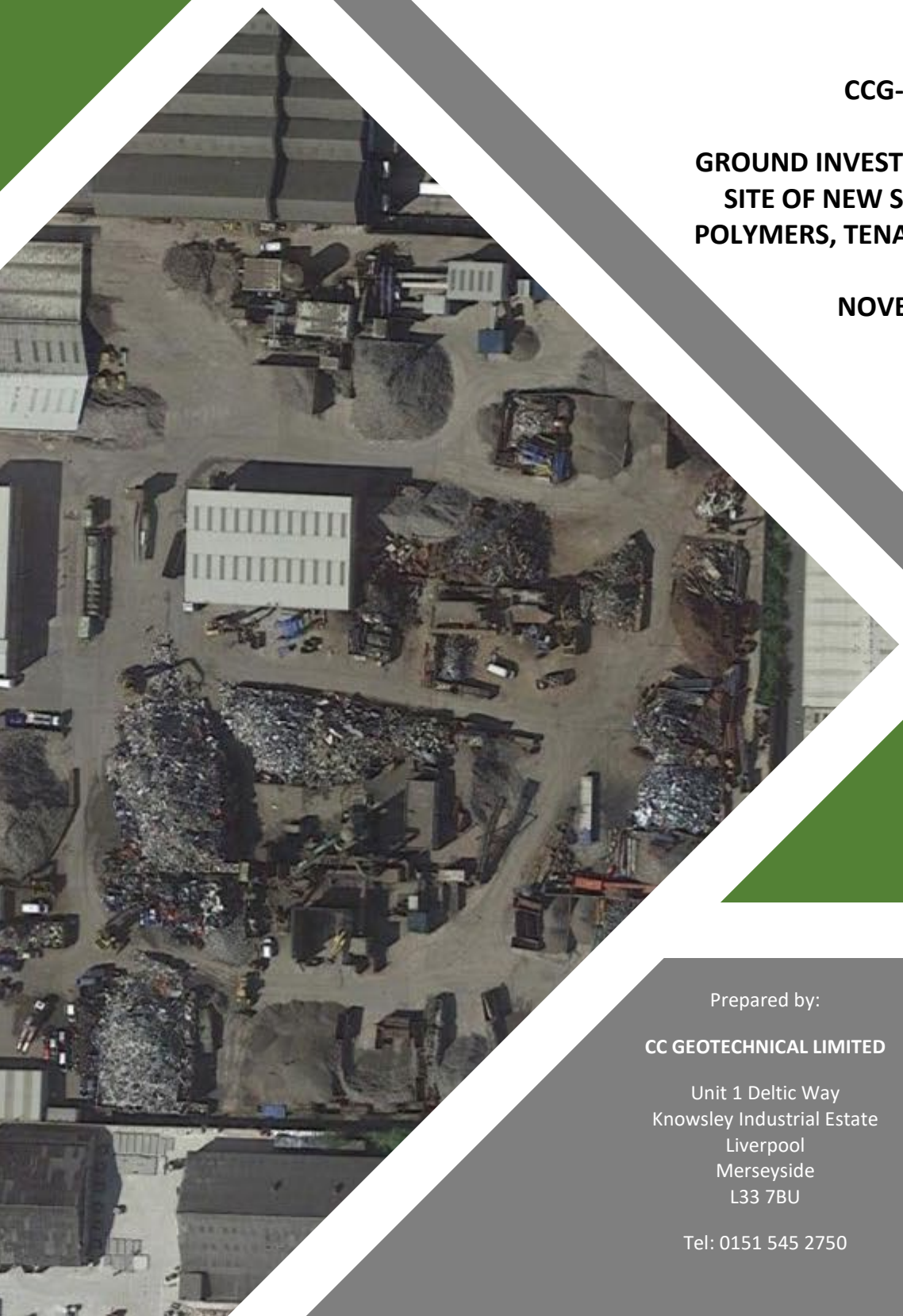

CCG-C-20-11869

GROUND INVESTIGATION AT PROPOSED SITE OF NEW SHEAR PLANT - AXION POLYMERS, TENAX ROAD, MANCHESTER

NOVEMBER 2020

Prepared by:

CC GEOTECHNICAL LIMITED

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Prepared for:

AXION POLYMERS

Tenax Road
Trafford Park
Manchester
M171JT

DOCUMENT CONTROL FORM	
Client:	Axion Polymenrs
Project Title:	Ground Investigation at Proposed Site of New Shear Plant – Axion Polymers, Tenax Road, Manchester
Reference Number:	CCG-C-20-11869
Main Author:	Paul McFadden BSc (Hons) BSc (Hons) PIEMA Tech IOSH
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Reviewed by:	Chris Bolan CEng MICE CEnv
Signature:	
Approved for Issue by:	Chris Bolan CEng MICE CEnv
Signature	
For and behalf of CC GEOTECHNICAL LTD	
Date:	November 2020
Revision Number:	
Comments:	
Status:	For Issue
Distribution:	Axion Polymers – Lewis Thompson

1.0 INTRODUCTION

CC Geotechnical Ltd (***CCG***) was commissioned by ***Axion Polymers*** (the Client) to undertake ground investigation works in connection with the proposed siting of heavy plant at their recycling facility at Tenax road, Manchester.

It is proposed that the new 'Shear Plant' be erected within a position at the eastern end of their existing facility. A location plan and aerial photography of the Tenax Road facility is contained at Appendix A.

The plant is to compresses scrap metal (predominantly beams, channel and railing) before shearing them through the use of a stamper and knife block. Whilst ***CCG*** are not in possession of detailed plant schematics or detail of plant loadings, the Client has provided a piled foundation layout including pile design loads for an identical plant install their Barking site. See Drawing '002B - Feb 19' provided at Appendix A.

CCG understands that the pile configuration and loadings as detailed within Drawing '002B – Feb 19' are applicable to the plant to be installed at this site.

This ground investigation was required to assess the suitability of the proposed site of the new Shear Plant, providing factual geotechnical and geochemical information pertaining to existing ground conditions in relation to the detail design of piled foundations, concrete specification and waste class.

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 F.

2.0 SITE LOCATION & DESCRIPTION

The site is located within an area of open yard within the eastern limits of the existing S.Norton Recycling facility at Tenax Road, Trafford Park, Manchester. Ground coverage is concrete hardstanding.

Prior to commencement, the proposed plant site and exploratory borehole positions were set out by the Client. Further, the client pre-cored each location to remove concrete hardstanding.

A location plan and aerial photograph of the existing facility is provided at Appendix A.

3.0 DOCUMENTED GEOLOGY & HYDROGEOLOGY

3.1 Introduction

The geology of the site is as researched from the British Geological Survey (**BGS**), Geology of Britain Viewer.

3.2 Solid & Drift Geology

The **BGS** superficial drift mapping data indicates that the site is underlain with Glaciofluvial Sheet Deposits, Devensian - Sand and Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period

The solid geology is documented as being the Chester Formation - Sandstone. Sedimentary Bedrock formed approximately 247 to 250 million years ago in the Triassic Period.

4.0 FIELDWORK

4.1 Introduction

The ground investigation was undertaken across the period September – October 2020 and comprised of the following:

- The manual excavation and logging of 6nr service clearance excavations, each extending to 1.2mbgl
- The sinking of 2nr boreholes from the base of the starter pits using cable percussive boring methods to a maximum termination depth of 30mbgl
- The sinking of 4nr boreholes from the base of starter pits using dynamic sampling boreholes to a maximum termination depth of 6mbgl

The fieldworks were carried out in accordance with BS10175: 2017 and BS5930: 2015, and BS1377: 1990 insofar as they related to the specified scope.

The borehole locations were instructed by the Client and are as provided on Drawing '11869/3 - Ground investigation Layout' provided at Appendix A.

4.2 Cable Percussive Boreholes

In accordance with the ground investigation plan, 2nr boreholes were sunk using cable percussive boring methods.

Each borehole was positioned clear of known buried / overhead services and were scanned using a CAT service detector prior to and during the manual excavation of a service clearance pit to a depth of 1.2mbgl.

Each borehole was then advanced from the base of the manual excavation using a Dando 3000 cable percussion rig, and 200/150mm diameter tools and casings.

Bulk disturbed and small-disturbed samples were recovered at regular incremental depths and at changes of stratum within the boreholes.

Undisturbed UT100 samples were recovered at regular incremental depths throughout cohesive soils were conditions permitted.

Standard Penetration Tests (SPT) were carried out at regular intervals throughout the borehole depth.

Logs of the boreholes annotated with sampling details and SPT`N' values are given in Appendix B.

4.3 Dynamic Sampling Boreholes

In accordance with the ground investigation plan, 4nr boreholes were sunk using dynamic sampling methods.

Each borehole was positioned clear of known buried / overhead services and were scanned using a CAT service detector prior to and during the manual excavation of a service clearance pit to a depth of 1.2mbgl.

Each borehole was then advanced from the base of the manual excavation using a Dando 2000 dynamic sampling rig.

By this method of investigation, the borehole was advanced by the driving of a series of reducing diameter steel sampling barrels, each fitted with a Perspex inner sleeve for the purpose of recovering undisturbed soil samples. The sampling barrels were driven into the ground in 1m increments, with Perspex lined soil samples being recovered to ground level, before being split, logged, and subsampled in accordance with the investigation requirements.

Standard Penetration Tests (SPT) were carried out at regular 1m intervals throughout the borehole depth.

Logs of the dynamic sampling boreholes annotated with sampling details and SPT`N' values are given in Appendix B.

5.0 OBSERVED STRATIGRAPHY

The observed ground conditions are generally consistent with the **BGS** documented geology and are as tabulated hereunder:

Table 1: Observed Stratigraphy

	Observed Stratigraphy
BH1	Concrete to 0.45mbgl, underlain by granular Made Ground to 3.7mbgl and succeeded by stiff slightly sandy slightly gravelly silty Clay to 14.5mbgl and very stiff slightly sandy gravelly silty cobbly bouldery Clay to the point of borehole termination at 25.00mbgl
BH2	Concrete to 0.45mbgl, underlain by granular Made ground with concrete and brick obstructions to 1.4mbgl, succeeded by loose silty gravelly Sand to 3.7mbgl. The succession then continues into stiff becoming very stiff slightly sandy gravelly silty cobbly Clay to 26.5mbgl, underlain by weathered Mudstone to 27.2mbgl and weathered Sandstone proven to the point of borehole termination at 30.0mbgl
WS1	Concrete to 0.30mbgl, underlain by successive granular Sub-base and Made Ground deposits to 3.3mbgl. The succession then continues into firm / firm to stiff slightly sandy slightly gravelly Clay proven to the point of borehole termination at 6.0mbgl
WS2	Concrete to 0.30mbgl, underlain by granular Made Ground to 0.7mbgl, medium dense slightly silty Sand to 2.4mbgl, and loose very gravelly silty Sand to 3.6mbgl. Thereafter the succession continues into stiff locally firm to stiff slightly sandy slightly gravelly silty Clay proven to the point of borehole termination at 6.0mbgl
WS3	Concrete to 0.30mbgl, underlain by successive Sub-base and granular Made Ground to 1.0mbgl, loose slightly silty slightly gravelly Sand to 2.3mbgl, and medium, dense very gravelly silty Sand to 3.5mbgl. Thereafter the succession continues into stiff slightly sandy gravelly silty Clay proven to the point of borehole termination at 6.0mbgl
WS4	Concrete to 0.30mbgl, underlain by successive granular Made Ground deposits to 1.3mbgl. The succession then continues into a medium dense slightly gravelly slightly silty Sand (possible Made Ground), and medium dense very gravelly slightly silty Sand to 3.9mbgl. The sand is underlain by stiff slightly sandy slightly gravelly Clay proven to the point of borehole termination at 6.0mbgl

There was no visual or olfactory evidence of significant contamination and/or biodegradable materials affecting the made ground mass at any sampling position.

6.0 GROUNDWATER

Water was recorded to ingress within the dynamic sampling boreholes at around 2.5mbgl (likely perched water held within the made ground and underlying sand deposits).

The water strike observed at BH2 at 13.0mbgl, along with the recorded start and end of shift standing water levels indicate the presence of water bearing sand deposits within the clay soils at and below this depth.

7.0 LABORATORY TESTING

7.1 Engineering Testing

A programme of soil engineering testing was undertaken at our in-house UKAS accredited soils and materials testing laboratory. The programme of testing comprised:

- Determination of soil moisture content in accordance with BS 1377: Part 2: 1990 (10nr)
- Determination of Particle Size Distribution in accordance with BS 1377: Part 2: 1990 (5nr)
- Determination of Liquid & Plastic Limits in accordance with BS1377: Part 2: 1990 (4nr)
- Determination of shear strength by Unconsolidated Undrained Triaxial Compression in accordance with BS1377: Part 7: 1990 (4nr)

The soil engineering test results are presented in Appendix C.

7.2 Chemical Testing

For the purposes of waste classification, 3nr subsamples of recovered soils (at positions and depths instructed by the Client) were analyzed for a broad spectrum suite of chemical analysis including metals, semi-metals, speciated PAH's, petroleum hydrocarbons to the TPHCWG methodology, BTEX compounds, VOC/SVOC's, and asbestos. WAC leachate testing was additionally undertaken on each of these samples.

2 further soil samples were subjected to pH and water-soluble sulphate determination to supplement the data obtained in the testing detailed above, allowing for the assessment of concrete design class.

All chemical analysis was undertaken at a subcontract UKAS / MCERTS accredited analytical laboratory.

The geochemical test results and certificates are presented in Appendix D.

8.0 FOUNDATION RECOMMENDATIONS

The ground is not suitable for the support of heavily loaded foundations on spread foundations at economic depth and hence bearing capacity recommendations are not appropriate.

It is understood that foundations for the proposed heavy plant will be supported on piled foundations, using an arrangement similar to that adopted for a site at Barking – see plan in Appendix A. It is further understood that pile loadings will be of a similar order to that shown on the Barking drawing. The ground conditions encountered at this site are suitable for the achievement of these loadings using CFA piles and piling contractors should be furnished with this report.

Piling contractors must be required to provide design calculations for their own proprietary pile types in isolation and in groups as appropriate to the design.

For light ancillary structures, consideration must be given to the varying depth of made ground across the site, and foundation options may be limited to construction on existing thick ground slabs, or construction of raft slabs, or mini-piled groundbeam foundations.

Rafts should bear on ground improved by the following:

- reduction in levels to 300mm below raft underside
- proof rolling at reduced level grubbing out and refilling any areas exhibiting excessive deflection
- placement and compaction of 2 x 150mm layer DTp Type 1 subbase
- Construction of dpm and reinforced slab

Rafts should be designed to span a notional void of 2m and cantilever 1.5m at corners.

9.0 CONCRETE SPECIFICATION

The data obtained in the investigation was assessed against the guidance given in BRE Special Digest 1: 2005, as summarised hereunder:

Table 4: Concrete Specification (based on soil data)

Site Context	Brownfield
Water Table	Mobile
Highest Water-Soluble Sulphate Result	65mg/l
Lowest pH result	7.4
Intended Working Life	50 years

Based on the above, concrete in contact with the ground should be specified on Sulphate Class of DS-1, an ACEC Class of AC-1, and a Design Chemical Classification of DC-1.

10.0 WASTE CLASSIFICATION

A waste classification assessment was carried out in accordance with current WM3 guidance using the HazWaste Online assessment tool. The results of the classification are provided at appendix E.

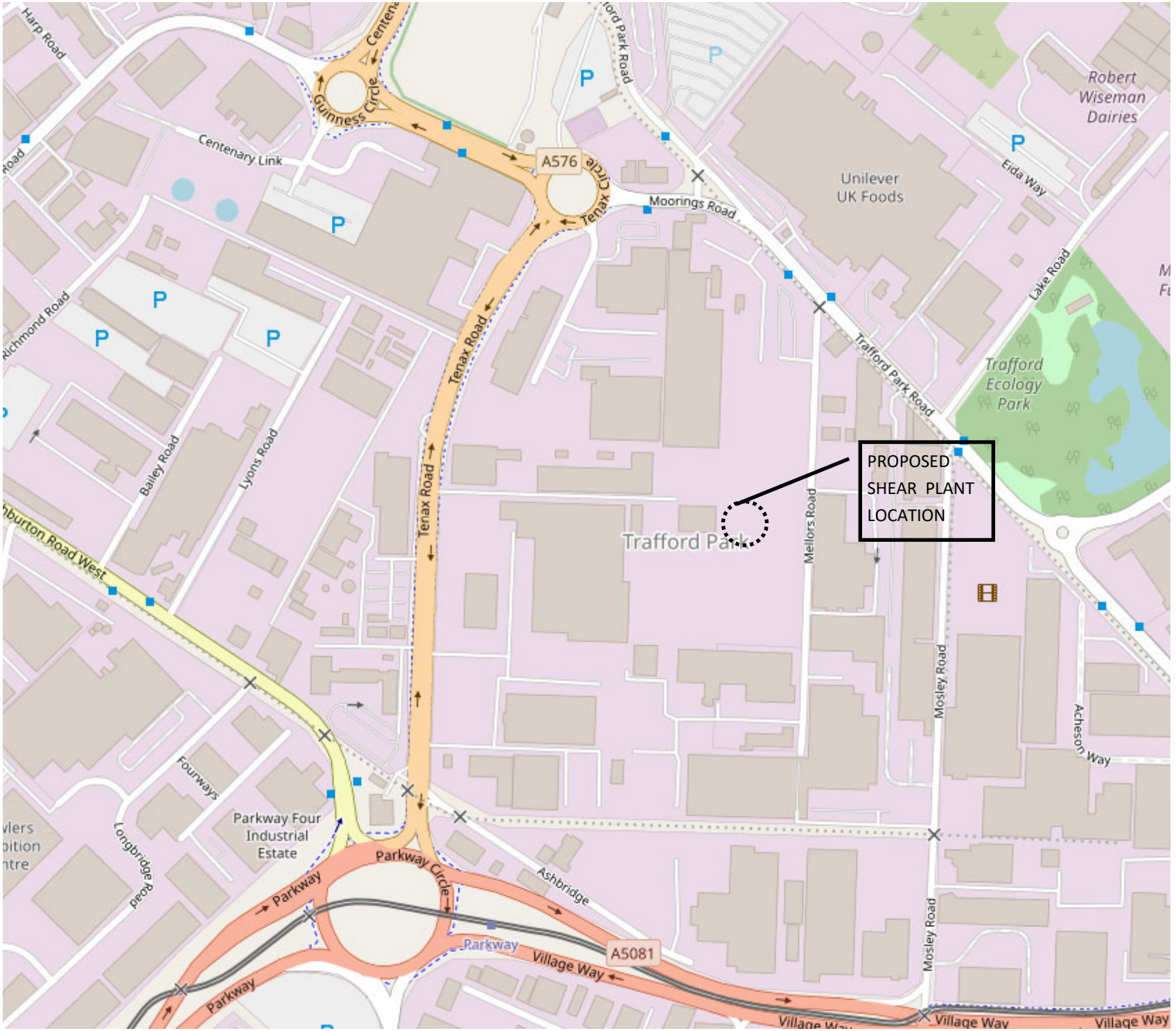
The results of the assessment undertaken here classify all soil waste as non-hazardous.

