

APPENDIX VI

CHEMICAL TESTING

RESULTS



Final Report

Report No.:	21-30440-1		
Initial Date of Issue:	09-Sep-2021		
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	Alex Smith		
Project	14-944 Vine Street		
Quotation No.:		Date Received:	02-Sep-2021
Order No.:	14-944-GC-G	Date Instructed:	02-Sep-2021
No. of Samples:	11		
Turnaround (Wkdays):	6	Results Due:	09-Sep-2021
Date Approved:	09-Sep-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Leachate

Project: 14-944 Vine Street

Client: E3P	Chemtest Job No.:					21-30440	21-30440	21-30440
Quotation No.:	Chemtest Sample ID.:					1271652	1271657	1271659
Order No.: 14-944-GC-G	Client Sample Ref.:					TP102	TP106	WS105
	Client Sample ID.:					TP102	TP107	WS105
	Sample Location:					TP102	TP107	WS105
	Sample Type:					SOIL	SOIL	SOIL
	Top Depth (m):					0.50	0.60	0.70
	Date Sampled:					31-Aug-2021	31-Aug-2021	31-Aug-2021
Determinand	Accred.	SOP	Type	Units	LOD			
pH	U	1010	2:1		N/A	10.5	8.7	9.2
Cyanide (Total) Low-Level	N	1300	2:1	mg/l	0.0050	< 0.0050	< 0.0050	< 0.0050
Arsenic (Dissolved)	U	1455	2:1	µg/l	0.20	7.4	2.7	6.7
Cadmium (Dissolved)	U	1455	2:1	µg/l	0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	2:1	µg/l	0.50	160	160	150
Copper (Dissolved)	U	1455	2:1	µg/l	0.50	360	11	33
Mercury (Dissolved)	U	1455	2:1	µg/l	0.05	< 0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	2:1	µg/l	0.50	90	75	67
Lead (Dissolved)	U	1455	2:1	µg/l	0.50	1.6	< 0.50	0.89
Selenium (Dissolved)	U	1455	2:1	µg/l	0.50	2.6	1.3	1.6
Zinc (Dissolved)	U	1455	2:1	µg/l	2.5	< 2.5	11	< 2.5
Chromium (Hexavalent)	U	1490	2:1	µg/l	20	< 20	< 20	< 20
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	[C] < 5.0	[C] < 5.0	[C] < 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	[C] 610	[C] 510	[C] 530
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	[C] < 0.10	[C] < 0.10	[C] < 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	[C] 610	[C] 510	[C] 530
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	[C] 610	[C] 510	[C] 530
Benzene	U	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Toluene	U	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	[C] < 1.0	[C] < 1.0	[C] < 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	84	0.66	4.9

Results - Leachate

Project: 14-944 Vine Street

Client: E3P	Chemtest Job No.:					21-30440	21-30440	21-30440
Quotation No.:	Chemtest Sample ID.:					1271652	1271657	1271659
Order No.: 14-944-GC-G	Client Sample Ref.:					TP102	TP106	WS105
	Client Sample ID.:					TP102	TP107	WS105
	Sample Location:					TP102	TP107	WS105
	Sample Type:					SOIL	SOIL	SOIL
	Top Depth (m):					0.50	0.60	0.70
	Date Sampled:					31-Aug-2021	31-Aug-2021	31-Aug-2021
Determinand	Accred.	SOP	Type	Units	LOD			
Acenaphthylene	N	1800	2:1	µg/l	0.010	0.58	0.61	0.41
Acenaphthene	N	1800	2:1	µg/l	0.010	31	13	9.4
Fluorene	N	1800	2:1	µg/l	0.010	13	8.2	5.5
Phenanthrene	N	1800	2:1	µg/l	0.010	23	17	29
Anthracene	N	1800	2:1	µg/l	0.010	5.2	7.3	5.6
Fluoranthene	N	1800	2:1	µg/l	0.010	9.4	30	30
Pyrene	N	1800	2:1	µg/l	0.010	7.9	23	24
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	2.7	9.3	9.8
Chrysene	N	1800	2:1	µg/l	0.010	2.7	9.0	9.3
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	2.4	11	12
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	0.64	3.3	4.3
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	2.6	6.0	9.2
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	2.7	8.4
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	0.24	0.89
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	3.7	6.0
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	180	140	170
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030	< 0.030

Results - Soil

Project: 14-944 Vine Street

Client: E3P	Chemtest Job No.:				21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440
Quotation No.:	Chemtest Sample ID.:				1271651	1271653	1271654	1271655	1271656	1271658	1271667	1271668
Order No.: 14-944-GC-G	Client Sample Ref.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Client Sample ID.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Location:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.10	2.00	1.30	1.60	1.50	0.40	0.30	2.60
	Date Sampled:				31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	10	12	12	11	12	9.7	7.7	14
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N	2040		N/A	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010		4.0	8.3	8.4	8.4	8.9	8.7	8.8	8.6	9.2
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.13	0.11	0.081	0.19	0.023	0.044	< 0.010	0.11
Total Sulphur	M	2175	%	0.010	0.20	0.20	0.10	0.20	0.10	0.10	0.088	0.41
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	13	6.2	11	14	2.7	21	19	180
Sulphate (Total)	M	2430	%	0.010	0.25	0.33	0.30	0.26	0.16	0.26	0.037	0.050
Arsenic	M	2450	mg/kg	1.0	590	600	810	13	220	23	9.8	4.3
Cadmium	M	2450	mg/kg	0.10	1.9	2.6	5.1	0.58	1.3	0.52	0.31	< 0.10
Chromium	M	2450	mg/kg	1.0	650	650	820	31	270	26	19	9.7
Copper	M	2450	mg/kg	0.50	5.6	1.8	140	51	1.5	130	34	56
Mercury	M	2450	mg/kg	0.10	0.75	0.85	0.50	0.20	0.54	4.7	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	16	0.68	200	33	5.0	470	16	5.8
Lead	M	2450	mg/kg	0.50	21	20	68	130	9.0	700	31	66
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	0.24	4.4	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	21	15	150	110	2.8	440	120	68
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
TPH >C6-C8	N	2670	mg/kg	1.0		< 1.0	< 1.0			< 1.0	< 1.0	< 1.0
TPH >C8-C10	N	2670	mg/kg	1.0		< 1.0	< 1.0			8.7	< 1.0	< 1.0
TPH >C10-C12	N	2670	mg/kg	1.0		6.1	< 1.0			32	< 1.0	9.5
TPH >C12-C16	N	2670	mg/kg	1.0		59	20			110	1.5	20
TPH >C16-C21	N	2670	mg/kg	1.0		250	96			430	35	28
TPH >C21-C25	N	2670	mg/kg	1.0		230	230			400	36	31
TPH >C25-C35	N	2670	mg/kg	1.0		560	700			1900	140	49
TPH >C35-C40	N	2670	mg/kg	1.0		170	290			840	110	5.2
Total TPH >C6-C40	M	2670	mg/kg	10		1300	1300			3800	320	140
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0			< 1.0	< 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0			< 1.0	< 1.0			
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0			< 1.0	< 1.0			
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	3.2			8.4	2.5			
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	62			76	< 1.0			

Results - Soil

Project: 14-944 Vine Street

Client: E3P	Chemtest Job No.:				21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440
Quotation No.:	Chemtest Sample ID.:				1271651	1271653	1271654	1271655	1271656	1271658	1271667	1271668
Order No.: 14-944-GC-G	Client Sample Ref.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Client Sample ID.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Location:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.10	2.00	1.30	1.60	1.50	0.40	0.30	2.60
	Date Sampled:				31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD								
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	120			120	7.9			
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	77			340	9.5			
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	33			46	< 1.0			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	300			590	20			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0			< 1.0	< 1.0			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0			< 1.0	< 1.0			
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	4.4			< 1.0	< 1.0			
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	16			7.7	< 1.0			
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	180			58	4.0			
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	460			100	16			
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	4200			950	180			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	240			42	27			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	5100			1200	220			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	5400			1800	240			
Naphthalene	M	2700	mg/kg	0.10	4.7			0.94	1.5			
Acenaphthylene	M	2700	mg/kg	0.10	2.3			0.23	1.2			
Acenaphthene	M	2700	mg/kg	0.10	11			0.92	5.4			
Fluorene	M	2700	mg/kg	0.10	11			0.89	6.1			
Phenanthrene	M	2700	mg/kg	0.10	55			2.8	32			
Anthracene	M	2700	mg/kg	0.10	18			0.77	6.5			
Fluoranthene	M	2700	mg/kg	0.10	74			3.2	37			
Pyrene	M	2700	mg/kg	0.10	75			3.3	35			
Benzo[a]anthracene	M	2700	mg/kg	0.10	31			1.5	14			
Chrysene	M	2700	mg/kg	0.10	31			1.7	15			
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	33			1.9	16			
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	15			1.1	7.5			
Benzo[a]pyrene	M	2700	mg/kg	0.10	26			1.4	13			
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	19			1.0	8.2			
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	5.6			1.1	2.6			
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	16			1.2	7.3			
Total Of 16 PAH's	M	2700	mg/kg	2.0	430			24	210			
Naphthalene	M	2800	mg/kg	0.10		3.2	1.9		24	0.28	0.84	
Acenaphthylene	N	2800	mg/kg	0.10		0.52	0.42		0.60	0.81	0.58	
Acenaphthene	M	2800	mg/kg	0.10		6.0	2.0		22	0.88	2.3	
Fluorene	M	2800	mg/kg	0.10		4.2	2.3		18	1.6	2.2	
Phenanthrene	M	2800	mg/kg	0.10		28	8.2		130	3.3	13	
Anthracene	M	2800	mg/kg	0.10		8.1	2.0		25	1.7	4.4	

Results - Soil

Project: 14-944 Vine Street

Client: E3P	Chemtest Job No.:				21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440	21-30440
Quotation No.:	Chemtest Sample ID.:				1271651	1271653	1271654	1271655	1271656	1271658	1271667	1271668
Order No.: 14-944-GC-G	Client Sample Ref.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Client Sample ID.:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Location:				TP101	TP103	TP104	TP105	TP106	WS101	WS106	WS102B
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				2.10	2.00	1.30	1.60	1.50	0.40	0.30	2.60
	Date Sampled:				31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021	31-Aug-2021
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD								
Fluoranthene	M	2800	mg/kg	0.10		50	14			110	3.9	24
Pyrene	M	2800	mg/kg	0.10		44	12			87	4.7	20
Benzo[a]anthracene	M	2800	mg/kg	0.10		21	5.1			48	4.8	12
Chrysene	M	2800	mg/kg	0.10		20	5.0			43	6.3	10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10		25	6.4			49	6.4	14
Benzo[k]fluoranthene	M	2800	mg/kg	0.10		8.8	2.2			16	4.0	4.6
Benzo[a]pyrene	M	2800	mg/kg	0.10		22	5.0			39	5.3	12
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10		14	3.9			27	7.3	9.7
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10		2.5	0.85			5.3	6.0	0.98
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10		12	3.2			18	7.1	4.8
Total Of 16 PAH's	N	2800	mg/kg	2.0		270	75			660	64	140
Total Phenols	M	2920	mg/kg	0.10		< 0.10	0.17	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1271652	TP102	TP102	TP102	31-Aug-2021	C	Plastic Tub 500g
1271657	TP106	TP107	TP107	31-Aug-2021	C	Plastic Tub 500g
1271659	WS105	WS105	WS105	31-Aug-2021	C	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.

