TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02645

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13653	13654	13655	13656	13657	13658
				Other ID						
				Depth m	0.50	0.50	0.50	0.50	0.50	1.50
				Lab ID	FAB03	FAB08	FAT07	FAT08	FAT14	FAT14
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Metals - Solid										
Arsenic	TP137	M	0.5	mg/kg	0.6	0.9	1.1	1.6	1.5	< 0.5
Boron, water soluble	TP032	U	0.2	mg/kg	< 0.2	< 0.2	0.4	0.4	0.3	< 0.2
Cadmium	TP137	M	0.1	mg/kg	0.10	0.16	0.14	0.18	0.17	< 0.10
Chromium	TP137	M	1	mg/kg	9	21	14	20	33	9
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	9	17	12	17	15	3
Lead	TP137	M	1	mg/kg	5	8	19	15	14	3
Mercury	TP137	M	0.1	mg/kg	< 0.10	0.12	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	TP137	M	1	mg/kg	7	13	8	11	18	6
Selenium	TP137	U	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc	TP137	M	0.5	mg/kg	31.8	39.0	55.5	62.3	77.1	18.1
Inorganic Suite - Solid										
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	< 0.10	0.17	< 0.10	< 0.10	0.45	< 0.10
pH	TP019	M	0	-	7.5	6.3	9.2	8.0	8.6	7.8
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.03	0.02	0.09	0.09	0.08	0.02
Organic Matter	TP041	U	0.1	%	5.5	2.9	2.9	7.8	5.6	0.5
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	0.2	2.0	0.5	1.9	0.5	0.2
TPH - Solid										
Mineral Oil (C10-C40) - EH_1D_Total	TP067	N	1	mg/kg	-	-	71	-	28	-
TPHCWG/VPHCWG - Solid										

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				Other ID						
				Depth m	0.50	0.50	0.50	0.50	0.50	1.50
				Lab ID	FAB03	FAB08	FAT07	FAT08	FAT14	FAT14
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	3	1	4	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	60	1	19	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	2	< 1	< 1	1	1	1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	2	1	< 1	2	1	3
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
PAHs - Solid										
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

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				Other ID						
				Depth m	0.50	0.50	0.50	0.50	0.50	1.50
				Lab ID	FAB03	FAB08	FAT07	FAT08	FAT14	FAT14
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	TP045	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCB 7 Congeners - Solid										
PCB congener 28	TP110	M	0.5	µg/kg	-	-	4.43	-	3.82	-
PCB congener 52	TP110	N	0.5	µg/kg	-	-	2.74	-	2.23	-
PCB congener 101	TP110	N	0.5	µg/kg	-	-	1.26	-	0.91	-
PCB congener 118	TP110	N	0.5	µg/kg	-	-	0.64	-	< 0.50	-
PCB congener 138	TP110	M	0.5	µg/kg	-	-	0.89	-	< 0.50	-
PCB congener 153	TP110	N	0.5	µg/kg	-	-	0.67	-	< 0.50	-
PCB congener 180	TP110	N	0.5	µg/kg	-	-	< 0.50	-	< 0.50	-
Total PCBs (sum 7 congeners)	TP110	N	3.5	µg/kg	-	-	10.6	-	7.0	-
VOCs (BTEX) - Solid										

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				Lab ID	FAB03	FAB08	FAT07	FAT08	FAT14	FAT14
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02645

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13653	13654	13655	13656	13657	13658
				Other ID						
				Depth m	0.50	0.50	0.50	0.50	0.50	1.50
				Lab ID	FAB03	FAB08	FAT07	FAT08	FAT14	FAT14
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023	15/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Asbestos										
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	1116.51	1187.07	1239.95	1202.22	1335.60	1208.45
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND

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Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02645
Client Reference/Site: LT519 Fort Augustus Upgrade

Test	Method	Acc	LOD	Units	Sample ID	FAT07	FAT14	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	0.50	0.50			
					Lab ID	13655	13657			
					Sample Type	SOIL	SOIL			
					Sample Date	15/08/2023	15/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%		0.5	0.5	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg		< 1.6	< 1.6	100	-	-
Loss on Ignition	TP042	M	0.1	%		1.71	1.94	-	-	10
pH	TP019	M	~	-		9.2	8.6	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg		-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg		< 0.03	< 0.03	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg		0.0106	0.007	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg		71	28	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)										
Arsenic	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg		0.07	0.08	20	100	300
Cadmium	TP156	N	0.04	mg/kg		< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg		< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg		< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg		< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg		< 0.01	0.01	0.5	10	30
Nickel	TP156	N	0.1	mg/kg		< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg		< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg		< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg		< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg		< 40.0	< 40.0	800	15000	25000
Fluoride	TP080	N	1	mg/kg		2.7	1	10	150	500
Sulphate	TP065	N	100	mg/kg		< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg		689	793	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg		< 0.1	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg		115	105	500	800	1000

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SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02645
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Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
13653		0.50	FAB03	15/08/2023	20.6	SAND with Fine to Medium Gravel	5.91	39.4
13654		0.50	FAB08	15/08/2023		Loamy SAND with Fine to Medium Gravel	7.55	62.2
13655		0.50	FAT07	15/08/2023		SAND with Fine to Medium Gravel	5.52	50.3
13656		0.50	FAT08	15/08/2023		Clayey SAND with Fine to Medium Gravel	9.45	50.1
13657		0.50	FAT14	15/08/2023		Clayey SAND with Fine to Medium Gravel	7.67	48.3
13658		1.50	FAT14	15/08/2023		SAND with Fine Gravel	6.51	3.72

Notes
Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02645
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Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
13653		0.50	FAB03	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13654		0.50	FAB08	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13655		0.50	FAT07	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13656		0.50	FAT08	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13657		0.50	FAT14	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13658		1.50	FAT14	Solid	15/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02645
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Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