Results of the WAC leachate testing show the made ground soils recovered at WS1 (1.5mbgl) and WS3 (0.60mbgl) to be at or above the inert limit criteria for Antimony and thus are deemed unsuitable for disposal to inert landfill. The natural clay soils recovered at WS3 (4.2mbgl) are deemed to satisfy the leaching criteria for disposal to inert landfill.

It should be noted that the final opinion on waste classification and appropriate landfill cell destination is at the discretion of the accepting landfill operator, and their opinion should be sought for confirmation prior to the excavation, movement and disposal of soils.

APPENDIX A

DRAWINGS



Notes:

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0151 545 2750

Client:
AXION POLYMERS

Project:
GROUND INVESTIGATION AT PROPOSED SHEAR PLANT, TENAX ROAD, MANCHESTER

Title:
SITE LOCATION

Scale:	Issue:
NTS	01
Drawn by:	Date:
PMC	NOV 20
Project No.	Drawing No.
CCG-C-20-11869	01

Notes:

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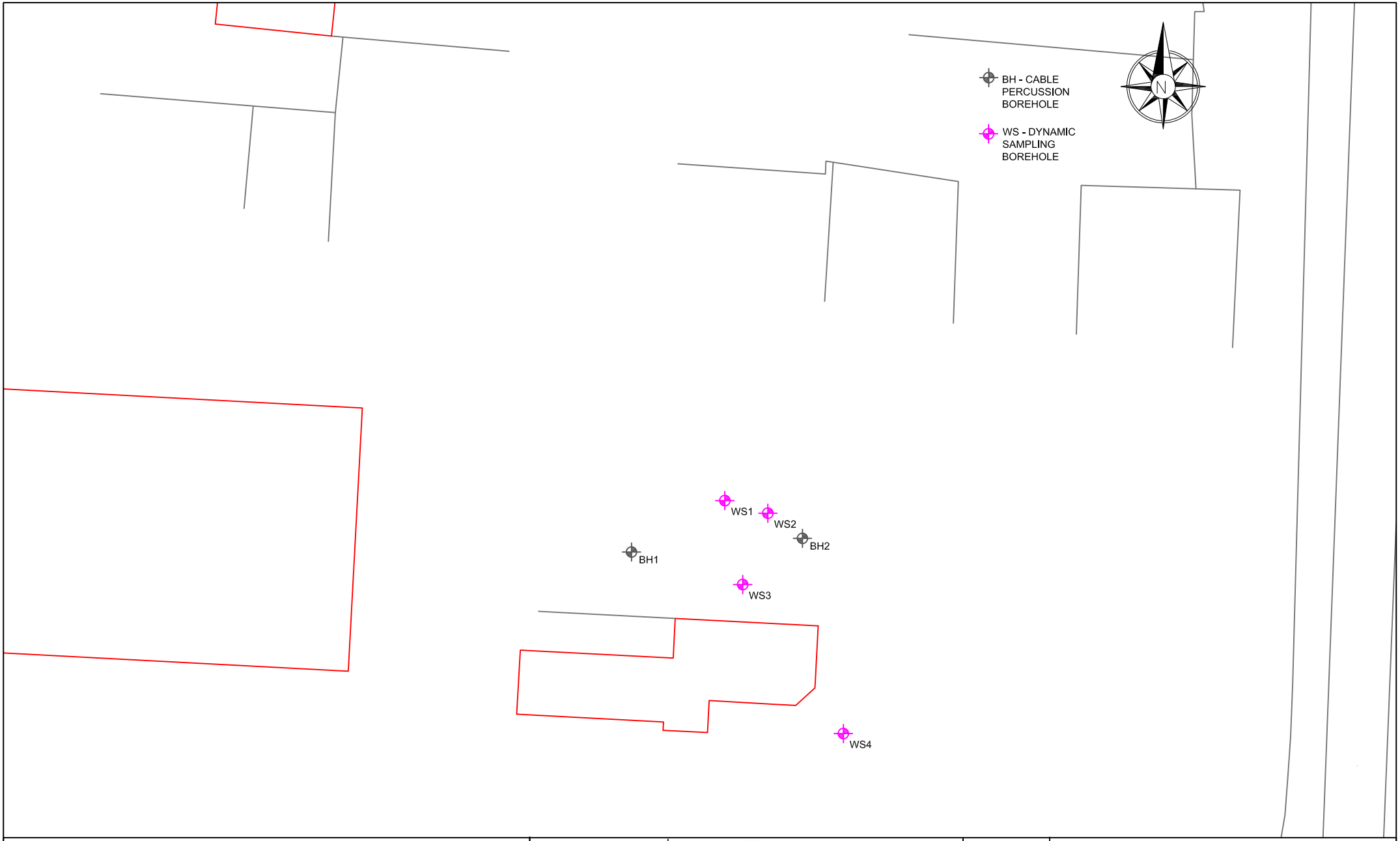
0151 545 2750

Client:
AXION POLYMERS

Project:
GROUND INVESTIGATION AT PROPOSED SHEAR PLANT, TENAX ROAD, MACHESTER

Title:
AERIAL PHOTOGRAPH

Scale:	Issue:
NTS	01
Drawn by:	Date:
PMC	NOV 20
Project No.	Drawing No.
CCG-C-20-11869	02



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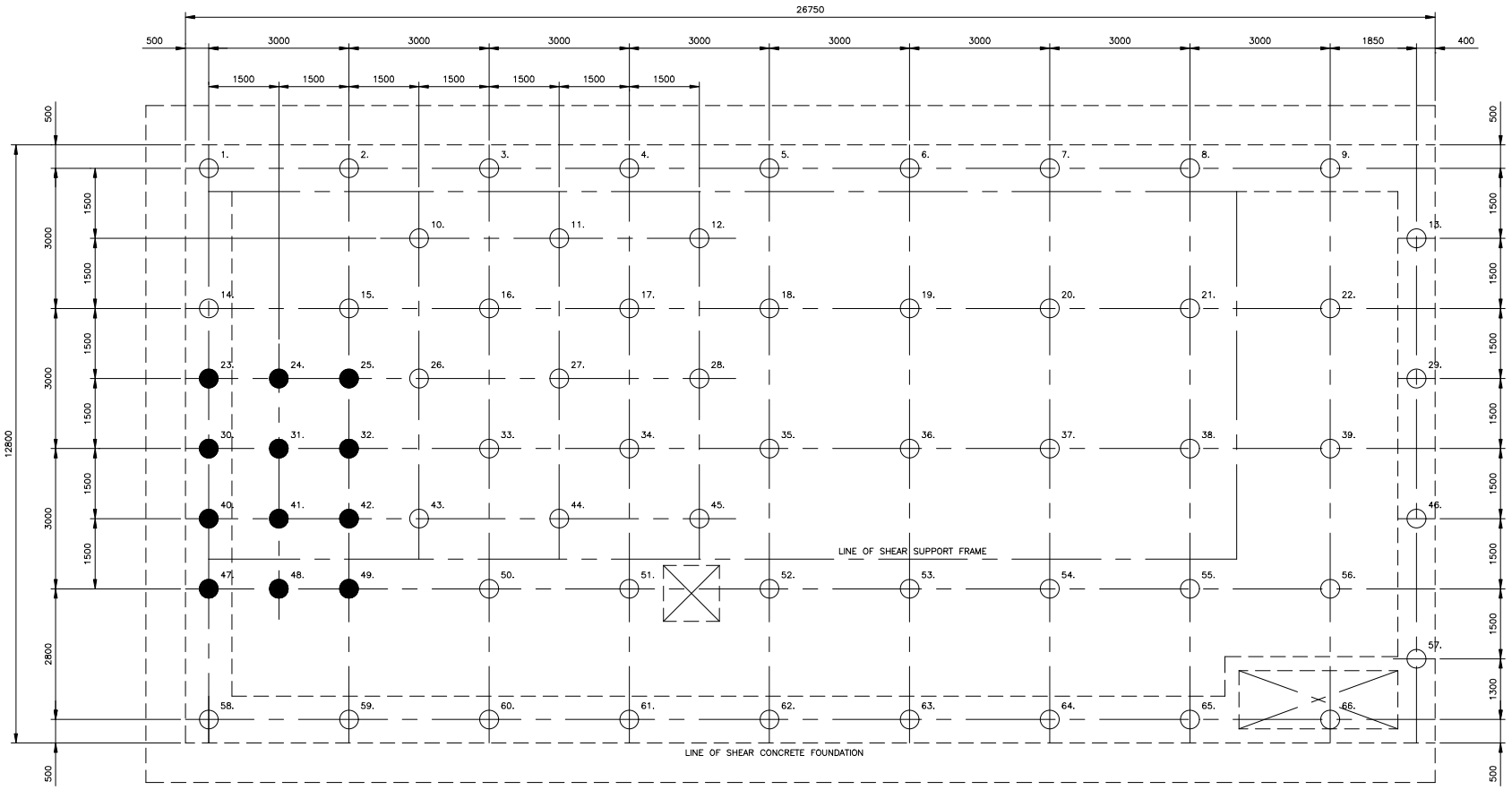
Client	Axion Polymers			
Site	Proposed New Shear Plant - Tenax Road, Manchester			
Drawing	Ground Investigation layout			
Job No.	**Dwg. No.**	**Rev. No.**	**Scale@A4**	**Date**
11869-3	3	0	NTS	NOV 20



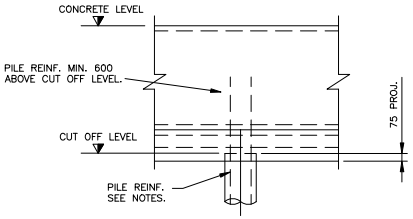
LAYOUT OF PILES

PILING LOG			
PILE No.	CONCRETE LEVEL	CUT OFF LEVEL	WORKING LOAD MAX.
1	4.280	1.755	30
2	4.280	1.755	30
3	4.280	1.755	30
4	4.280	1.755	30
5	4.280	1.755	30
6	4.280	1.755	30
7	4.280	1.755	30
8	4.280	1.755	30
9	4.280	1.755	30
10	4.280	3.055	30
11	4.280	3.055	30
12	4.280	3.055	30
13	4.280	1.755	30
14	4.280	1.755	30
15	4.280	3.055	30
16	4.280	3.055	30
17	4.280	3.055	30
18	4.280	3.055	30

PILING LOG			
PILE No.	CONCRETE LEVEL	CUT OFF LEVEL	WORKING LOAD MAX.
19	4.280	3.055	30
20	4.280	3.055	30
21	4.280	3.055	30
22	4.280	3.055	30
23	4.280	1.755	50
24	4.280	3.055	50
25	4.280	3.055	50
26	4.280	3.055	30
27	4.280	3.055	30
28	4.280	3.055	30
29	4.280	1.755	30
30	4.280	1.755	50
31	4.280	3.055	50
32	4.280	3.055	50
33	4.280	3.055	30
34	4.280	3.055	30
35	4.280	3.055	30
36	4.280	3.055	30

PILING LOG			
PILE No.	CONCRETE LEVEL	CUT OFF LEVEL	WORKING LOAD MAX.
37	4.280	3.055	30
38	4.280	3.055	30
39	4.280	3.055	30
40	4.280	1.755	50
41	4.280	3.055	50
42	4.280	3.055	50
43	4.280	3.055	30
44	4.280	3.055	30
45	4.280	3.055	30
46	4.280	1.755	30
47	4.280	1.755	50
48	4.280	3.055	50
49	4.280	3.055	50
50	4.280	3.055	30
51	4.280	3.055	30
52	4.280	3.055	30
53	4.280	3.055	30
54	4.280	3.055	30

PILING LOG			
PILE No.	CONCRETE LEVEL	CUT OFF LEVEL	WORKING LOAD MAX.
55	4.280	3.055	30
56	4.280	3.055	30
57	4.280	1.755	30
58	4.280	1.755	30
59	4.280	1.755	30
60	4.280	1.755	30
61	4.280	1.755	30
62	4.280	1.755	30
63	4.280	1.755	30
64	4.280	1.755	30
65	4.280	1.755	30
66	4.280	1.755	30



TYPICAL PILE DETAIL
(SCALE 1:25)

NOTES

1. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH ALL RELEVANT CLIENT STANDARDS AND BRITISH STANDARDS.

2. ALL DIMENSIONS ARE IN MILLIMETRES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF ALL DIMENSIONS AND FOR THE CORRECT SETTING OUT OF THE WORK ON SITE.

4. CONCRETE TO BE GRADE C30.

5. THE TOLERANCE OF ANY COMPLETED PILE CAST INSITU SHALL BE BETWEEN +300 AND +500 OF THE REQUIRED LEVEL.

6. THE CONTRACTOR SHOULD ENSURE THAT AN ADEQUATE LENGTH OF REBAR IS MADE AVAILABLE ABOVE THE PILE CUT OFF LEVEL IN ORDER TO PROVIDE SUFFICIENT BOND LENGTH AT THE HEAD OF THE PILE. SEE TYPICAL SECTION.

7. ALL CONCRETE SHALL BE REINFORCED IN ACCORDANCE WITH THE PILING CONTRACTORS SPECIFICATION AND TO THE APPROVAL OF THE CIVIL CONSTRUCTION ENGINEER.

8. PILES ARE ASSUMED TO BE 300 DIA. ACTUAL SIZE TO SUIT PILING CONTRACTORS DESIGN.

○ DENOTES 30T PILES.

● DENOTES 50T PILES.

D		
C		
B	AMENDED TO SUIT COMMENTS	MAR 19
A	ISSUED FOR INFORMATION	FEB 19

PROJECT
NORTON
BARKING SITE
.
.

TITLE
SHEAR FOUNDATION
PILIING LAYOUT & PILING LOG

Scale	Date	Drawn
1:50	FEB 19	SGP

Job No.	Drg. No.
18/06	002B

APPENDIX B

BOREHOLE LOGS

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers		Borehole ID: **BH1**
Contract Number: CCG-C-20-11869	Date Started: 23/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 3
Cable Percussion Borehole Log	Easting: 378852.2	Northing: 397291.5	Ground Level: 25.70mAOD	Plant Used: Dando 3000 S/A Rig	Rig Crew: PC/AS	Scale: 1:50
Weather:	Termination: As instructed		SPT Hammer: CCG7 Energy Ratio: 64%		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.45)		CONCRETE		
			25.26	0.45				
0.60	D					Loose grey/brown silty gravelly SAND. Gravel is fine to coarse subrounded to subangular of sandstone and mudstone (MADE GROUND)		
1.00	B							
		SPT(S) 1.20m, N=8 (1,2/2,2,2,2)						
1.50	D							
2.00	B	SPT(S) 2.00m, N=2 (1,0/0,1,0,1)		(3.25)				
2.20	D							
2.50	B							
3.00	B	SPT(S) 3.00m, N=6 (1,1/1,1,2,2)						
3.50	D							
			22.00	3.70		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to subrounded of sandstone		
4.00	B							
4.00 - 4.45	UT							
4.50	D							
5.00	B	SPT(S) 5.00m, N=10 (1,2/2,2,3,3)						
5.50	D							
6.00	B							
6.00 - 6.45	UT							
6.50	D							
				(10.80)				
7.50	B	SPT(S) 7.50m, N=15 (2,3/3,3,4,5)						
8.00	D							
9.00	B							
9.00 - 9.45	UT							
9.50	D							
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks
14.60	15.00	01:00	Boulder
19.20	19.50	01:00	Boulder

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

CCG	Contract Name: Tenax Road, Manchester - Shear Plant		Client: Axion Polymers		Borehole ID: **BH1**
	Contract Number: CCG-C-20-11869	Date Started: 23/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL — Sheet 2 of 3
Cable Percussion Borehole Log	Easting: 378852.2	Northing: 397291.5	Ground Level: 25.70mAOD	Plant Used: Dando 3000 S/A Rig	Rig Crew: PC/AS — Scale: 1:50
Weather:	Termination: As instructed		SPT Hammer: CCG7 Energy Ratio: 64%		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
						Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse angular to subrounded of sandstone		
10.50	B	SPT(S) 10.50m, N=16 (2,3/3,4,4,5)						
11.00	D							
12.00	B							
12.00 - 12.45	UT							
13.00	D							
13.50	B	SPT(S) 13.50m, N=25 (2,4/6,6,6,7)						
14.60	D		11.20	14.50		Very stiff brown slightly sandy gravelly silty CLAY. Low cobble content. Low boulder content. Gravel is fine to coarse subangular to subrounded of sandstone		
15.00	B	SPT(S) 15.00m, N=43 (3,6/7,10,12,14)						
16.00	D							
16.50	B	SPT(S) 16.50m, N=50 (4,8/10,11,15,14)						
				(10.50)				
17.50	D							
18.00	B	SPT(S) 18.00m, N=50 (6,10/50 for 285mm)						
19.00	D							
19.50	B	SPT(S) 19.50m, 50 (25 for 30mm/50 for 25mm)						
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
14.60	15.00	01:00	Boulder				
19.20	19.50	01:00	Boulder				