Test Methods

SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44 Aromatics: >C5–C7, >C7–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	Compliance Test for Leaching of Granular Waste Material and Sludge
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	Compliance Test for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

APPENDIX VII

ORIGIN OF TIER I GENERIC ASSESSMENT CRITERIA

CONSTITUENT	ORIGIN OF RISK ASSESSMENT VALUE
Arsenic	2014 LQM/CIEH S4ULs
Cadmium	2014 LQM/CIEH S4ULs
Chromium	2014 LQM/CIEH S4ULs
Lead	2014 LQM/CIEH S4ULs
Mercury	2014 LQM/CIEH S4ULs – methylmercury
Nickel	2014 LQM/CIEH S4ULs
Selenium	2014 LQM/CIEH S4ULs
Copper	2014 LQM/CIEH S4ULs
Zinc	2014 LQM/CIEH S4ULs
Cyanide – Total	2014 LQM/CIEH S4ULs
Phenols – Total	2014 LQM/CIEH S4ULs
Naphthalene	General assessment criteria (GAC) developed by CIEH/LQM Suitable 4 Use Levels with supporting data from SR3, SR7 and existing Tox report where applicable. 1% SOM.
Acenaphthylene	
Acenaphthene	
Fluorene	
Phenanthrene	
Anthracene	
Fluoranthene	
Pyrene	
Benzo(a)Anthracene	
Chrysene	
Benzo(b/k)Fluoranthene ⁽ⁱⁱⁱ⁾	
Benzo(a)Pyrene	
Indeno(123-cd)Pyrene	
Dibenzo(a,h)Anthracene	
Benzo(ghi)Perylene	
TPH C ₅ -C ₆ (aliphatic)	
TPH C ₆ -C ₈ (aliphatic)	
TPH C ₈ -C ₁₀ (aliphatic)	
TPH C ₁₀ -C ₁₂ (aliphatic)	
TPH C ₁₂ -C ₁₆ (aromatic)	
TPH C ₁₆ -C ₂₁ (aromatic)	
TPH C ₂₁ -C ₃₅ (aromatic)	



APPENDIX VIII

GEOTECHNICAL TESTING

RESULTS



LABORATORY REPORT



4043

Contract Number: PSL21/7957

Report Date: 04 November 2021

Client's Reference: 14-944

Client Name: E3P
Taylor Road
Urmston
Manchester
M41 7JQ

For the attention of: Matthew Dee

Contract Title: Vine Street

Date Received: 7/10/2021

Date Commenced: 7/10/2021

Date Completed: 4/11/2021

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

4043

PSL
Professional Soils Laboratory

Vine Street

Contract No:

PSL21/7957

Client Ref:

14-944

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



4043

PSL
Professional Soils Laboratory

Vine Street

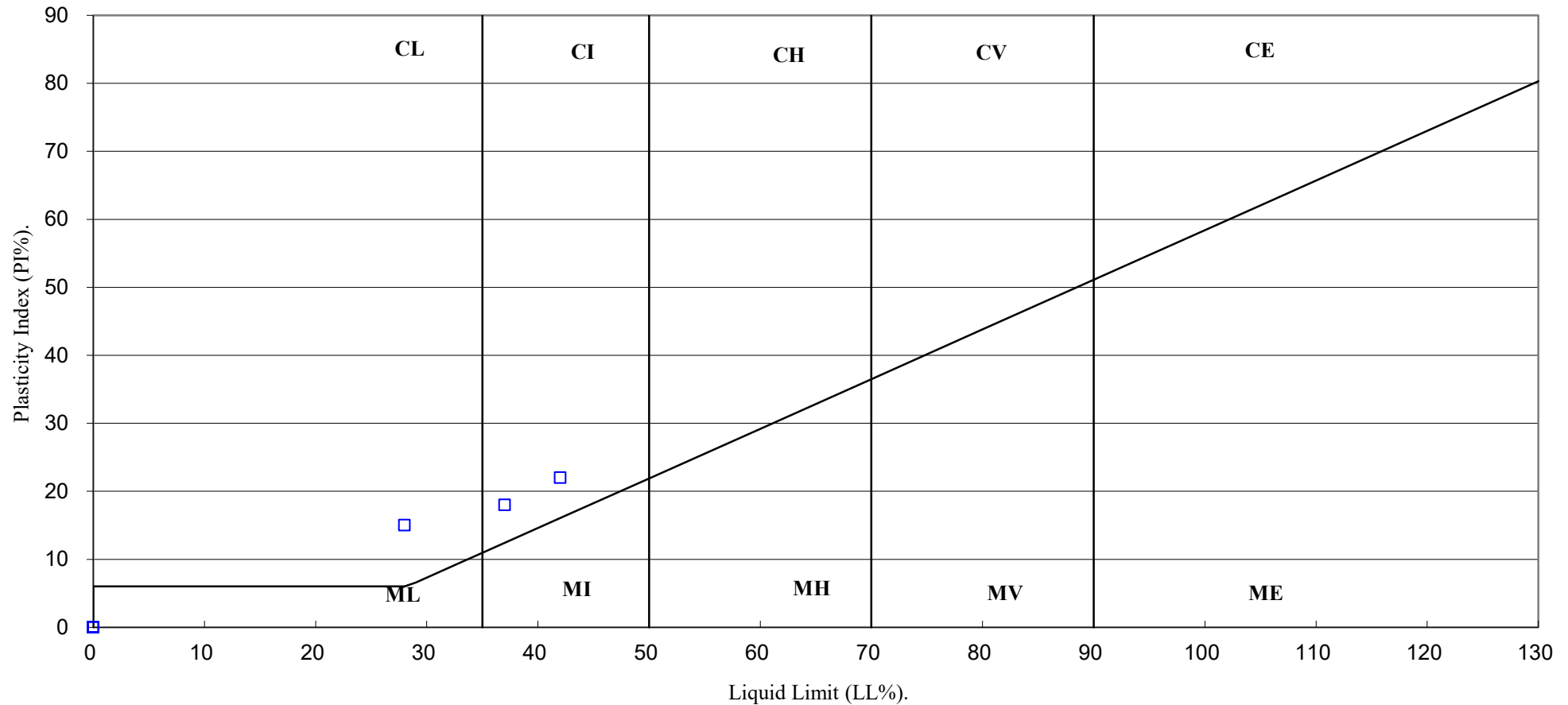
Contract No:

PSL21/7957

Client Ref:

14-944

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL

Professional Soils Laboratory

Vine Street

Contract No:

PSL21/7957

Client Ref:

14-944

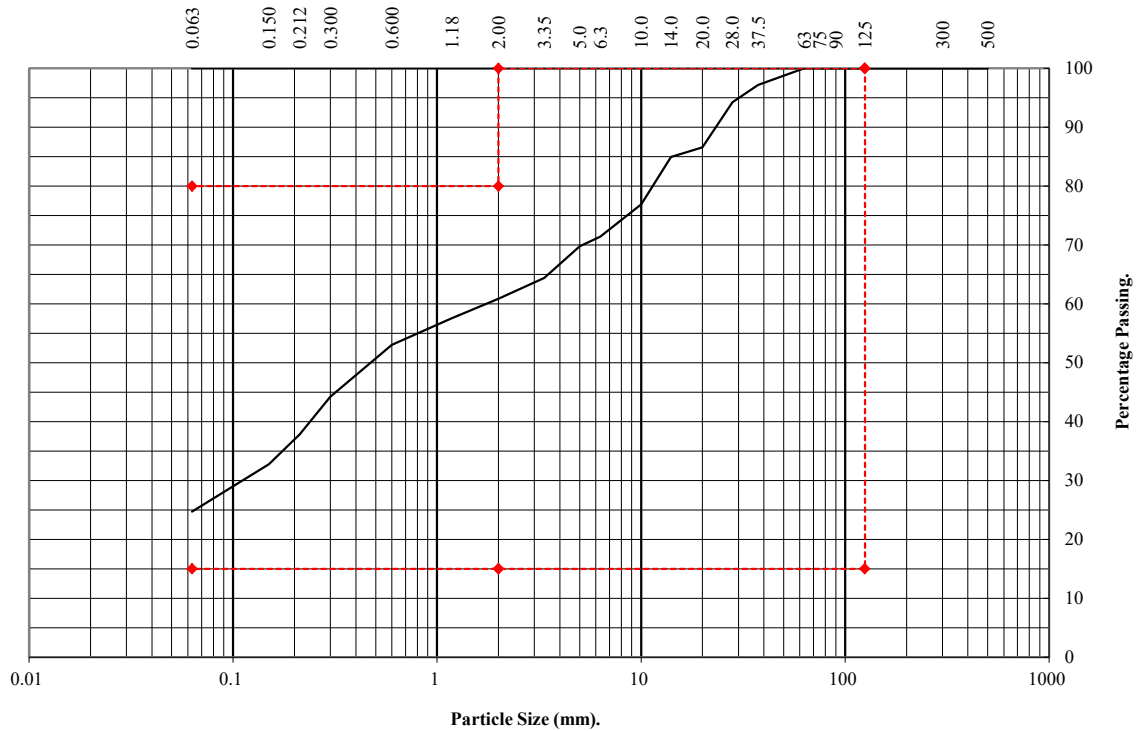
PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990

Wet Sieve: Clause 9.2

Classification for Acceptable Earthworks Materials

Sample Number: CP101 @ 2.0-2.45m Classification Type: 2C



BS Test Sieve mm	Percentage Passing %	Table 6/2 Grading Requirements	
		Lower	Upper
500	100		
300	100		
125	100	100	100
90	100		
75	100		
63	100		
37.5	97		
28	94		
20	87		
14	85		
10	77		
6.3	71		
5	70		
3.35	64		
2	61	15	80
1.18	58		
0.6	53		
0.3	44		
0.212	38		
0.15	33		
0.063	25	15	80

Remarks:

SHW Series 600 Table 6/2 :
Class 2C



PSL
Professional Soils Laboratory

Vine Street

Contract No.:

PSL21/7957

Client Ref:

14-944

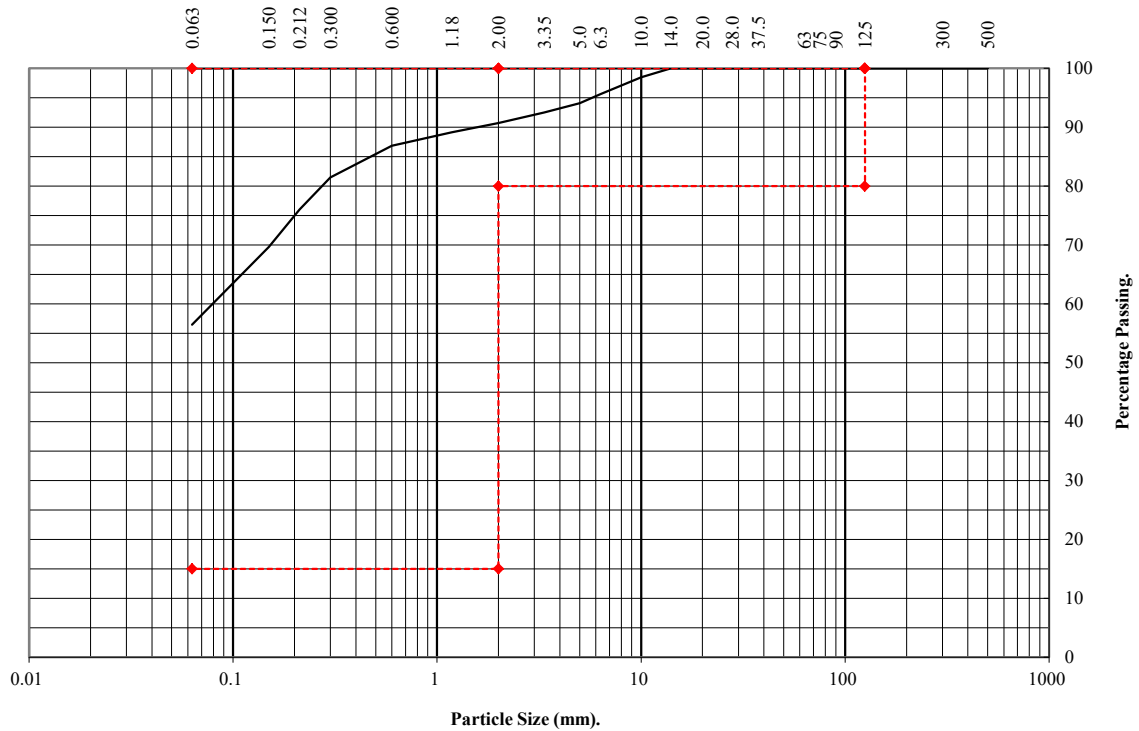
PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990

Wet Sieve: Clause 9.2

Classification for Acceptable Earthworks Materials

Sample Number: CP101 @ 12.50-12.95m Classification Type: 2A



BS Test Sieve mm	Percentage Passing %	Table 6/2 Grading Requirements	
		Lower	Upper
500	100		
300	100		
125	100	100	100
90	100		
75	100		
63	100		
37.5	100		
28	100		
20	100		
14	100		
10	98		
6.3	96		
5	94		
3.35	93		
2	91	80	100
1.18	89		
0.6	87		
0.3	81		
0.212	76		
0.15	70		
0.063	56	15	100

Remarks:

SHW Series 600 Table 6/2 :
Class 2A



PSL
Professional Soils Laboratory

Vine Street

Contract No.:

PSL21/7957

Client Ref:

14-944

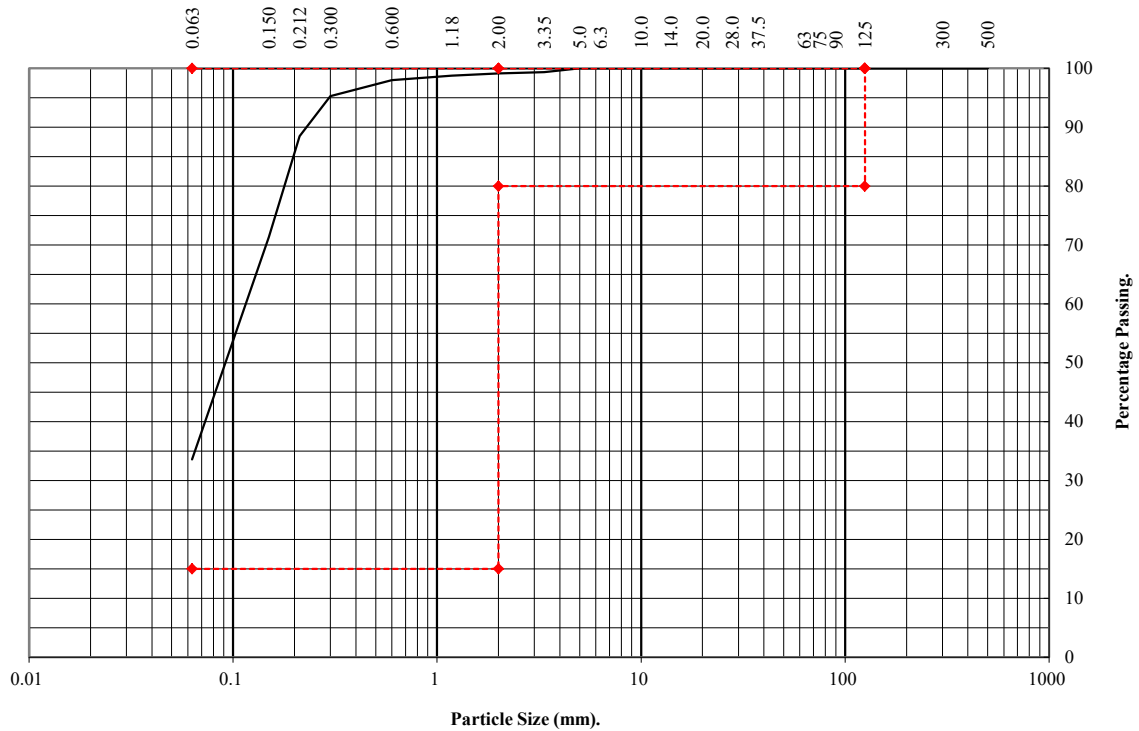
PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990