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				Sample ID	13659	13660	13661	13662	13663	13664	13665
				Other ID							
				Depth m	0.50	0.50	1.50	0.50	1.50	0.50	1.00
				Lab ID	FAB01	FAT16	FAT16	FAT17	FAT17	FAT18	FAT18
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**							
Metals - Solid											
Arsenic	TP137	M	0.5	mg/kg	1.2	1.4	1.1	1.3	0.5	1.0	1.4
Boron, water soluble	TP032	U	0.2	mg/kg	0.3	0.3	0.4	0.3	0.3	< 0.2	0.3
Cadmium	TP137	M	0.1	mg/kg	0.19	0.13	0.14	0.19	0.10	0.12	0.10
Chromium	TP137	M	1	mg/kg	22	23	21	23	11	22	17
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	12	7	5	4	6	5	5
Lead	TP137	M	1	mg/kg	9	15	14	14	9	10	10
Mercury	TP137	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	TP137	M	1	mg/kg	8	8	7	8	4	10	7
Selenium	TP137	U	0.5	mg/kg	1.07	< 0.50	0.92	0.87	< 0.50	0.53	0.62
Zinc	TP137	M	0.5	mg/kg	46.7	45.2	40.5	40.9	25.0	52.0	34.6
Inorganic Suite - Solid											
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	0.64	0.50	0.65	0.43	0.56	0.34	0.47
pH	TP019	M	0	-	6.2	5.7	5.5	5.3	5.6	5.7	5.5
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.02	0.02	0.01	0.01	0.01	0.01	0.01
Organic Matter	TP041	U	0.1	%	5.9	9.5	10.6	11.1	8.9	2.2	7.7
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	2.4	4.4	4.3	4.4	3.5	1.3	3.2
TPH - Solid											
Mineral Oil (C10-C40) - EH_1D_Total	TP067	N	1	mg/kg	-	-	7	6	-	-	-
TPHCWG/VPHCWG - Solid											

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02646

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13659	13660	13661	13662	13663	13664	13665
				Other ID							
				Depth m	0.50	0.50	1.50	0.50	1.50	0.50	1.00
				Lab ID	FAB01	FAT16	FAT16	FAT17	FAT17	FAT18	FAT18
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**							
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	1	1	1	< 1	< 1	1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	1	2	< 1	< 1	< 1	1	1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	3	4	2	2	2	2	2
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	1	3	1	1	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1	< 1
PAHs - Solid											
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02646

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13659	13660	13661	13662	13663	13664	13665
				Other ID							
				Depth m	0.50	0.50	1.50	0.50	1.50	0.50	1.00
				Lab ID	FAB01	FAT16	FAT16	FAT17	FAT17	FAT18	FAT18
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**							
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	TP045	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCB 7 Congeners - Solid											
PCB congener 28	TP110	M	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 52	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 101	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 118	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 138	TP110	M	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 153	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
PCB congener 180	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-	-
Total PCBs (sum 7 congeners)	TP110	N	3.5	µg/kg	-	-	< 3.5	< 3.5	-	-	-
VOCs (BTEX) - Solid											

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02646

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13659	13660	13661	13662	13663	13664	13665
				Other ID							
				Depth m	0.50	0.50	1.50	0.50	1.50	0.50	1.00
				Lab ID	FAB01	FAT16	FAT16	FAT17	FAT17	FAT18	FAT18
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**							
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02646

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13659	13660	13661	13662	13663	13664	13665
				Other ID							
				Depth m	0.50	0.50	1.50	0.50	1.50	0.50	1.00
				Lab ID	FAB01	FAT16	FAT16	FAT17	FAT17	FAT18	FAT18
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023	16/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**							
Asbestos											
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	1054.06	864.00	755.91	622.48	1019.84	687.02	600.00
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND	ND

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Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02646
Client Reference/Site: LT519 Fort Augustus Upgrade

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02646
Client Reference/Site: LT519 Fort Augustus Upgrade

Test	Method	Acc	LOD	Units	Sample ID	FAT16	FAT17	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	1.50	0.50			
					Lab ID	13661	13662			
					Sample Type	SOIL	SOIL			
					Sample Date	16/08/2023	16/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%	4.3	4.4	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	100	-	-
Loss on Ignition	TP042	M	0.1	%	8.97	10.6	-	-	10
pH	TP019	M	~	-	5.5	5.3	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg	-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg	< 0.03	< 0.03	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg	< 0.0035	< 0.0035	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg	7	6	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)									
Arsenic	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg	0.05	0.03	20	100	300
Cadmium	TP156	N	0.04	mg/kg	< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg	< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg	< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg	< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg	< 0.01	< 0.01	0.5	10	30
Nickel	TP156	N	0.1	mg/kg	< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg	< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg	< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg	< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg	< 40.0	< 40.0	800	15000	25000
Fluoride	TP080	N	1	mg/kg	< 1.0	< 1.0	10	150	500
Sulphate	TP065	N	100	mg/kg	< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg	169	91	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg	0.2	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg	151	59	500	800	1000

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SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02646
Client Reference / Site: LT519 Fort Augustus Upgrade

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
13659		0.50	FAB01	16/08/2023	20.6	Clayey SAND with Fine to Medium Gravel	11.1	43.5
13660		0.50	FAT16	16/08/2023		Peaty CLAY with Fine to Medium Gravel and Roots/Twigs	33.4	10.5
13661		1.50	FAT16	16/08/2023		Clayey SAND with Fine to Medium Gravel	30.4	12.8
13662		0.50	FAT17	16/08/2023		Clayey SAND with Fine to Medium Gravel	28.6	12.1
13663		1.50	FAT17	16/08/2023		Clayey SAND with Fine to Medium Gravel	19.4	27.5
13664		0.50	FAT18	16/08/2023		Clayey SAND with Fine to Medium Gravel	12.5	18.1
13665		1.00	FAT18	16/08/2023	20.6	Peaty SAND with Fine to Medium Gravel	23.6	23.1

Notes
Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02646
Client Reference/Site: LT519 Fort Augustus Upgrade

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
13659		0.50	FAB01	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13660		0.50	FAT16	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13661		1.50	FAT16	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13662		0.50	FAT17	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13663		1.50	FAT17	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13664		0.50	FAT18	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13665		1.00	FAT18	Solid	16/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02646
Client Reference/Site: LT519 Fort Augustus Upgrade