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **BH1**
Contract Number: CCG-C-20-11869	Date Started: 23/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL — Sheet 3 of 3
Cable Percussion Borehole Log	Easting: 378852.2	Northing: 397291.5	Ground Level: 25.70mAOD	Plant Used: Dando 3000 S/A Rig — Rig Crew: PC/AS — Scale: 1:50
Weather:	Termination: As instructed		SPT Hammer: CCG7 Energy Ratio: 64%	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
20.50	D					Very stiff brown slightly sandy gravelly silty CLAY. Low cobble content. Low boulder content. Gravel is fine to coarse subangular to subrounded of sandstone		
21.00	B	SPT(S) 21.00m, N=62 (8,10/10,15,17,20)						
22.00	D							
22.50	B	SPT(S) 22.50m, N=64 (7,11/12,16,18,18)						
23.50	D							
24.00	B	SPT(S) 24.00m, N=100 (10,13/100 for 285mm)						
24.50	D							
25.00	B	SPT(S) 25.00m, N=92 (25 for 140mm/18,22,24,28)	0.70	25.00		End of Borehole at 25.00m		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)
14.60	15.00	01:00	Boulder				
19.20	19.50	01:00	Boulder				

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **BH2**
Contract Number: CCG-C-20-11869	Date Started: 28/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Cable Percussion Borehole Log	Easting: 378868.5	Northing: 397292.8	Ground Level: 25.62mAOD	Plant Used: Dando 150 S/A Rig
Rig Crew: PC/AS	Scale: 1:50			Sheet 1 of 4
Weather:	Termination: Bedrock		SPT Hammer: CCG7 Energy Ratio: 64%	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.45)		CONCRETE		
			25.17	0.45		Brown slightly silty sandy GRAVEL. Gravel is fine to coarse angular to sub-angular brick. (MADE GROUND) Obstructions within the made ground included for intact remnants of brick walling and concrete foundations - borehole advanced by chiselling for 1hr		
0.80	B							
0.90	D			(0.95)				
1.00	B	SPT(S) 1.20m, N=9 (1,2/2,2,2,3)						
1.50	D		24.22	1.40		Loose brown/grey silty gravelly SAND. Gravel is fine to coarse subangular to subrounded of sandstone and mudstone		
2.00	B	SPT(S) 2.00m, N=4 (1,0/1,1,1,1)						
2.50	D			(2.30)				
3.00	B	SPT(S) 3.00m, N=3 (1,1/1,0,1,1)						
3.50	D							
			21.92	3.70		Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with occasional sand bands. Low cobble content. Gravel is fine to coarse subangular to subrounded sandstone		
4.00	B							
4.50	D	SPT(S) 4.50m, N=13 (1,2/2,3,4,4)				*NO RECOVERY OF UT100 DUE TO SAND CONTENT 4.50-4.95mbgl*		
5.00	B							
5.50 - 5.95	UT							
6.00	D							
6.50	B							
6.50 - 6.95	UT							
		SPT(S) 7.00m, N=17 (2,2/3,4,5,5)						
7.50	D							
8.50	B							
8.50 - 8.95	UT							
9.00	D							
10.00	B							

Continued next sheet

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2020	16:00	7.00	7.00	
29-09-2020	08:00	7.00	7.00	
29-09-2020	16:00	19.50	19.50	19.00
30-09-2020	08:00	19.50	19.50	11.10
30-09-2020	16:00	26.50	26.50	15.40

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks
0.50	1.00	01:00	Concrete and brick obstructions

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
13.00			20	12.00	

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **BH2**
Contract Number: CCG-C-20-11869	Date Started: 28/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Cable Percussion Borehole Log	Easting: 378868.5	Northing: 397292.8	Ground Level: 25.62mAOD	Plant Used: Dando 150 S/A Rig
Rig Crew: PC/AS	Scale: 1:50			Sheet 2 of 4
Weather:	Termination: Bedrock		SPT Hammer: CCG7 Energy Ratio: 64%	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
		SPT(S) 10.00m, N=31 (5,7/7,7,8,9)				Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with occasional sand bands. Low cobble content. Gravel is fine to coarse subangular to subrounded sandstone		
10.50	D							
11.50	B							
11.50 - 11.95	UT							
12.00	EW							
12.50	D							
13.00	B	SPT(S) 13.00m, N=33 (8,10/5,7,9,12)						
14.00	D							
14.50	B	SPT(S) 14.50m, N=37 (6,8/8,9,9,11)						
14.50 - 14.95	UT					NO RECOVERY OF UT100 DUE TO COBBLE CONTENT - 14.50-14.95mbgl		
				(22.80)				
15.50	D							
16.00	B	SPT(S) 16.00m, N=47 (7,10/10,11,11,15)						
17.00	D							
17.50	B	SPT(S) 17.50m, N=44 (8,11/8,10,12,14)						
18.50	D							
19.00	B	SPT(S) 19.00m, N=71 (9,16/15,18,18,20)						
20.00	D					Continued next sheet		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2020	16:00	7.00	7.00	
29-09-2020	08:00	7.00	7.00	
29-09-2020	16:00	19.50	19.50	19.00
30-09-2020	08:00	19.50	19.50	11.10
30-09-2020	16:00	26.50	26.50	15.40

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks
0.50	1.00	01:00	Concrete and brick obstructions

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
13.00			20	12.00	

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **BH2**
Contract Number: CCG-C-20-11869	Date Started: 28/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Cable Percussion Borehole Log	Easting: 378868.5	Northing: 397292.8	Ground Level: 25.62mAOD	Plant Used: Dando 150 S/A Rig
Rig Crew: PC/AS	Scale: 1:50			Sheet 3 of 4
Weather:	Termination: Bedrock		SPT Hammer: CCG7 Energy Ratio: 64%	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
						Stiff becoming very stiff brown slightly sandy slightly gravelly silty CLAY with occasional sand bands. Low cobble content. Gravel is fine to coarse subangular to subrounded sandstone		
20.50	B	SPT(S) 20.50m, 50 (25 for 115mm/50 for 60mm)						
21.50	D							
22.00	B	SPT(S) 22.00m, 100 (25 for 90mm/100 for 190mm)						
23.00	D							
23.50	B	SPT(S) 23.50m, 50 (25 for 45mm/50 for 55mm)						
24.50	D							
25.00	B	SPT(S) 25.00m, 100 (25 for 30mm/100 for 25mm)						
25.50	D							
26.50	B		-0.88	26.50		Reddish brown weathered MUDSTONE		
				(0.70)				
			-1.58	27.20		Reddish brown weathered SANDSTONE		
28.00	B	SPT(C) 28.00m, 100 (25 for 95mm/100 for 145mm)						
				(2.80)				
29.50	B							
30.00	B		-4.38	30.00				
						Continued next sheet		

Start & End of Shift Observations				
Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2020	16:00	7.00	7.00	
29-09-2020	08:00	7.00	7.00	
29-09-2020	16:00	19.50	19.50	19.00
30-09-2020	08:00	19.50	19.50	11.10
30-09-2020	16:00	26.50	26.50	15.40

Borehole Diameter		Casing Diameter	
Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbl service avoidance pit

Chiselling			
From (m)	To (m)	Duration	Remarks
0.50	1.00	01:00	Concrete and brick obstructions

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
13.00			20	12.00	

	Contract Name: Tenax Road, Manchester - Shear Plant		Client: Axion Polymers		Borehole ID: **BH2**
	Contract Number: CCG-C-20-11869	Date Started: 28/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Cable Percussion Borehole Log	Easting: 378868.5	Northing: 397292.8	Ground Level: 25.62mAOD	Plant Used: Dando 150 S/A Rig	Rig Crew: PC/AS
					Sheet 4 of 4
					Scale: 1:50

Weather: | Termination: Bedrock | SPT Hammer: CCG7 Energy Ratio: 64%

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
		SPT(C) 30.00m, 100 (25 for 30mm/100 for 130mm)				End of Borehole at 30.00m		

31 32 33 34 35 36 37 38 39 40

Start & End of Shift Observations

Date	Time	Depth (m)	Casing (m)	Water (m)
28-09-2020	16:00	7.00	7.00	
29-09-2020	08:00	7.00	7.00	
29-09-2020	16:00	19.50	19.50	19.00
30-09-2020	08:00	19.50	19.50	11.10
30-09-2020	16:00	26.50	26.50	15.40

Borehole Diameter

Depth (m)	Dia (mm)

Casing Diameter

Depth (m)	Dia (mm)

Chiselling

From (m)	To (m)	Duration	Remarks
0.50	1.00	01:00	Concrete and brick obstructions

Installation

Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbl service avoidance pit

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
13.00			20	12.00	

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers		Borehole ID: **WS1**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 378861.1	Northing: 397296.4	Ground Level: 25.58mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.30)		CONCRETE		
			25.28	0.30		SUB-BASE		
0.40	D							
0.45	B		25.08	0.50		Dark brown slightly silty gravelly fine to coarse grained SAND (MADE GROUND)		
0.60	B							
0.70	D			(0.30)				
			24.78	0.80		Dark grey very sandy silty GRAVEL. Gravel is fine to coarse angular to sub-angular brick and sandstone (MADE GROUND)		
0.90	B							
			24.58	1.00		Loose varying to very loose brown gravelly silty SAND. Gravel is fine to coarse sub-angular to sub-rounded sandstone, quartz and brick (MADE GROUND)		
1.10	D							
		SPT(S)N=8 (1,2/2,2,2,2)						
1.50	ES							
1.60	B							
		SPT(S)N=0 (1,0/0,0,0,0)						
				(2.30)				
2.20	D							
2.80	B							
		SPT(S)N=8 (4,2/2,3,1,2)						
			22.28	3.30		Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone		
		HVP=70						
3.80	D							
		HVP=80						
		SPT(S)N=18 (2,3/4,3,5,6)						
				(2.70)				
4.20	B	HVP=70						
		HVP=70						
		HVP=100						
4.80	D							
		SPT(S)N=21 (2,2/4,5,6,6)						
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.00			0		

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **WS1**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 378861.1	Northing: 397296.4	Ground Level: 25.58mAOD	Plant Used: Dando Terrier Rig
Rig Crew: LN	Scale: 1:25			Sheet 2 of 2
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
5.20	D	HVP=50				Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone		
5.80	D	HVP=50						
		SPT(S)N=21 (2,3/4,5,6,6)	19.58	6.00		End of Borehole at 6.00m		

6 7 8 9 10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.00			0		

	Contract Name: Tenax Road, Manchester - Shear Plant		Client: Axion Polymers		Borehole ID: **WS2**
	Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 378865.2	Northing: 397295.2	Ground Level: 25.61mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN
					Sheet 1 of 2
					Scale: 1:25
Weather:		Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.30)		CONCRETE		
0.40	D		25.31	0.30		Dark brown very gravelly silty SAND. Gravel is fine to coarse sub-angular to sub-rounded limestone, sandstone, quartz and brick (MADE GROUND)		
0.50	B			(0.40)				
0.90	D		24.91	0.70		Medium dense brown slightly silty fine to medium grained SAND		
1.00	B							
		SPT(S)N=12 (2,3/3,3,3,3)						
1.40	B			(1.70)				
2.00	D	SPT(S)N=10 (1,2/2,3,2,3)						
			23.21	2.40		Loose brown very gravelly silty fine to coarse grained SAND. Gravel is fine to coarse sub-angular to angular sandstone, mudstone and quartz		
2.60	B							
		SPT(S)N=7 (2,2/1,2,2,2)		(1.20)				
3.30	D							
			22.01	3.60		Stiff, locally firm to stiff, brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to subrounded sandstone		
		HVP=100						
3.90	D							
		SPT(S)N=15 (2,3/3,4,4,4)						
		HVP=110		(2.40)				
4.50	D							
		HVP=110						
		SPT(S)N=13 (3,3/3,3,4,3)						
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.50			0		

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **WS2**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 378865.2	Northing: 397295.2	Ground Level: 25.61mAOD	Plant Used: Dando Terrier Rig
Rig Crew: LN	Scale: 1:25			Sheet 2 of 2
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R	

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
5.60	D	HVP=70 HVP=50 SPT(S)N=17 (3,3/4,5,4,4)	19.61	6.00		Stiff, locally firm to stiff, brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to subrounded sandstone End of Borehole at 6.00m		

6 7 8 9 10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
2.50			0		

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers		Borehole ID: **WS3**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 378862.8	Northing: 397288.4	Ground Level: 25.73mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.30)		CONCRETE		
			25.43	0.30		SUB-BASE		
0.40	D							
0.45	B		25.23	0.50		Greyish brown gravelly silty SAND. Gravel is fine to coarse angular to sub-angular limestone, brick and sandstone (MADE GROUND)		
0.60	ES							
0.70	B			(0.50)				
			24.73	1.00		Loose brown slightly gravelly slightly silty fine to medium grained SAND. Gravel is fine to medium sub-rounded sandstone and quartz		
1.10	D	SPT(S)N=7 (1,2/2,2,1,2)						
1.50	B			(1.30)				
2.00	D	SPT(S)N=8 (1,2/2,2,2,2)						
			23.43	2.30		Medium dense greyish brown very gravelly slightly silty fine to medium grained SAND. Gravel is fine to coarse sub-rounded to rounded sandstone and quartz		
2.40	B							
				(1.20)				
3.00	D	SPT(S)N=11 (2,3/3,3,2,3)						
			22.23	3.50		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone		
3.70	D	HVP=75						
		SPT(S)N=20 (2,4/4,5,6,5)						
4.20	ES			(2.50)				
		HVP=110						
		HVP=110						
5.00	D	SPT(S)N=16 (2,3/3,5,4,4)						
						Continued next sheet		

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers		Borehole ID: **WS3**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 2 of 2
Dynamic Sampling Borehole Log	Easting: 378862.8	Northing: 397288.4	Ground Level: 25.73mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
5.50	D	HVP=90 HVP=80 SPT(S)N=15 (2,2/3,4,4,4)	19.73	6.00		Stiff brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-angular to sub-rounded sandstone End of Borehole at 6.00m		

6 7 8 9 10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling			
From (m)	To (m)	Duration	Remarks

Installation			
Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers		Borehole ID: **WS4**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL	Sheet 1 of 2
Dynamic Sampling Borehole Log	Easting: 378872.4	Northing: 397274.2	Ground Level: 25.68mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R		

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
				(0.30)		CONCRETE		
0.40	B		25.38	0.30		Black very clayey gravelly SAND. Gravel is fine to medium sub-angular brick and sandstone (MADE GROUND)		
0.45	D		25.18	0.50		Brown silty fine to medium grained SAND (MADE GROUND)		
0.60	D							
				(0.80)				
1.00	B							
		SPT(S)N=20 (2,4/4,5,6,5)						
1.40	D		24.38	1.30		Medium dense brown slightly gravelly slightly silty fine to medium grained SAND. Gravel is fine to medium sub-angular to sub-rounded coal, sandstone and quartz (POSSIBLE MADE GROUND)		
				(1.20)				
2.00	B	SPT(S)N=12 (1,2/3,3,3,3)						
2.60	D		23.18	2.50		Medium dense greyish brown very gravelly slightly silty fine to medium grained SAND. Gravel is fine to coarse sub-angular to sub-rounded sandstone, mudstone and quartz		
		SPT(S)N=14 (2,3/3,3,4,4)						
				(1.40)				
3.80	D							
		SPT(S)N=12 (2,2/3,3,3,3)	21.78	3.90		Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone		
4.20	D							
		HVP=110						
				(2.10)				
		HVP=110						
5.00	D	SPT(S)N=16 (2,4/4,3,4,5)						

Continued next sheet

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Water Strikes

Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00			0		

Contract Name: Tenax Road, Manchester - Shear Plant			Client: Axion Polymers	Borehole ID: **WS4**
Contract Number: CCG-C-20-11869	Date Started: 29/09/2020	Logged By: PMC	Checked By: CB	Status: FINAL
Dynamic Sampling Borehole Log	Easting: 378872.4	Northing: 397274.2	Ground Level: 25.68mAOD	Plant Used: Dando Terrier Rig	Rig Crew: LN	Scale: 1:25
Weather:	Termination: As instructed		SPT Hammer: N/R, Energy Ratio: N/R	Sheet 2 of 2

Samples & In Situ Testing			Strata Details				Groundwater	
Depth	Sample ID	Test Result	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation
		HVP=110				Firm brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium sub-rounded sandstone		
		HVP=80						
6.00	D	SPT(S)N=19 (3,3/4,5,5,5)	19.68	6.00		End of Borehole at 6.00m		

6
7
8
9
10

Start & End of Shift Observations					Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)

Chiselling				Installation			
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)

Remarks:
1 hour hand excavating 1.20mbgl service avoidance pit

Water Strikes					
Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
3.00			0		

APPENDIX C

SOIL ENGINERRING TEST DATA

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Consulting Geoenvironmental and Geotechnical Engineers

LABORATORY REPORT

CONTRACT NUMBER: CCG-C-20-11869

CONTRACT TITLE: SHEAR PLANT, TENAX ROAD

CLIENT: AXION POLYMERS
Tenax Road, Trafford Park, Manchester M17 1JT

DATE RECEIVED: 24/10/20
DATE COMMENCED: 24/10/20
DATE COMPLETED: 29/10/20
REPORT DATE: 29/10/20

Test Description	Qty
Determination of Moisture Content BS 1377-2:1990 (a)	10
Determination of Liquid & Plastic Limits BS 1377-2:1990 (a)	4
Particle Size Distribution BS 1377-2:1990 (a)	5
Unconsolidated Undrained Triaxial Compression Test BS 1377-7:1990 (a)	4