Wet Sieve: Clause 9.2

Classification for Acceptable Earthworks Materials

Sample Number: CP102 @ 9.50-9.95m Classification Type: 2A



BS Test Sieve mm	Percentage Passing %	Table 6/2 Grading Requirements	
		Lower	Upper
500	100	100	100
300	100		
125	100		
90	100		
75	100		
63	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100	80	100
5	100		
3.35	99		
2	99		
1.18	99		
0.6	98	15	100
0.3	95		
0.212	88		
0.15	71		
0.063	34		

Remarks:

SHW Series 600 Table 6/2 :
Class 2A



PSL
Professional Soils Laboratory

Vine Street

Contract No.:

PSL21/7957

Client Ref:

14-944

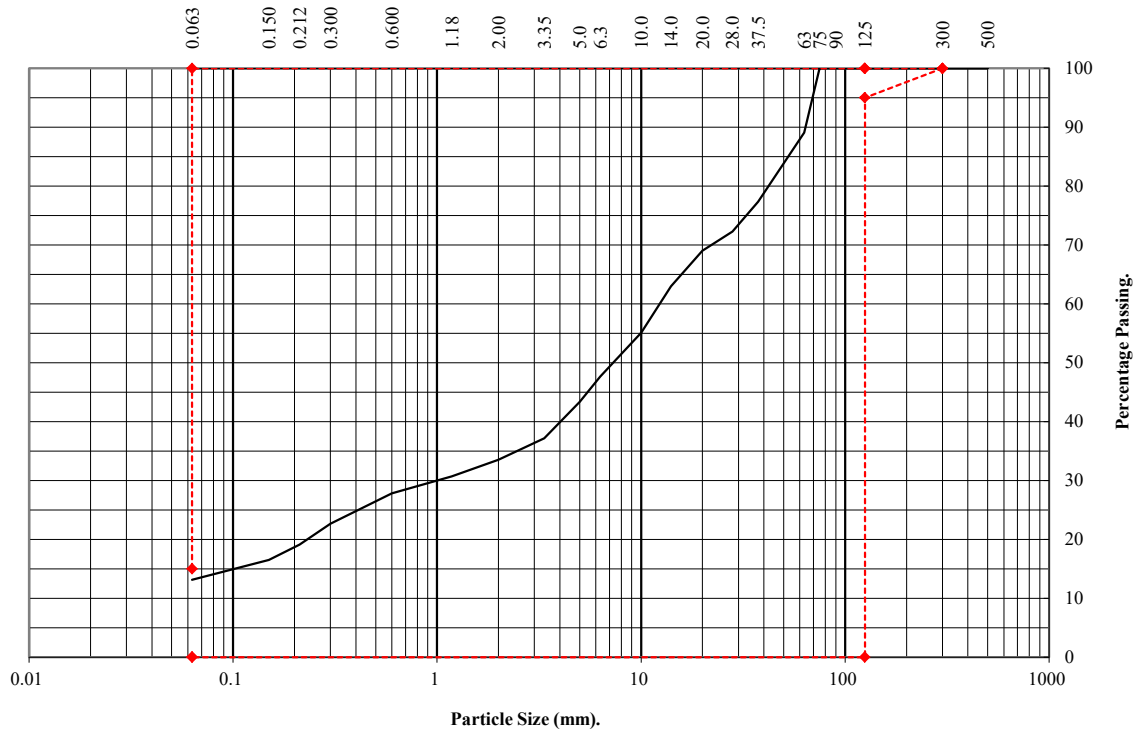
PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990

Wet Sieve: Clause 9.2

Classification for Acceptable Earthworks Materials

Sample Number: CP103 @ 3.00-3.45m Classification Type: 1A



BS Test Sieve mm	Percentage Passing %	Table 6/2 Grading Requirements	
		Lower	Upper
500	100		
300	100	100	100
125	100	95	100
90	100		
75	100		
63	89		
37.5	77		
28	72		
20	69		
14	63		
10	55		
6.3	48		
5	43		
3.35	37		
2	34		
1.18	31		
0.6	28		
0.3	23		
0.212	19		
0.15	17		
0.063	13	0	15

Remarks:

SHW Series 600 Table 6/2 :
Class 1A



PSL
Professional Soils Laboratory

Vine Street

Contract No.:

PSL21/7957

Client Ref:

14-944

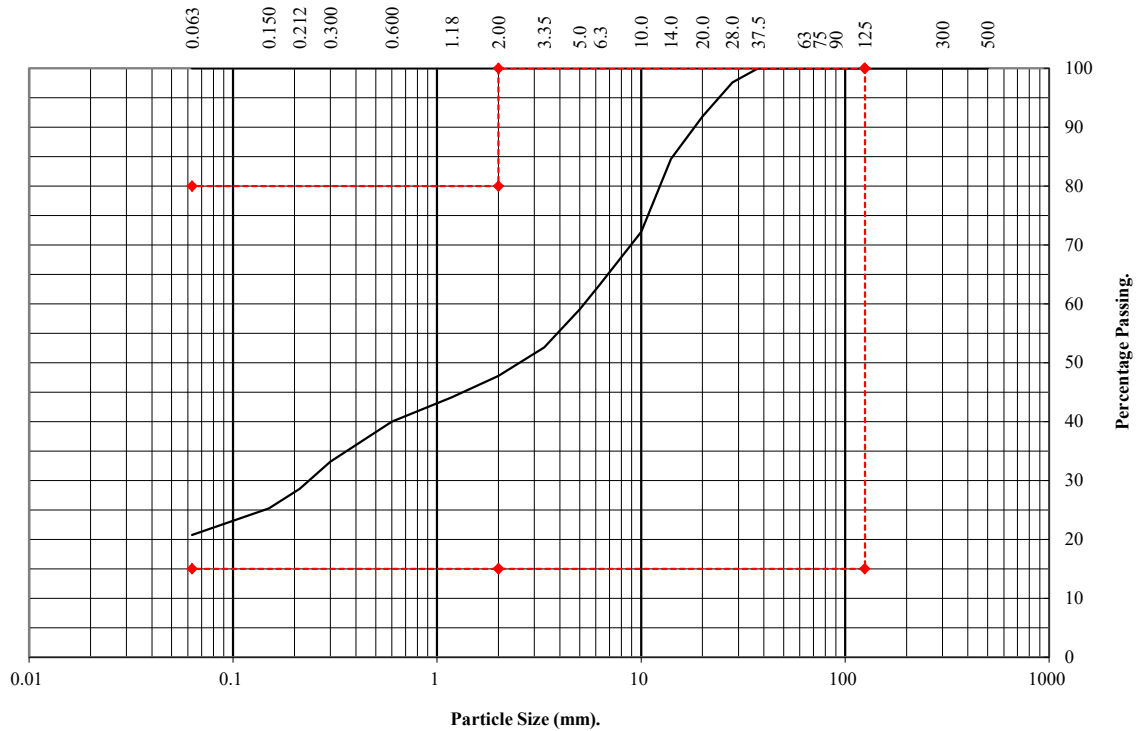
PARTICLE SIZE DISTRIBUTION TEST

BS1377:Part 2:1990

Wet Sieve: Clause 9.2

Classification for Acceptable Earthworks Materials

Sample Number: CP104 @ 3.00-3.45m Classification Type: 1A



BS Test Sieve mm	Percentage Passing %	Table 6/2 Grading Requirements	
		Lower	Upper
500	100		
300	100		
125	100	100	100
90	100		
75	100		
63	100		
37.5	100		
28	98		
20	92		
14	85		
10	72		
6.3	63		
5	59		
3.35	53		
2	48	15	80
1.18	44		
0.6	40		
0.3	33		
0.212	29		
0.15	25		
0.063	21	15	80

Remarks:

SHW Series 600 Table 6/2 :
Class 1A



PSL
Professional Soils Laboratory

Vine Street

Contract No.:

PSL21/7957

Client Ref:

14-944

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 9

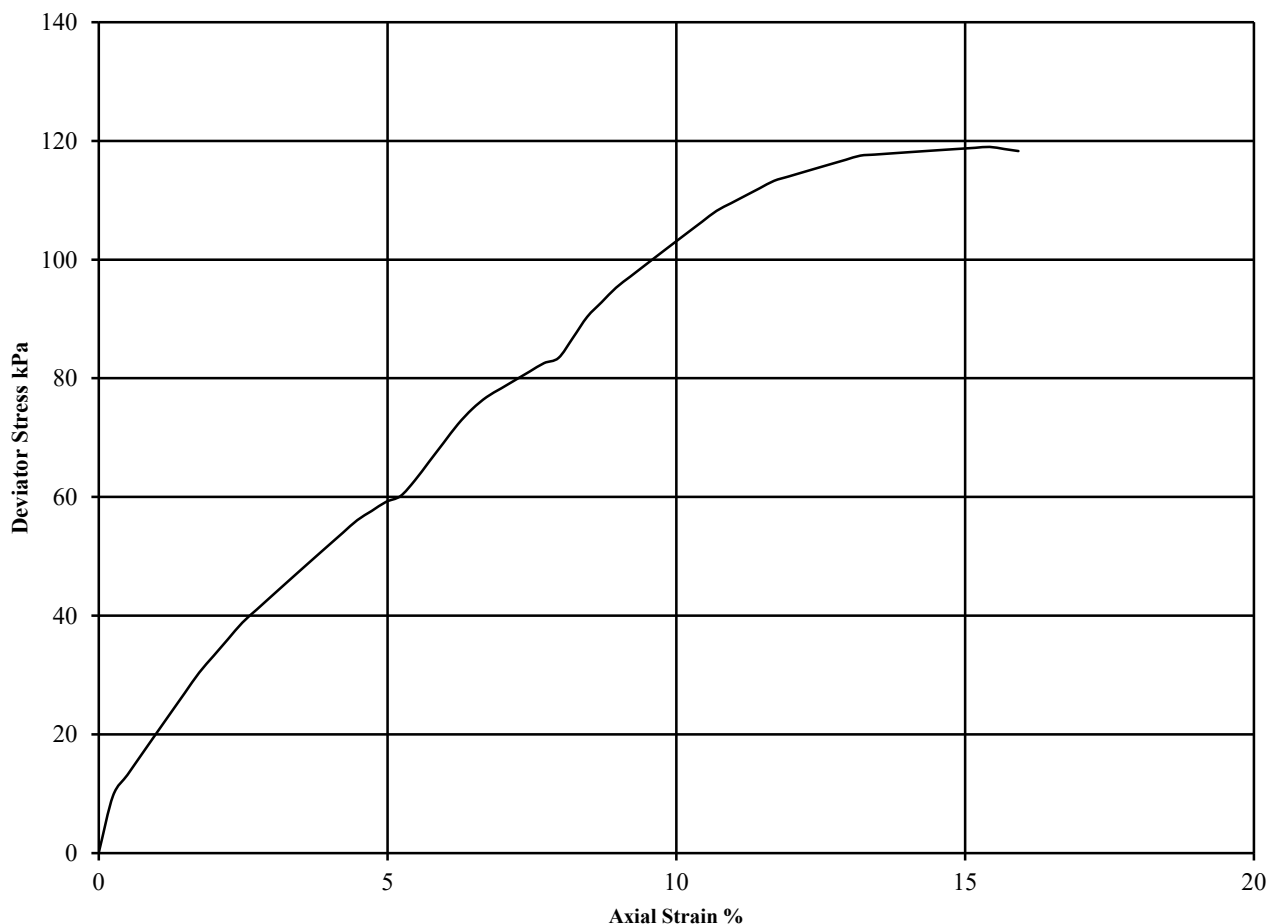
Hole Number: CP104

Top Depth (m): 11.00

Sample Number:

Base Depth (m): 11.45

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick Membrane Correction applied (kPa) 0.36 0.35 0.34 See summary of soil descriptions
	23	2.11	1.71	225	60	30	5.2		
				450	83	42	8.0		
				900	119	59	15.4	Plastic	



PSL
Professional Soils Laboratory

Vine Street

Contract No:

PSL21/7957

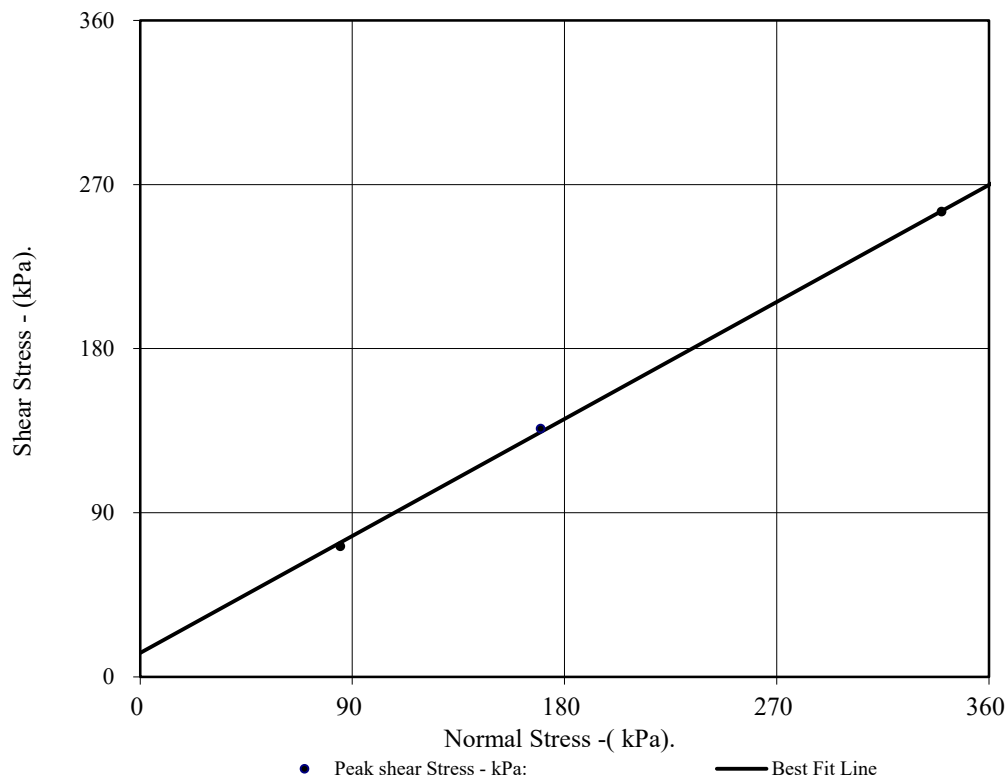
Client Ref:

14-944

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 4

Hole Number:	CP102		Top Depth:	4.00	
Sample Number:			Base Depth:	4.45	
Sample Conditions:	Submerged		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 2mm sieve Remoulded using 2.5kg effort.				
Sample Description:	See summary of soil descriptions.				
STAGE			1	2	3
Initial Conditions					
Height - mm:			20.05	20.05	20.05
Length - mm:			59.97	59.97	59.97
Moisture Content - %:			18	18	18
Bulk Density - Mg/m3:			2.12	1.94	1.94
Dry Density - Mg/m3:			1.80	1.65	1.64
Voids Ratio:			0.473	0.608	0.613
Normal Pressure- kPa			85	170	340
Consolidation Stage					
Consolidated Height - mm:			18.67	18.51	17.88
Shearing Stage					
Rate of Strain - mm/min			0.046	0.046	0.046
Displacement at peak shear stress - mm			3.61	3.91	4.80
Peak shear Stress - kPa:			71	136	255
Final Consolidated Conditions					
Moisture Content - %:			17	16	15
Bulk Density - Mg/m3:			2.28	2.10	2.17
Dry Density - Mg/m3:			1.94	1.82	1.89
Peak					
Angle of Shearing Resistance:(θ)			36		
Effective Cohesion - kPa:			13		



PSL
Professional Soils Laboratory

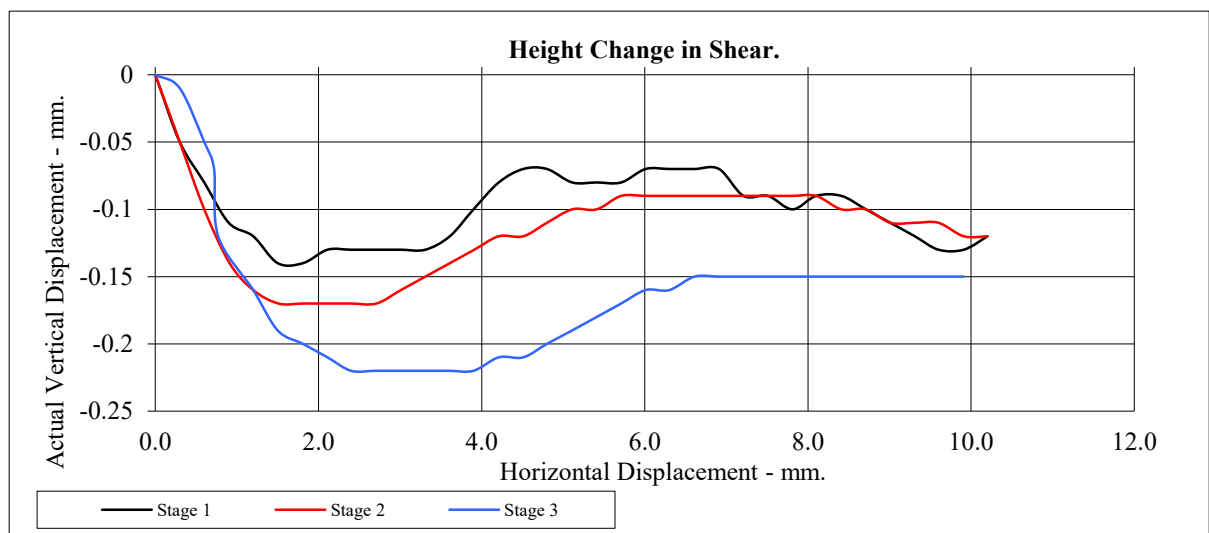
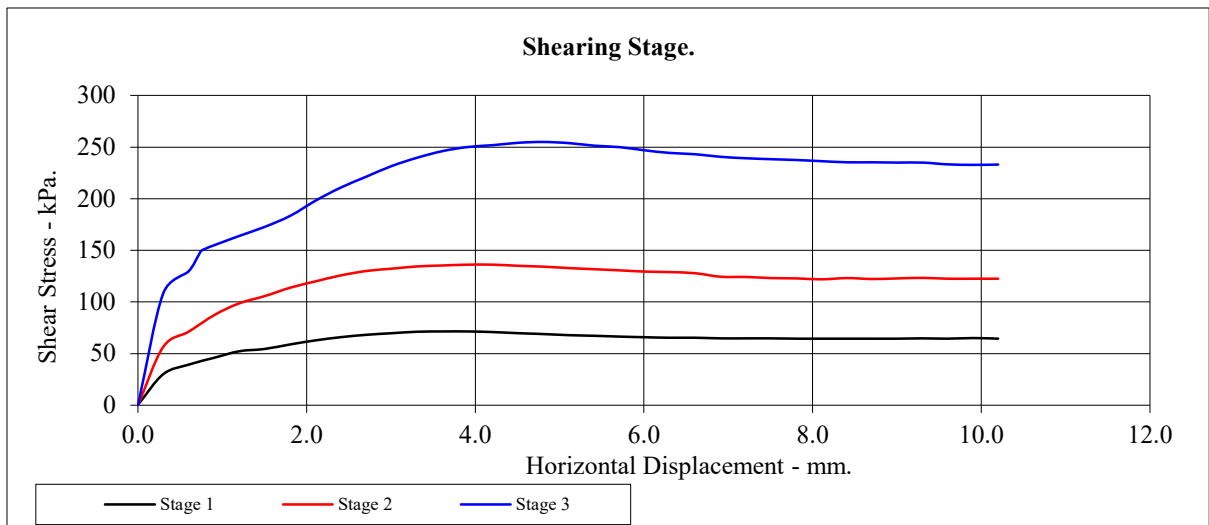
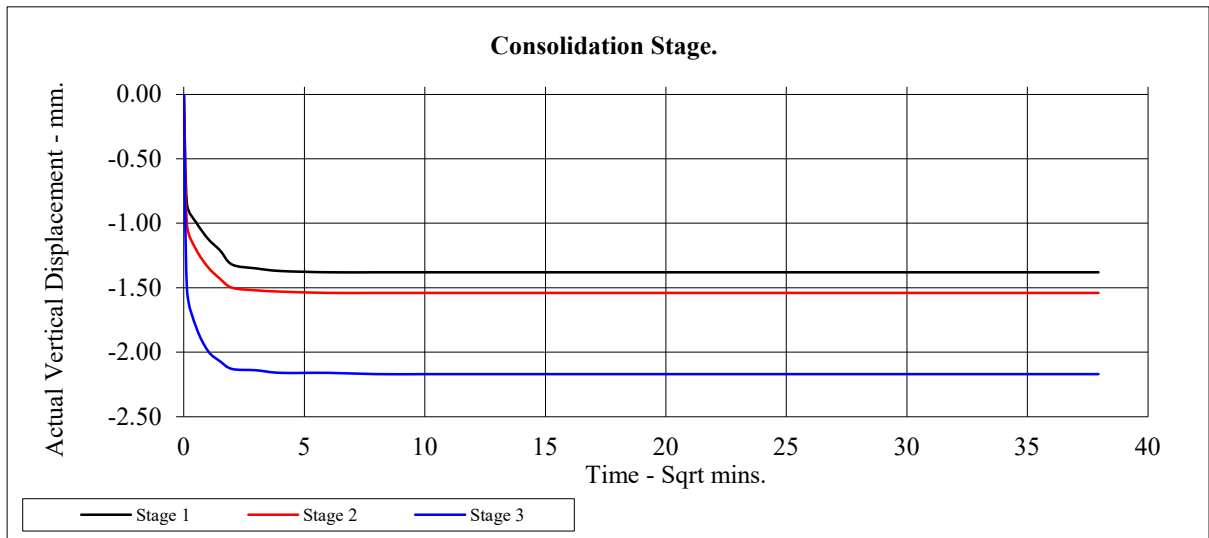
Vine Street

Contract No:
PSL21/7957
Client Ref:
14-944

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 4

Hole Number:	CP102	Top Depth:	4.00
Sample Number:		Base Depth:	4.45



PSL
Professional Soils Laboratory

Vine Street

Contract No:
PSL21/7957
Client Ref:
14-944

APPENDIX IX WM3 WASTE CLASSIFICATION RESULTS



Alex Smith
e3p
Taylor Road
Urmston
Manchester
M41 7JQ

e: asmith@e3p.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS
t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 21-79838

Project / Site name:	Vine Street	Samples received on:	08/06/2021
Your job number:	14944	Samples instructed on/ Analysis started on:	08/06/2021
Your order number:	AS-14944B	Analysis completed by:	11/06/2021
Report Issue Number:	1	Report issued on:	11/06/2021
Samples Analysed:	3 soil samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Preliminary reports provided at the request of the client should be considered as incomplete and have not been through the complete quality control procedure.

Results contained in preliminary reports may be subject to change and therefore should not be used as a basis for decision making, except at the risk of the client.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.

Application of uncertainty of measurement would provide a range within which the true result lies.

An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 21-79838
Project / Site name: Vine Street
Your Order No: AS-14944B

Lab Sample Number				1896292	1896293	1896294
Sample Reference				SP101	SP102	SP103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				07/06/2021	07/06/2021	07/06/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	9.0	2.4	3.3
Total mass of sample received	kg	0.001	NONE	0.40	0.40	0.40

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
------------------	------	-----	-----------	--------------	--------------	--------------

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.8	8.0	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO ₄	mg/kg	50	MCERTS	53000	6500	6600
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	1.8	1.6	1.8
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	3700	3200	3600
Water Soluble SO ₄ (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	1840	1610	1820
Sulphide	mg/kg	1	MCERTS	9.5	7.5	7.7
Total Sulphur	mg/kg	50	MCERTS	22000	2800	2500

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
----------------------------	-------	---	--------	-------	-------	-------

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.22
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.64	3.0
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.47	4.3
Phenanthrene	mg/kg	0.05	MCERTS	1.6	4.6	50
Anthracene	mg/kg	0.05	MCERTS	0.42	1.1	15
Fluoranthene	mg/kg	0.05	MCERTS	3.7	6.2	54
Pyrene	mg/kg	0.05	MCERTS	3.4	5.5	43
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.0	3.3	22
Chrysene	mg/kg	0.05	MCERTS	1.4	2.1	16
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.0	3.2	16
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.70	1.1	7.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	1.6	2.7	15
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.2	1.8	9.4
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.33	0.54	2.8
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.4	2.2	10

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	19.8	35.4	270
-----------------------------	-------	-----	--------	------	------	-----

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	14	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	0.5	0.6
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	27	26
Copper (aqua regia extractable)	mg/kg	1	MCERTS	45	52	51
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	140	120
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	20	31	28
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	150	130	160

Analytical Report Number: 21-79838

Project / Site name: Vine Street

Your Order No: AS-14944B

Lab Sample Number				1896292	1896293	1896294
Sample Reference				SP101	SP102	SP103
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied
Date Sampled				07/06/2021	07/06/2021	07/06/2021
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	5.9	2.8	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	14	10	21
TPH (C16 - C21)	mg/kg	1	MCERTS	26	37	180
TPH (C21 - C35)	mg/kg	1	MCERTS	220	190	280
TPH (C35 - C40)	mg/kg	10	MCERTS	62	65	73
TPH Total C5 - C40	mg/kg	10	MCERTS	330	300	560

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-79838

Project / Site name: Vine Street

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1896292	SP101	None Supplied	None Supplied	Brown clay and sand with gravel and rubble.
1896293	SP102	None Supplied	None Supplied	Brown clay and sand with gravel.
1896294	SP103	None Supplied	None Supplied	Brown loam and sand with gravel and vegetation.