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02680

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13839	13840	13841
				Other ID			
				Depth m	0.50	1.00	0.50
				Lab ID	FAB11	FAB12	FAT15
				Sample Type	SOIL	SOIL	SOIL
				Sample Date	18/08/2023	18/08/2023	18/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**			
Metals - Solid							
Arsenic	TP137	M	0.5	mg/kg	1.1	< 0.5	0.7
Boron, water soluble	TP032	U	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Cadmium	TP137	M	0.1	mg/kg	0.16	0.29	0.12
Chromium	TP137	M	1	mg/kg	13	27	18
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	7	4	4
Lead	TP137	M	1	mg/kg	7	8	5
Mercury	TP137	M	0.1	mg/kg	0.12	< 0.10	< 0.10
Nickel	TP137	M	1	mg/kg	12	20	13
Selenium	TP137	U	0.5	mg/kg	< 0.50	0.50	< 0.50
Zinc	TP137	M	0.5	mg/kg	30.4	43.6	25.6
Inorganic Suite - Solid							
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	0.13	0.36	0.29
pH	TP019	M	0	-	6.4	5.4	5.3
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.01	0.01	0.01
Organic Matter	TP041	U	0.1	%	0.5	1.9	4.5
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	0.8	0.9	1.9
TPHCWG/VPHCWG - Solid							
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 20	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 20	< 10

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02680

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13839	13840	13841
				Other ID			
				Depth m	0.50	1.00	0.50
				Lab ID	FAB11	FAB12	FAT15
				Sample Type	SOIL	SOIL	SOIL
				Sample Date	18/08/2023	18/08/2023	18/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**			
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1
PAHs - Solid							
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02680

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13839	13840	13841
				Other ID			
				Depth m	0.50	1.00	0.50
				Lab ID	FAB11	FAB12	FAT15
				Sample Type	SOIL	SOIL	SOIL
				Sample Date	18/08/2023	18/08/2023	18/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**			
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3
VOCs (BTEX) - Solid							
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 10	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02680

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13839	13840	13841
				Other ID			
				Depth m	0.50	1.00	0.50
				Lab ID	FAB11	FAB12	FAT15
				Sample Type	SOIL	SOIL	SOIL
				Sample Date	18/08/2023	18/08/2023	18/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**			

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02680

Client Reference/Site: LT519 Fort Augustus Upgrade

				Sample ID	13839	13840	13841
				Other ID			
				Depth m	0.50	1.00	0.50
				Lab ID	FAB11	FAB12	FAT15
				Sample Type	SOIL	SOIL	SOIL
				Sample Date	18/08/2023	18/08/2023	18/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**			
Asbestos							
Asbestos Screen	TP181	U	~	-	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	1170.18	1050.84	1135.36
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND

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d - Result deviating. Please refer to deviation table at the end of the report

Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02680
Client Reference/Site: LT519 Fort Augustus Upgrade

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02680
Client Reference/Site: LT519 Fort Augustus Upgrade

Test	Method	Acc	LOD	Units	Sample ID	FAB11	FAB12	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	0.50	1.00			
					Lab ID	13839	13840			
					Sample Type	SOIL	SOIL			
					Sample Date	18/08/2023	18/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%	0.8	0.9	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	100	-	-
Loss on Ignition	TP042	M	0.1	%	-	-	-	-	10
pH	TP019	M	~	-	6.4	5.4	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg	-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg	< 0.03	< 0.03	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg	< 0.0035	< 0.0035	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg	< 1	< 1	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)									
Arsenic	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg	0.15	0.04	20	100	300
Cadmium	TP156	N	0.04	mg/kg	< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg	< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg	< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg	< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg	< 0.01	< 0.01	0.5	10	30
Nickel	TP156	N	0.1	mg/kg	< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg	< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg	< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg	< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg	60.5	< 40.0	800	15000	25000
Fluoride	TP080	N	1	mg/kg	< 1.0	< 1.0	10	150	500
Sulphate	TP065	N	100	mg/kg	< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg	325	104	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg	< 0.1	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg	46	25	500	800	1000

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A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02680
Client Reference / Site: LT519 Fort Augustus Upgrade

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
13839		0.50	FAB11	18/08/2023	20.7	SAND with Fine to Medium Gravel	5.03	53.2
13840		1.00	FAB12	18/08/2023		SAND with Fine to Medium Gravel	10.2	42.3
13841		0.50	FAT15	18/08/2023		SAND with Fine to Medium Gravel	13.4	26.7

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02680
Client Reference/Site: LT519 Fort Augustus Upgrade

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
13839		0.50	FAB11	Solid	18/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13840		1.00	FAB12	Solid	18/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
13841		0.50	FAT15	Solid	18/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02680
Client Reference/Site: LT519 Fort Augustus Upgrade

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02689

Client Reference/Site: LT519 Fort Augustus

				Sample ID	13876	13877	13878	13879	13880
				Other ID					
				Depth m	0.5	1.00	0.5	0.5	1.00
				Lab ID	FAB04	FAB06	FAT11	FAT12	FAT13
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	21/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**					
Metals - Solid									
Arsenic	TP137	M	0.5	mg/kg	1.6	1.0	0.7	< 0.5	0.8
Boron, water soluble	TP032	U	0.2	mg/kg	0.3	< 0.2	< 0.2	< 0.2	< 0.2
Cadmium	TP137	M	0.1	mg/kg	0.42	0.29	0.21	0.15	0.19
Chromium	TP137	M	1	mg/kg	24	29	13	9	15
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	6	6	3	1	5
Lead	TP137	M	1	mg/kg	13	11	6	3	8
Mercury	TP137	M	0.1	mg/kg	0.14	0.11	0.24	< 0.10	0.11
Nickel	TP137	M	1	mg/kg	11	22	11	7	14
Selenium	TP137	U	0.5	mg/kg	0.83	< 0.50	< 0.50	< 0.50	< 0.50
Zinc	TP137	M	0.5	mg/kg	51.2	75.3	40.1	26.2	32.1
Inorganic Suite - Solid									
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	0.65	< 0.10	0.19	< 0.10	0.15
pH	TP019	M	0	-	5.8	5.6	5.5	5.4	5.4
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.02	0.02	0.01	< 0.01	0.01
Organic Matter	TP041	U	0.1	%	5.6	1.4	2.5	1.1	1.4
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	2.9	0.7	1.3	0.6	0.8
TPHCWG/VPHCWG - Solid									
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 20	< 20	< 10	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 20	< 20	< 10	< 10