Notes: Observations and interpretations are not accredited by UKAS
All testing undertaken at laboratory permanent facilities
# denotes non-accredited test
a denotes UKAS accredited test
s denotes test undertaken by approved subcontractor
Test results only relate to the samples tested

Approved Signatories: Chris Bolan (Managing Director) – Daniel Kerfoot (Laboratory Manager)

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	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
BH1	B	2.00	2.00	20	-	-	-	-	-	-	-	-	Y	Dark brown silty gravelly SAND. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. (BS1377Pt2:3.2,9.2)
BH1	UT	4.00	4.45	15	2.21	1.92	146	34	17	17	86	CL	Y	Brown slightly sandy slightly gravelly silty CLAY of HIGH shear strength. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,4.4,5,Pt7.9)
BH1	UT	6.00	6.45	16	2.18	1.89	90	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY of HIGH shear strength. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,Pt7.9)
BH1	UT	9.00	9.45	15	2.24	1.94	176	37	17	20	86	CL	Y	Brown slightly sandy slightly gravelly silty CLAY of VERY HIGH shear strength. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,4.4,5,Pt7.9)
BH1	UT	12.00	12.45	15	2.27	1.98	197	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY of VERY HIGH shear strength. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,Pt7.9)
BH1	B	15.00	15.00	-	-	-	-	40	17	23	82	CL/CI	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,4.4,5)

SITE: SHEAR PLANT, TENAX ROAD (CCG-C-20-11869) DATE: 29.10.20

CLIENT: AXION POLYMERS

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
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

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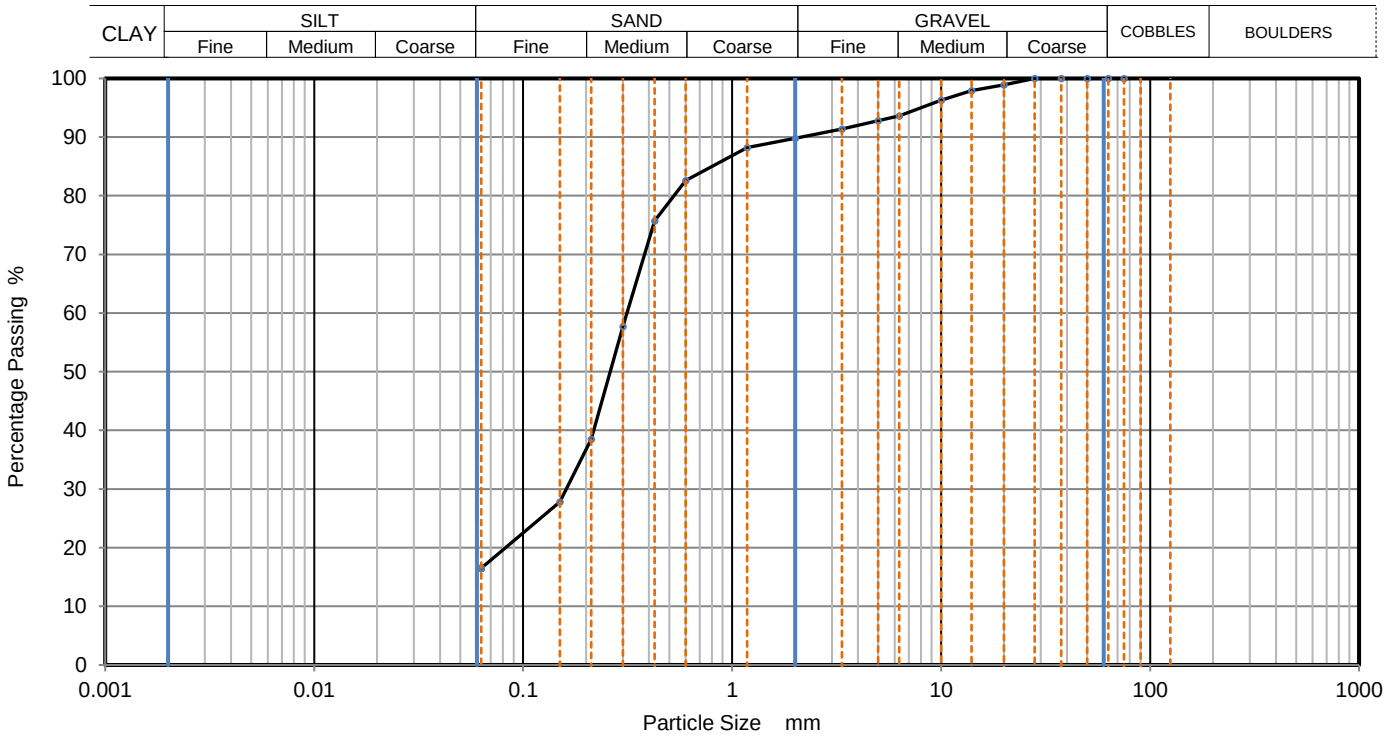
PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-20-11869
Borehole/Pit No.			BH1
Site Name	SHEAR PLANT, TENAX ROAD	Sample No.	1
Specimen Description	Dark brown silty gravelly SAND.	Depth, m	2.00
Specimen Reference	Specimen Depth: m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202010294



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	96		
6.3	94		
5	93		
3.35	91		
2	90		
1.18	88		
0.6	83		
0.425	76		
0.3	58		
0.212	39		
0.15	28		
0.063	17		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	10
Sand	73
Fines <0.063mm	17

Grading Analysis		
D100	mm	
D60	mm	0.314
D30	mm	0.161
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

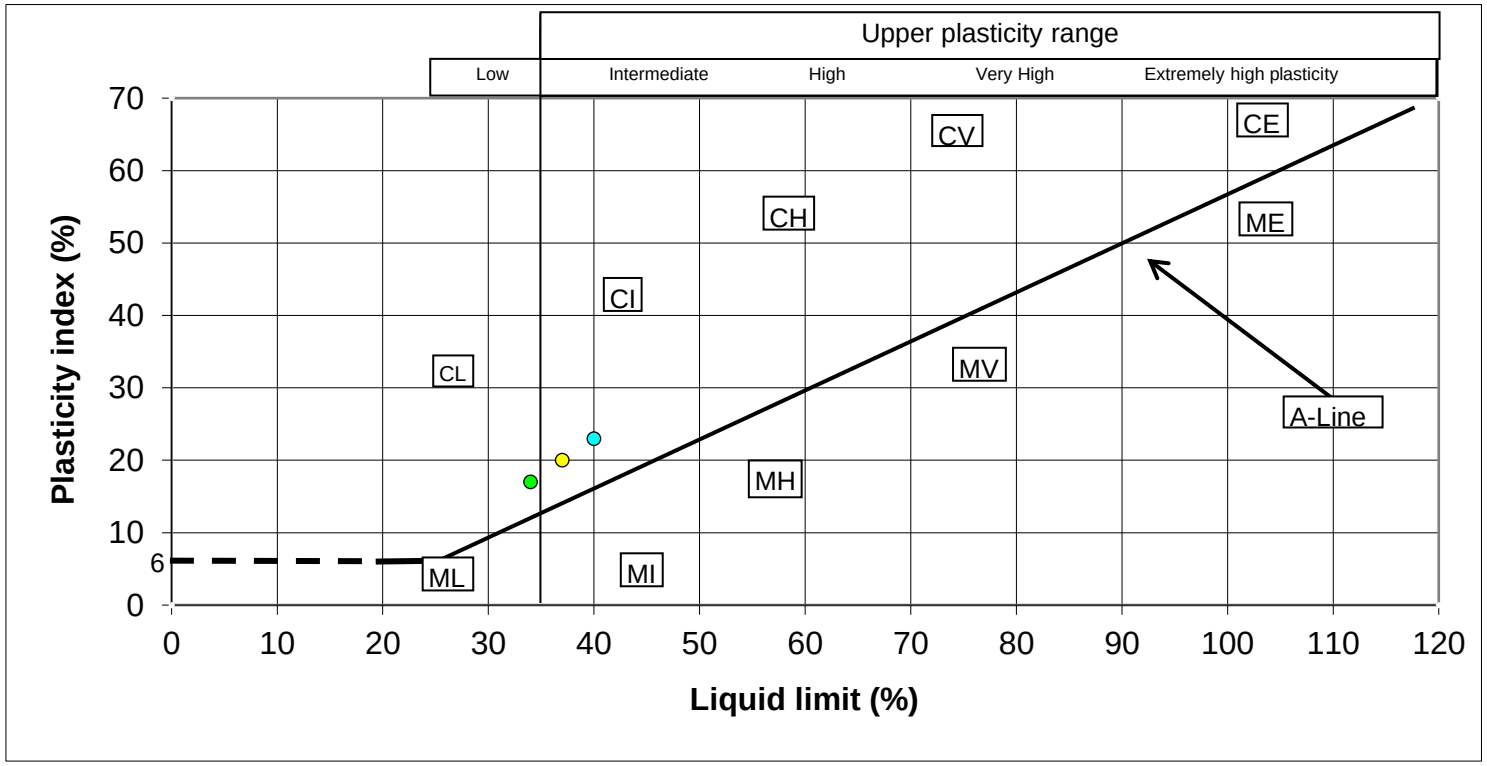
Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	29/10/2020 09:51	Sheet

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
BH1	4.00	34.0	17.0
BH1	9.00	37.0	20.0
BH1	15.00	40.0	23.0

UKAS TESTING
4514

APPROVED BY	DK

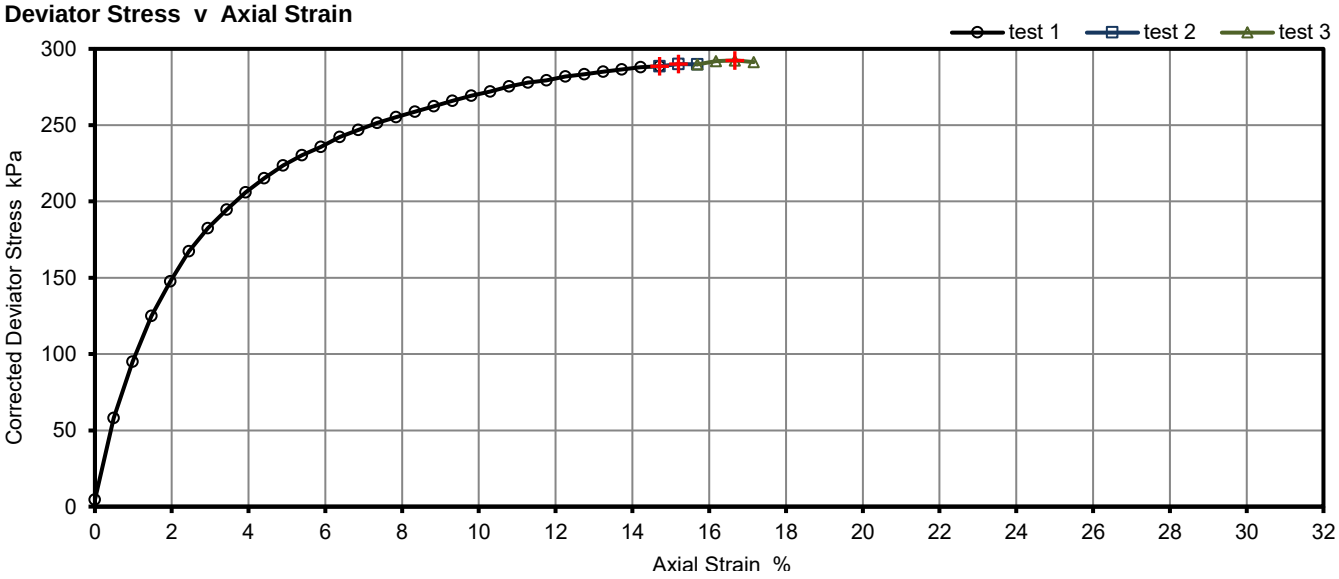
CLIENT: AXION POLYMERS	SITE: SHEAR PLANT, TENAX ROAD (CCG-C-20-11869)

	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test			Job Ref	CCG-C-20-11869
				Borehole/Pit No.	BH1
Site Name	SHEAR PLANT, TENAX ROAD			Sample No.	1
Soil Description				Depth	4.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY of HIGH shear strength.			KeyLAB ID	CCGL202010295
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single specir			Date of test	27.10.20

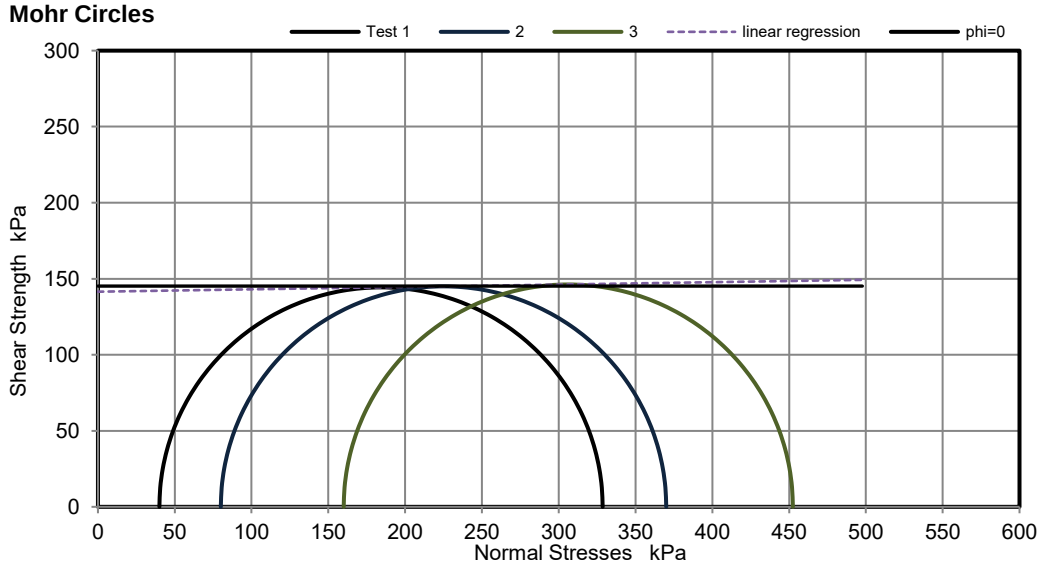
Length	mm	204.0
Diameter	mm	103.9
Bulk Density	Mg/m3	2.21
Moisture Content	%	15.1
Dry Density	Mg/m3	1.92

Rate of Strain		%/min	2.00		
Stage Number			1	2	3
Cell Pressure		kPa	40	80	160
End of stage	Axial Strain	%	14.7	15.2	16.7
	Deviator Stress, (σ1 - σ3) corrected for area and membrane	kPa	288.6	290.0	292.5
	Shear strength, cu	kPa	144.3	145.0	146.2
	Mode of failure		Compound		

Deviator Stress v Axial Strain



Mohr Circles



ϕu = 0

Average cu 145 kPa

Linear Regression

ϕu 0.9 °

cu 141 kPa

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Remarks

Approved

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Fig. No. 1

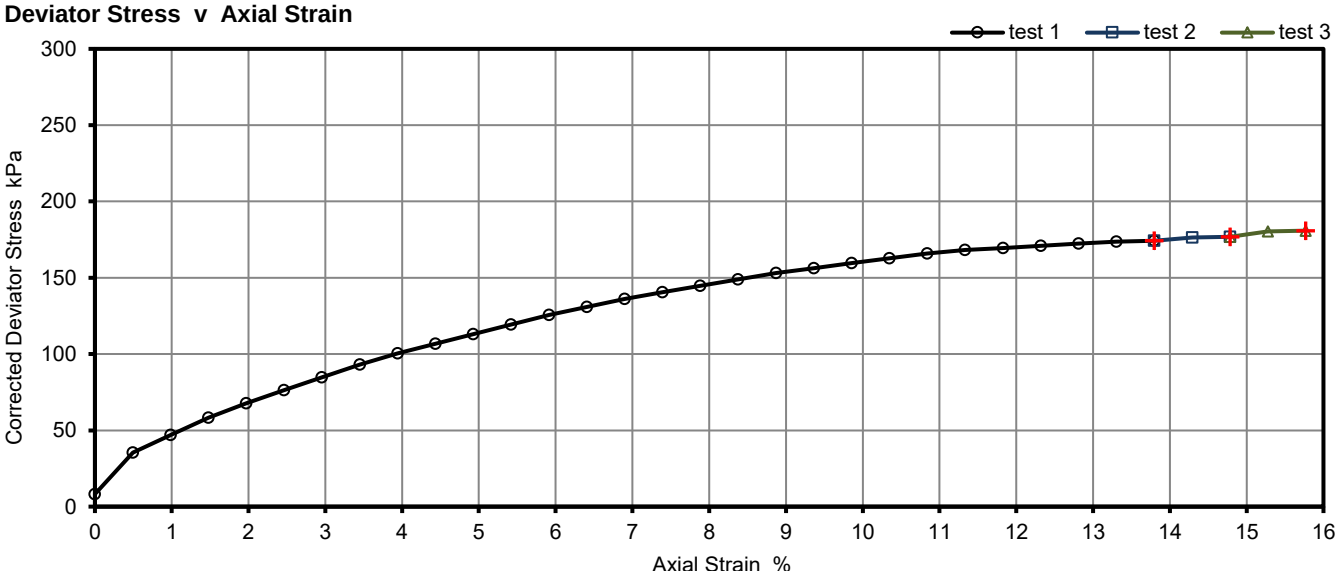
Sheet 1

Lab Sheet Reference :