Analytical Report Number : 21-79838

Project / Site name: Vine Street

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Total sulphate (as SO ₄ in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-PL	D	MCERTS



Analytical Report Number : 21-79838
Project / Site name: Vine Street

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
----------------------	-------------------------------	-----------------------------	---------------	--------------------	----------------------

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



Alex Smith
e3p
Taylor Road
Urmston
Manchester
M41 7JQ

e: asmith@e3p.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404

f: 01923 237404

e: reception@i2analytical.com

Analytical Report Number : 21-85687

Replaces Analytical Report Number: 21-85687, issue no. 1
Client sampling date amended.

Project / Site name:	Vine Street	Samples received on:	07/07/2021
Your job number:	14-944	Samples instructed on/ Analysis started on:	07/07/2021
Your order number:	14-944-AS-D	Analysis completed by:	13/07/2021
Report Issue Number:	2	Report issued on:	13/07/2021
Samples Analysed:	7 soil samples		

Signed: *Karolina Marek*

Karolina Marek
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



Analytical Report Number: 21-85687
 Project / Site name: Vine Street
 Your Order No: 14-944-AS-D

Lab Sample Number				1931153	1931154	1931155	1931156	1931157
Sample Reference				SP-101	SP-102	SP-103	SP-104	SP-105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Date Sampled				06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		
Asbestos in Soil				Type	N/A	ISO 17025	Not-detected	Not-detected
							Not-detected	Not-detected

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number: 21-85687
 Project / Site name: Vine Street
 Your Order No: 14-944-AS-D

Lab Sample Number				1931158	1931159
Sample Reference				SP-106	SP-107
Sample Number				None Supplied	None Supplied
Depth (m)				None Supplied	None Supplied
Date Sampled				06/07/2021	06/07/2021
Time Taken				None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected

U/S = Unsuitable Sample I/S = Insufficient Sample



Analytical Report Number : 21-85687

Project / Site name: Vine Street

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



3L5TN-CAGF2-N75SV

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Job name

14-944

Description/Comments

This Waste Classification is based on the analytical results provided by E3P on the i2 Analytical Ltd 'Analytical Report' Number: 21-79838. Soil Samples Only. During the assessment we have considered the 'worst or most reasonable case' metals compounds as laboratory reports only provide total concentrations of a metal e.g. Cu but not which compound(s) (species) of the metal present within the respective soil samples e.g. CuSO₄. If the assessment is non-hazardous based on these worst case species no further 'species' consideration is required. With TPH, WM3 (EA) require assessment of the potential presence of an unknown 'oil' by assessing the TPH range C6 – C40. Where the concentration of TPH is >0.1% (1000mg/kg) the 'soil' will be classed as HP 7 Carcinogenic and HP 11 Mutagenic, unless the concentration of the marker benzo(a)pyrene is <0.01% of the TPH concentration and confirmation is received that the TPH result has not arisen from petrol or diesel sources. Note that samples consider moisture content correction factors. In the case of any samples exceeding the 1000mg/kg TPH value and also the marker benzo(a)pyrene at <0.01% of the TPH concentration, the moisture correction factor could make it 'non-hazardous'. It is the responsibility of the geo-environmental consultant to target the laboratory analysis suite and testing to appropriately reflect the nature of the site, its activities and its impact on surrounding soils. WM3 states that the assessment of asbestos containing waste considers both the presence of asbestos as a) fibres that are free and dispersed, and b) identifiable pieces of asbestos containing material. If the waste contains fibres that are free and dispersed then the waste will be hazardous if the waste as a whole contains 0.1% or more asbestos. Where the waste contains identifiable pieces of asbestos containing material (i.e. any size that can be identified as potentially being asbestos by a competent person by the naked eye) it is deemed hazardous.

Project

Waste Classification

Site

Vine Street

Classified by

Name: **Daniel Enon**
Company: **RJT Consulting Partnerships Ltd**
Date: **29 Jun 2021 15:03 GMT**
Telephone: **0161 706 0402**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification

Date

18 Sep 2019

Next 3 year Refresher due by Sep 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	SP101		Non Hazardous		3
2	SP102		Non Hazardous		5
3	SP103		Non Hazardous		7

Related documents

#	Name	Description
1	E3P I2 Characterisation Suite 4	waste stream template used to create this Job

Report

Created by: Daniel Enon

Created date: 29 Jun 2021 15:03 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	9
Appendix B: Rationale for selection of metal species	10

Appendices	Page
Appendix C: Version	11

Classification of sample: SP101

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

Sample details

Sample name:	LoW Code:
SP101	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9% (dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9% Dry Weight 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	• pH				7.8 pH		7.8 pH	7.8 pH		
2	• 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									
3	• phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
4	• naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
5	• acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
6	• acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
7	• fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
8	• phenanthrene				1.6 mg/kg		1.468 mg/kg	0.000147 %	✓	
		201-581-5	85-01-8							
9	• anthracene				0.42 mg/kg		0.385 mg/kg	0.0000385 %	✓	
		204-371-1	120-12-7							
10	• fluoranthene				3.7 mg/kg		3.394 mg/kg	0.000339 %	✓	
		205-912-4	206-44-0							
11	• pyrene				3.4 mg/kg		3.119 mg/kg	0.000312 %	✓	
		204-927-3	129-00-0							
12	• benzo[a]anthracene				2 mg/kg		1.835 mg/kg	0.000183 %	✓	
	601-033-00-9	200-280-6	56-55-3							
13	• chrysene				1.4 mg/kg		1.284 mg/kg	0.000128 %	✓	
	601-048-00-0	205-923-4	218-01-9							
14	• benzo[b]fluoranthene				2 mg/kg		1.835 mg/kg	0.000183 %	✓	
	601-034-00-4	205-911-9	205-99-2							
15	• benzo[k]fluoranthene				0.7 mg/kg		0.642 mg/kg	0.0000642 %	✓	
	601-036-00-5	205-916-6	207-08-9							
16	• benzo[a]pyrene; benzo[def]chrysene				1.6 mg/kg		1.468 mg/kg	0.000147 %	✓	
	601-032-00-3	200-028-5	50-32-8							
17	• indeno[123-cd]pyrene				1.2 mg/kg		1.101 mg/kg	0.00011 %	✓	
		205-893-2	193-39-5							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
18	dibenz[a,h]anthracene				0.33	mg/kg		0.303	mg/kg	0.0000303 %	✓	
	601-041-00-2	200-181-8	53-70-3									
19	benzo[ghi]perylene				1.4	mg/kg		1.284	mg/kg	0.000128 %	✓	
		205-883-8	191-24-2									
20	arsenic { arsenic trioxide }				13	mg/kg	1.32	15.747	mg/kg	0.00157 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
21	cadmium { cadmium oxide }				0.5	mg/kg	1.142	0.524	mg/kg	0.0000524 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
22	chromium in chromium(VI) compounds { chromium(VI) oxide }				<4	mg/kg	1.923	<7.692	mg/kg	<0.000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
23	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	28.158	mg/kg	0.00282 %	✓	
		215-160-9	1308-38-9									
24	copper { dicopper oxide; copper (I) oxide }				45	mg/kg	1.126	46.482	mg/kg	0.00465 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
25	lead { lead chromate }			1	150	mg/kg	1.56	214.653	mg/kg	0.0138 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
26	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
27	nickel { nickel chromate }				20	mg/kg	2.976	54.61	mg/kg	0.00546 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
28	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											
29	zinc { zinc chromate }				150	mg/kg	2.774	381.763	mg/kg	0.0382 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
30	TPH (C6 to C40) petroleum group		TPH		330	mg/kg		302.752	mg/kg	0.0303 %	✓	
Total:										0.0998 %		

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 Determinand - 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 HP3(i) - Flammable relates to liquids. However this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0303%)

Classification of sample: SP102

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

Sample details

Sample name:	LoW Code:
SP102	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2.4%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(dry weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 2.4% Dry Weight 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	● pH				8 pH		8 pH	8pH		
2	● 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									
3	● phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
4	● naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
5	● acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
6	● acenaphthene				0.64 mg/kg		0.625 mg/kg	0.0000625 %	✓	
		201-469-6	83-32-9							
7	● fluorene				0.47 mg/kg		0.459 mg/kg	0.0000459 %	✓	
		201-695-5	86-73-7							
8	● phenanthrene				4.6 mg/kg		4.492 mg/kg	0.000449 %	✓	
		201-581-5	85-01-8							
9	● anthracene				1.1 mg/kg		1.074 mg/kg	0.000107 %	✓	
		204-371-1	120-12-7							
10	● fluoranthene				6.2 mg/kg		6.055 mg/kg	0.000605 %	✓	
		205-912-4	206-44-0							
11	● pyrene				5.5 mg/kg		5.371 mg/kg	0.000537 %	✓	
		204-927-3	129-00-0							
12	benzo[a]anthracene				3.3 mg/kg		3.223 mg/kg	0.000322 %	✓	
	601-033-00-9	200-280-6	56-55-3							
13	chrysene				2.1 mg/kg		2.051 mg/kg	0.000205 %	✓	
	601-048-00-0	205-923-4	218-01-9							
14	benzo[b]fluoranthene				3.2 mg/kg		3.125 mg/kg	0.000313 %	✓	
	601-034-00-4	205-911-9	205-99-2							
15	benzo[k]fluoranthene				1.1 mg/kg		1.074 mg/kg	0.000107 %	✓	
	601-036-00-5	205-916-6	207-08-9							
16	benzo[a]pyrene; benzo[def]chrysene				2.7 mg/kg		2.637 mg/kg	0.000264 %	✓	
	601-032-00-3	200-028-5	50-32-8							
17	● indeno[123-cd]pyrene				1.8 mg/kg		1.758 mg/kg	0.000176 %	✓	
		205-893-2	193-39-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number								
18		dibenz[a,h]anthracene				0.54 mg/kg		0.527 mg/kg	0.0000527 %		✓	
		601-041-00-2	200-181-8	53-70-3								
19	•	benzo[ghi]perylene				2.2 mg/kg		2.148 mg/kg	0.000215 %		✓	
			205-883-8	191-24-2								
20		arsenic { arsenic trioxide }				14 mg/kg	1.32	18.051 mg/kg	0.00181 %		✓	
		033-003-00-0	215-481-4	1327-53-3								
21		cadmium { cadmium oxide }				0.5 mg/kg	1.142	0.558 mg/kg	0.0000558 %		✓	
		048-002-00-0	215-146-2	1306-19-0								
22		chromium in chromium(VI) compounds { chromium(VI) oxide }				<4 mg/kg	1.923	<7.692 mg/kg	<0.000769 %			<LOD
		024-001-00-0	215-607-8	1333-82-0								
23		chromium in chromium(III) compounds { • chromium(III) oxide (worst case) }				27 mg/kg	1.462	38.537 mg/kg	0.00385 %		✓	
			215-160-9	1308-38-9								
24		copper { dicopper oxide; copper (I) oxide }				52 mg/kg	1.126	57.174 mg/kg	0.00572 %		✓	
		029-002-00-X	215-270-7	1317-39-1								
25		lead { lead chromate }			1	140 mg/kg	1.56	213.256 mg/kg	0.0137 %		✓	
		082-004-00-2	231-846-0	7758-97-6								
26		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
		080-010-00-X	231-299-8	7487-94-7								
27		nickel { nickel chromate }				31 mg/kg	2.976	90.102 mg/kg	0.00901 %		✓	
		028-035-00-7	238-766-5	14721-18-7								
28		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										
29		zinc { zinc chromate }				130 mg/kg	2.774	352.187 mg/kg	0.0352 %		✓	
		024-007-00-3	236-878-9	13530-65-9								
30	•	TPH (C6 to C40) petroleum group				300 mg/kg		292.969 mg/kg	0.0293 %		✓	
				TPH								
Total:									0.103 %			

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 Determinand - 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 HP3(i) - Flammable relates to liquids. However this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0293%)

