.9	1.4	1.8	3.9	2.8	40.5	8.4	4.1	74.5	6.3
Aliphatic												
>EC_5-EC_6	(mg/kg)		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_6-EC_8	(mg/kg)		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_8-EC_{10}	(mg/kg)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{10}-EC_{12}	(mg/kg)		<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{12}-EC_{16}	(mg/kg)		<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1
>EC_{16}-EC_{21}	(mg/kg)		<0.1	0.1	<0.1	<0.1	<0.1	0.6	<0.1	<0.1	5.6	<0.1
>EC_{21}-EC_{35}	(mg/kg)		0.4	<0.1	0.3	0.5	0.2	17.7	0.7	0.1	113.9	1.6
TPH (C_5 - C_{35})	(mg/kg)		5.4	1.8	2.1	4.4	3.0	59.6	9.1	4.2	198.1	7.9
Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethyl Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylenes**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

All results expressed on dry weight

** - MCERTS accredited test

MP

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ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

	Date Sampled	---	---	---	---	---	---	---	21/06/12	21/06/12	21/06/12
	TP/BH	TPM13	TPM13	TPM14	TPM14	TPM16	TPM16	TPM17	TPM19	TPM20	TPM22
	Depth (m)	1.00	4.00	1.40	3.00	0.20	2.00	1.20	1.15	0.80	3.10
	Our ref	42090	42091	42092	42093	42095	42107	42096	42098	42100	42102
Aromatic											
>EC_5-EC_7	(mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_7-EC_8	(mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_8-EC_{10}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{10}-EC_{12}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{12}-EC_{16}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{16}-EC_{21}	(mg/kg)	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1
>EC_{21}-EC_{35}	(mg/kg)	4.1	1.7	1.1	0.7	0.9	<0.1	0.6	1.2	11.5	2.1
Aliphatic											
>EC_5-EC_6	(mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_6-EC_8	(mg/kg)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
>EC_8-EC_{10}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{10}-EC_{12}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC_{12}-EC_{16}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
>EC_{16}-EC_{21}	(mg/kg)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	0.5	0.1
>EC_{21}-EC_{35}	(mg/kg)	0.3	0.4	0.6	0.7	0.7	<0.1	0.7	0.6	2.2	<0.1
TPH (C_5 - C_{35})	(mg/kg)	4.5	2.1	1.7	1.4	1.5	<0.1	1.4	2.0	15.2	2.2
Benzene**	(µg/kg)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Toluene**	(µg/kg)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Ethyl Benzene**	(µg/kg)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Xylenes**	(µg/kg)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

All results expressed on dry weight

** - MCERTS accredited test

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Liverpool, L33 7BA

Date Sampled		21/06/12	21/06/12	21/06/12
TP/BH		TPM23	TPM23	TPM24
Depth (m)		1.10	2.45	0.60
Our ref		42103	42104	42105
Aromatic				
$>EC_5-EC_7$	(mg/kg)	<0.01	<0.01	<0.01
$>EC_7-EC_8$	(mg/kg)	<0.01	<0.01	<0.01
$>EC_8-EC_{10}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{10}-EC_{12}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{12}-EC_{16}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{16}-EC_{21}$	(mg/kg)	<0.1	<0.1	0.2
$>EC_{21}-EC_{35}$	(mg/kg)	1.0	1.4	3.9
Aliphatic				
$>EC_5-EC_6$	(mg/kg)	<0.01	<0.01	<0.01
$>EC_6-EC_8$	(mg/kg)	<0.01	<0.01	<0.01
$>EC_8-EC_{10}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{10}-EC_{12}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{12}-EC_{16}$	(mg/kg)	<0.1	<0.1	<0.1
$>EC_{16}-EC_{21}$	(mg/kg)	0.2	0.2	0.4
$>EC_{21}-EC_{35}$	(mg/kg)	0.7	0.3	1.0
TPH (C_5 - C_{35})	(mg/kg)	1.9	1.8	5.5
Benzene**	(µg/kg)	<10	<10	<10
Toluene**	(µg/kg)	<10	<10	<10
Ethyl Benzene**	(µg/kg)	<10	<10	<10
Xylenes**	(µg/kg)	<10	<10	<10

All results expressed on dry weight basis

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Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

VOC ANALYSIS

Soils		Date Sampled	19/06/12	19/06/12	---	---	---	---	---
		TP/BH	TPM01	TPM08	TPM10	TPM11	TPM13	TPM14	TPM15
		Depth (m)	1.90	1.00	1.00	1.10	1.00	1.40	2.20
		Our ref	42075	42082	42085	42087	42090	42092	42094
Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Toluene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Ethyl Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
mpXylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
oXylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethene-cis**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1-Dichloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Chloroform**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Carbontetrachloride**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 1-Trichloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Trichloroethylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Tetrachloroethylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 1, 2-Tetrachloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 2, 2-Tetrachloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Chlorobenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromobenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Methylethylbenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1-Dichloro-1-propene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethene-trans	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
2, 2-Dichloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromochloromethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromomethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloropropane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloro1propene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloro1propene trans	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 2-Trichloroethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromoethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Styrene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Propylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 4-Trimethylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
t-Butylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Trimethylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1-Methylpropylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
o-Cymene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 4-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Butylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dibromo-3-chloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Hexachlorobutaciene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 3-Trichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 4-Trichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromoform	(µg/kg)		<10	<10	<10	<10	<10	<10	<10

** - MCERTS accredited test

MP

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonard's on Sea, East Sussex, TN38 9BY
Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

2683 2683

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693

Reporting Date: 19/07/12

VOC ANALYSIS

Soils		Date Sampled	---	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12
		TP/BH	TPM16	TPM19	TPM22	TPM22	TPM23	TPM23	TPM24
		Depth (m)	2.00	1.15	1.10	3.10	1.10	2.45	0.60
		Our ref	42107	42098	42101	42102	42103	42104	42105
Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Toluene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Ethyl Benzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
mpXylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
oXylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethene-cis**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1-Dichloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Chloroform**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Carbontetrachloride**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 1-Trichloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Trichloroethylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Tetrachloroethylene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 1, 2-Tetrachloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 2, 2-Tetrachloroethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Chlorobenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromobenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromodichloromethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Methylethylbenzene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1-Dichloro-1-propene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethene-trans	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
2, 2-Dichloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromochloromethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloroethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromomethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichloropropane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloro1propene**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloro1propene trans	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 1, 2-Trichloroethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromochloromethane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Dibromoethane**	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Styrene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Propylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
2-Chlorotoluene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 4-Trimethylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
4-Chlorotoluene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
t-Butylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Trimethylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1-Methylpropylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
o-Cymene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 4-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Butylbenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dibromo-3-chloropropane	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Hexachlorobutaciene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 3-Trichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2, 4-Trichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 3-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
1, 2-Dichlorobenzene	(µg/kg)		<10	<10	<10	<10	<10	<10	<10
Bromoform	(µg/kg)		<10	<10	<10	<10	<10	<10	<10