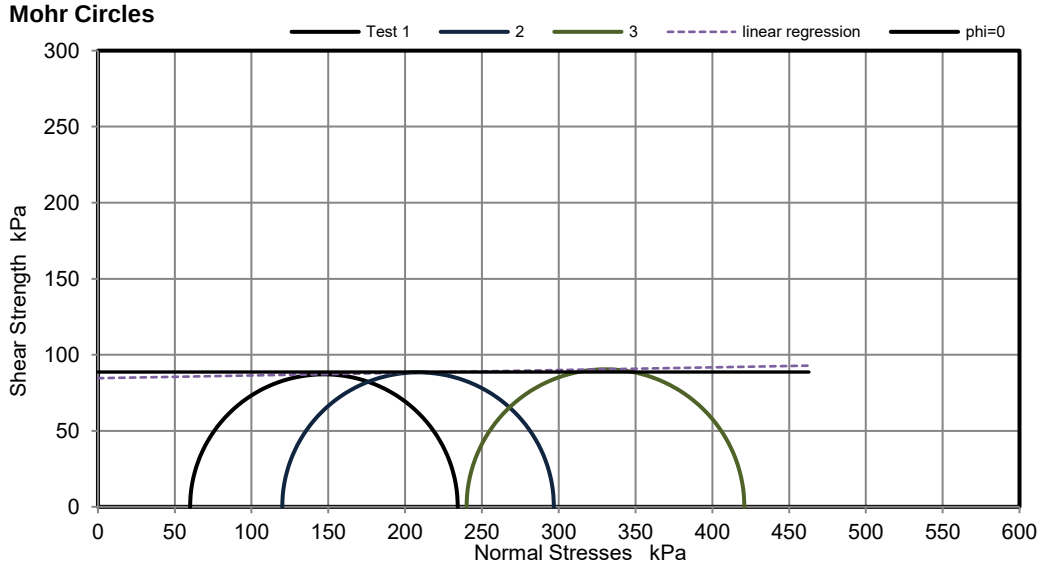
	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test			Job Ref	CCG-C-20-11869
				Borehole/Pit No.	BH1
Site Name	SHEAR PLANT, TENAX ROAD			Sample No.	2
Soil Description				Depth	6.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY of HIGH shear strength.			KeyLAB ID	CCGL202010296
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single specir			Date of test	27.10.20

Length			mm	202.9	
Diameter			mm	103.9	
Bulk Density			Mg/m3	2.18	
Moisture Content			%	15.5	
Dry Density			Mg/m3	1.89	
Rate of Strain			%/min	2.00	
Stage Number				1	2	3
Cell Pressure			kPa	60	120	240
End of stage	Axial Strain		%	13.8	14.8	15.8
	Deviator Stress, (σ1 - σ3) corrected for area and membrane		kPa	174.2	176.8	180.9
	Shear strength, cu		kPa	87.1	88.4	90.4
	Mode of failure			Compound		

Deviator Stress v Axial Strain



Mohr Circles



ϕu = 0

Average cu 89 kPa

Linear Regression

ϕu 1.0 °

cu 85 kPa

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Remarks

Approved

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Lab Sheet Reference :

Fig. No. 1

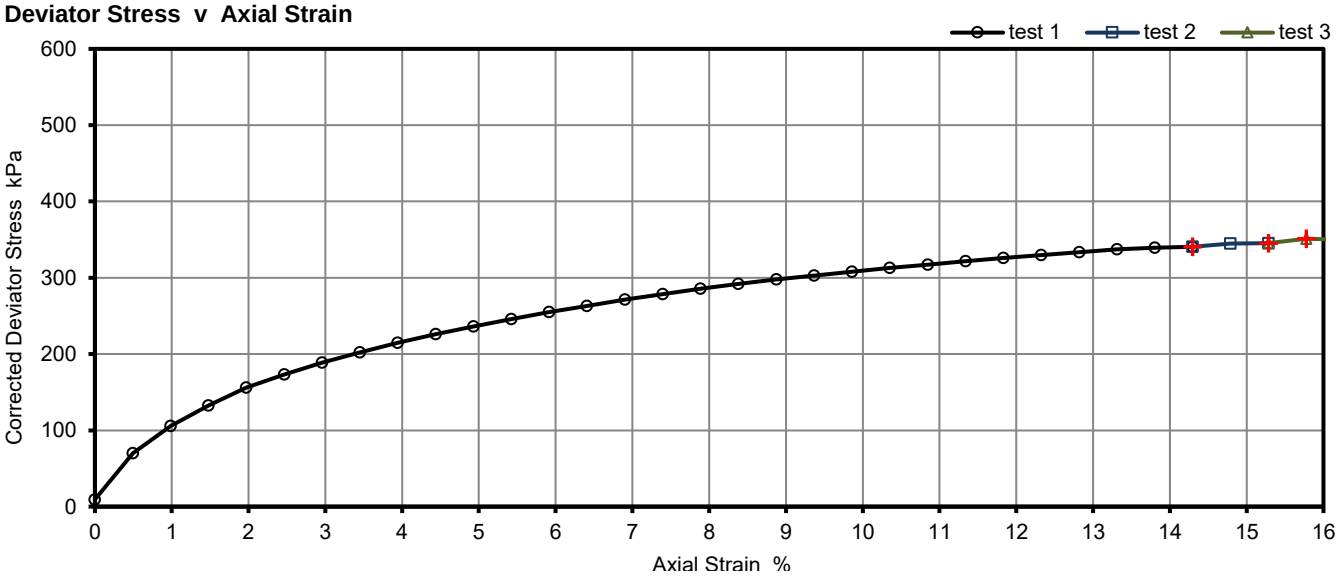
Sheet 2

	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test			Job Ref	CCG-C-20-11869
				Borehole/Pit No.	BH1
Site Name	SHEAR PLANT, TENAX ROAD			Sample No.	3
Soil Description				Depth	9.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY of VERY HIGH shear strength.			KeyLAB ID	CCGL202010297
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single specir			Date of test	27.10.20

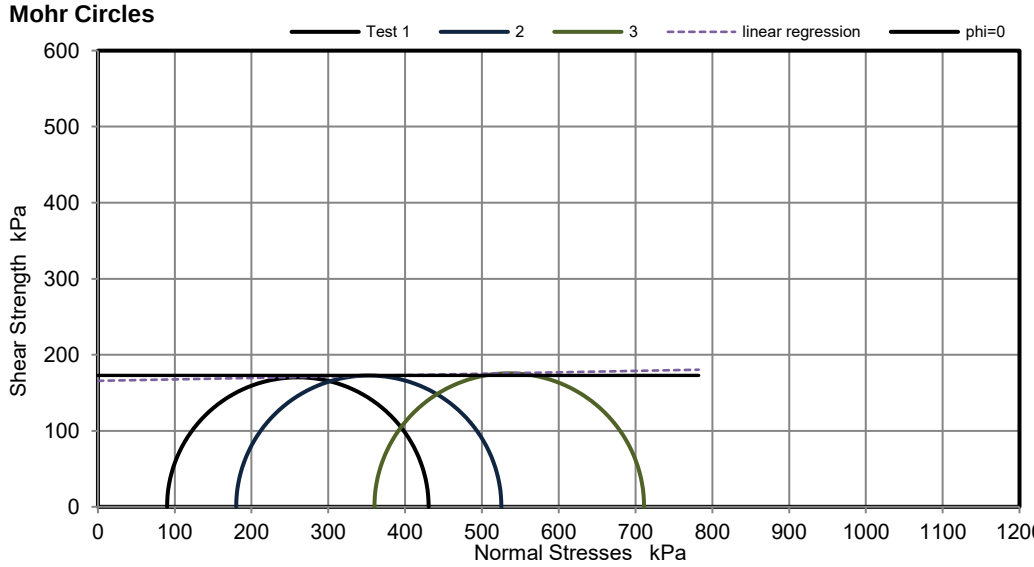
Length	mm	202.8
Diameter	mm	102.6
Bulk Density	Mg/m3	2.24
Moisture Content	%	15.1
Dry Density	Mg/m3	1.94

Rate of Strain		%/min	2.00		
Stage Number			1	2	3
Cell Pressure		kPa	90	180	360
End of stage	Axial Strain	%	14.3	15.3	15.8
	Deviator Stress, (σ1 - σ3) corrected for area and membrane	kPa	340.6	345.3	351.2
	Shear strength, cu	kPa	170.3	172.7	175.6
	Mode of failure		Compound		

Deviator Stress v Axial Strain



Mohr Circles



ϕu = 0

Average cu 173 kPa

Linear Regression

ϕu 1.1 °

cu 166 kPa

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Remarks

Approved

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Lab Sheet Reference :

Fig. No. 1

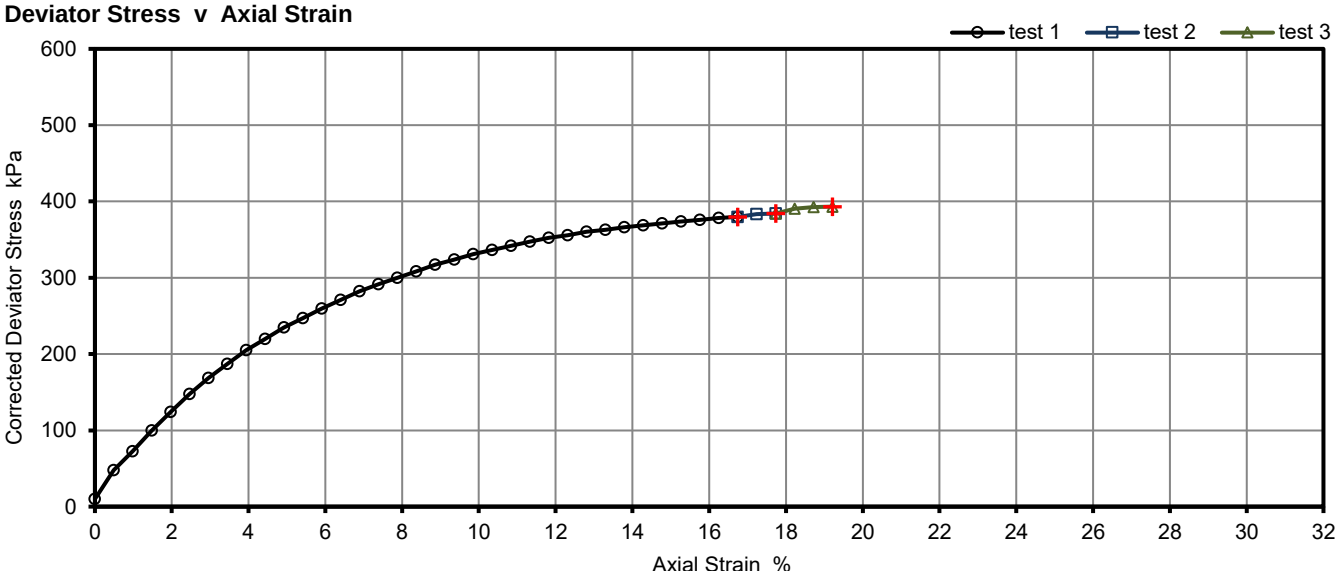
Sheet 3

	Unconsolidated Undrained Triaxial Compression Test without measurement of pore pressure - Multistage test			Job Ref	CCG-C-20-11869
				Borehole/Pit No.	BH1
Site Name	SHEAR PLANT, TENAX ROAD			Sample No.	4
Soil Description				Depth	12.00
Specimen Reference		Specimen Depth	m	Sample Type	UT
Specimen Description	Brown slightly sandy slightly gravelly silty CLAY of VERY HIGH shear strength.			KeyLAB ID	CCGL202010298
Test Method	BS1377:Part 7:1990, clause 9, multistage test on a single specir			Date of test	27.10.20

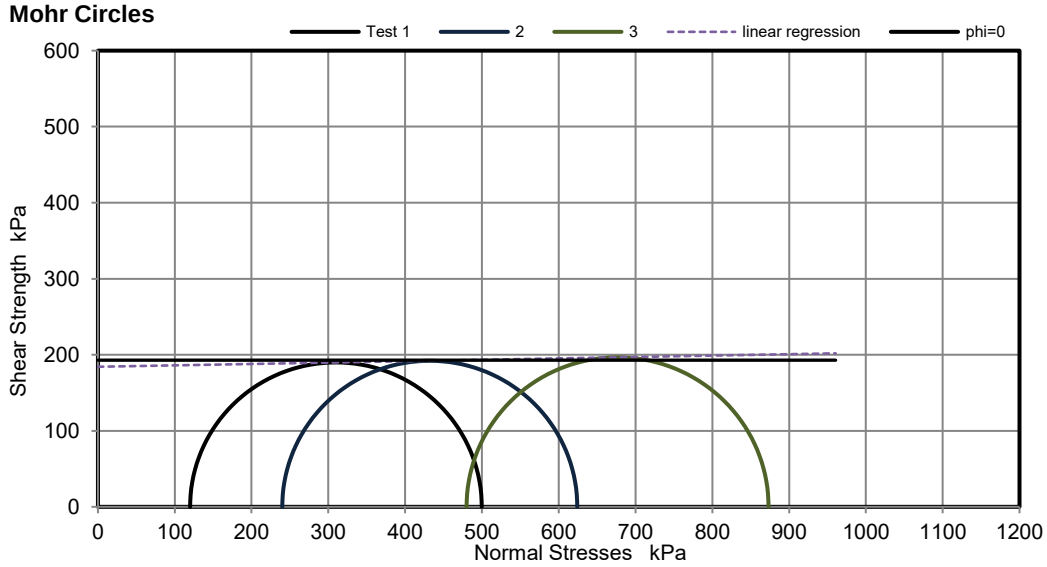
Length	mm	203.0
Diameter	mm	104.3
Bulk Density	Mg/m3	2.27
Moisture Content	%	14.8
Dry Density	Mg/m3	1.98

Rate of Strain		%/min	2.00		
Stage Number			1	2	3
Cell Pressure		kPa	120	240	480
End of stage	Axial Strain	%	16.7	17.7	19.2
	Deviator Stress, (σ1 - σ3) corrected for area and membrane	kPa	379.8	384.2	393.3
	Shear strength, cu	kPa	189.9	192.1	196.6
	Mode of failure		Compound		

Deviator Stress v Axial Strain



Mohr Circles



ϕu = 0

Average cu 193 kPa

Linear Regression

ϕu 1.1 °

cu 184 kPa

Mohr circles and their interpretation is not covered by BS1377. These are provided for information only.

Remarks

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Lab Sheet Reference :

Fig. No. 1

Sheet 4

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
BH2	B	2.00	2.00	20	-	-	-	-	-	-	-	-	Y	Dark brown silty gravelly SAND. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. (BS1377Pt2:3.2,9.2)
BH2	UT	5.50	5.95	18	-	-	-	-	-	-	-	-	Y	Brown very clayey gravelly SAND. Gravel is fine to coarse subrounded sandstone. Frequent pockets of clay (BS1377Pt2:3.2)
BH2	UT	8.50	8.95	15	-	-	>110	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,4.4,5,Pt7.9)
BH2	UT	11.50	11.95	14	-	-	>110	-	-	-	-	-	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2)
BH2	B	19.00	19.00	25	-	-	-	40	17	23	88	CL/CI	Y	Brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to coarse subangular to subrounded sandstone (BS1377Pt2:3.2,4.4,5)
BH2	B	30.00	30.00	32	-	-	-	-	-	-	-	-	Y	Reddish brown very silty SAND. (BS1377Pt2:3.2,9.2)

SITE: SHEAR PLANT, TENAX ROAD (CCG-C-20-11869) DATE: 29.10.20

CLIENT: AXION POLYMERS

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
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

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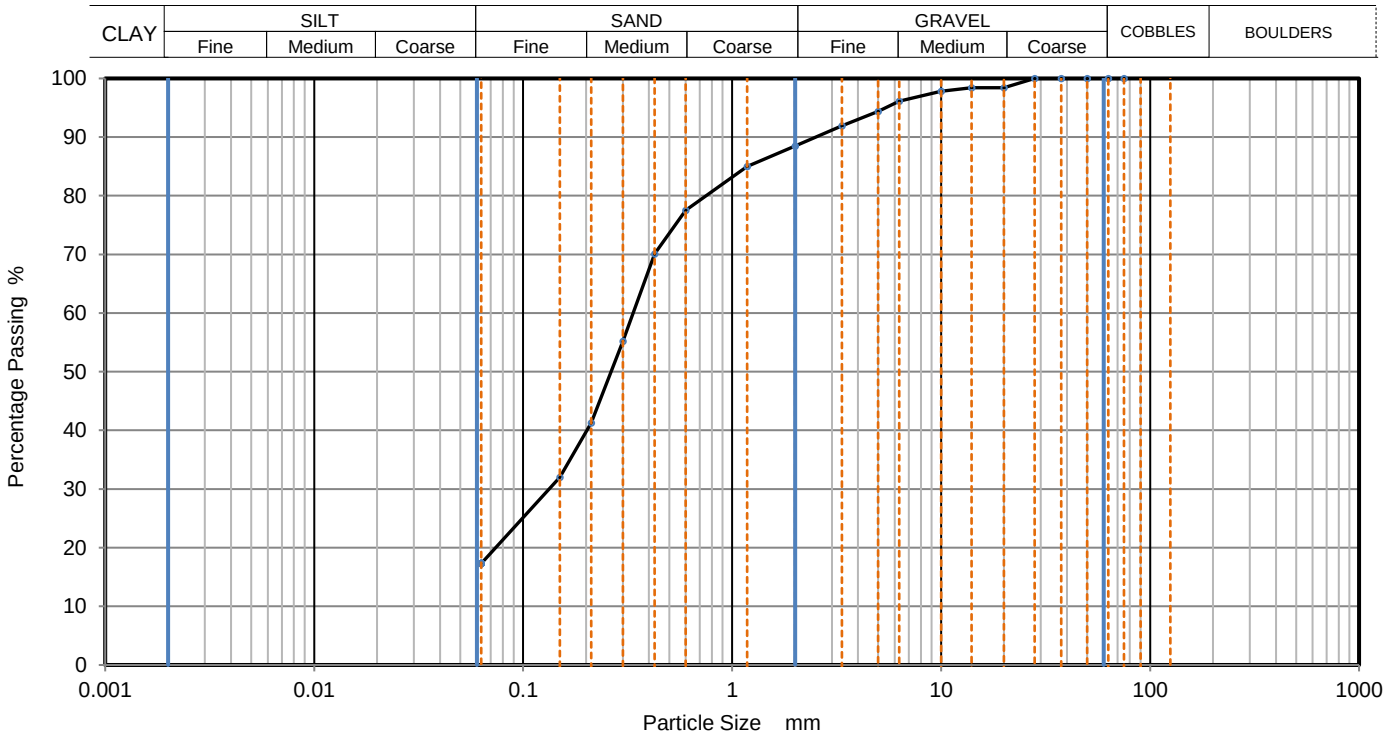
PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-20-11869
Borehole/Pit No.			BH2
Site Name	SHEAR PLANT, TENAX ROAD		
Sample No.			1
Specimen Description	Dark brown silty gravelly SAND.		
Depth, m			2.00
Specimen Reference		Specimen Depth	m
Sample Type			B
Test Method	BS1377:Part 2:1990, clause 9.2		
KeyLAB ID			CCGL202010291