Classification of sample: SP103

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

Sample details

Sample name:	LoW Code:
SP103	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3.3% (dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.3% Dry Weight 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	pH				8.1 pH		8.1 pH	8.1 pH		
2	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									
3	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
4	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
5	acenaphthylene				0.22 mg/kg		0.213 mg/kg	0.0000213 %	✓	
		205-917-1	208-96-8							
6	acenaphthene				3 mg/kg		2.904 mg/kg	0.00029 %	✓	
		201-469-6	83-32-9							
7	fluorene				4.3 mg/kg		4.163 mg/kg	0.000416 %	✓	
		201-695-5	86-73-7							
8	phenanthrene				50 mg/kg		48.403 mg/kg	0.00484 %	✓	
		201-581-5	85-01-8							
9	anthracene				15 mg/kg		14.521 mg/kg	0.00145 %	✓	
		204-371-1	120-12-7							
10	fluoranthene				54 mg/kg		52.275 mg/kg	0.00523 %	✓	
		205-912-4	206-44-0							
11	pyrene				43 mg/kg		41.626 mg/kg	0.00416 %	✓	
		204-927-3	129-00-0							
12	benzo[a]anthracene				22 mg/kg		21.297 mg/kg	0.00213 %	✓	
	601-033-00-9	200-280-6	56-55-3							
13	chrysene				16 mg/kg		15.489 mg/kg	0.00155 %	✓	
	601-048-00-0	205-923-4	218-01-9							
14	benzo[b]fluoranthene				16 mg/kg		15.489 mg/kg	0.00155 %	✓	
	601-034-00-4	205-911-9	205-99-2							
15	benzo[k]fluoranthene				7.9 mg/kg		7.648 mg/kg	0.000765 %	✓	
	601-036-00-5	205-916-6	207-08-9							
16	benzo[a]pyrene; benzo[def]chrysene				15 mg/kg		14.521 mg/kg	0.00145 %	✓	
	601-032-00-3	200-028-5	50-32-8							
17	indeno[123-cd]pyrene				9.4 mg/kg		9.1 mg/kg	0.00091 %	✓	
		205-893-2	193-39-5							

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
18	dibenz[a,h]anthracene				2.8	mg/kg		2.711	mg/kg	0.000271 %	✓	
	601-041-00-2	200-181-8	53-70-3									
19	benzo[ghi]perylene				10	mg/kg		9.681	mg/kg	0.000968 %	✓	
		205-883-8	191-24-2									
20	arsenic { arsenic trioxide }				15	mg/kg	1.32	19.172	mg/kg	0.00192 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
21	cadmium { cadmium oxide }				0.6	mg/kg	1.142	0.664	mg/kg	0.0000664 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
22	chromium in chromium(VI) compounds { chromium(VI) oxide }				<4	mg/kg	1.923	<7.692	mg/kg	<0.000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
23	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26	mg/kg	1.462	36.786	mg/kg	0.00368 %	✓	
		215-160-9	1308-38-9									
24	copper { dicopper oxide; copper (I) oxide }				51	mg/kg	1.126	55.586	mg/kg	0.00556 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
25	lead { lead chromate }			1	120	mg/kg	1.56	181.198	mg/kg	0.0116 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
26	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
27	nickel { nickel chromate }				28	mg/kg	2.976	80.673	mg/kg	0.00807 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
28	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											
29	zinc { zinc chromate }				160	mg/kg	2.774	429.684	mg/kg	0.043 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
30	TPH (C6 to C40) petroleum group		TPH		560	mg/kg		542.11	mg/kg	0.0542 %	✓	
Total:										0.155 %		

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 Determinand - 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 HP3(i) - Flammable relates to liquids. However this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0542%)

Appendix A: Classifier defined and non CLP determinands

• pH (CAS Number: PH)

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

• 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

• 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

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

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

• **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

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}

Worst Case

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

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. 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

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

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

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. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight

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

Harmonised group entry used as most reasonable case. Pigment cadmium sulposelenide 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.

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2021.162.4804.9151 (21 Jun 2021)

HazWasteOnline Database: 2021.162.4804.9151 (21 Jun 2021)

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 Waste 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

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2019 - UK: 2019 No. 720 of 27th March 2019

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

APPENDIX X SLOPE STABILITY ASSESSMENT


```
Slip Type: CIRCULAR
Direction of slip: Downhill
Minimum slip weight [kN/m] :0.00000
Type of analysis: STATIC
Factor of safety on: SHEAR STRENGTH
Minimum number of slices 25
Method: Bishop(Variably inclined interslice forces)
Maximum number of iterations: 300
Reinforcement: NONE
```

No	Description	Unit Weight		Shear Strength Parameters	Phi or c
		Above GWL	Below GWL		
or c0'				Condition	
		[kN/m3]	[kN/m3]		Phi0 [°]
1	Made Ground: Sandy Gravel	18.000	18.000	Drained	35.000
2	Medium Dense Sand	18.000	18.000	Drained	30.000
3	Dense Sand	18.000	18.000	Drained	40.000
4	Retaining Wall	30.000	30.000	Drained	45.000

No.	Limits of loaded area		Distributed load		Permanent / Variable load	Favourable / Unfavourable load	Use in pull-out calc
	X1 [m]	X2 [m]	Vert [kN/m ²]	Horiz [kN/m ²]			
1	40.000	47.000	20.000	0.0	Permanent	N/A	No

Circle centre specification:
 Bottom left of grid: x = 6.00000 m y = 11.00000 m
 Inclination of grid: 10.00000 deg
 (positive anticlockwise direction about bottom left of grid)
 Centres on grid: 20 in x direction at 1.50000m spacing
 7 in y direction at 1.50000m spacing
 Grid extended to find minimum FoS
 Initial radius of circle 1.00000 m
 Incremented by 1.00000 m until all possible circles considered

Centre at (13.126m,13.780m)	Radius 13.000m
Iterations: 5	Horiz acceleration [%g]: 0.0
Net vertical force [kN/m]: 20.665E-9	Slip weight [kN/m]: 0.028670
Net horiz force [kN/m]: 26.401E-9	Disturbing moment [kN/m]: 0.22943
	Restoring moment [kNm/m]: 0.20572
	Reinf.Rest.Moment [kNm/m]: 0.0
	Factor of Safety: 0.89666

The system of interslice and base forces are in equilibrium when the strengths available at the bases are divided by the computed factor of safety. The interslice forces shown in the following table are in equilibrium with the factored strengths of the soil at the bases of slices.

Slip surface coordinates		Pore Pressure		Interslice forces [kN/m]		
Point	x [m]	y [m]	L	R	T	E
			[kN/m ²]	[kN/m ²]		E (u)
1	20.880	3.3450	-	0.0		0.0
2	20.899	3.3600	0.0	0.0	532.98E-9	-3.3499E-9
3	20.918	3.3740	0.0	0.0	4.5228E-6	4.7124E-6
4	20.937	3.3880	0.0	0.0	15.455E-6	18.832E-6
5	20.956	3.4020	0.0	0.0	33.331E-6	42.354E-6
6	20.975	3.4170	0.0	0.0	28.798E-6	35.947E-6
7	20.994	3.4310	0.0	0.0	53.617E-6	68.873E-6
8	21.013	3.4460	0.0	0.0	48.240E-6	61.399E-6
9	21.032	3.4600	0.0	0.0	73.058E-6	94.325E-6
10	21.051	3.4750	0.0	0.0	66.837E-6	85.783E-6

Oasys Vine Street, Gorton Section A							Job No.		Sheet No.		Rev.	
							14-944					
							Drg. Ref.					
							Made by CB		Date		Checked	
Slip surface coordinates												
Point x [m]		y [m]	Pore Pressure		Interslice forces [kN/m]							
			L	R	T	E	E (u)					
			[kN/m²]		[kN/m²]							
11	21.070		3.4890	0.0	0.0	98.598E-6	128.11E-6	0.0				
12	21.089		3.5040	0.0	0.0	90.688E-6	117.44E-6	0.0				
13	21.108		3.5190	0.0	0.0	83.622E-6	107.83E-6	0.0				
14	21.126		3.5330	0.0	0.0	115.38E-6	150.16E-6	0.0				
15	21.145		3.5480	0.0	0.0	107.47E-6	139.48E-6	0.0				
16	21.164		3.5630	0.0	0.0	99.564E-6	128.80E-6	0.0				
17	21.183		3.5780	0.0	0.0	91.654E-6	118.13E-6	0.0				
18	21.202		3.5930	0.0	0.0	84.588E-6	108.52E-6	0.0				
19	21.221		3.6080	0.0	0.0	78.367E-6	99.978E-6	0.0				
20	21.240		3.6230	0.0	0.0	72.145E-6	91.437E-6	0.0				
21	21.259		3.6380	0.0	0.0	65.924E-6	82.895E-6	0.0				
22	21.278		3.6540	0.0	0.0	29.431E-6	38.981E-6	0.0				
23	21.297		3.6690	0.0	0.0	24.898E-6	32.574E-6	0.0				
24	21.316		3.6840	0.0	0.0	21.210E-6	27.235E-6	0.0				
25	21.335		3.7000	0.0	0.0	5.8813E-6	8.4026E-6	0.0				
26	21.354		3.7150	0.0	0.0	4.7256E-6	6.2647E-6	0.0				
27	21.373		3.7310	0.0	-	-20.665E-9	-26.401E-9	0.0				
Slice Strength Parameters												
No.		Average		Slice		Forces on base [kN/m]						
		Pore		Weight								
		Pressure										
c'		Tan phi		[kN/m²]		[kN/m]		Normal		Shear		
[kN/m²]								(capacity)		(mobilised)		
1	0.0	0.70021	0.0	0.0	0.0	420.08E-9	294.14E-9	328.04E-9				
2	0.0	0.70021	0.0	170.65E-6	137.70E-6	96.416E-6	107.53E-6					
3	0.0	0.70021	0.0	511.96E-6	412.27E-6	288.68E-6	321.95E-6					
4	0.0	0.70021	0.0	853.27E-6	686.85E-6	480.94E-6	536.36E-6					
5	0.0	0.70021	0.0	0.0010239	803.45E-6	562.58E-6	627.42E-6					
6	0.0	0.70021	0.0	0.0011946	961.42E-6	673.20E-6	750.78E-6					
7	0.0	0.70021	0.0	0.0011946	937.29E-6	656.30E-6	731.94E-6					
8	0.0	0.70021	0.0	0.0011946	961.42E-6	673.20E-6	750.78E-6					
9	0.0	0.70021	0.0	0.0013652	0.0010711	750.01E-6	836.45E-6					
10	0.0	0.70021	0.0	0.0015359	0.0012360	865.46E-6	965.20E-6					
11	0.0	0.70021	0.0	0.0017065	0.0013388	937.44E-6	0.0010455					
12	0.0	0.70021	0.0	0.0015359	0.0012050	843.73E-6	940.97E-6					
13	0.0	0.70021	0.0	0.0015359	0.0012360	865.46E-6	965.20E-6					
14	0.0	0.70021	0.0	0.0017065	0.0013388	937.44E-6	0.0010455					
15	0.0	0.70021	0.0	0.0017065	0.0013388	937.44E-6	0.0010455					
16	0.0	0.70021	0.0	0.0017065	0.0013388	937.44E-6	0.0010455					
17	0.0	0.70021	0.0	0.0015359	0.0012050	843.73E-6	940.97E-6					
18	0.0	0.70021	0.0	0.0013652	0.0010711	750.01E-6	836.45E-6					
19	0.0	0.70021	0.0	0.0013652	0.0010711	750.01E-6	836.45E-6					
20	0.0	0.70021	0.0	0.0013652	0.0010711	750.01E-6	836.45E-6					
21	0.0	0.70021	0.0	0.0011946	913.41E-6	639.57E-6	713.29E-6					
22	0.0	0.70021	0.0	0.0010239	803.45E-6	562.58E-6	627.42E-6					
23	0.0	0.70021	0.0	853.27E-6	669.61E-6	468.87E-6	522.91E-6					
24	0.0	0.70021	0.0	511.96E-6	391.71E-6	274.28E-6	305.89E-6					
25	0.0	0.70021	0.0	341.31E-6	268.10E-6	187.72E-6	209.36E-6					
26	0.0	0.70021	0.0	170.65E-6	130.85E-6	91.626E-6	102.19E-6					
Slice Surface Load [kN/m_hor/m]												
No.		Point Load [kN/m]		Water Pressure on								
				ground surface [kN/m_hor/m]								
Vert		Horiz		Vert		Horiz		Vert		Horiz		
1	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
2	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
3	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
4	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
5	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
6	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
7	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
8	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
9	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
10	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
11	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
12	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
13	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
14	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
15	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
16	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
17	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
18	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
19	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
20	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	
21	0.0		0.0	0.0	0.0	0.0	0.0	0.0			0.0	