** - MCERTS accredited test

MP

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693

Reporting Date: 19/07/12

SVOC ANALYSIS

Soils	TP/BH	TPM01	TPM08	TPM10	TPM11	TPM13	TPM14
	Depth (m)	1.90	1.00	1.00	1.10	1.00	1.40
	Our ref	42075	42082	42085	42087	42090	42092
Pyridine	(µg/kg)	<10	<10	<10	<10	<10	<10
Aniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol	(µg/kg)	28	36	<10	<10	<10	<10
Bis(2-chloroethyl) ether	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,3-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,4-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,2-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Ethane, hexachloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 3-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Nitrobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
Isophorone	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2-nitro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4-dimethyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Methane, bis(2-chloroethoxy)-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
1,3,4-Trichlorobenzene,	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene	(µg/kg)	---	---	---	---	---	---
4-Chloroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Hexachloro-1,3-butadiene	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 4-chloro-3-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene, 2-methyl-	(µg/kg)	<10	13	<10	<10	29	<10
Naphthalene, 1-methyl-	(µg/kg)	<10	11	<10	<10	28	<10
Hexachlorocyclopentadiene	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4,6-trichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4,5-trichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene, 2-chloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
2-Nitroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
1,4-Dinitrobenzene,	(µg/kg)	<10	<10	<10	<10	<10	<10
Dimethylphthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Acenaphthylene	(µg/kg)	---	---	---	---	---	---
1.3-Dinitrobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
3-Nitroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Acenaphthene	(µg/kg)	---	---	---	---	---	---
Dibenzofuran	(µg/kg)	<10	13	<10	<10	24	<10
2,4-Dinitrotoluene	(µg/kg)	<10	<10	<10	<10	<10	<10
2,3,4,6-Tetrachlorophenol,	(µg/kg)	<10	<10	<10	<10	<10	<10
2,3,5,6-Tetrachlorophenol,	(µg/kg)	<10	<10	<10	<10	<10	<10
Diethylphthalate	(µg/kg)	55	70	46	42	45	<10
Fluorene	(µg/kg)	---	---	---	---	---	---
Diphenylamine	(µg/kg)	<10	<10	<10	<10	<10	<10
Azobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
4-Bromophenyl phenyl ether	(µg/kg)	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
Pentachlorophenol	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenanthrene	(µg/kg)	---	---	---	---	---	---
Anthracene	(µg/kg)	---	---	---	---	---	---
Fluoranthene	(µg/kg)	---	---	---	---	---	---
Pyrene	(µg/kg)	---	---	---	---	---	---
Benzylbutylphthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)adipate	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzo(a)anthracene	(µg/kg)	---	---	---	---	---	---
Chrysene	(µg/kg)	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	(µg/kg)	---	---	---	---	---	---
Benzo(k)fluoranthene	(µg/kg)	---	---	---	---	---	---
Benzo(a)pyrene	(µg/kg)	---	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	(µg/kg)	---	---	---	---	---	---
Dibenz(ah)anthracene	(µg/kg)	---	---	---	---	---	---
Benzo(ghi)perylene	(µg/kg)	---	---	---	---	---	---

MP

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693

Reporting Date: 19/07/12

SVOC ANALYSIS

Soils	TP/BH	TPM15	TPM16	TPM19	TPM22	TPM22	TPM23
	Depth (m)	2.20	2.00	1.15	1.10	3.10	1.10
	Our ref	42094	42107	42098	42101	42102	42103
Pyridine	(µg/kg)	<10	<10	<10	<10	<10	<10
Aniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol	(µg/kg)	<10	<10	<10	<10	22	<10
Bis(2-chloroethyl) ether	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,3-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,4-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzene, 1,2-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Ethane, hexachloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 3-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Nitrobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
Isophorone	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2-nitro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4-dimethyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Methane, bis(2-chloroethoxy)-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4-dichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
1,3,4-Trichlorobenzene,	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene	(µg/kg)	---	---	---	---	---	---
4-Chloroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Hexachloro-1,3-butadiene	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 4-chloro-3-methyl-	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene, 2-methyl-	(µg/kg)	<10	42	<10	<10	153	<10
Naphthalene, 1-methyl-	(µg/kg)	<10	38	<10	<10	141	<10
Hexachlorocyclopentadiene	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4,6-trichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenol, 2,4,5-trichloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
Naphthalene, 2-chloro-	(µg/kg)	<10	<10	<10	<10	<10	<10
2-Nitroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
1,4-Dinitrobenzene,	(µg/kg)	<10	<10	<10	<10	<10	<10
Dimethylphthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Acenaphthylene	(µg/kg)	---	---	---	---	---	---
1.3-Dinitrobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
3-Nitroaniline	(µg/kg)	<10	<10	<10	<10	<10	<10
Acenaphthene	(µg/kg)	---	---	---	---	---	---
Dibenzofuran	(µg/kg)	<10	20	<10	<10	223	<10
2,4-Dinitrotoluene	(µg/kg)	<10	<10	<10	<10	<10	<10
2,3,4,6-Tetrachlorophenol,	(µg/kg)	<10	<10	<10	<10	<10	<10
2,3,5,6-Tetrachlorophenol,	(µg/kg)	<10	<10	<10	<10	<10	<10
Diethylphthalate	(µg/kg)	39	33	39	<10	64	35
Fluorene	(µg/kg)	---	---	---	---	---	---
Diphenylamine	(µg/kg)	<10	<10	<10	<10	<10	<10
Azobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
4-Bromophenyl phenyl ether	(µg/kg)	<10	<10	<10	<10	<10	<10
Hexachlorobenzene	(µg/kg)	<10	<10	<10	<10	<10	<10
Pentachlorophenol	(µg/kg)	<10	<10	<10	<10	<10	<10
Phenanthrene	(µg/kg)	---	---	---	---	---	---
Anthracene	(µg/kg)	---	---	---	---	---	---
Fluoranthene	(µg/kg)	---	---	---	---	---	---
Pyrene	(µg/kg)	---	---	---	---	---	---
Benzylbutylphthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Bis(2-ethylhexyl)adipate	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzo(a)anthracene	(µg/kg)	---	---	---	---	---	---
Chrysene	(µg/kg)	---	---	---	---	---	---
Bis(2-ethylhexyl)phthalate	(µg/kg)	<10	<10	<10	<10	<10	<10
Benzo(b)fluoranthene	(µg/kg)	---	---	---	---	---	---
Benzo(k)fluoranthene	(µg/kg)	---	---	---	---	---	---
Benzo(a)pyrene	(µg/kg)	---	---	---	---	---	---
Indeno[1,2,3-cd]pyrene	(µg/kg)	---	---	---	---	---	---
Dibenz(ah)anthracene	(µg/kg)	---	---	---	---	---	---
Benzo(ghi)perylene	(µg/kg)	---	---	---	---	---	---