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	98		
10	98		
6.3	96		
5	94		
3.35	92		
2	89		
1.18	85		
0.6	78		
0.425	70		
0.3	55		
0.212	41		
0.15	32		
0.063	17		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	12
Sand	71
Fines <0.063mm	17

Grading Analysis		
D100	mm	
D60	mm	0.336
D30	mm	0.134
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	29/10/2020 09:51	Sheet

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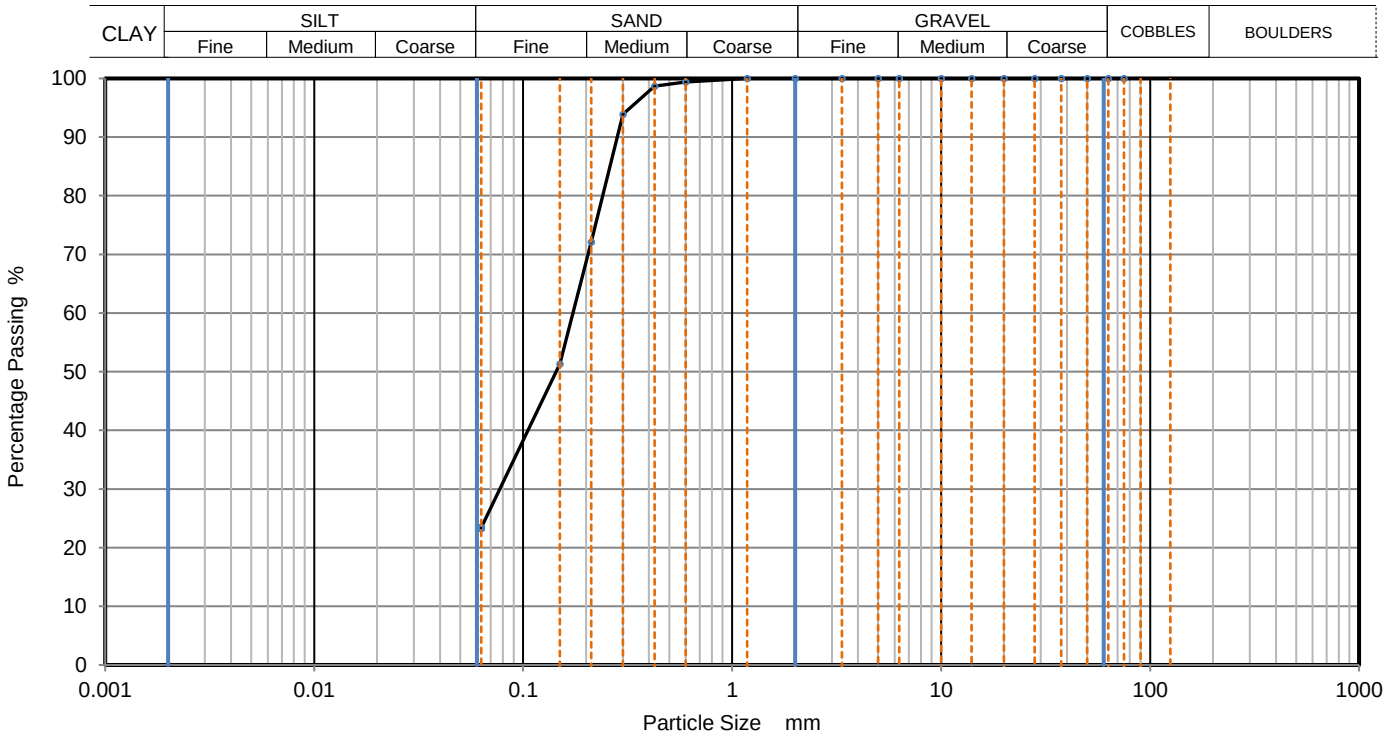
PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-20-11869		
Borehole/Pit No.	BH2		
Site Name	SHEAR PLANT, TENAX ROAD	Sample No.	1
Specimen Description	Reddish brown very silty SAND.	Depth, m	30.00
Specimen Reference	Specimen Depth: m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202010299



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	94		
0.212	72		
0.15	51		
0.063	23		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	77
Fines <0.063mm	23

Grading Analysis		
D100	mm	
D60	mm	0.173
D30	mm	0.0774
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

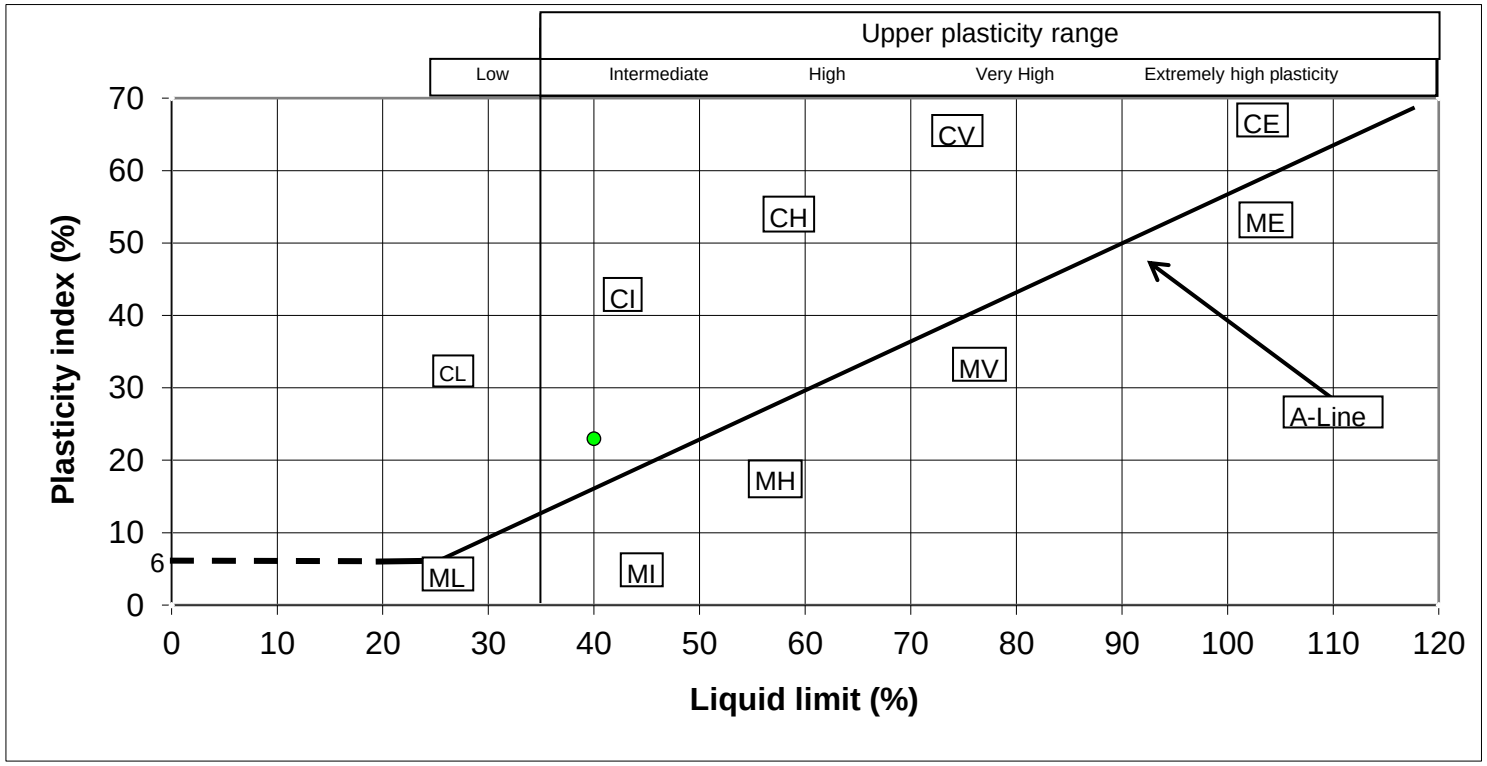
Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	29/10/2020 09:51	Sheet

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
BH2	19.00	40.0	23.0

UKAS TESTING
4514

APPROVED BY	DK

CLIENT: AXION POLYMERS	SITE: SHEAR PLANT, TENAX ROAD (CCG-C-20-11869)

SUMMARY OF LABORATORY SOIL TEST RESULTS

BH / TP / WS Number	Sample Type	Depth From (m)	Depth To (m)	Moisture Content (%)	Bulk Density (Mg/m³)	Dry Density (Mg/m³)	Shear Strength (kN/m²)	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
WS2	WS	3.30	3.30	14	-	-	-	-	-	-	-	-	Y	Greyish brown very gravelly silty SAND. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. (BS1377Pt2:3.2,9.2)
WS4	WS	3.80	3.80	10	-	-	-	-	-	-	-	-	Y	Brown gravelly silty SAND. Gravel is fine to coarse subangular to subrounded sandstone and mudstone. (BS1377Pt2:3.2,9.2)

SITE: SHEAR PLANT, TENAX ROAD (CCG-C-20-11869) DATE: 29.10.20

CLIENT: AXION POLYMERS

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
(* Denotes Hand Shear Vane test result)
Sample description not accredited by UKAS

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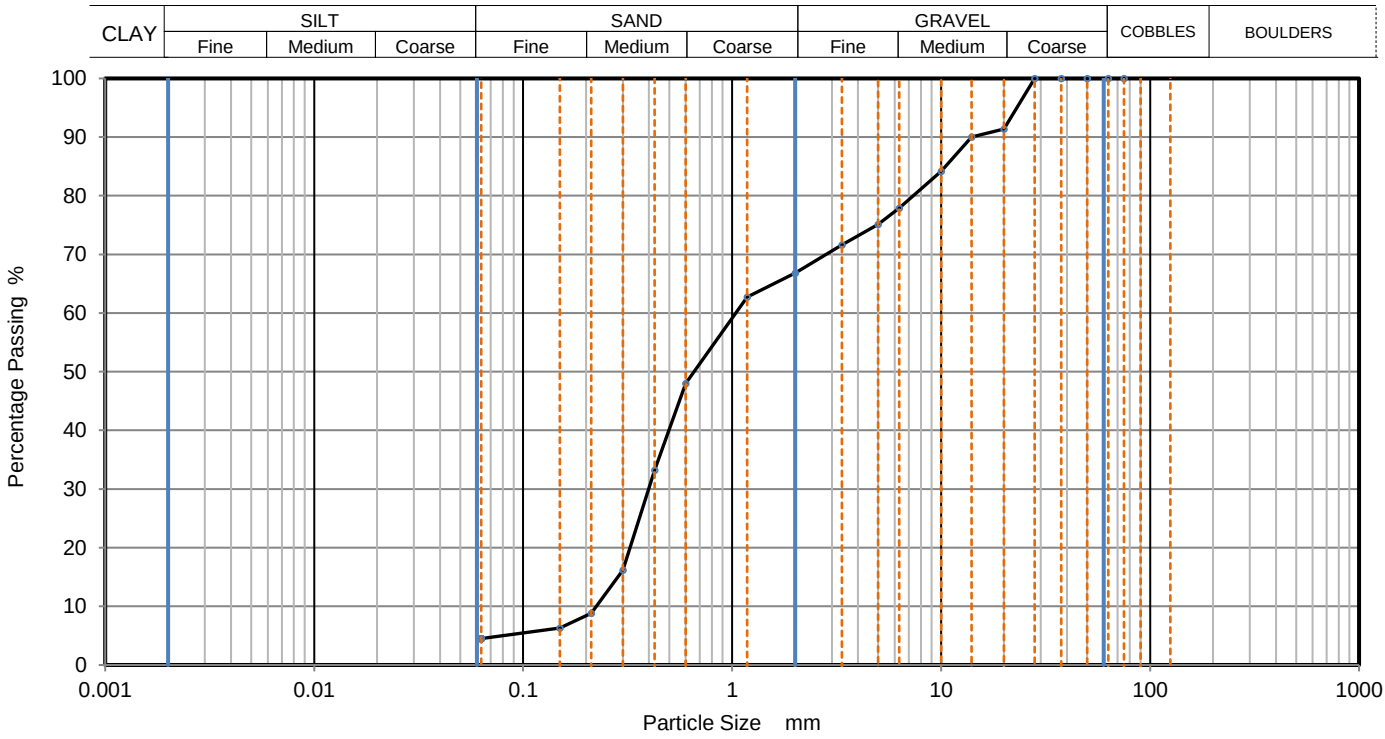
PARTICLE SIZE DISTRIBUTION

Job Ref			CCG-C-20-11869
Borehole/Pit No.			WS2
Site Name	SHEAR PLANT, TENAX ROAD	Sample No.	1
Specimen Description	Greyish brown very gravelly silty SAND.	Depth, m	3.30
Specimen Reference	Specimen Depth: m	Sample Type	WS
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202010292



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	91		
14	90		
10	84		
6.3	78		
5	75		
3.35	72		
2	67		
1.18	63		
0.6	48		
0.425	33		
0.3	16		
0.212	9		
0.15	6		
0.063	5		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	33
Sand	62
Fines <0.063mm	5

Grading Analysis		
D100	mm	
D60	mm	1.04
D30	mm	0.398
D10	mm	0.224
Uniformity Coefficient		4.7
Curvature Coefficient		0.68

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	29/10/2020 09:51	Sheet

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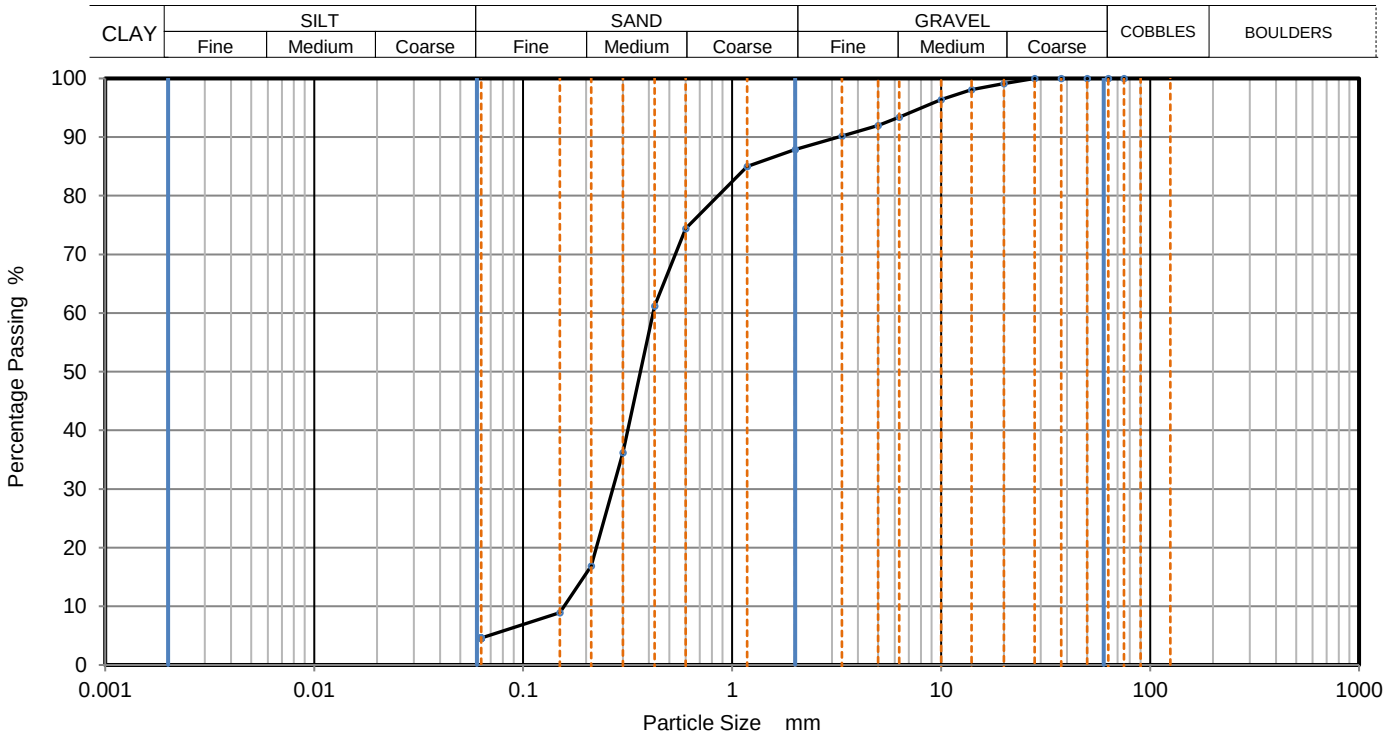
PARTICLE SIZE DISTRIBUTION

Job Ref	CCG-C-20-11869		
Borehole/Pit No.	WS4		
Site Name	SHEAR PLANT, TENAX ROAD	Sample No.	1
Specimen Description	Brown gravelly silty SAND.	Depth, m	3.80
Specimen Reference	Specimen Depth: m	Sample Type	WS
Test Method	BS1377:Part 2:1990, clause 9.2	KeyLAB ID	CCGL202010293