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02689

Client Reference/Site: LT519 Fort Augustus

				Sample ID	13876	13877	13878	13879	13880
				Other ID					
				Depth m	0.5	1.00	0.5	0.5	1.00
				Lab ID	FAB04	FAB06	FAT11	FAT12	FAT13
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	21/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**					
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	14	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	98	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1
PAHs - Solid									
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02689

Client Reference/Site: LT519 Fort Augustus

				Sample ID	13876	13877	13878	13879	13880
				Other ID					
				Depth m	0.5	1.00	0.5	0.5	1.00
				Lab ID	FAB04	FAB06	FAT11	FAT12	FAT13
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	21/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**					
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
VOCs (BTEX) - Solid									
Benzene	TP154	M	5	µg/kg	< 5	7	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	33	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	27	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 10	< 10	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	12	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	14	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02689

Client Reference/Site: LT519 Fort Augustus

				Sample ID	13876	13877	13878	13879	13880
				Other ID					
				Depth m	0.5	1.00	0.5	0.5	1.00
				Lab ID	FAB04	FAB06	FAT11	FAT12	FAT13
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	21/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**					

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02689

Client Reference/Site: LT519 Fort Augustus

				Sample ID	13876	13877	13878	13879	13880
				Other ID					
				Depth m	0.5	1.00	0.5	0.5	1.00
				Lab ID	FAB04	FAB06	FAT11	FAT12	FAT13
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	21/08/2023	21/08/2023	21/08/2023	21/08/2023	21/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**					
Asbestos									
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	799.73	1120.76	1268.15	1033.28	1130.24
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND

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d - Result deviating. Please refer to deviation table at the end of the report

Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02689
Client Reference/Site: LT519 Fort Augustus

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02689
Client Reference/Site: LT519 Fort Augustus

Test	Method	Acc	LOD	Units	Sample ID	FAB04	FAT12	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	0.5	0.5			
					Lab ID	13876	13879			
					Sample Type	SOIL	SOIL			
					Sample Date	21/08/2023	21/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%	2.9	0.6	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	-	-	100	-	-
Loss on Ignition	TP042	M	0.1	%	7.69	1.99	-	-	10
pH	TP019	M	~	-	5.8	5.4	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg	-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg	-	-	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg	-	-	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg	-	-	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)									
Arsenic	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg	0.05	0.03	20	100	300
Cadmium	TP156	N	0.04	mg/kg	< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg	< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg	< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg	< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg	< 0.01	< 0.01	0.5	10	30
Nickel	TP156	N	0.1	mg/kg	< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg	< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg	< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg	< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg	< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg	< 40.0	< 40.0	800	15000	25000
Fluoride	TP080	N	1	mg/kg	7.8	5.1	10	150	500
Sulphate	TP065	N	100	mg/kg	< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg	293	163	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg	< 0.1	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg	157	84	500	800	1000

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A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02689
Client Reference / Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
13876		0.5	FAB04	21/08/2023	19.2	Clayey SAND with Fine to Medium Gravel	22.7	16.3
13877		1.00	FAB06	21/08/2023	19.2	Clayey SAND with Fine to Medium Gravel	9.86	60.5
13878		0.5	FAT11	21/08/2023	19.2	SAND with Fine to Medium Gravel	6.68	56.0
13879		0.5	FAT12	21/08/2023	19.2	SAND	11.0	< 0.01
13880		1.00	FAT13	21/08/2023	19.2	SAND with Fine to Medium Gravel	7.09	48.1

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02689
Client Reference/Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
13876		0.5	FAB04	Solid	21/08/2023	800mL Tub, 60mL Glass Vial, 800mL Tub, 60mL Glass Vial							No
13877		1.00	FAB06	Solid	21/08/2023	800mL Tub, 60mL Glass Vial, 800mL Tub, 60mL Glass Vial							No
13878		0.5	FAT11	Solid	21/08/2023	800mL Tub, 60mL Glass Vial, 800mL Tub, 60mL Glass Vial							No
13879		0.5	FAT12	Solid	21/08/2023	800mL Tub, 60mL Glass Vial, 800mL Tub, 60mL Glass Vial							No
13880		1.00	FAT13	Solid	21/08/2023	800mL Tub, 60mL Glass Vial, 800mL Tub, 60mL Glass Vial							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02689
Client Reference/Site: LT519 Fort Augustus

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02716

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14077	14078	14079	14080	14081	14082
				Other ID						
				Depth m	1.00	0.50	0.50	1.00	1.00	0.50
				Lab ID	FAB07	FAB10	FAT03	FAT05	FAT09	FAT10
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Metals - Solid										
Arsenic	TP137	M	0.5	mg/kg	2.1	1.8	2.2	1.8	1.4	1.1
Boron, water soluble	TP032	U	0.2	mg/kg	< 0.2	< 0.2	0.3	< 0.2	< 0.2	< 0.2
Cadmium	TP137	M	0.1	mg/kg	0.25	0.43	0.34	1.40	0.14	0.34
Chromium	TP137	M	1	mg/kg	18	27	17	23	10	29
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	12	9	7	8	5	6
Lead	TP137	M	1	mg/kg	10	13	11	9	4	7
Mercury	TP137	M	0.1	mg/kg	0.11	0.26	0.13	0.14	0.12	0.19
Nickel	TP137	M	1	mg/kg	16	19	9	16	11	19
Selenium	TP137	U	0.5	mg/kg	< 0.50	0.82	1.01	0.76	< 0.50	0.51
Zinc	TP137	M	0.5	mg/kg	39.1	63.9	38.0	55.0	27.2	54.8
Inorganic Suite - Solid										
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	< 0.10	0.12	0.77	< 0.10	< 0.10	< 0.10
pH	TP019	M	0	-	7.1	5.2	5.5	5.4	5.7	5.3
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.01	0.01	0.03	0.02	0.01	0.02
Organic Matter	TP041	U	0.1	%	1.5	2.8	10.2	4.1	0.5	4.4
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	1.2	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	0.6	1.6	5.2	1.4	0.2	1.1
TPH - Solid										
Mineral Oil (C10-C40) - EH_1D_Total	TP067	N	1	mg/kg	-	-	< 1	< 1	-	-
TPHCWG/VPHCWG - Solid										