MP

THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY

Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693

Reporting Date: 19/07/12

SVOC ANALYSIS

Soils		TP/BH	TPM23	TPM24
		Depth (m)	2.45	0.60
		Our ref	42104	42105
Pyridine		(µg/kg)	<10	<10
Aniline		(µg/kg)	<10	<10
Phenol		(µg/kg)	<10	<10
Bis(2-chloroethyl) ether		(µg/kg)	<10	<10
Benzene, 1,3-dichloro-		(µg/kg)	<10	<10
Benzene, 1,4-dichloro-		(µg/kg)	<10	<10
Benzene, 1,2-dichloro-		(µg/kg)	<10	<10
Phenol, 2-methyl-		(µg/kg)	<10	<10
Ethane, hexachloro-		(µg/kg)	<10	<10
Phenol, 3-methyl-		(µg/kg)	<10	<10
Nitrobenzene		(µg/kg)	<10	<10
Isophorone		(µg/kg)	<10	<10
Phenol, 2-nitro-		(µg/kg)	<10	<10
Phenol, 2,4-dimethyl-		(µg/kg)	<10	<10
Methane, bis(2-chloroethoxy)-		(µg/kg)	<10	<10
Phenol, 2,4-dichloro-		(µg/kg)	<10	<10
1,3,4-Trichlorobenzene,		(µg/kg)	<10	<10
Naphthalene		(µg/kg)	---	---
4-Chloroaniline		(µg/kg)	<10	<10
Hexachloro-1,3-butadiene		(µg/kg)	<10	<10
Phenol, 4-chloro-3-methyl-		(µg/kg)	<10	<10
Naphthalene, 2-methyl-		(µg/kg)	14	13
Naphthalene, 1-methyl-		(µg/kg)	12	12
Hexachlorocyclopentadiene		(µg/kg)	<10	<10
Phenol, 2,4,6-trichloro-		(µg/kg)	<10	<10
Phenol, 2,4,5-trichloro-		(µg/kg)	<10	<10
Naphthalene, 2-chloro-		(µg/kg)	<10	<10
2-Nitroaniline		(µg/kg)	<10	<10
1,4-Dinitrobenzene,		(µg/kg)	<10	<10
Dimethylphthalate		(µg/kg)	80	41
Acenaphthylene		(µg/kg)	---	---
1.3-Dinitrobenzene		(µg/kg)	<10	<10
3-Nitroaniline		(µg/kg)	<10	<10
Acenaphthene		(µg/kg)	---	---
Dibenzofuran		(µg/kg)	<10	<10
2,4-Dinitrotoluene		(µg/kg)	<10	<10
2,3,4,6-Tetrachlorophenol,		(µg/kg)	<10	<10
2,3,5,6-Tetrachlorophenol,		(µg/kg)	<10	<10
Diethylphthalate		(µg/kg)	<10	<10
Fluorene		(µg/kg)	---	---
Diphenylamine		(µg/kg)	<10	<10
Azobenzene		(µg/kg)	<10	<10
4-Bromophenyl phenyl ether		(µg/kg)	<10	<10
Hexachlorobenzene		(µg/kg)	<10	<10
Pentachlorophenol		(µg/kg)	<10	<10
Phenanthrene		(µg/kg)	---	---
Anthracene		(µg/kg)	---	---
Fluoranthene		(µg/kg)	---	---
Pyrene		(µg/kg)	---	---
Benzylbutylphthalate		(µg/kg)	<10	<10
Bis(2-ethylhexyl)adipate		(µg/kg)	<10	<10
Benzo(a)anthracene		(µg/kg)	---	---
Chrysene		(µg/kg)	---	---
Bis(2-ethylhexyl)phthalate		(µg/kg)	<10	<10
Benzo(b)fluoranthene		(µg/kg)	---	---
Benzo(k)fluoranthene		(µg/kg)	---	---
Benzo(a)pyrene		(µg/kg)	---	---
Indeno[1,2,3-cd]pyrene		(µg/kg)	---	---
Dibenz(ah)anthracene		(µg/kg)	---	---
Benzo(ghi)perylene		(µg/kg)	---	---

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THE ENVIRONMENTAL LABORATORY LTD

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards On Sea, East Sussex, TN38 9BY
Tel: 01424 718618 Fax: 01424 729911

UKAS TESTING 2683

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

F.A.O. Graham Rooney
CC Geotechnical Limited
Unit 2, Deltic Way
Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Your Job No: 12/6693
Your Order No: 12/1448
Reporting Date: 19/07/12

Asbestos Identification

Sample ref:	**TPM01**
Depth (m)	**1.90**
Our ref:	**42075**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM02**
Depth (m)	**4.20**
Our ref:	**42076**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM03**
Depth (m)	**2.50**
Our ref:	**42077**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM04**
Depth (m)	**1.00**
Our ref:	**42078**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM05**
Depth (m)	**3.00**
Our ref:	**42079**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM06**
Depth (m)	**1.00**
Our ref:	**42080**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM07**
Depth (m)	**2.50**
Our ref:	**42081**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

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Your Job No: 12/6693
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Reporting Date: 19/07/12

Asbestos Identification

Sample ref:	**TPM08**
Depth (m)	**1.00**
Our ref:	**42082**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM08**
Depth (m)	**4.40**
Our ref:	**42083**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM09**
Depth (m)	**2.00**
Our ref:	**42084**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM10**
Depth (m)	**1.00**
Our ref:	**42085**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM10**
Depth (m)	**4.00**
Our ref:	**42086**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM11**
Depth (m)	**1.10**
Our ref:	**42087**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM11**
Depth (m)	**2.00**
Our ref:	**42088**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

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Reporting Date: 19/07/12

Asbestos Identification

Sample ref:	**TPM13**
Depth (m)	**1.00**
Our ref:	**42090**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM13**
Depth (m)	**4.00**
Our ref:	**42091**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM14**
Depth (m)	**1.40**
Our ref:	**42092**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM14**
Depth (m)	**3.00**
Our ref:	**42093**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM15**
Depth (m)	**2.20**
Our ref:	**42094**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM16**
Depth (m)	**0.20**
Our ref:	**42095**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM16**
Depth (m)	**2.00**
Our ref:	**42107**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

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Reporting Date: 19/07/12

Asbestos Identification

Sample ref:	**TPM17**
Depth (m)	**1.20**
Our ref:	**42096**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM18**
Depth (m)	**1.30**
Our ref:	**42097**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM19**
Depth (m)	**1.15**
Our ref:	**42098**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM20**
Depth (m)	**0.80**
Our ref:	**42100**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM22**
Depth (m)	**1.10**
Our ref:	**42101**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM22**
Depth (m)	**3.10**
Our ref:	**42102**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM23**
Depth (m)	**1.10**
Our ref:	**42103**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

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Reporting Date: 19/07/12

Asbestos Identification

Sample ref:	**TPM23**
Depth (m)	**2.45**
Our ref:	**42104**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

Sample ref:	**TPM24**
Depth (m)	**0.60**
Our ref:	**42105**
#Description of Sample Matrix:	Soil
***Result**	No asbestos identified

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2683

Your Job No: 12/6693

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2683

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Kirkby Indus
Liverpool, L

Leachates

												Leachates
	Date Sampled	19/06/12	19/06/12	19/06/12	19/06/12	---	---	---	---	---	---	
	TP/BH	TPM01	TPM03	TPM06	TPM08	TPM09	TPM10	TPM10	TPM11	TPM13	TPM13	
	Depth	1.90	2.50	1.00	1.00	2.00	1.00	4.00	1.10	1.00	4.00	
	Our ref	42075	42077	42080	42082	42084	42085	42086	42087	42090	42091	
Arsenic*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Cadmium*	(µg/l)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Chromium*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Lead*	(µg/l)	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	
Nickel*	(µg/l)	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	
Copper*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
Zinc*	(µg/l)	6	<5	8	<5	<5	6	5	<5	<5	9	
Mercury*	(µg/l)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Selenium*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
pH Value*	(Units)	7.6	7.7	7.5	7.6	7.7	7.6	7.4	7.5	7.5	7.2	
Total Cyanide	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	

* = UKAS Accredited test

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* = UKAS Accred

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Tel: 01424 718618 Fax: 01424 729911

ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693

Reporting Date: 19/07/2012

ɜm Rooney
nical Limited
c Way
ɜtrial Estate, Knowsley
33 7BA

	Date Sampled	---	---	---	---	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12
	TP/BH	TPM14	TPM16	TPM16	TPM17	TPM19	TPM20	TPM22	TPM23	TPM23	TPM24
	Depth	1.40	0.20	2.00	1.20	1.15	0.80	3.10	1.10	2.45	0.60
	Our ref	42092	42095	42107	42096	42098	42100	42102	42103	42104	42105
Arsenic*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Cadmium*	(µg/l)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Lead*	(µg/l)	<1	<1	<1	<1	<1	2	<1	<1	<1	<1
Nickel*	(µg/l)	<1	<1	1	<1	<1	<1	<1	<1	1	<1
Copper*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Zinc*	(µg/l)	8	20	13	<5	6	25	<5	5	7	<5
Mercury*	(µg/l)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Selenium*	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
pH Value*	(Units)	7.3	7.3	7.5	8.1	7.6	7.2	7.3	7.1	7.5	7.6
Total Cyanide	(µg/l)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

lited test

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Leachates											
	Date Sampled	19/06/12	19/06/12	19/06/12	19/06/12	---	---	---	---	---	---
	TP/BH	TPM01	TPM03	TPM06	TPM08	TPM09	TPM10	TPM10	TPM11	TPM13	TPM13
	Depth	1.90	2.50	1.00	1.00	2.00	1.00	4.00	1.10	1.00	4.00
	Our ref	42075	42077	42080	42082	42084	42085	42086	42087	42090	42091
Naphthalene	(µg/l)	0.32	0.22	0.14	0.19	0.39	0.17	0.19	0.60	0.17	0.13
Acenaphthylene	(µg/l)	0.03	0.02	0.03	0.02	0.03	0.03	0.03	0.04	0.01	0.01
Acenaphthene	(µg/l)	0.06	0.05	0.07	0.04	0.06	0.12	0.13	0.07	0.05	0.02
Fluorene	(µg/l)	0.08	0.07	0.08	0.06	0.06	0.11	0.09	0.07	0.06	0.03
Phenanthrene	(µg/l)	0.11	0.10	0.09	0.07	0.09	0.14	0.14	0.09	0.08	0.06
Anthracene	(µg/l)	0.03	0.02	0.03	0.03	0.03	0.05	0.05	0.02	0.03	0.02
Fluoranthene	(µg/l)	0.03	0.03	0.04	0.03	0.04	0.05	0.05	0.03	0.03	0.03
Pyrene	(µg/l)	0.02	0.02	0.02	0.20	0.02	0.03	0.04	0.02	0.02	0.02
Benz(a)anthracene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01
Chrysene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.07	<0.01	<0.01	0.01
Benzo(b)fluoranthene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01
Benzo(k)fluoranthene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01
Benzo(a)pyrene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Dibenz(ah)anthracene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(ghi)perylene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01
Total PAH	(µg/l)	0.68	0.53	0.50	0.64	0.72	0.70	0.95	0.94	0.45	0.33

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ANALYTICAL REPORT No. AR39548

Location: Wast Arc Wrexham Soil Mounds

Your Job No: 12/6693

Reporting Date: 19/07/2012

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Kirkby Industrial Estate, Knowsley
Liverpool, L33 7BA

Leachates

	Date Sampled	---	---	---	---	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12	21/06/12
	TP/BH	TPM14	TPM16	TPM16	TPM17	TPM19	TPM20	TPM22	TPM23	TPM23	TPM24
	Depth	1.40	0.20	2.00	1.20	1.15	0.80	3.10	1.10	2.45	0.60
	Our ref	42092	42095	42107	42096	42098	42100	42102	42103	42104	42105
Naphthalene	(µg/l)	0.13	0.12	0.18	0.09	0.28	0.13	0.06	0.18	0.12	0.25
Acenaphthylene	(µg/l)	0.01	0.01	0.02	0.01	0.03	0.01	<0.01	0.02	0.01	0.02
Acenaphthene	(µg/l)	0.04	0.03	0.04	0.02	0.05	0.03	0.01	0.04	0.03	0.03
Fluorene	(µg/l)	0.05	0.05	0.06	0.02	0.07	0.05	0.01	0.04	0.04	0.05
Phenanthrene	(µg/l)	0.09	0.11	0.09	0.08	0.12	0.08	0.03	0.06	0.08	0.07
Anthracene	(µg/l)	0.04	0.03	0.03	0.02	0.04	0.03	0.01	0.02	0.02	0.02
Fluoranthene	(µg/l)	0.03	0.03	0.03	0.05	0.04	0.03	0.10	0.02	0.02	0.02
Pyrene	(µg/l)	0.02	0.02	0.02	0.05	0.03	0.02	<0.01	0.01	0.01	0.01
Benz(a)anthracene	(µg/l)	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chrysene	(µg/l)	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	(µg/l)	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(k)fluoranthene	(µg/l)	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(a)pyrene	(µg/l)	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(123-cd)pyrene	(µg/l)	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenz(ah)anthracene	(µg/l)	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(ghi)perylene	(µg/l)	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total PAH	(µg/l)	0.41	0.40	0.47	0.66	0.66	0.38	0.22	0.39	0.33	0.47

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THE ENVIRONMENTAL LABORATORY LTD

Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42075				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM01						
Depth	1.90						
Solid Waste Analysis							
TOC (%)	0.9				3%	5%	6%
Loss on Ignition (%)**	2.2				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	5				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	7.9				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.008	0.008		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	0.006		<0.1	4	50	200
Chloride*	2	4		24	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	15	3		36	1000	20000	50000
TDS	170	390		2298	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.1	10.7		70	500	800	1000
Leach Test Information							
pH *	8.0	7.6					
EC*	161	106					
Sample Mass (kg)	0.192						
Dry Matter (%)	91						
Moisture (%)	11						
Stage 1							
Volume Eluate L2 (litres)	0.331						
Filtered Eluate VE1 (litres)	0.236						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42076				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM02						
Depth	4.20						
Solid Waste Analysis							
TOC (%)	1.3				3%	5%	6%
Loss on Ignition (%)**	3.1				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	2				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	7.9				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.040	0.017		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.008	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.006	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.020	0.005		<0.1	4	50	200
Chloride*	12	3		9	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	186	23		109	1000	20000	50000
TDS	560	440		924	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.7	7.3		16	500	800	1000
Leach Test Information							
pH *	8.1	7.7					
EC*	621	176					
Sample Mass (kg)	0.293						
Dry Matter (%)	60						
Moisture (%)	79						
Stage 1							
Volume Eluate L2 (litres)	0.212						
Filtered Eluate VE1 (litres)	0.068						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42077				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM03						
Depth	2.50						
Solid Waste Analysis							
TOC (%)	2.2				3%	5%	6%
Loss on Ignition (%)**	1.4				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	2				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	8.1				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.020	0.021		0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.011	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.008	0.006		<0.1	4	50	200
Chloride*	5	4		21	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	34	5		55	1000	20000	50000
TDS	270	360		1749	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	12.8	10.3		55	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	227	110					
Sample Mass (kg)	0.206						
Dry Matter (%)	85						
Moisture (%)	20						
Stage 1							
Volume Eluate L2 (litres)	0.315						
Filtered Eluate VE1 (litres)	0.176						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42078				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM04						
Depth	1.00						
Solid Waste Analysis							
TOC (%)	0.2				3%	5%	6%
Loss on Ignition (%)**	0.7				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	3				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	8.2				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	3		21	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	2	<5		3	1000	20000	50000
TDS	200	190		1322	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.7	9.4		65	500	800	1000
Leach Test Information							
pH *	7.9	7.4					
EC*	81	39					
Sample Mass (kg)	0.191						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.334						
Filtered Eluate VE1 (litres)	0.220						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42079				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM05						
Depth	3.00						
Solid Waste Analysis							
TOC (%)	0.4				3%	5%	6%
Loss on Ignition (%)**	1.3				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	8				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	8.0				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.007	0.007		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	5	2		17	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	16	1		26	1000	20000	50000
TDS	160	380		2248	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.8	11.1		72	500	800	1000
Leach Test Information							
pH *	8.0	7.6					
EC*	130	71					
Sample Mass (kg)	0.192						
Dry Matter (%)	91						
Moisture (%)	11						
Stage 1							
Volume Eluate L2 (litres)	0.332						
Filtered Eluate VE1 (litres)	0.230						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42080				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM06						
Depth	1.00						
Solid Waste Analysis							
TOC (%)	0.4				3%	5%	6%
Loss on Ignition (%)**	1.3				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	4				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.0				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.006	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	2	3		18	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	3	2		14	1000	20000	50000
TDS	190	390		2273	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.3	9.3		61	500	800	1000
Leach Test Information							
pH *	8.1	7.6					
EC*	126	58					
Sample Mass (kg)	0.194						
Dry Matter (%)	90						
Moisture (%)	12						
Stage 1							
Volume Eluate L2 (litres)	0.330						
Filtered Eluate VE1 (litres)	0.198						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42081				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM07						
Depth	2.50						
Solid Waste Analysis							
TOC (%)	1.4				3%	5%	6%
Loss on Ignition (%)**	1.4				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	3				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	8.1				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.025	0.012		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.006	<0.005		<0.1	4	50	200
Chloride*	3	3		20	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	14	3		34	1000	20000	50000
TDS	180	320		1973	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.5	9.7		65	500	800	1000
Leach Test Information							
pH *	8.1	7.8					
EC*	164	96					
Sample Mass (kg)	0.192						
Dry Matter (%)	91						
Moisture (%)	10						
Stage 1							
Volume Eluate L2 (litres)	0.332						
Filtered Eluate VE1 (litres)	0.224						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42082				Landfill Waste Acceptance Critena Limits		
Sampling Date	19/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM08						
Depth	1.00						
Solid Waste Analysis							
TOC (%)	1.0				3%	5%	6%
Loss on Ignition (%)**	2.9				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	60				500	--	--
Total PAH (mg/kg)**	18.5				100	--	--
pH (Units)**	8.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.010	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	4		24	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	15	3		35	1000	20000	50000
TDS	190	230		1420	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.7	10.2		65	500	800	1000
Leach Test Information							
pH *	8.1	7.8					
EC*	179	93					
Sample Mass (kg)	0.195						
Dry Matter (%)	90						
Moisture (%)	12						
Stage 1							
Volume Eluate L2 (litres)	0.329						
Filtered Eluate VE1 (litres)	0.228						

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Waste Acceptance Criteria ANALYTICAL *RESULTS*							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42084				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM09						
Depth	2.00						
Solid Waste Analysis							
TOC (%)	0.3				3%	5%	6%
Loss on Ignition (%)**	1.9				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	9				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.0				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	2		15	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	5	1		12	1000	20000	50000
TDS	150	210		1306	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.1	7.0		48	500	800	1000
Leach Test Information							
pH *	8.0	7.9					
EC*	117	70					
Sample Mass (kg)	0.193						
Dry Matter (%)	91						
Moisture (%)	11						
Stage 1							
Volume Eluate L2 (litres)	0.331						
Filtered Eluate VE1 (litres)	0.240						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42085				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM10						
Depth	1.00						
Solid Waste Analysis							
TOC (%)	0.6				3%	5%	6%
Loss on Ignition (%)**	1.5				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)	<0.01				1	--	--
Mineral Oil (mg/kg)**	4				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	3		21	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	69	1		94	1000	20000	50000
TDS	230	290		1909	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.3	10.2		69	500	800	1000
Leach Test Information							
pH *	8.1	7.8					
EC*	137	84					
Sample Mass (kg)	0.191						
Dry Matter (%)	92						
Moisture (%)	10						
Stage 1							
Volume Eluate L2 (litres)	0.333						
Filtered Eluate VE1 (litres)	0.224						