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	96		
6.3	93		
5	92		
3.35	90		
2	88		
1.18	85		
0.6	74		
0.425	61		
0.3	36		
0.212	17		
0.15	9		
0.063	5		

Dry Mass of sample, g

Sample Proportions	% dry mass
Very coarse	0
Gravel	12
Sand	83
Fines <0.063mm	5

Grading Analysis		
D100	mm	
D60	mm	0.418
D30	mm	0.268
D10	mm	0.157
Uniformity Coefficient		2.7
Curvature Coefficient		1.1

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Operator	Checked	Approved	Sheet printed	Fig 1
JE	DK	DK	29/10/2020 09:51	Sheet

APPENDIX D

CHEMICAL TEST DATA

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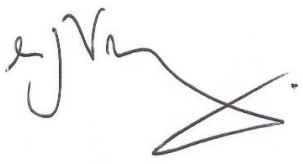
2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	20-30110
Issue:	1
Date of Issue:	08/10/2020
Contact:	Paul McFadden
Customer Details:	CC Geotechnical Ltd Unit 1 & 2 Deltic Place Deltic Way Liverpool MersevsideL33 7BA
Quotation No:	Q14-00045
Order No:	Not Supplied
Customer Reference:	CCG-C-20-11869
Date Received:	01/10/2020
Date Approved:	08/10/2020
Details:	Tenax Rd, Manchester
Approved by:	

Mike Varley, Technical Manager

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

Sample Summary

Report No.: 20-30110, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
215368	WS1 1.50	29/09/2020	01/10/2020	Loamy sand	
215369	WS3 0.60	29/09/2020	01/10/2020	Loamy sand	
215370	WS3 4.20	29/09/2020	01/10/2020	Clay	

Results Summary

Report No.: 20-30110, issue number 1

				ELAB Reference	215368	215369	215370
				Customer Reference			
				Sample ID			
				Sample Type	SOIL	SOIL	SOIL
				Sample Location	WS1	WS3	WS3
				Sample Depth (m)	1.50	0.60	4.20
				Sampling Date	29/09/2020	29/09/2020	29/09/2020
Determinand	**Codes**	**Units**	**LOD**				
Soil sample preparation parameters							
Material removed	N	%	0.1		< 0.1	< 0.1	< 0.1
Description of Inert material removed	N		0		None	None	None
Metals							
Arsenic	M	mg/kg	1		5.1	19.1	8.8
Cadmium	M	mg/kg	0.5		< 0.5	1.5	< 0.5
Chromium	M	mg/kg	5		12.5	23.2	25.4
Copper	M	mg/kg	5		400	755	45.2
Lead	M	mg/kg	5		71.4	119	13.4
Mercury	M	mg/kg	0.5		< 0.5	< 0.5	< 0.5
Nickel	M	mg/kg	5		13.1	23.2	34.7
Selenium	M	mg/kg	1		< 1.0	< 1.0	< 1.0
Zinc	M	mg/kg	5		48.9	145	66.8
Anions							
Water Soluble Sulphate	M	g/l	0.02		0.04	0.06	0.03
Inorganics							
Free Cyanide	N	mg/kg	1		< 1.0	< 1.0	< 1.0
Hexavalent Chromium	N	mg/kg	0.8		< 0.8	< 0.8	< 0.8
Total Sulphide	N	mg/kg	2		< 2	< 2	< 2
Acid Soluble Sulphate (SO4)	U	%	0.02		0.04	0.08	0.05
Water Soluble Boron	N	mg/kg	0.5		6.1	1.5	0.5
Miscellaneous							
Acid Neutralisation Capacity	N	mol/kg	0.1		< 0.1	< 0.1	< 0.1
Loss On Ignition (450°C)	M	%	0.01		3.92	3.46	1.55
pH	M	pH units	0.1		7.4	8.7	8.4
Soil Organic Matter	U	%	0.1		3.9	2.9	1.1
Total Organic Carbon	N	%	0.01		2.1	1.9	1.2
Polyaromatic hydrocarbons							
Naphthalene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Acenaphthylene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Acenaphthene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Fluorene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Phenanthrene	M	mg/kg	0.1		< 0.1	0.2	< 0.1
Anthracene	M	mg/kg	0.1		< 0.1	0.2	< 0.1
Fluoranthene	M	mg/kg	0.1		< 0.1	0.5	< 0.1
Pyrene	M	mg/kg	0.1		< 0.1	0.3	< 0.1
Benzo(a)anthracene	M	mg/kg	0.1		< 0.1	< 0.1	0.2
Chrysene	M	mg/kg	0.1		< 0.1	< 0.1	0.1
Benzo(b)fluoranthene	M	mg/kg	0.1		< 0.1	< 0.1	0.1
Benzo(k)fluoranthene	M	mg/kg	0.1		< 0.1	< 0.1	0.1
Benzo(a)pyrene	M	mg/kg	0.1		< 0.1	< 0.1	0.2
Indeno(1,2,3-cd)pyrene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Benzo[g,h,i]perylene	M	mg/kg	0.1		< 0.1	< 0.1	< 0.1
Total PAH(16)	M	mg/kg	0.4		< 0.4	1.2	0.9
Total PAH (Including Coronene GC-FID)	N	mg/kg	2		< 2	< 2	< 2

Results Summary

Report No.: 20-30110, issue number 1

				ELAB Reference	215368	215369	215370
				Customer Reference			
				Sample ID			
				Sample Type	SOIL	SOIL	SOIL
				Sample Location	WS1	WS3	WS3
				Sample Depth (m)	1.50	0.60	4.20
				Sampling Date	29/09/2020	29/09/2020	29/09/2020
Determinand	**Codes**	**Units**	**LOD**				
BTEX							
Benzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10		< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10		< 10.0	< 10.0	< 10.0
Xylenes	M	ug/kg	10		< 10.0	< 10.0	< 10.0
Total BTEX	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01
TPH CWG							
>C5-C6 Aliphatic	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01
>C6-C8 Aliphatic	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01
>C8-C10 Aliphatic	N	mg/kg	1		< 1.0	< 1.0	< 1.0
>C10-C12 Aliphatic	N	mg/kg	1		< 1.0	< 1.0	< 1.0
>C12-C16 Aliphatic	N	mg/kg	1		< 1.0	< 1.0	1.2
>C16-C21 Aliphatic	N	mg/kg	1		9.2	2.8	1.5
>C21-C35 Aliphatic	N	mg/kg	1		40.2	82.6	2.2
>C35-C40 Aliphatic	N	mg/kg	1		2.7	14.9	< 1.0
>C5-C7 Aromatic	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01
>C7-C8 Aromatic	N	mg/kg	0.01		< 0.01	< 0.01	< 0.01
>C8-C10 Aromatic	N	mg/kg	1		< 1.0	< 1.0	< 1.0
>C10-C12 Aromatic	N	mg/kg	1		< 1.0	< 1.0	< 1.0
>C12-C16 Aromatic	N	mg/kg	1		< 1.0	< 1.0	< 1.0
>C16-C21 Aromatic	N	mg/kg	1		3.2	1.0	< 1.0
>C21-C35 Aromatic	N	mg/kg	1		30.3	32.6	< 1.0
>C35-C40 Aromatic	N	mg/kg	1		4.7	7.1	< 1.0
Total (>C5-C40) Ali/Aro	N	mg/kg	1		90.3	141	4.9
Total Petroleum Hydrocarbons							
Mineral Oil	M	mg/kg	5		^ 158	^ 46	^ < 5
PCB (ICES 7 congeners)							
PCB 28	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 52	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 101	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 118	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 153	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 138	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB 180	M	mg/kg	0.01		< 0.01	< 0.01	< 0.01
PCB (Total of 7 Congeners)	M	mg/kg	0.03		< 0.03	< 0.03	< 0.03

Results Summary

Report No.: 20-30110, issue number 1

ELAB Reference	215368	215369	215370
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	WS1	WS3	WS3
Sample Depth (m)	1.50	0.60	4.20
Sampling Date	29/09/2020	29/09/2020	29/09/2020

Determinand	Codes	Units	LOD			
VOC						
Heptane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Octane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Nonane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Benzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Toluene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Ethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
m+p-xylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
o-xylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
cis-1,2-dichloroethene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1-Dichloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Chloroform	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Tetrachloromethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1,1-Trichloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Trichloroethylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Tetrachloroethylene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1,1,2-Tetrachloroethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1,2,2-Tetrachloroetha	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Chlorobenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Bromobenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Bromodichloromethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Methylethylbenzene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
Trans - 1-2 -dichloroethylene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
2,2-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Bromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2-Dichloroethane	M	ug/kg	10	^ < 10.0	^ < 10.0	^ < 10.0
Dibromomethane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2-Dichloropropane	M	ug/kg	10	< 10.0	< 10.0	< 10.0
cis-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
trans-1,3-Dichloro-1-propene	M	ug/kg	10	< 10.0	< 10.0	< 10.0
1,1,2-Trichloroethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Dibromochloromethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,3-Dichloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2-dibromoethane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Styrene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Propylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
2-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2,4-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
4-Chlorotoluene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
t-butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,3,5-Trimethylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1-methylpropylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
p-cymene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,3-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Butylbenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2-Dibromo-3-chloropropane	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Hexachlorobutadiene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1-2-3 - Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Naphthalene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1-2-4 - Trichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,4-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
1,2-Dichlorobenzene	N	ug/kg	10	< 10.0	< 10.0	< 10.0
Bromoform	N	ug/kg	10	< 10.0	< 10.0	< 10.0

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-30110, issue number 1

ELAB Reference	215368	215369	215370
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	WS1	WS3	WS3
Sample Depth (m)	1.50	0.60	4.20
Sampling Date	29/09/2020	29/09/2020	29/09/2020

Determinand	Codes	Units	LOD			
SVOC						
Phenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Aniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Chlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzyl Alcohol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,2-Dichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroisopropyl)ether	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3 and 4-methylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
N-Nitrosodi-n-propylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloroethane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Nitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Isophorone	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dimethylphenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis(2-chloroethoxy)methane	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4-Dichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,3,5-Trichlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Naphthalene	N	mg/kg	0.01	0.02	0.03	0.02
3-Chloroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachloro-1,3-butadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
4-Chloro-3-methylphenol	N	mg/kg	0.01	< 0.01	0.01	< 0.01
2-Methylnaphthalene	N	mg/kg	0.01	0.01	0.02	0.03
1-Methylnaphthalene	N	mg/kg	0.01	< 0.01	0.02	0.02
Hexachlorocyclopentadiene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,6-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,4,5-Trichlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-Chloronaphthalene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1,4-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dimethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-3-dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2-6-dinitrotoluene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	N	mg/kg	0.01	0.01	0.01	< 0.01
1,2-Dinitrobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
3-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	N	mg/kg	0.01	< 0.01	0.02	< 0.01
4-nitrophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dibenzofuran	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,3,5,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
2,3,4,6-Tetrachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diethyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-chloro-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Fluorene	N	mg/kg	0.01	< 0.01	0.01	< 0.01
4-Nitroaniline	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dinitro-o-cresol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Diphenylamine	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Azobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
1-bromo-4-phenoxybenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Hexachlorobenzene	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01

Tests marked N are not UKAS accredited.

Results Summary

Report No.: 20-30110, issue number 1

ELAB Reference	215368	215369	215370
Customer Reference			
Sample ID			
Sample Type	SOIL	SOIL	SOIL
Sample Location	WS1	WS3	WS3
Sample Depth (m)	1.50	0.60	4.20
Sampling Date	29/09/2020	29/09/2020	29/09/2020

Determinand	Codes	Units	LOD			
SVOC						
Phenanthrene	N	mg/kg	0.01	0.03	0.14	0.03
Anthracene	N	mg/kg	0.01	< 0.01	0.04	< 0.01
Carbazole	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Dibutyl phthalate	N	mg/kg	0.01	< 0.01	1.59	< 0.01
Fluoranthene	N	mg/kg	0.01	< 0.01	0.40	0.01
Pyrene	N	mg/kg	0.01	< 0.01	0.36	0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Bis-2-ethylhexyladipate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Butyl benzyl phthalate	N	mg/kg	0.01	< 0.01	< 0.01	0.01
Benzo(a)anthracene	N	mg/kg	0.01	< 0.01	0.34	< 0.01
Chrysene	N	mg/kg	0.01	< 0.01	0.37	< 0.01
Bis(2-ethylhexyl)phthalate	N	mg/kg	0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	N	mg/kg	0.01	< 0.01	0.30	< 0.01
Benzo(k)fluoranthene	N	mg/kg	0.01	< 0.01	0.35	< 0.01
Benzo(a)pyrene	N	mg/kg	0.01	< 0.01	0.35	< 0.01
Indeno(1,2,3-cd)pyrene	N	mg/kg	0.01	< 0.01	0.27	< 0.01
Dibenz(ah)anthracene	N	mg/kg	0.01	< 0.01	0.09	< 0.01
Benzo[g,h,i]perylene	N	mg/kg	0.01	0.01	0.29	< 0.01

Results Summary

Report No.: 20-30110, issue number 1

WAC Analysis								
Elab Ref:	215370					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	29/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS3							
Depth (m)	4.2							
Site:	Tenax Rd, Manchester							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.20	3	5	6
Loss on Ignition		M	%		1.6	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		< 5	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.128		1.28	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	< 0.005		< 0.05	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	< 0.005		< 0.05	0.5	10	30
Nickel		N	< 0.001		< 0.05	0.4	10	40
Lead		N	< 0.001		< 0.05	0.5	10	50
Antimony		N	< 0.005		< 0.05	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	< 5		< 50	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	10		102.00	1000	20000	50000
Total Dissolved Solids		N	126		1260.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	17.800		178.00	500	800	1000
Leach Test Information								
pH		N	8.0					
Conductivity (uS/cm)		N	188					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			87					
Moisture (%)			15					
Eluent Volume (ml)			970					

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

* Stated limits are for guidance only, and not for conformity assessment.

Results Summary

Report No.: 20-30110, issue number 1

WAC Analysis								
Elab Ref:	215369					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	29/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS3							
Depth (m)	0.6							
Site:	Tenax Rd, Manchester							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		1.90	3	5	6
Loss on Ignition		M	%		3.5	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		46	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			8.7	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.035		0.35	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.042		0.42	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	0.038		0.38	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	0.003		< 0.05	0.5	10	50
Antimony		N	0.006		0.06	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	< 0.005		< 0.05	4	50	200
Chloride		N	6		61.00	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	16		162.00	1000	20000	50000
Total Dissolved Solids		N	201		2010.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	37.200		372.00	500	800	1000
Leach Test Information								
pH		N	8.0					
Conductivity (uS/cm)		N	300					
Dry mass of test portion (g)			100.000					
Dry Matter (%)			81					
Moisture (%)			23					
Eluent Volume (ml)			954					

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

* Stated limits are for guidance only, and not for conformity assessment.

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Results Summary

Report No.: 20-30110, issue number 1

WAC Analysis								
Elab Ref:	215368					**Landfill Waste Acceptance Criteria Limits***		
Sample Date:	29/09/2020					**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:	WS1							
Depth (m)	1.5							
Site:	Tenax Rd, Manchester							
Determinand		**Code**	**Units**					
Total Organic Carbon		N	%		2.10	3	5	6
Loss on Ignition		M	%		3.9	--	--	10
Total BTEX		M	mg/kg		< 0.01	6	--	--
Total PCBs (7 congeners)		M	mg/kg		< 0.03	1	--	--
TPH Total WAC		M	mg/kg		158	500	--	--
Total (of 17) PAHs		N	mg/kg		< 2	100	--	--
pH		M			7.4	--	>6	--
Acid Neutralisation Capacity		N	mol/kg		< 0.1	--	To evaluate	To evaluate
Eluate Analysis			**10:1**		**10:1**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
			mg/l		**mg/kg**			
Arsenic		N	< 0.005		< 0.05	0.5	2	25
Barium		N	0.017		0.17	20	100	300
Cadmium		N	< 0.001		< 0.01	0.04	1	5
Chromium		N	< 0.005		< 0.05	0.5	10	70
Copper		N	0.071		0.71	2	50	100
Mercury		N	< 0.005		< 0.01	0.01	0.2	2
Molybdenum		N	0.022		0.22	0.5	10	30
Nickel		N	0.002		< 0.05	0.4	10	40
Lead		N	0.021		0.21	0.5	10	50
Antimony		N	0.010		0.10	0.06	0.7	5
Selenium		N	< 0.005		< 0.05	0.1	0.5	7
Zinc		N	0.009		0.09	4	50	200
Chloride		N	6		58.00	800	15000	25000
Fluoride		N	< 5		< 10	10	150	500
Sulphate		N	46		456.00	1000	20000	50000
Total Dissolved Solids		N	143		1430.00	4000	60000	100000
Phenol Index		N	< 0.01		< 0.10	1	-	-
Dissolved Organic Carbon		N	46.600		466.00	500	800	1000
Leach Test Information								
pH		N	7.4					
Conductivity (uS/cm)		N	213					
Dry mass of test portion (g)			103.000					
Dry Matter (%)			85					
Moisture (%)			18					
Eluent Volume (ml)			977					

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

* Stated limits are for guidance only, and not for conformity assessment.