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02716

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14077	14078	14079	14080	14081	14082
				Other ID						
				Depth m	1.00	0.50	0.50	1.00	1.00	0.50
				Lab ID	FAB07	FAB10	FAT03	FAT05	FAT09	FAT10
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1	< 1	< 1
PAHs - Solid										
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02716

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14077	14078	14079	14080	14081	14082
				Other ID						
				Depth m	1.00	0.50	0.50	1.00	1.00	0.50
				Lab ID	FAB07	FAB10	FAT03	FAT05	FAT09	FAT10
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	TP045	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3	< 1.3
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6
PCB 7 Congeners - Solid										
PCB congener 28	TP110	M	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 52	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 101	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 118	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 138	TP110	M	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 153	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
PCB congener 180	TP110	N	0.5	µg/kg	-	-	< 0.50	< 0.50	-	-
Total PCBs (sum 7 congeners)	TP110	N	3.5	µg/kg	-	-	< 3.5	< 3.5	-	-
VOCs (BTEX) - Solid										

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02716

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14077	14078	14079	14080	14081	14082
				Other ID						
				Depth m	1.00	0.50	0.50	1.00	1.00	0.50
				Lab ID	FAB07	FAB10	FAT03	FAT05	FAT09	FAT10
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02716

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14077	14078	14079	14080	14081	14082
				Other ID						
				Depth m	1.00	0.50	0.50	1.00	1.00	0.50
				Lab ID	FAB07	FAB10	FAT03	FAT05	FAT09	FAT10
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**						
Asbestos										
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	1351.90	1196.84	840.44	1060.06	967.26	1351.90
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND	ND	ND

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d - Result deviating. Please refer to deviation table at the end of the report

Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02716
Client Reference/Site: LT519 Fort Augustus

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02716
Client Reference/Site: LT519 Fort Augustus

Test	Method	Acc	LOD	Units	Sample ID	FAT03	FAT05	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	0.50	1.00			
					Lab ID	14079	14080			
					Sample Type	SOIL	SOIL			
					Sample Date	23/08/2023	23/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%		5.2	1.4	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg		< 1.6	< 1.6	100	-	-
Loss on Ignition	TP042	M	0.1	%		11.6	4.14	-	-	10
pH	TP019	M	~	-		5.5	5.4	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg		-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg		< 0.03	< 0.03	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg		< 0.0035	< 0.0035	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg		< 1	< 1	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)										
Arsenic	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg		0.03	0.06	20	100	300
Cadmium	TP156	N	0.04	mg/kg		< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg		< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg		< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg		< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg		< 0.01	< 0.01	0.5	10	30
Nickel	TP156	N	0.1	mg/kg		< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg		< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg		< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg		< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg		< 40.0	< 40.0	800	15000	25000
Fluoride	TP080	N	1	mg/kg		2.4	2.5	10	150	500
Sulphate	TP065	N	100	mg/kg		< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg		169	124	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg		< 0.1	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg		54	22	500	800	1000

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d - Result deviating. Please refer to deviation table at the end of the report

SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02716
Client Reference / Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
14077		1.00	FAB07	23/08/2023	17.2	SAND with Fine to Medium Gravel	5.18	69.1
14078		0.50	FAB10	23/08/2023		SAND with Fine to Medium Gravel	9.86	58.5
14079		0.50	FAT03	23/08/2023		Peaty SAND with Fine Gravel	29.8	14.9
14080		1.00	FAT05	23/08/2023		SAND with Fine to Medium Gravel	13.5	35.0
14081		1.00	FAT09	23/08/2023		SAND with Fine to Medium Gravel	6.87	21.2
14082		0.50	FAT10	23/08/2023		SAND with Fine to Medium Gravel	13.4	43.6

Notes

Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02716
Client Reference/Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
14077		1.00	FAB07	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
14078		0.50	FAB10	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
14079		0.50	FAT03	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
14080		1.00	FAT05	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
14081		1.00	FAT09	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No
14082		0.50	FAT10	Solid	23/08/2023	800mL Tub, 60mL Glass Vial, 60mL Glass Vial, 800mL Tub							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02716
Client Reference/Site: LT519 Fort Augustus

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02730

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14181	14182	14183	14184
				Other ID				
				Depth m	0.50	0.50	0.40	0.40
				Lab ID	FAB09	FAT01	FAT02	FAT04
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Metals - Solid								
Arsenic	TP137	M	0.5	mg/kg	2.1	2.3	2.1	2.1
Boron, water soluble	TP032	U	0.2	mg/kg	< 0.2	0.2	0.4	0.3
Cadmium	TP137	M	0.1	mg/kg	0.50	0.32	0.41	0.24
Chromium	TP137	M	1	mg/kg	30	19	54	15
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	9	17	9	12
Lead	TP137	M	1	mg/kg	14	10	13	21
Mercury	TP137	M	0.1	mg/kg	0.19	0.21	0.24	0.16
Nickel	TP137	M	1	mg/kg	18	12	31	11
Selenium	TP137	U	0.5	mg/kg	2.22	0.70	0.97	< 0.50
Zinc	TP137	M	0.5	mg/kg	93.3	58.5	63.4	55.5
Inorganic Suite - Solid								
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	0.22	0.15	0.87	< 0.10
pH	TP019	M	0	-	4.9	7.0	5.5	8.0
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.01	0.06	0.01	0.08
Organic Matter	TP041	U	0.1	%	3.1	2.2	8.5	1.0
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	1.4	1.2	4.8	0.5
TPH - Solid								
Mineral Oil (C10-C40) - EH_1D_Total	TP067	N	1	mg/kg	-	-	-	29
TPHCWG/VPHCWG - Solid								

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SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02730

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14181	14182	14183	14184
				Other ID				
				Depth m	0.50	0.50	0.40	0.40
				Lab ID	FAB09	FAT01	FAT02	FAT04
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	2
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	3	22
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	4
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1
PAHs - Solid								
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02730