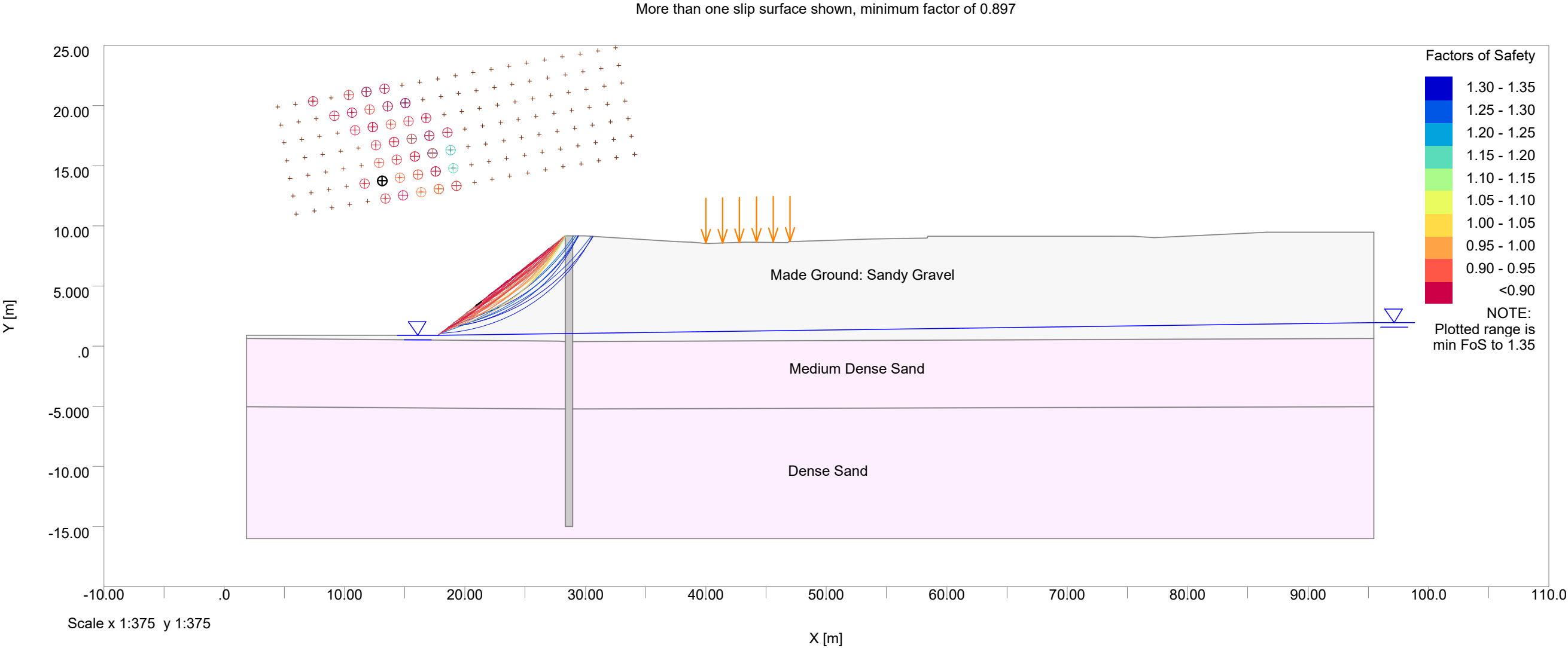


Vine Street, Gorton
Section A

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date

Slice No.	Surface Load [kN/m_hor/m]		Point Load [kN/m]		Water Pressure on ground surface [kN/m_hor/m]	
	Vert	Horiz	Vert	Horiz	Vert	Horiz
22	0.0		0.0	0.0	0.0	0.0
23	0.0		0.0	0.0	0.0	0.0
24	0.0		0.0	0.0	0.0	0.0
25	0.0		0.0	0.0	0.0	0.0
26	0.0		0.0	0.0	0.0	0.0

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date



```
Slip Type: CIRCULAR
Direction of slip: Downhill
Minimum slip weight [kN/m] :0.00000
Type of analysis: STATIC
Factor of safety on: SHEAR STRENGTH
Minimum number of slices 25
Method: Bishop(Variably inclined interslice forces)
Maximum number of iterations: 300
Reinforcement: NONE
```

No	Description	Unit Weight		Shear Strength Parameters	Phi or c0'
		Above GWL	Below GWL		
		[kN/m3]	[kN/m3]	Condition	Phi0 [°]
0.0	1 Made Ground: Gravelly Clay	16.000	16.000	Drained	20.000
0.0	2 Stiff Clay	20.000	20.000	Drained	20.000
0.0	3 Dense Sand	18.000	18.000	Drained	40.000
50.000	4 Retaining Wall	30.000	30.000	Drained	45.000

No.	Limits of loaded area		Distributed load		Permanent / Variable load	Favourable / Unfavourable load	Use in pull-out calc
	X1 [m]	X2 [m]	Vert [kN/m ²]	Horiz [kN/m ²]			
1	17.500	20.500	20.000	0.0	Permanent	N/A	No

```
Circle centre specification:
Bottom left of grid: x = 3.00000 m  y = 6.00000 m
Inclination of grid:  10.00000 deg
(positive anticlockwise direction about bottom left of grid)
Centres on grid:  20 in x direction at 1.00000m spacing
                  7 in y direction at 1.00000m spacing
Grid extended to find minimum FoS
Initial radius of circle 1.00000 m
Incremented by 1.00000 m until all possible circles considered
```

Centre at (19.221m,11.906m)	Radius 9.0000m
Iterations: 5	Horiz acceleration [%g]: 0.0
Net vertical force [kN/m]: 974.27E-9	Slip weight [kN/m] 0.054407
Net horiz force [kN/m]: 1.1545E-6	Disturbing moment [kN/m]: 0.31476
	Restoring moment [kNm/m]: 0.13675
	Reinf.Rest.Moment [kNm/m]: 0.0
	Factor of Safety: 0.43446

The system of interslice and base forces are in equilibrium when the strengths available at the bases are divided by the computed factor of safety. The interslice forces shown in the following table are in equilibrium with the factored strengths of the soil at the bases of slices.

Slip surface coordinates			Pore Pressure		Interslice forces [kN/m]		
Point	x [m]	y [m]	L	R	T	E	E (u)
			[kN/m ²]	[kN/m ²]			
1	24.922	4.9420	-	-75.520	0.0	0.0	0.0
2	24.929	4.9480	-75.580	-75.580	4.3443E-6	-3.3958E-6	0.0
3	24.935	4.9540	-75.640	-75.640	3.0269E-6	-13.149E-6	0.0
4	24.942	4.9590	-75.690	-75.690	36.850E-6	23.776E-6	0.0
5	24.949	4.9650	-75.750	-75.750	22.794E-6	-279.75E-9	0.0
6	24.956	4.9700	-75.800	-75.800	76.335E-6	63.212E-6	0.0
7	24.962	4.9760	-75.860	-75.860	49.540E-6	24.853E-6	0.0
8	24.969	4.9810	-75.910	-75.910	125.26E-6	118.23E-6	0.0
9	24.976	4.9870	-75.970	-75.970	87.145E-6	67.159E-6	0.0
10	24.983	4.9930	-76.030	-76.030	44.780E-6	11.318E-6	0.0

Oasys Vine Street, Gorton Section B						Job No.		Sheet No.	Rev.
						14-944			
						Drg. Ref.			
						Made by CB	Date	Checked	Date
Slip surface coordinates Pore Pressure Interslice forces [kN/m] Point x [m] y [m] L R T E E (u) [kN/m²] [kN/m²]									
11	24.989	4.9980	-76.080	-76.080	147.62E-6	141.23E-6	0.0		
12	24.996	5.0040	-76.140	-76.140	92.512E-6	71.082E-6	0.0		
13	25.003	5.0090	-76.190	-76.190	217.53E-6	230.88E-6	0.0		
14	25.010	5.0150	-76.250	-76.250	151.10E-6	148.02E-6	0.0		
15	25.016	5.0210	-76.310	-76.310	79.013E-6	58.805E-6	0.0		
16	25.023	5.0260	-76.360	-76.360	233.61E-6	258.45E-6	0.0		
17	25.030	5.0320	-76.420	-76.420	150.19E-6	156.52E-6	0.0		
18	25.037	5.0380	-76.480	-76.480	61.121E-6	48.236E-6	0.0		
19	25.043	5.0440	-76.540	-76.540	-32.200E-6	-64.818E-6	0.0		
20	25.050	5.0490	-76.590	-76.590	159.36E-6	184.64E-6	0.0		
21	25.056	5.0550	-76.650	-76.650	-10.258E-6	-4.8929E-6	0.0		
22	25.063	5.0600	-76.700	-76.700	87.448E-6	112.56E-6	0.0		
23	25.069	5.0660	-76.760	-76.760	-28.229E-6	-19.170E-6	0.0		
24	25.076	5.0710	-76.810	-76.810	36.596E-6	56.011E-6	0.0		
25	25.082	5.0770	-76.870	-76.870	-25.134E-6	-17.924E-6	0.0		
26	25.089	5.0820	-76.920	-76.920	6.8097E-6	14.981E-6	0.0		
27	25.095	5.0880	-76.980	-	-974.27E-9	-1.1545E-6	0.0		
Slice Strength Parameters Average Slice Forces on base [kN/m] No. Pore Weight c' Tan phi Pressure [kN/m²] [kN/m] Normal Shear Shear [kN/m²] (capacity) (mobilised)									
1	0.0	0.36397	0.0	107.79E-6	85.996E-6	31.300E-6	72.043E-6		
2	0.0	0.36397	0.0	323.37E-6	246.98E-6	89.894E-6	206.91E-6		
3	0.0	0.36397	0.0	592.84E-6	481.21E-6	175.14E-6	403.13E-6		
4	0.0	0.36397	0.0	808.42E-6	609.20E-6	221.73E-6	510.36E-6		
5	0.0	0.36397	0.0	0.0010240	827.43E-6	301.16E-6	693.17E-6		
6	0.0	0.36397	0.0	0.0012935	971.42E-6	353.57E-6	813.81E-6		
7	0.0	0.36397	0.0	0.0015091	0.0012169	442.92E-6	0.0010195		
8	0.0	0.36397	0.0	0.0017246	0.0012934	470.76E-6	0.0010835		
9	0.0	0.36397	0.0	0.0018863	0.0014141	514.70E-6	0.0011847		
10	0.0	0.36397	0.0	0.0021019	0.0016930	616.19E-6	0.0014183		
11	0.0	0.36397	0.0	0.0023714	0.0017764	646.54E-6	0.0014881		
12	0.0	0.36397	0.0	0.0025869	0.0020825	757.96E-6	0.0017446		
13	0.0	0.36397	0.0	0.0028025	0.0020983	763.73E-6	0.0017579		
14	0.0	0.36397	0.0	0.0030181	0.0022593	822.32E-6	0.0018927		
15	0.0	0.36397	0.0	0.0032337	0.0026018	946.98E-6	0.0021797		
16	0.0	0.36397	0.0	0.0034493	0.0025813	939.51E-6	0.0021625		
17	0.0	0.36397	0.0	0.0036648	0.0027423	998.11E-6	0.0022973		
18	0.0	0.36397	0.0	0.0038265	0.0028630	0.0010421	0.0023985		
19	0.0	0.36397	0.0	0.0040421	0.0032510	0.0011833	0.0027235		
20	0.0	0.36397	0.0	0.0037029	0.0027123	987.20E-6	0.0022722		
21	0.0	0.36397	0.0	0.0031371	0.0024813	903.13E-6	0.0020787		
22	0.0	0.36397	0.0	0.0025714	0.0018852	686.15E-6	0.0015793		
23	0.0	0.36397	0.0	0.0020057	0.0015882	578.07E-6	0.0013305		
24	0.0	0.36397	0.0	0.0014400	0.0010580	385.09E-6	886.37E-6		
25	0.0	0.36397	0.0	874.29E-6	695.13E-6	253.01E-6	582.34E-6		
26	0.0	0.36397	0.0	308.57E-6	230.90E-6	84.041E-6	193.44E-6		
Slice Surface Load [kN/m_hor/m] Point Load [kN/m] Water Pressure on No. ground surface [kN/m_hor/m] Vert Horiz Vert Horiz Vert Horiz									
1	0.0		0.0	0.0	0.0	0.0	0.0		
2	0.0		0.0	0.0	0.0	0.0	0.0		
3	0.0		0.0	0.0	0.0	0.0	0.0		
4	0.0		0.0	0.0	0.0	0.0	0.0		
5	0.0		0.0	0.0	0.0	0.0	0.0		
6	0.0		0.0	0.0	0.0	0.0	0.0		
7	0.0		0.0	0.0	0.0	0.0	0.0		
8	0.0		0.0	0.0	0.0	0.0	0.0		
9	0.0		0.0	0.0	0.0	0.0	0.0		
10	0.0		0.0	0.0	0.0	0.0	0.0		
11	0.0		0.0	0.0	0.0	0.0	0.0		
12	0.0		0.0	0.0	0.0	0.0	0.0		
13	0.0		0.0	0.0	0.0	0.0	0.0		
14	0.0		0.0	0.0	0.0	0.0	0.0		
15	0.0		0.0	0.0	0.0	0.0	0.0		
16	0.0		0.0	0.0	0.0	0.0	0.0		
17	0.0		0.0	0.0	0.0	0.0	0.0		
18	0.0		0.0	0.0	0.0	0.0	0.0		
19	0.0		0.0	0.0	0.0	0.0	0.0		
20	0.0		0.0	0.0	0.0	0.0	0.0		
21	0.0		0.0	0.0	0.0	0.0	0.0		