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Waste Acceptance Criteria ANALYTICAL *RESULTS*							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42086				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM10						
Depth	4.00						
Solid Waste Analysis							
TOC (%)	1.9				3%	5%	6%
Loss on Ignition (%)**	3.9				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	198				500	--	--
Total PAH (mg/kg)**	22.1				100	--	--
pH (Units)**	8.0				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.026	0.010		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.006	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.007	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.008	0.006		<0.1	4	50	200
Chloride*	6	5		30	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	74	8		135	1000	20000	50000
TDS	320	410		2255	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	12.2	7.5		50	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	320	110					
Sample Mass (kg)	0.201						
Dry Matter (%)	87						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.322						
Filtered Eluate VE1 (litres)	0.236						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42087				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM11						
Depth	1.10						
Solid Waste Analysis							
TOC (%)	0.5				3%	5%	6%
Loss on Ignition (%)**	1.7				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	8				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.012	0.010		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	0.005		<0.1	4	50	200
Chloride*	4	2		17	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	14	2		31	1000	20000	50000
TDS	140	160		1113	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.5	10.3		71	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	146	82					
Sample Mass (kg)	0.189						
Dry Matter (%)	93						
Moisture (%)	8						
Stage 1							
Volume Eluate L2 (litres)	0.335						
Filtered Eluate VE1 (litres)	0.246						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42088				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM11						
Depth	2.00						
Solid Waste Analysis							
TOC (%)	0.4				3%	5%	6%
Loss on Ignition (%)**	2.2				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	6				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.010	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.006	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.006	0.008		<0.1	4	50	200
Chloride*	4	3		23	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	15	3		38	1000	20000	50000
TDS	190	250		1681	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.7	9.8		68	500	800	1000
Leach Test Information							
pH *	8.0	7.8					
EC*	172	86					
Sample Mass (kg)	0.189						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.335						
Filtered Eluate VE1 (litres)	0.248						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42089				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM12						
Depth	4.50						
Solid Waste Analysis							
TOC (%)	0.7				3%	5%	6%
Loss on Ignition (%)**	1.7				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	6				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.3				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.020	0.010		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	4		28	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	6	2		21	1000	20000	50000
TDS	150	160		1154	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.7	6.8		53	500	800	1000
Leach Test Information							
pH *	8.0	7.8					
EC*	122	68					
Sample Mass (kg)	0.188						
Dry Matter (%)	93						
Moisture (%)	8						
Stage 1							
Volume Eluate L2 (litres)	0.336						
Filtered Eluate VE1 (litres)	0.268						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
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Waste Acceptance Criteria ANALYTICAL *RESULTS*							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42090				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM13						
Depth	1.00						
Solid Waste Analysis							
TOC (%)	1.9				3%	5%	6%
Loss on Ignition (%)**	4.2				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	5				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.1				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.019	0.013		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.006	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.009	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.005	0.008		<0.1	4	50	200
Chloride*	4	4		23	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	17	4		39	1000	20000	50000
TDS	220	420		2162	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.9	7.6		48	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	212	108					
Sample Mass (kg)	0.200						
Dry Matter (%)	87						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.322						
Filtered Eluate VE1 (litres)	0.218						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42091				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM13						
Depth	4.00						
Solid Waste Analysis							
TOC (%)	0.3				3%	5%	6%
Loss on Ignition (%)**	1.2				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	2				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.3				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.031	0.009		0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	0	4			800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	0	7			1000	20000	50000
TDS	270	370		2627	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	7.6	7.5		56	500	800	1000
Leach Test Information							
pH *	7.9	7.8					
EC*	309	86					
Sample Mass (kg)	0.187						
Dry Matter (%)	94						
Moisture (%)	7						
Stage 1							
Volume Eluate L2 (litres)	0.338						
Filtered Eluate VE1 (litres)	0.264						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42092				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM14						
Depth	1.40						
Solid Waste Analysis							
TOC (%)	0.2				3%	5%	6%
Loss on Ignition (%)**	0.9				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	2				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	3		23	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	2	<5		3	1000	20000	50000
TDS	70	50		405	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.9	10.3		77	500	800	1000
Leach Test Information							
pH *	8.0	7.6					
EC*	97	52					
Sample Mass (kg)	0.186						
Dry Matter (%)	94						
Moisture (%)	7						
Stage 1							
Volume Eluate L2 (litres)	0.338						
Filtered Eluate VE1 (litres)	0.248						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42093				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM14						
Depth	3.00						
Solid Waste Analysis							
TOC (%)	0.2				3%	5%	6%
Loss on Ignition (%)**	1.3				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	1				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.1				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	0.007		<0.1	4	50	200
Chloride*	3	3		23	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	2	1		9	1000	20000	50000
TDS	160	110		903	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	9.3	10.3		77	500	800	1000
Leach Test Information							
pH *	7.7	7.3					
EC*	59	32					
Sample Mass (kg)	0.186						
Dry Matter (%)	94						
Moisture (%)	7						
Stage 1							
Volume Eluate L2 (litres)	0.339						
Filtered Eluate VE1 (litres)	0.234						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42094				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM15						
Depth	2.20						
Solid Waste Analysis							
TOC (%)	0.1				3%	5%	6%
Loss on Ignition (%)**	0.9				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	7				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.0				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	4		29	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	2	2		15	1000	20000	50000
TDS	120	50		474	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	7.8	6.7		52	500	800	1000
Leach Test Information							
pH *	7.8	7.3					
EC*	86	37					
Sample Mass (kg)	0.186						
Dry Matter (%)	94						
Moisture (%)	7						
Stage 1							
Volume Eluate L2 (litres)	0.338						
Filtered Eluate VE1 (litres)	0.242						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42095				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM16						
Depth	0.20						
Solid Waste Analysis							
TOC (%)	0.3				3%	5%	6%
Loss on Ignition (%)**	2.6				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)	<0.01				1	--	--
Mineral Oil (mg/kg)**	2				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.0				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.010	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	0.009		<0.1	4	50	200
Chloride*	3	3		21	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	4	<5		5	1000	20000	50000
TDS	130	100		742	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.6	10.0		68	500	800	1000
Leach Test Information							
pH *	8.0	7.5					
EC*	127	58					
Sample Mass (kg)	0.190						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.334						
Filtered Eluate VE1 (litres)	0.240						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42107				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM16						
Depth	2.00						
Solid Waste Analysis							
TOC (%)	1.2				3%	5%	6%
Loss on Ignition (%)**	2.0				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	<5				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.1				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.011	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.010	<0.005		<0.1	4	50	200
Chloride*	0	0			800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	0	0			1000	20000	50000
TDS	200	190		1333	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	11.7	12.5		86	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	162	81					
Sample Mass (kg)	0.190						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.334						
Filtered Eluate VE1 (litres)	0.230						

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THE ENVIRONMENTAL LABORATORY LTD

Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42096				Landfill Waste Acceptance Critena Limits		
Sampling Date	---				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM17						
Depth	1.20						
Solid Waste Analysis							
TOC (%)	0.5				3%	5%	6%
Loss on Ignition (%)**	1.1				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	1				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.4				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	<0.005	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	2		16	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	3	<5		4	1000	20000	50000
TDS	80	40		355	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	8.8	5.6		46	500	800	1000
Leach Test Information							
pH *	8.0	7.7					
EC*	114	65					
Sample Mass (kg)	0.187						
Dry Matter (%)	93						
Moisture (%)	7						
Stage 1							
Volume Eluate L2 (litres)	0.337						
Filtered Eluate VE1 (litres)	0.254						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
Stated limits are for guidance only and ELAB cannot be held responsible for any discrepencies with current legislation

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42097				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM18						
Depth	1.30						
Solid Waste Analysis							
TOC (%)	0.4				3%	5%	6%
Loss on Ignition (%)**	4.1				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	7				500	–	–
Total PAH (mg/kg)**	3.6				100	–	–
pH (Units)**	8.1				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.031	0.019		0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	0.009	0.009		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.008	0.006		<0.1	4	50	200
Chloride*	3	4		22	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	16	3		34	1000	20000	50000
TDS	210	90		672	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	7.8	8.5		48	500	800	1000
Leach Test Information							
pH *	8.0	7.8					
EC*	179	71					
Sample Mass (kg)	0.202						
Dry Matter (%)	87						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.322						
Filtered Eluate VE1 (litres)	0.228						

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Waste Acceptance Criteria ANALYTICAL *RESULTS*							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42098				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM19						
Depth	1.15						
Solid Waste Analysis							
TOC (%)	3.8				3%	5%	6%
Loss on Ignition (%)**	6.6				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	2				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	7.8				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.035	0.018		0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.009	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.007	0.008		<0.1	4	50	200
Chloride*	5	4		24	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	20	4		36	1000	20000	50000
TDS	230	260		1470	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.3	6.4		40	500	800	1000
Leach Test Information							
pH *	8.1	7.9					
EC*	207	104					
Sample Mass (kg)	0.199						
Dry Matter (%)	88						
Moisture (%)	15						
Stage 1							
Volume Eluate L2 (litres)	0.324						
Filtered Eluate VE1 (litres)	0.144						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42099				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM19						
Depth	4.20						
Solid Waste Analysis							
TOC (%)	3.6				3%	5%	6%
Loss on Ignition (%)**	1.7				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	5				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	7.7				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.028	0.007		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.009	<0.005		<0.1	4	50	200
Chloride*	5	4		26	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	27	4		57	1000	20000	50000
TDS	150	30		356	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	7.3	3.8		29	500	800	1000
Leach Test Information							
pH *	7.7	7.6					
EC*	157	43					
Sample Mass (kg)	0.196						
Dry Matter (%)	89						
Moisture (%)	13						
Stage 1							
Volume Eluate L2 (litres)	0.327						
Filtered Eluate VE1 (litres)	0.246						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42100				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM20						
Depth	0.80						
Solid Waste Analysis							
TOC (%)	0.6				3%	5%	6%
Loss on Ignition (%)**	10.2				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	15				500	--	--
Total PAH (mg/kg)**	14.6				100	--	--
pH (Units)**	7.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.047	0.010		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.012	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.014	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.012	0.007		<0.1	4	50	200
Chloride*	4	3		14	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	61	7		95	1000	20000	50000
TDS	260	120		698	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	15.6	8.5		46	500	800	1000
Leach Test Information							
pH *	8.0	7.5					
EC*	346	81					
Sample Mass (kg)	0.220						
Dry Matter (%)	79						
Moisture (%)	28						
Stage 1							
Volume Eluate L2 (litres)	0.300						
Filtered Eluate VE1 (litres)	0.208						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42101				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM22						
Depth	1.10						
Solid Waste Analysis							
TOC (%)	1.8				3%	5%	6%
Loss on Ignition (%)**	3.5				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	6				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	7.2				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.013	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.007	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	3	4		21	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	9	2		19	1000	20000	50000
TDS	240	140		899	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	18.9	7.1		53	500	800	1000
Leach Test Information							
pH *	8.2	7.7					
EC*	247	76					
Sample Mass (kg)	0.201						
Dry Matter (%)	87						
Moisture (%)	16						
Stage 1							
Volume Eluate L2 (litres)	0.321						
Filtered Eluate VE1 (litres)	0.196						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42102				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM22						
Depth	3.10						
Solid Waste Analysis							
TOC (%)	1.7				3%	5%	6%
Loss on Ignition (%)**	0.8				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	2				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.3				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.017	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.013	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	0.006	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.009	<0.005		<0.1	4	50	200
Chloride*	3	3		26	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	64	4		135	1000	20000	50000
TDS	230	160		1516	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	7.3	5.2		49	500	800	1000
Leach Test Information							
pH *	7.9	8.0					
EC*	234	78					
Sample Mass (kg)	0.180						
Dry Matter (%)	97						
Moisture (%)	3						
Stage 1							
Volume Eluate L2 (litres)	0.345						
Filtered Eluate VE1 (litres)	0.292						