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14181	14182	14183	14184
				Other ID				
				Depth m	0.50	0.50	0.40	0.40
				Lab ID	FAB09	FAT01	FAT02	FAT04
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	TP045	N	0.3	mg/kg	< 0.3	-	< 0.3	< 0.3
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	-	< 1.6	< 1.6
PCB 7 Congeners - Solid								
PCB congener 28	TP110	M	0.5	µg/kg	-	-	-	27.0
PCB congener 52	TP110	N	0.5	µg/kg	-	-	-	10.4
PCB congener 101	TP110	N	0.5	µg/kg	-	-	-	3.27
PCB congener 118	TP110	N	0.5	µg/kg	-	-	-	1.11
PCB congener 138	TP110	M	0.5	µg/kg	-	-	-	2.04
PCB congener 153	TP110	N	0.5	µg/kg	-	-	-	1.31
PCB congener 180	TP110	N	0.5	µg/kg	-	-	-	< 0.50
Total PCBs (sum 7 congeners)	TP110	N	3.5	µg/kg	-	-	-	45.1
VOCs (BTEX) - Solid								

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02730

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14181	14182	14183	14184
				Other ID				
				Depth m	0.50	0.50	0.40	0.40
				Lab ID	FAB09	FAT01	FAT02	FAT04
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5

Key

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02730

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14181	14182	14183	14184
				Other ID				
				Depth m	0.50	0.50	0.40	0.40
				Lab ID	FAB09	FAT01	FAT02	FAT04
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Asbestos								
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	872.33	1208.40	1009.46	1375.65
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND

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Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02730
Client Reference/Site: LT519 Fort Augustus

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02730
Client Reference/Site: LT519 Fort Augustus

			Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
Sample ID	FAT04				
Other ID					
Depth (m)	0.40				
Lab ID	14184				
Sample Type	SOIL				
Sample Date	23/08/2023				

Test	Method	Acc	LOD	Units					
WAC - Solid Testing									
Total Organic Carbon	TP189	N	0.1	%	0.5	-	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	-	100	-	-
Loss on Ignition	TP042	M	0.1	%	1.97	-	-	-	10
pH	TP019	M	~	-	8	-	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg	-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg	< 0.03	-	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg	0.0451	-	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg	29	-	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)									
Arsenic	TP156	N	0.05	mg/kg	< 0.1	-	0.5	2	25
Barium	TP156	N	0.01	mg/kg	0.08	-	20	100	300
Cadmium	TP156	N	0.04	mg/kg	< 0.04	-	0.04	1	5
Chromium	TP156	N	0.1	mg/kg	< 0.10	-	0.5	10	70
Copper	TP156	N	0.1	mg/kg	< 0.10	-	2	50	100
Mercury	TP156	N	0.005	mg/kg	< 0.005	-	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg	0.02	-	0.5	10	30
Nickel	TP156	N	0.1	mg/kg	< 0.1	-	0.4	10	40
Lead	TP156	N	0.2	mg/kg	< 0.20	-	0.5	10	50
Antimony	TP156	N	0.05	mg/kg	< 0.05	-	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg	< 0.1	-	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg	< 0.2	-	4	50	200
Chloride	TP068	N	40	mg/kg	< 40.0	-	800	15000	25000
Fluoride	TP080	N	1	mg/kg	5.9	-	10	150	500
Sulphate	TP065	N	100	mg/kg	< 100	-	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg	722	-	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg	< 0.1	-	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg	274	-	500	800	1000

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d - Result deviating. Please refer to deviation table at the end of the report

SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02730
Client Reference / Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
14181		0.50	FAB09	23/08/2023	18.0	SAND with Fine to Medium Gravel	13.7	42.9
14182		0.50	FAT01	23/08/2023		SAND with Fine to Medium Gravel	8.99	53.2
14183		0.40	FAT02	23/08/2023		SAND with Fine to Medium Gravel	16.2	35.4
14184		0.40	FAT04	23/08/2023		SAND with Fine to Medium Gravel	5.61	51.5

Notes
Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02730
Client Reference/Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
14181		0.50	FAB09	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14182		0.50	FAT01	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14183		0.40	FAT02	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14184		0.40	FAT04	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02730
Client Reference/Site: LT519 Fort Augustus

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP074	Water soluble fluoride in soil	In-house documented method	No	No	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02744

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14258	14259	14260	14261
				Other ID				
				Depth m	0.50	1.00	0.50	0.30
				Lab ID	FAT08A	FAT08A	FAT08B	FAT08C
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Metals - Solid								
Arsenic	TP137	M	0.5	mg/kg	1.6	1.9	1.8	1.3
Boron, water soluble	TP032	U	0.2	mg/kg	0.5	0.4	0.5	< 0.2
Cadmium	TP137	M	0.1	mg/kg	0.14	0.24	0.18	0.16
Chromium	TP137	M	1	mg/kg	16	28	17	13
Chromium, hexavalent	TP040	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Copper	TP137	M	1	mg/kg	12	16	13	9
Lead	TP137	M	1	mg/kg	11	20	9	22
Mercury	TP137	M	0.1	mg/kg	0.27	0.26	0.14	0.20
Nickel	TP137	M	1	mg/kg	12	15	12	9
Selenium	TP137	U	0.5	mg/kg	< 0.50	< 0.50	< 0.50	< 0.50
Zinc	TP137	M	0.5	mg/kg	51.5	62.7	51.7	40.0
Inorganic Suite - Solid								
Cyanide, free	TP184	N	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Cyanide, total	TP193	N	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
pH	TP019	M	0	-	8.3	8.4	8.9	9.1
Sulphate, water soluble in 2:1 extract (as SO4)	TP169	M	0.01	g/l	0.08	0.11	0.16	0.03
Organic Matter	TP041	U	0.1	%	1.0	1.8	1.1	0.2
Phenol, monohydric	TP193	N	0.7	mg/kg	< 0.7	< 0.7	< 0.7	< 0.7
Total Organic Carbon	TP189	N	0.1	%	0.9	0.9	0.9	< 0.1
TPH - Solid								
Mineral Oil (C10-C40) - EH_1D_Total	TP067	N	1	mg/kg	12	-	-	< 1
TPHCWG/VPHCWG - Solid								