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

Results Summary

Report No.: 20-30110, issue number 1

Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #)
in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

Elab No	Depth (m)	Clients Reference	Description of Sample Matrix #	Asbestos Identification	Gravimetric Analysis Total (%)	Gravimetric Analysis by ACM Type (%)	Free Fibre Analysis (%)	Total Asbestos (%)
215368	1.50	WS1	Brown soil, stones, clinker	No asbestos detected	n/t	n/t	n/t	n/t
215369	0.60	WS3	Brown soil, stones, clinker, brick	No asbestos detected	n/t	n/t	n/t	n/t
215370	4.20	WS3	Brown soil (clay), stones	No asbestos detected	n/t	n/t	n/t	n/t

Method Summary

Report No.: 20-30110, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
Free cyanide	N	As submitted sample	02/10/2020	107	Colorimetry
Sulphide	N	As submitted sample	02/10/2020	109	Colorimetry
Hexavalent chromium	N	As submitted sample	02/10/2020	110	Colorimetry
Acid Soluble Sulphate	U	Air dried sample	05/10/2020	115	Ion Chromatography
PAH (GC-FID)	M	As submitted sample	02/10/2020	133	GC-FID
SVOC in solids	N	As submitted sample	02/10/2020	167	GC-MS
Water soluble anions	M	Air dried sample	02/10/2020	172	Ion Chromatography
Low range Aliphatic hydrocarbons soil	N	As submitted sample	02/10/2020	181	GC-MS
Low range Aromatic hydrocarbons soil	N	As submitted sample	02/10/2020	181	GC-MS
VOC in solids	M	As submitted sample	02/10/2020	181	GC-MS
Water soluble boron	N	Air dried sample	02/10/2020	202	Colorimetry
Aliphatic hydrocarbons in soil	N	As submitted sample	02/10/2020	214	GC-FID
Aliphatic/Aromatic hydrocarbons in soil	N	As submitted sample	05/10/2020	214	GC-FID
Aromatic hydrocarbons in soil	N	As submitted sample	02/10/2020	214	GC-FID
Asbestos identification	U	Air dried sample	05/10/2020	280	Microscopy
Aqua regia extractable metals	M	Air dried sample	02/10/2020	300	ICPMS
Soil organic matter	U	Air dried sample	08/10/2020	BS1377:P3	Titrimetry
Leachate					
Arsenic	N		06/10/2020	301	ICPMS
Cadmium	N		06/10/2020	301	ICPMS
Chromium	N		06/10/2020	301	ICPMS
Lead	N		06/10/2020	301	ICPMS
Nickel	N		06/10/2020	301	ICPMS
Copper	N		06/10/2020	301	ICPMS
Zinc	N		06/10/2020	301	ICPMS
Mercury	N		06/10/2020	301	ICPMS
Selenium	N		06/10/2020	301	ICPMS
Antimony	N		06/10/2020	301	ICPMS
Barium	N		06/10/2020	301	ICPMS
Molybdenum	N		06/10/2020	301	ICPMS
pH Value	N		06/10/2020	113	Electrometric
Electrical Conductivity	N		06/10/2020	136	Probe
Dissolved Organic Carbon	N		06/10/2020	102	TOC analyser
Chloride	N		06/10/2020	131	Ion Chromatography
Fluoride	N		06/10/2020	131	Ion Chromatography
Sulphate	N		06/10/2020	131	Ion Chromatography
Total Dissolved Solids	N		06/10/2020	144	Gravimetric
Phenol index	N		06/10/2020	121	HPLC
WAC Solids analysis	N				
pH Value	M	Air dried sample	08/10/2020	113	Electrometric
Total Organic Carbon	N	Air dried sample	05/10/2020	210	IR
Loss on Ignition	M	Air dried sample	07/10/2020	129	Gravimetric
Acid Neutralization Capacity to pH 7	N	Air dried sample	08/10/2020	NEN 737	Electrometric
Total BTEX	M	As submitted sample	02/10/2020	181	GCMS
Mineral Oil	M	As submitted sample	02/10/2020	117	GCFID
Total PCBs (7 congeners)	M	Air dried sample	05/10/2020	120	GCMS
Total PAH (17)	N	As submitted sample	05/10/2020	133	GCFID

Tests marked N are not UKAS accredited

Report Information

Report No.: 20-30110, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

Unit A2
Windmill Road
Ponswood Industrial Estate
St Leonards on Sea
East Sussex
TN38 9BY
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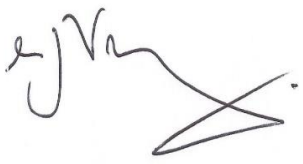
info@elab-uk.co.uk

2683

THE ENVIRONMENTAL LABORATORY LTD

Analytical Report Number:	20-30567
Issue:	1
Date of Issue:	30/10/2020
Contact:	Paul McFadden
Customer Details:	CC Geotechnical Ltd Unit 1 & 2 Deltic Place Deltic Way Liverpool MersevsideL33 7BA
Quotation No:	Q14-00045
Order No:	Not Supplied
Customer Reference:	CCG-C-20-11869
Date Received:	27/10/2020
Date Approved:	30/10/2020
Details:	Shear Plant, Tenax Road
Approved by:	

Mike Varley, Technical Manager

Sample Summary

Report No.: 20-30567, issue number 1

Elab No.	Client's Ref.	Date Sampled	Date Scheduled	Description	Deviations
218365	BH2 8.50	26/10/2020	27/10/2020	Silty clayey loam	
218366	BH2 16.00	26/10/2020	27/10/2020	Silty clayey loam	

Results Summary

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Report No.: 20-30567, issue number 1

			ELAB Reference	218365	218366
			Customer Reference		
			Sample ID		
			Sample Type	SOIL	SOIL
			Sample Location	BH2	BH2
			Sample Depth (m)	8.50	16.00
			Sampling Date	26/10/2020	26/10/2020
Determinand	**Codes**	**Units**	**LOD**		
Soil sample preparation parameters					
Material removed	N	%	0.1	< 0.1	< 0.1
Description of Inert material removed	N		0	None	None
Anions					
Water Soluble Sulphate	M	mg/l	20	65	44
Miscellaneous					
pH	M	pH units	0.1	8.3	8.9

Tests marked N are not UKAS accredited.

Method Summary

Report No.: 20-30567, issue number 1

Parameter	Codes	Analysis Undertaken On	Date Tested	Method Number	Technique
Soil					
pH	M	Air dried sample	28/10/2020	113	Electromeric
Water soluble anions	M	Air dried sample	28/10/2020	172	Ion Chromatography

Report Information

Report No.: 20-30567, issue number 1

Key

U	hold UKAS accreditation
M	hold MCERTS and UKAS accreditation
N	do not currently hold UKAS accreditation
^	MCERTS accreditation not applicable for sample matrix
*	UKAS accreditation not applicable for sample matrix
S	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
NS	Subcontracted to approved laboratory. UKAS accreditation is not applicable.
I/S	Insufficient Sample
U/S	Unsuitable sample
n/t	Not tested
<	means "less than"
>	means "greater than"
LOD	LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed.

ELAB are unable to provide an interpretation or opinion on the content of this report.

The results relate only to the sample received.

PCB congener results may include any coeluting PCBs

Uncertainty of measurement for the determinands tested are available upon request

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Deviation Codes

a	No date of sampling supplied
b	No time of sampling supplied (Waters Only)
c	Sample not received in appropriate containers
d	Sample not received in cooled condition
e	The container has been incorrectly filled
f	Sample age exceeds stability time (sampling to receipt)
g	Sample age exceeds stability time (sampling to analysis)

Where a sample has a deviation code, the applicable test result may be invalid.

Sample Retention and Disposal

All soil samples will be retained for a period of one month

All water samples will be retained for 7 days following the date of the test report

Charges may apply to extended sample storage

APPENDIX E

WASTE ASSESSMENT

Waste Classification Report

TM5JY-7U6V7-JKSEU

Job name

Shear Plant - Axion Polymers

Description/Comments

This preliminary waste classification must be provided to the landfill operator prior to the excavation, handling and transport of materials. The final decision on landfill class is at the discretion of the accepting landfill and their opinion in this regard should be sought at the earliest opportunity.

Project

11869

Site

Shear Plant - Axion Polymers

Related Documents

#	Name	Description
None		

Waste Stream Template

CCG SOIL A 2020

Classified by

Name:
Paul McFadden
Date:
10 Nov 2020 16:41 GMT
Telephone:
0151 523 0202

Company:
CC Geotechnical
Units 1 and 2, Deltic Place, Deltic Way
Knowsley Industrial Estate
Liverpool
L33 7BU

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	11 Sep 2017
Advanced Hazardous Waste Classification	-

Report

Created by: Paul McFadden
Created date: 10 Nov 2020 16:41 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	WS1	1.50	Non Hazardous		2
2	WS3	0.60	Non Hazardous		5
3	WS3[2]	4.20	Non Hazardous		8

Classification of sample: WS1

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS1
Sample Depth:
1.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		5.1 mg/kg	1.32	6.734 mg/kg	0.000673 %		
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	cadmium { cadmium oxide }		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		12.5 mg/kg	1.462	18.269 mg/kg	0.00183 %		
	/ 215-160-9 / 1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }		400 mg/kg	1.126	450.355 mg/kg	0.045 %		
	029-002-00-X / 215-270-7 / 1317-39-1							
5	lead { lead chromate }	1	71.4 mg/kg	1.56	111.371 mg/kg	0.00714 %		
	082-004-00-2 / 231-846-0 / 7758-97-6							
6	mercury { mercury dichloride }		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<LOD
	080-010-00-X / 231-299-8 / 7487-94-7							
7	nickel { nickel chromate }		13.1 mg/kg	2.976	38.989 mg/kg	0.0039 %		
	028-035-00-7 / 238-766-5 / 14721-18-7							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
	034-002-00-8 / /							
9	zinc { zinc chromate }		48.9 mg/kg	2.774	135.656 mg/kg	0.0136 %		
	024-007-00-3 / 236-878-9 / 13530-65-9							
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5 / /							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.8 mg/kg	1.923	<1.538 mg/kg	<0.000154 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
12	boron { diboron trioxide; boric oxide }		6.1 mg/kg	3.22	19.641 mg/kg	0.00196 %		
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	pH		7.4 pH		7.4 pH	7.4 pH		
	/ / PH							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-917-1	208-96-8									
16	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-581-5	85-01-8									
19	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-371-1	120-12-7									
20	●	fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-912-4	206-44-0									
21	●	pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
27	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
29	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-883-8	191-24-2									
30		benzene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3									
32	●	ethylbenzene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34	●	TPH (C6 to C40) petroleum group				90.3	mg/kg		90.3	mg/kg	0.00903 %		
				TPH									
										Total:	0.0879 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because TPH in this soil mix is not considered to pose a credible flammables risk

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00903%)

Classification of sample: WS3

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS3
Sample Depth:
0.60 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19.1	mg/kg	1.32	25.218	mg/kg	0.00252 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.5	mg/kg	1.142	1.713	mg/kg	0.000171 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23.2	mg/kg	1.462	33.908	mg/kg	0.00339 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		755	mg/kg	1.126	850.046	mg/kg	0.085 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	119	mg/kg	1.56	185.618	mg/kg	0.0119 %		
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		23.2	mg/kg	2.976	69.049	mg/kg	0.0069 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		145	mg/kg	2.774	402.251	mg/kg	0.0402 %		
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.8	mg/kg	1.923	<1.538	mg/kg	<0.000154 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.5	mg/kg	3.22	4.83	mg/kg	0.000483 %		
13	pH			PH		8.7	pH		8.7	pH	8.7 pH		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	•	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
16	•	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17	•	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18	•	phenanthrene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			201-581-5	85-01-8									
19	•	anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			204-371-1	120-12-7									
20	•	fluoranthene				0.5	mg/kg		0.5	mg/kg	0.00005 %		
			205-912-4	206-44-0									
21	•	pyrene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27	•	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29	•	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
30		benzene				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
32	•	ethylbenzene				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34	•	TPH (C6 to C40) petroleum group				141	mg/kg		141	mg/kg	0.0141 %		
				TPH									
										Total:	0.169 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because TPH in this soil mix is not considered to pose a credible flammables risk

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0141%)

Classification of sample: WS3[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS3[2]
Sample Depth:
4.20 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8 mg/kg	1.32	11.619 mg/kg	0.00116 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.5 mg/kg	1.142	<0.571 mg/kg	<0.0000571 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25.4 mg/kg	1.462	37.124 mg/kg	0.00371 %		
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		45.2 mg/kg	1.126	50.89 mg/kg	0.00509 %		
5	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13.4 mg/kg	1.56	20.902 mg/kg	0.00134 %		
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<**LOD**
7	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		34.7 mg/kg	2.976	103.276 mg/kg	0.0103 %		
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<**LOD**
9	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		66.8 mg/kg	2.774	185.313 mg/kg	0.0185 %		
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<**LOD**
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.8 mg/kg	1.923	<1.538 mg/kg	<0.000154 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %		
13	pH			PH		8.4 pH		8.4 pH	8.4 pH		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-917-1	208-96-8									
16	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			201-581-5	85-01-8									
19	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-371-1	120-12-7									
20	●	fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-912-4	206-44-0									
21	●	pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-032-00-3	200-028-5	50-32-8									
27	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
29	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
			205-883-8	191-24-2									
30		benzene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2									
31		toluene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3									
32	●	ethylbenzene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
33		xylene				<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
34	●	TPH (C6 to C40) petroleum group				4.9	mg/kg		4.9	mg/kg	0.00049 %		
				TPH									
										Total:	0.0456 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because TPH in this soil mix is not considered to pose a credible flammables risk

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00049%)

Appendix A: Classifier defined and non CLP determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H332 , Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Resp. Sens. 1 H334 , Skin Sens. 1 H317 , Repr. 1B H360FD , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H302 , Acute Tox. 1 H330 , Acute Tox. 1 H310 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Aquatic Chronic 2 H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 2 H351 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Skin Irrit. 2 H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3 H226 , Asp. Tox. 1 H304 , STOT RE 2 H373 , Muta. 1B H340 , Carc. 1B H350 , Repr. 2 H361d , Aquatic Chronic 2 H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.310.4521.8789 (05 Nov 2020)
HazWasteOnline Database: 2020.310.4521.8789 (05 Nov 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

APPENDIX F

NOTES ON LIMITATIONS

Notes on Limitations
For
Geoenvironmental and Geotechnical Consultancy Services

General

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The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date. In particular, seasonal groundwater levels, with the effects of precipitation, may affect the conditions found during the investigation. The report should be read in conjunction with the further Notes on Limitations included in Appendix A.

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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 brief 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.

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Soils and Materials Testing ⌖ Flood Risk Assessments
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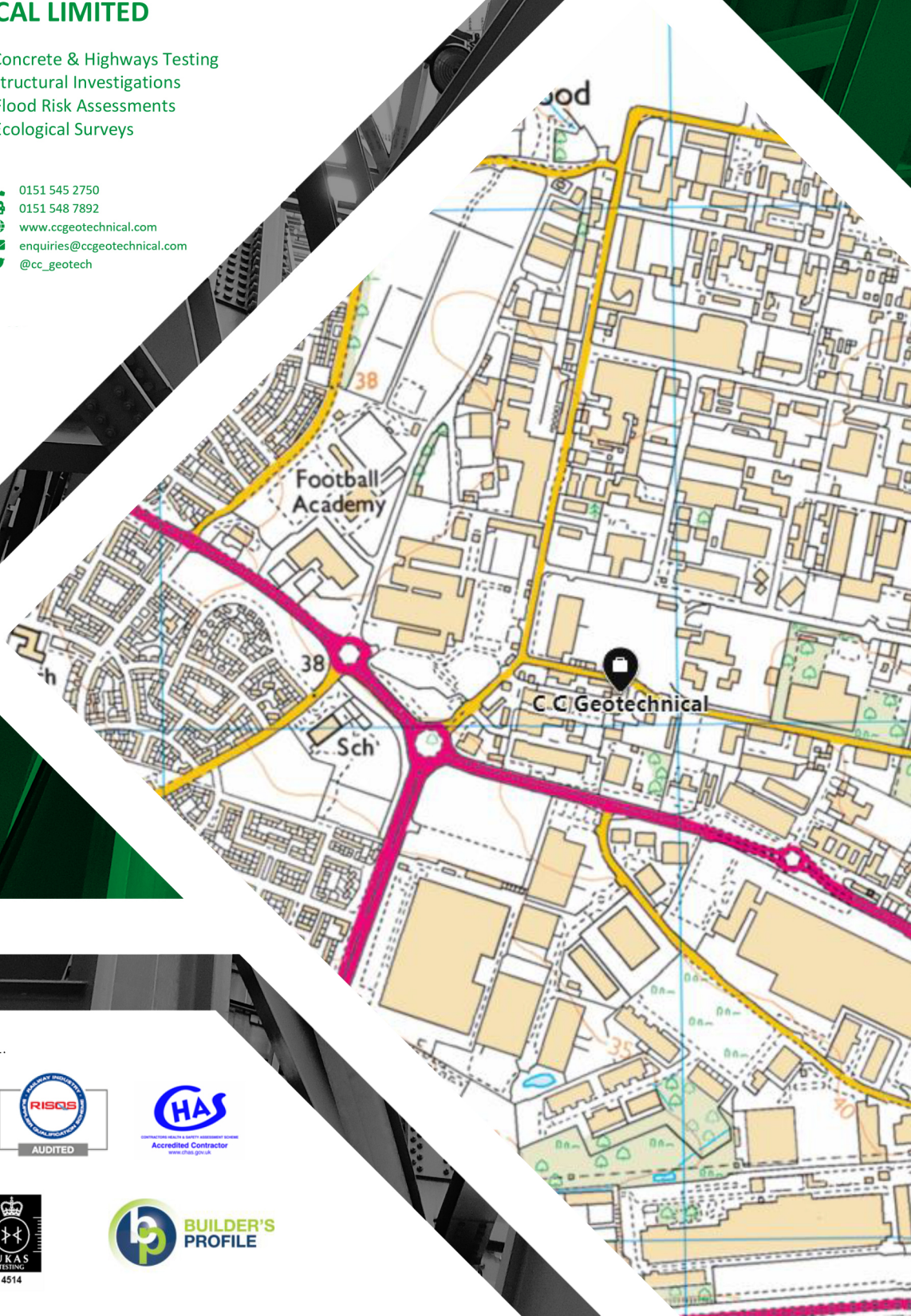

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