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Waste Acceptance Criteria ANALYTICAL *RESULTS*							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42103				Landfill Waste Acceptance Critena		
					Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM23						
Depth	1.10						
Solid Waste Analysis							
TOC (%)	1.6				3%	5%	6%
Loss on Ignition (%)**	3.6				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)**	<0.01				1	–	–
Mineral Oil (mg/kg)**	2				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	7.3				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.014	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.008	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.005	<0.005		<0.1	4	50	200
Chloride*	4	4		22	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	15	3		28	1000	20000	50000
TDS	300	110		772	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	18.7	8.6		56	500	800	1000
Leach Test Information							
pH *	7.7	7.4					
EC*	197	56					
Sample Mass (kg)	0.203						
Dry Matter (%)	86						
Moisture (%)	18						
Stage 1							
Volume Eluate L2 (litres)	0.319						
Filtered Eluate VE1 (litres)	0.166						

Results are expressed on a dry weight basis, after correction for moisture content where applicable
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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42104				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM23						
Depth	2.45						
Solid Waste Analysis							
TOC (%)	0.8				3%	5%	6%
Loss on Ignition (%)**	3.4				–	–	10%
BTEX (mg/kg)**	<0.01				6	–	–
Sum of PCBs (mg/kg)	<0.01				1	–	–
Mineral Oil (mg/kg)**	2				500	–	–
Total PAH (mg/kg)**	<0.5				100	–	–
pH (Units)**	7.5				–	–	–
Acid Neutralisation Capacity (mol/kg)	<0.1				–	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	0.006	<0.005		<0.1	0.5	2	25
Barium*	0.039	0.008		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	0.014	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	6	5		27	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	47	6		80	1000	20000	50000
TDS	590	430		2425	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	37.0	8.2		77	500	800	1000
Leach Test Information							
pH *	7.9	7.9					
EC*	572	158					
Sample Mass (kg)	0.207						
Dry Matter (%)	84						
Moisture (%)	20						
Stage 1							
Volume Eluate L2 (litres)	0.315						
Filtered Eluate VE1 (litres)	0.208						

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Waste Acceptance Criteria **ANALYTICAL** ***RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42105				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM24						
Depth	0.60						
Solid Waste Analysis							
TOC (%)	2.7				3%	5%	6%
Loss on Ignition (%)**	2.8				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	6				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.3				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.011	<0.005		<0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	<0.005	<0.005		<0.1	4	50	200
Chloride*	2	4		26	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	10	2		25	1000	20000	50000
TDS	200	250		1707	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	12.0	4.6		43	500	800	1000
Leach Test Information							
pH *	8.2	7.9					
EC*	159	86					
Sample Mass (kg)	0.189						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.335						
Filtered Eluate VE1 (litres)	0.236						

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Waste Acceptance Criteria **ANALYTICAL *RESULTS***							
Report No:	ANALYTICAL REPORT No. AR39548						
					CLIENT:	CC Geotechnical Limited	
Project Name:	Location: Wast Arc Wrexham Soil Mounds						
Lab Reference	42106				Landfill Waste Acceptance Critena Limits		
Sampling Date	21/06/12				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TPM24						
Depth	1.40						
Solid Waste Analysis							
TOC (%)	6.2				3%	5%	6%
Loss on Ignition (%)**	1.8				--	--	10%
BTEX (mg/kg)**	<0.01				6	--	--
Sum of PCBs (mg/kg)**	<0.01				1	--	--
Mineral Oil (mg/kg)**	0				500	--	--
Total PAH (mg/kg)**	<0.5				100	--	--
pH (Units)**	8.4				--	--	--
Acid Neutralisation Capacity (mol/kg)	<0.1				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic*	<0.005	<0.005		<0.1	0.5	2	25
Barium*	0.024	0.014		0.1	20	100	300
Cadmium*	<0.001	<0.001		<0.01	0.04	1	5
Chromium*	<0.005	<0.005		<0.1	0.5	10	70
Copper*	<0.005	<0.005		<0.1	2	50	100
Mercury*	<0.0001	<0.0001		<0.001	0.01	0.2	2
Molybdenum*	<0.005	<0.005		<0.1	0.5	10	30
Nickel*	<0.005	<0.005		<0.1	0.4	10	40
Lead*	<0.005	<0.005		<0.1	0.5	10	50
Antimony	<0.005	<0.005		<0.01	0.06	0.7	5
Selenium*	<0.005	<0.005		<0.01	0.1	0.5	7
Zinc*	0.005	<0.005		<0.1	4	50	200
Chloride*	4	4		28	800	15000	25000
Fluoride*	<1	<1		<1	10	150	500
Sulphate*	4	<5		6	1000	20000	50000
TDS	160	520		3101	4000	60000	100000
Phenol Index	<0.5	<0.5			1	-	-
DOC	10.5	5.5		46	500	800	1000
Leach Test Information							
pH *	8.4	7.8					
EC*	123	75					
Sample Mass (kg)	0.190						
Dry Matter (%)	92						
Moisture (%)	9						
Stage 1							
Volume Eluate L2 (litres)	0.334						
Filtered Eluate VE1 (litres)	0.260						

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THE ENVIRONMENTAL LABORATORY LTD

SOLID SAMPLE RECEIPT AND TEST DATES

Our Analytical Report Number	AR39548
Sample Receipt Date:	22/06/12
Reporting Date:	19/07/12
Registered:	22/06/12
Prepared:	27/06/12
Analysis complete:	08/07/12