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02744

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14258	14259	14260	14261
				Other ID				
				Depth m	0.50	1.00	0.50	0.30
				Lab ID	FAT08A	FAT08A	FAT08B	FAT08C
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
TPH (Aliphatics C5-C6) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 500	< 10
TPH (Aliphatics C6-C8) - HS_1D_AL	TP154	M	10	µg/kg	< 10	< 10	< 500	< 10
TPH (Aliphatics C8-C10) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C10-C12) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C12-C16) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C16-C21) - EH_CU_1D_AL	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aliphatics C21-C35) - EH_CU_1D_AL	TP126	U	1	mg/kg	12	3	< 1	< 1
TPH (Aliphatics C35-C40) - EH_CU_1D_AL	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C6-C7) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C7-C8) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C8-C10) - HS_1D_AR	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
TPH (Aromatics C10-C12) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C12-C16) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C16-C21) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C21-C35) - EH_CU_1D_AR	TP126	U	1	mg/kg	< 1	< 1	< 1	< 1
TPH (Aromatics C35-C40) - EH_CU_1D_AR	TP126	N	1	mg/kg	< 1	< 1	< 1	< 1
PAHs - Solid								
Acenaphthene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(a)anthracene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02744

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14258	14259	14260	14261
				Other ID				
				Depth m	0.50	1.00	0.50	0.30
				Lab ID	FAT08A	FAT08A	FAT08B	FAT08C
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Benzo(ghi)perylene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	TP045	N	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
Dibenzo(ah)anthracene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(123-cd)pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Naphthalene	TP045	M	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	TP045	M	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
Total PAHs (USEPA 16)	TP045	M	1.3	mg/kg	< 1.3	< 1.3	< 1.3	< 1.3
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6
PCB 7 Congeners - Solid								
PCB congener 28	TP110	M	0.5	µg/kg	57.7	-	-	4.41
PCB congener 52	TP110	N	0.5	µg/kg	24.5	-	-	2.25
PCB congener 101	TP110	N	0.5	µg/kg	5.45	-	-	6.19
PCB congener 118	TP110	N	0.5	µg/kg	3.67	-	-	5.48
PCB congener 138	TP110	M	0.5	µg/kg	3.46	-	-	< 0.50
PCB congener 153	TP110	N	0.5	µg/kg	2.00	-	-	< 0.50
PCB congener 180	TP110	N	0.5	µg/kg	1.14	-	-	< 0.50
Total PCBs (sum 7 congeners)	TP110	N	3.5	µg/kg	97.9	-	-	18.3
VOCs (BTEX) - Solid								

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02744

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14258	14259	14260	14261
				Other ID				
				Depth m	0.50	1.00	0.50	0.30
				Lab ID	FAT08A	FAT08A	FAT08B	FAT08C
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
Ethyl benzene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
m/p-Xylene	TP154	M	10	µg/kg	< 10	< 10	< 10	< 10
Methyl tert-butyl ether (MTBE)	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
o-Xylene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5
Toluene	TP154	M	5	µg/kg	< 5	< 5	< 5	< 5

Key

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M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SUMMARY OF CHEMICAL ANALYSIS

Report Number: 23-02744

Client Reference/Site: LT519 Fort Augustus

				Sample ID	14258	14259	14260	14261
				Other ID				
				Depth m	0.50	1.00	0.50	0.30
				Lab ID	FAT08A	FAT08A	FAT08B	FAT08C
				Sample Type	SOIL	SOIL	SOIL	SOIL
				Sample Date	23/08/2023	23/08/2023	23/08/2023	23/08/2023
Test	**Method**	**Acc**	**LOD**	**Units**				
Asbestos								
Asbestos Screen	TP181	U	~	-	ND	ND	ND	ND
Weight of Sample Material	TP183	U	0.001	g	837.17	993.16	958.49	1205.19
Chrysotile (White Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Amosite (Brown Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Crocidolite (Blue Asbestos)	TP181	U	~	-	ND	ND	ND	ND
Anthophylite Asbestos	TP181	U	~	-	ND	ND	ND	ND
Tremolite Asbestos	TP181	U	~	-	ND	ND	ND	ND
Actinolite Asbestos	TP181	U	~	-	ND	ND	ND	ND

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A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

Analyst: Matthew Nicholls, Asbestos Lab Team Leader

Report Number: 23-02744
Client Reference/Site: LT519 Fort Augustus

Asbestos Notes

The Limit of Detection of the method is 0.001% dry mass of asbestos fibre of the dry weight of soil provided. Where the result of analysis is ND (Not Detected), this indicates that no asbestos fibres were identified by the analyst.

The Limit of Quantitation of the test is 0.001% dry mass of asbestos fibre of dry weight of soil/material provided based on method validation where the size of sample provided is in excess of 600g, and results associated with a sample mass less than 600g are DEVIATING.

Asbestos analysis is only undertaken at the Birmingham Laboratory only.

The uncertainty of measurement for the quantification of asbestos fibre in soil can be provided on request.

The identification of product type or the Asbestos Containing Material (ACM) within a soil sample is based on the opinion of the analyst based on the visual assessment and may not be accurate and is not covered by the scope of UKAS accreditation.

The analysis result pertains only to the sample provided and is not guaranteed to be representative in whole or part from where it was taken.

Information relating to the sampling site, ie hole depth and location, is provided by the client and Terra Tek do not accept any responsibility for the accuracy of validity of this information.