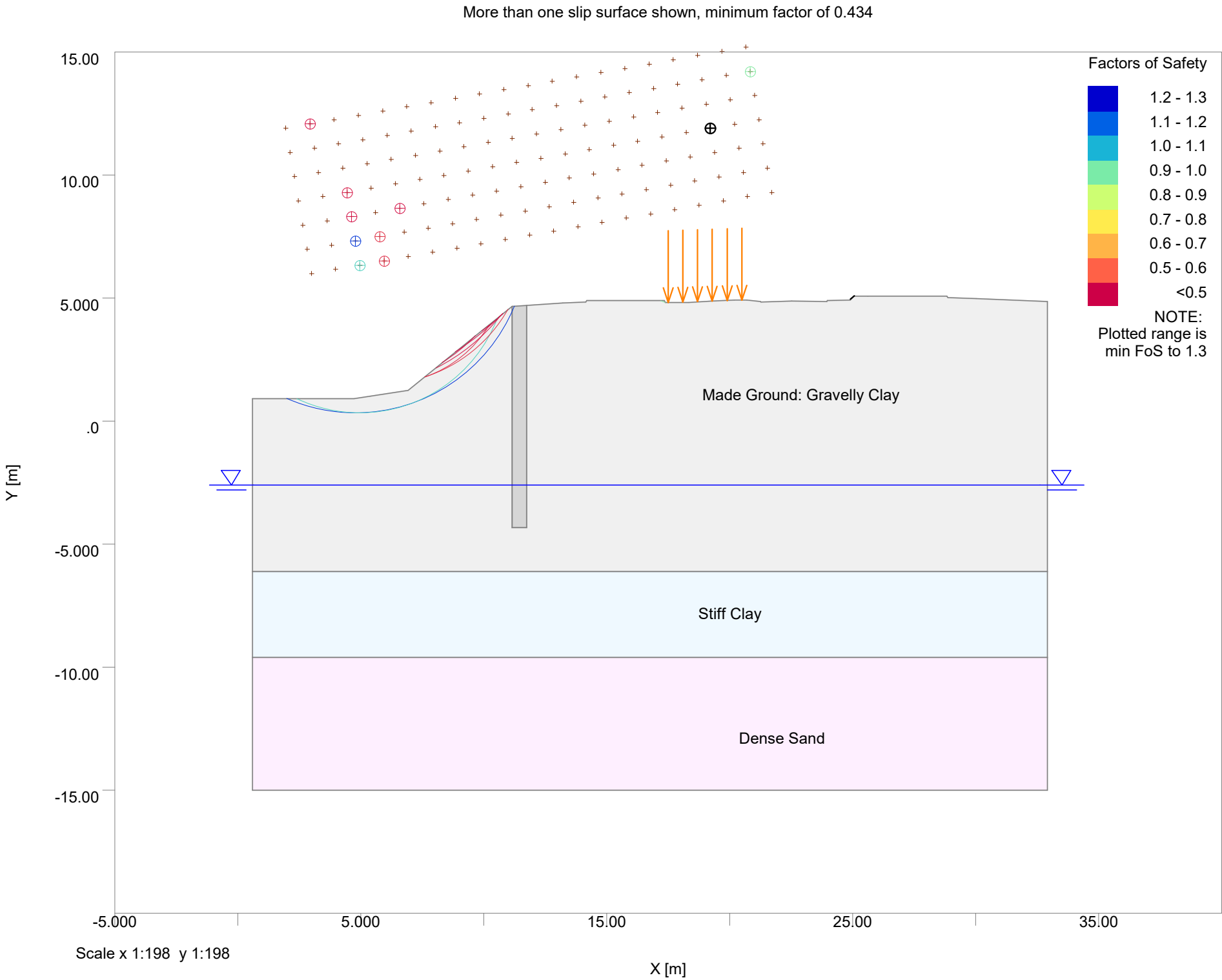


Vine Street, Gorton
Section B

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date

Slice No.	Surface Load [kN/m_hor/m]		Point Load [kN/m]		Water Pressure on ground surface [kN/m_hor/m]	
	Vert	Horiz	Vert	Horiz	Vert	Horiz
22	0.0		0.0	0.0	0.0	0.0
23	0.0		0.0	0.0	0.0	0.0
24	0.0		0.0	0.0	0.0	0.0
25	0.0		0.0	0.0	0.0	0.0
26	0.0		0.0	0.0	0.0	0.0

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date



Oasys Vine Street, Gorton Section C	Job No.		Sheet No.		Rev.	
	14-944					
	Drg. Ref.					
	Made by CB		Date		Checked Date	

Specification

Slip Type: CIRCULAR
Direction of slip: Downhill
Minimum slip weight [kN/m] :0.00000
Type of analysis: STATIC
Factor of safety on: SHEAR STRENGTH
Minimum number of slices 25
Method: Bishop(Variably inclined interslice forces)
Maximum number of iterations: 300
Reinforcement: NONE

Material Properties

No	Description	Unit Weight		Shear Strength Parameters		Phi or c
		Above GWL	Below GWL	Condition		
		[kN/m3]	[kN/m3]			Phi0 [°]
0.0	1 Made Ground: Sandy Gravel	18.000	18.000	Drained		35.000
0.0	2 Silty Sand	18.000	18.000	Drained		40.000
0.0	3 Sandy Clay	20.000	20.000	Drained		20.000
0.0	4 Dense Sand	18.000	18.000	Drained		40.000
50.000	5 Retaining Wall	30.000	30.000	Drained		45.000

Surface loads

No.	Limits of loaded area		Distributed load	Permanent / Variable load	Favourable / Unfavourable load	Use in pull-out calc
	X1	X2	Vert	Horiz		
	[m]	[m]	[kN/m²]	[kN/m²]		
1	20.600	25.000	20.000	0.0	Permanent	N/A No

Slip Surface Specification

Circle centre specification:
Bottom left of grid: x = 5.00000 m y = 7.00000 m
Inclination of grid: 10.00000 deg
(positive anticlockwise direction about bottom left of grid)
Centres on grid: 15 in x direction at 1.00000m spacing
7 in y direction at 1.00000m spacing
Grid extended to find minimum FoS
Initial radius of circle 1.00000 m
Incremented by 1.00000 m until all possible circles considered

WORST CASE

Centre at (7.9544m,7.5209m) Radius 5.0000m
Iterations: 5 Horiz acceleration [%g]: 0.0
Net vertical force [kN/m]: 148.66E-6 Slip weight [kN/m] 3.0026
Net horiz force [kN/m]: 192.91E-6 Disturbing moment [kN/m]: 9.0550
Restoring moment [kNm/m]: 8.4464
Reinf.Rest.Moment [kNm/m]: 0.0
Factor of Safety: 0.93279

The system of interslice and base forces are in equilibrium when the strengths available at the bases are divided by the computed factor of safety. The interslice forces shown in the following table are in equilibrium with the factored strengths of the soil at the bases of slices.

Slip surface coordinates

Point	x [m]	y [m]	Pore Pressure		Interslice forces [kN/m]		
			L	R	T	E	E(u)
			[kN/m²]	[kN/m²]			
1	10.077	2.9940	-	0.0	0.0	0.0	0.0
2	10.144	3.0260	0.0	0.0	0.0025577	0.0027998	0.0
3	10.211	3.0590	0.0	0.0	0.0073126	0.0098992	0.0
4	10.278	3.0930	0.0	0.0	0.013960	0.020448	0.0
5	10.344	3.1290	0.0	0.0	0.021823	0.032547	0.0
6	10.411	3.1660	0.0	0.0	0.030760	0.046202	0.0
7	10.478	3.2050	0.0	0.0	0.039931	0.059453	0.0
8	10.545	3.2440	0.0	0.0	0.050110	0.074432	0.0

Program Oasys Slope Version 21.0.0.46 Copyright (C) 1997-2023

Printed 06-Jun-2023

Page 1
Time 12:22

Oasys Vine Street, Gorton Section C							Job No.		Sheet No.	Rev.
							14-944			
							Drg. Ref.			
							Made by CB	Date	Checked	Date
Slip surface coordinates Pore Pressure Interslice forces [kN/m] Point x [m] y [m] L R T E E(u) [kN/m²] [kN/m²]										
9	10.611	3.2850	0.0	0.0	0.059079	0.086420	0.0			
10	10.677	3.3270	0.0	0.0	0.067829	0.097733	0.0			
11	10.742	3.3700	0.0	0.0	0.076166	0.10811	0.0			
12	10.808	3.4150	0.0	0.0	0.082797	0.11544	0.0			
13	10.874	3.4620	0.0	0.0	0.087339	0.11946	0.0			
14	10.940	3.5100	0.0	0.0	0.090758	0.12182	0.0			
15	11.006	3.5600	0.0	0.0	0.091727	0.12079	0.0			
16	11.071	3.6110	0.0	0.0	0.091430	0.11811	0.0			
17	11.137	3.6650	0.0	0.0	0.087337	0.11086	0.0			
18	11.203	3.7200	0.0	0.0	0.082128	0.10238	0.0			
19	11.269	3.7770	0.0	0.0	0.074724	0.091605	0.0			
20	11.334	3.8360	0.0	0.0	0.065422	0.079024	0.0			
21	11.400	3.8980	0.0	0.0	0.053621	0.064324	0.0			
22	11.466	3.9620	0.0	0.0	0.041221	0.049420	0.0			
23	11.532	4.0280	0.0	0.0	0.028964	0.035065	0.0			
24	11.598	4.0960	0.0	0.0	0.017698	0.022049	0.0			
25	11.663	4.1680	0.0	0.0	0.0075223	0.010672	0.0			
26	11.729	4.2420	0.0	0.0	0.0011579	0.0029549	0.0			
27	11.795	4.3190	0.0	-	-148.66E-6	-192.91E-6	0.0			
Slice Strength Parameters Average Slice Forces on base [kN/m] No. Pore Weight c' Tan phi [kN/m²] [kN/m] Normal Shear Shear (capacity) (mobilised)										
1	0.0	0.70021	0.0	0.011433	0.011411	0.0079897	0.0085654			
2	0.0	0.70021	0.0	0.033094	0.030798	0.021565	0.023119			
3	0.0	0.70021	0.0	0.053553	0.048879	0.034225	0.036691			
4	0.0	0.70021	0.0	0.072206	0.064762	0.045347	0.048614			
5	0.0	0.70021	0.0	0.089054	0.079124	0.055404	0.059396			
6	0.0	0.70021	0.0	0.10470	0.091681	0.064196	0.068822			
7	0.0	0.70021	0.0	0.11854	0.10364	0.072566	0.077795			
8	0.0	0.70021	0.0	0.12908	0.11082	0.077596	0.083187			
9	0.0	0.70021	0.0	0.14033	0.11957	0.083723	0.089755			
10	0.0	0.70021	0.0	0.15099	0.12769	0.089409	0.095851			
11	0.0	0.70021	0.0	0.15987	0.13329	0.093328	0.10005			
12	0.0	0.70021	0.0	0.16579	0.13626	0.095411	0.10229			
13	0.0	0.70021	0.0	0.16993	0.13865	0.097085	0.10408			
14	0.0	0.70021	0.0	0.17230	0.13858	0.097032	0.10402			
15	0.0	0.70021	0.0	0.17289	0.13805	0.096664	0.10363			
16	0.0	0.70021	0.0	0.17112	0.13370	0.093620	0.10037			
17	0.0	0.70021	0.0	0.16697	0.12955	0.090711	0.097247			
18	0.0	0.70021	0.0	0.16105	0.12318	0.086253	0.092468			
19	0.0	0.70021	0.0	0.15336	0.11564	0.080975	0.086809			
20	0.0	0.70021	0.0	0.14270	0.10534	0.073761	0.079076			
21	0.0	0.70021	0.0	0.12849	0.093602	0.065541	0.070263			
22	0.0	0.70021	0.0	0.11191	0.080518	0.056379	0.060441			
23	0.0	0.70021	0.0	0.092961	0.066160	0.046325	0.049663			
24	0.0	0.70021	0.0	0.070461	0.049063	0.034355	0.036830			
25	0.0	0.70021	0.0	0.044408	0.031045	0.021738	0.023304			
26	0.0	0.70021	0.0	0.015395	0.011545	0.0080838	0.0086662			
Slice Surface Load [kN/m_hor/m] Point Load [kN/m] Water Pressure on No. Vert Horiz Vert Horiz ground surface [kN/m_hor/m] Vert Horiz										
1	0.0		0.0	0.0	0.0	0.0	0.0			
2	0.0		0.0	0.0	0.0	0.0	0.0			
3	0.0		0.0	0.0	0.0	0.0	0.0			
4	0.0		0.0	0.0	0.0	0.0	0.0			
5	0.0		0.0	0.0	0.0	0.0	0.0			
6	0.0		0.0	0.0	0.0	0.0	0.0			
7	0.0		0.0	0.0	0.0	0.0	0.0			
8	0.0		0.0	0.0	0.0	0.0	0.0			
9	0.0		0.0	0.0	0.0	0.0	0.0			
10	0.0		0.0	0.0	0.0	0.0	0.0			
11	0.0		0.0	0.0	0.0	0.0	0.0			
12	0.0		0.0	0.0	0.0	0.0	0.0			
13	0.0		0.0	0.0	0.0	0.0	0.0			
14	0.0		0.0	0.0	0.0	0.0	0.0			
15	0.0		0.0	0.0	0.0	0.0	0.0			
16	0.0		0.0	0.0	0.0	0.0	0.0			
17	0.0		0.0	0.0	0.0	0.0	0.0			
18	0.0		0.0	0.0	0.0	0.0	0.0			
19	0.0		0.0	0.0	0.0	0.0	0.0			



Vine Street, Gorton
Section C

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date

Slice Surface Load [kN/m_hor/m] No.	Point Load [kN/m]		Water Pressure on ground surface [kN/m_hor/m]			
	Vert	Horiz	Vert	Horiz	Vert	Horiz
20	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0

Job No.	Sheet No.	Rev.
14-944		
Drg. Ref.		
Made by CB	Date	Checked Date