SOLID TEST METHOD SUMMARY

PARAMETER	Analysis Undertaken on	Date Tested	Method Number	Technique
Arsenic**	Air dried sample	06/07/12	118	ICPMS
Cadmium**	Air dried sample	06/07/12	118	ICPMS
Chromium**	Air dried sample	06/07/12	118	ICPMS
Lead**	Air dried sample	06/07/12	118	ICPMS
Mercury**	Air dried sample	06/07/12	118	ICPMS
Nickel**	Air dried sample	06/07/12	118	ICPMS
Copper**	Air dried sample	06/07/12	118	ICPMS
Zinc**	Air dried sample	06/07/12	118	ICPMS
Selenium**	Air dried sample	06/07/12	118	ICPMS
Hexavalent Chromium	As submitted sample	06/07/12	110	Colorimetry
Water Soluble Boron	Air dried sample	06/07/12	202	Colorimetry
pH Value**	Air dried sample	29/06/12	113	Electrometric
Total Cyanide**	As submitted sample	05/07/12	204	Automated Flow Digital Colorimetry
Total Organic Carbon	Air dried sample	05/07/12	210	Automated IR Adsorption
Total Monohydric Phenols**	As submitted sample	05/07/12	121	HPLC
Speciated PAH**	As submitted sample	27/06/12	133	Gas Chromatography
Carbon Banding (TPH CWG)	As submitted sample	27/06/12	214	Gas Chromatography
BTEX**	As submitted sample	27/06/12	154	GCMS
Asbestos*	As submitted sample	05/07/12	179	See note
Carbon Banding (TPH BCB)**	As submitted sample	27/06/12	117	Gas chromatography
VOC**	As submitted sample	27/06/12	181	GCMS
SVOC	As submitted sample	27/06/12	167	GCMS

Asbestos analysis qualitative only
Note:- Documented In-house procedure based on HSG 248 2005
* = UKAS Accredited test
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Determinands not marked with * or ** are not accredited
MCERTS accreditation covers samples which are predominantly sand, clay, loam or combinations of these three soil types

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LEACHATE SAMPLE RECEIPT AND TEST DATES

Our Analytical Report Number	AR39548
Sample Receipt Date:	22/06/12
Reporting Date:	19/07/12
Registered:	22/06/12
Prepared:	27/06/12
Analysis complete:	08/07/12

LEACHATE TEST METHOD SUMMARY

PARAMETER	Method Number	Technique
Arsenic*	101	ICPMS
Cadmium*	101	ICPMS
Chromium*	101	ICPMS
Lead*	101	ICPMS
Nickel*	101	ICPMS
Copper*	101	ICPMS
Zinc*	101	ICPMS
Mercury*	101	ICPMS
Selenium*	101	ICPMS
pH Value*	113	Electrometric
Total Cyanide	130	Colorimetry
Speciated PAH	135	GCMS

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SAMPLE RECEIPT AND TEST DATES

Our Analytical Report Number	AR39548
Sample Receipt Date:	22/06/12
Reporting Date:	19/07/12
Registered:	22/06/12
Prepared:	27/06/12
Analysis complete:	08/07/12

TEST METHOD SUMMARY

PARAMETER	Undertaken on	Date Tested	Method Number	Technique
pH Value**	Air dried sample	29/06/12	113	Electrometric
Total Organic Carbon	Air dried sample	29/06/12	210	Automated IR Absorption
Loss on Ignition**	Air dried sample	29/06/12	129	Gravimetric
Neutralization Capacity to pH 7	Air dried sample	29/06/12	-	EA
Benzene**	As submitted sample	27/06/12	181	GCMS
Toluene**	As submitted sample	27/06/12	181	GCMS
Ethyl Benzene**	As submitted sample	27/06/12	181	GCMS
Xylenes**	As submitted sample	27/06/12	181	GCMS
Mineral Oil**	As submitted sample	27/06/12	117	GCFID
PCB 28**	Air dried sample	03/07/12	120	GCMS
PCB 52**	Air dried sample	03/07/12	120	GCMS
PCB 101**	Air dried sample	03/07/12	120	GCMS
PCB 118**	Air dried sample	03/07/12	120	GCMS
PCB 138**	Air dried sample	03/07/12	120	GCMS
PCB 153**	Air dried sample	03/07/12	120	GCMS
PCB 180**	Air dried sample	03/07/12	120	GCMS
Speciated PAH**	As submitted sample	27/06/12	133	GCFID

The analysts' guide for sampling, analysis and clearance procedures
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LEACHATE SAMPLE RECEIPT AND TEST DATES

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Registered:	22/06/12
Prepared:	27/06/12
Analysis complete:	08/07/12

LEACHATE TEST METHOD SUMMARY

PARAMETER	Method Number	Technique
Arsenic*	101	ICPMS
Cadmium*	101	ICPMS
Chromium*	101	ICPMS
Lead*	101	ICPMS
Nickel*	101	ICPMS
Copper*	101	ICPMS
Zinc*	101	ICPMS
Mercury*	101	ICPMS
Selenium	101	ICPMS
Antimony	101	ICPMS
Barium*	101	ICPMS
Molybdenum*	101	ICPMS
pH Value*	113	Electrometric
Electrical Conductivity*	136	Probe
Dissolved Organic Carbon	102	TOC analyser
Chloride*	131	Ion Chromatography
Fluoride*	131	Ion Chromatography
Sulphate*	131	Ion Chromatography
Total Dissolved Solids	144	Gravimetric
Phenol Index	121	HPLC

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APPENDIX G

NOTES ON LIMITATIONS

Standard Terms and Conditions of Engagement
Notes on Limitations
For
Geoenvironmental and Geotechnical Consultancy Services

General

CC GEOTECHNICAL LTD has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from CC GEOTECHNICAL LTD and a charge may be levied against such approval.

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1. the consequences of this document being used for any purpose or project other than for which it was commissioned

and/or

2. the consequences of use of this document by any party with whom an agreement has not been executed.

Phase I Environmental Audits / Desk Studies

The work undertaken to provide the basis of a Phase 1 Desk Study report comprises a study of available documented information from a variety of sources (including the client), together with (where appropriate) a walk over inspection of the site and meetings and discussions with relevant authorities and other interested parties. The opinions given in a Desk Study report have been dictated by finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in the report, CC GEOTECHNICAL LTD reserves the right to review such information and to modify the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

Phase II Environmental Audits

The investigation of the site has been carried out with the intention of providing sufficient information concerning the type and degree of contamination, and ground and groundwater conditions to allow a reasonable risk assessment to be made. The objectives of the investigation have been limited to establishing the risks associated to potential human targets, building materials, the environment (including adjacent land), and surface and groundwater.

The amount of exploratory work and chemical testing undertaken may have been restricted by the timescale available, and the locations of the exploratory holes may have been restricted to areas unoccupied by the building(s) on the site, and further restricted by the existence of buried services. A more comprehensive investigation may be required if the site is to be redeveloped as, in addition to risk assessment, a number of important engineering and environmental issues may need to be resolved.

For those reasons, if costs have been included in relation to site remediation these must be considered as tentative only and must, in any event, be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of site conditions. The number of sampling points and the methods of sampling and testing do not preclude the existence of localised “hotspots” of contamination where concentrations may be significantly higher than those actually encountered.

Geoenvironmental Ground Investigations

The investigation of the site has been carried out to provide sufficient information within the agreed scope of the investigation, under the general headings of type and degree of contamination, geotechnical characteristics, and ground and groundwater conditions, to provide a reasonable assessment of the environmental risks together with engineering and development implications.

If costs have been included in relation to the site remediation, these must be confirmed by a qualified quantity surveyor.

The exploratory holes undertaken, investigate only a small volume of the ground in relation to the size of the site, and can only provide a general indication of the site conditions. The opinions provided and recommendations given in this report are based on the ground conditions apparent at the site of each of the exploratory holes. There may be ground conditions present on the site which have not been disclosed by this investigation, and which have therefore not been taken into account in this report.

The comments made on groundwater conditions are based on observations made at the time that site work was carried out. It should be noted that groundwater levels will vary owing to seasonal, tidal, weather, or other effects.

The risk assessment and opinions provided, inter alia, take into consideration currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values.