TERRA TEK
SITE INVESTIGATION & LABORATORY SERVICES

WASTE ACCEPTANCE CRITERIA

Report Number: 23-02744
Client Reference/Site: LT519 Fort Augustus

Test	Method	Acc	LOD	Units	Sample ID	FAT08A	FAT08C	Inert Landfill	Stable, non-reactive hazardous waste in non-hazardous landfill	Hazardous landfill
					Other ID					
					Depth (m)	0.50	0.30			
					Lab ID	14258	14261			
					Sample Type	SOIL	SOIL			
					Sample Date	23/08/2023	23/08/2023			
WAC - Solid Testing										
Total Organic Carbon	TP189	N	0.1	%		0.9	< 0.1	3	5	6
Total PAHs (USEPA 16 + Coronene)	TP045	N	1.6	mg/kg		< 1.6	< 1.6	100	-	-
Loss on Ignition	TP042	M	0.1	%		2.09	0.6	-	-	10
pH	TP019	M	~	-		8.3	9.1	-	>6	-
Acid Neutralisation Capacity	~	N	2	Mol/kg		-	-	-	-	-
BTEX (Sum)	TP154	N	0.03	mg/kg		< 0.03	< 0.03	6	-	-
Total PCBs (7 congeners)	TP110	M	0.0035	mg/kg		0.0979	0.0183	1	-	-
Mineral Oils (C10 - C40) - EH_CU_1D_Total	TP067	M	1	mg/kg		12	< 1	500	-	-
WAC - Leachate Testing (expressed as 10:1 ratio)										
Arsenic	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.5	2	25
Barium	TP156	N	0.01	mg/kg		0.08	0.11	20	100	300
Cadmium	TP156	N	0.04	mg/kg		< 0.04	< 0.04	0.04	1	5
Chromium	TP156	N	0.1	mg/kg		< 0.10	< 0.10	0.5	10	70
Copper	TP156	N	0.1	mg/kg		< 0.10	< 0.10	2	50	100
Mercury	TP156	N	0.005	mg/kg		< 0.005	< 0.005	0.01	0.2	2
Molybdenum	TP156	N	0.01	mg/kg		0.01	0.02	0.5	10	30
Nickel	TP156	N	0.1	mg/kg		< 0.1	< 0.1	0.4	10	40
Lead	TP156	N	0.2	mg/kg		< 0.20	< 0.20	0.5	10	50
Antimony	TP156	N	0.05	mg/kg		< 0.05	< 0.05	0.06	0.7	5
Selenium	TP156	N	0.05	mg/kg		< 0.1	< 0.1	0.1	0.5	7
Zinc	TP156	N	0.2	mg/kg		< 0.2	< 0.2	4	50	200
Chloride	TP068	N	40	mg/kg		124	559	800	15000	25000
Fluoride	TP080	N	1	mg/kg		1.7	4.1	10	150	500
Sulphate	TP065	N	100	mg/kg		< 100	< 100	1000	20000	50000
Dissolved Solids	TP035	N	50	mg/kg		696	2140	4000	60000	100000
Phenol	TP060	N	0.1	mg/kg		< 0.1	< 0.1	1	-	-
Dissolved Organic Carbon	TP162	N	10	mg/kg		86	304	500	800	1000

U - Results are ISO 17025 accredited

M - Results are MCERTS and ISO 17025 accredited

N - Results are outside of accreditation

A result value of 'D' or 'ND' refers to Detected/Not Detected

d - Result deviating. Please refer to deviation table at the end of the report

SAMPLE DESCRIPTION AND PREPARATION DATA

Report Number: 23-02744
Client Reference / Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Date	Temperature on receipt (°C)	Primary (in uppercase) and Secondary Matrix	% Loss at 30°C	% Retained 2mm
14258		0.50	FAT08A	23/08/2023	19.3	Clayey SAND with Fine to Medium Gravel	7.81	29.3
14259		1.00	FAT08A	23/08/2023		Clayey SAND with Fine to Medium Gravel	10.1	36.8
14260		0.50	FAT08B	23/08/2023		Clayey SAND with Fine to Medium Gravel	10.5	42.0
14261		0.30	FAT08C	23/08/2023		Clayey SAND with Fine to Medium Gravel	6.33	44.1

Notes
Terra Tek are accredited for clay, sand and loam matrix types only, where they constitute the major component of the sample. Other coarse granular materials such as gravel, are not accredited where they comprise the major constituent of the sample (listed as primary matrix above).Results are expressed on a dry-weight basis (samples dried at <30°C) except where stated within the test report. Samples for asbestos testing are dried at 85°C. With the exception of samples analysed for asbestos, the laboratory removes any material greater than 2mm prior to analysis. The quantity and nature of the material is shown as the secondary matrix type above.

DEVIATING SAMPLES

Report Number: 23-02744
Client Reference/Site: LT519 Fort Augustus

Sample ID	Other ID	Depth (m)	Lab ID	Sample Type	Sample Date	Container Type	DEVIATING CONDITIONS						
							Sampling date not provided	Incorrect sampling container	Exceeds maximum holding time for indicated test	Presence of headspace in vial	Poorly fitting cap or lid	Damaged container	Preservatives used
14258		0.50	FAT08A	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14259		1.00	FAT08A	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14260		0.50	FAT08B	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No
14261		0.30	FAT08C	Solid	23/08/2023	800mL Tub, 800mL Tub, 60mL Glass Vial, 60mL Glass Vial							No

Presence of ✓ means that the respective sample has met the deviating condition and therefore results for a sample that has been classified as deviating, so may be compromised.

SUMMARY OF METHODS USED

Report Number: 23-02744
Client Reference/Site: LT519 Fort Augustus

Method Code	Method Title	Reference	MCERTS Accredited	UKAS Accredited	Wet/dry sample tested
TP137	Acid extractable metals in soil	BS7755: Section 3.9: 1995/ISO 11466:1995	Selected	Selected	DRY
TP181	Asbestos Identification in bulk samples	HSG 248, Ed. 2	No	Yes	DRY
TP184	Chloride, Water Soluble 2:1	In-house documented method	No	No	DRY
TP110	Determination of 7 PCB congeners in soil	USEPA Methods 8082A & 3665A	Yes	Yes	WET
TP019	Determination of pH	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP184	Discrete Analyser		No	No	WET
TP162	Dissolved organic carbon in water	USEPA Method 9060A	No	Yes	WET
TP108	Electrical Conductivity in water	APHA/AWWA, 19th edition: Method 2510B	No	No	WET
TP047	Free cyanide in soil	MEWAM method: Cyanide in Waters etc	No	Yes	DRY
TP040	Hexavalent Chromium in soil	APHA/AWWA, 19th edition: Method 3500Cr-D	No	No	DRY
TP042	Loss on ignition in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	DRY
TP156	Metals in water (ICP-MS)	APHA/AWWA, 19th edition: Method 3030B (filtration)	No	No	WET
TP041	Organic matter content in soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	Yes	DRY
TP067	Petroleum hydrocarbons (C8 - C40) in soil	TNRCC Method 1005: 2001 (modified)	Yes	Yes	WET
TP045	Polyaromatic hydrocarbons in soil	GACHAMJA A.M. Chromatography and Analysis: 1992 9-11 (modified)	Yes	Yes	WET
GP001	Preservation & Preparation of Soil	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	Yes	Yes	WET
TP193	Skalar Analysis of Soil		No	No	DRY
TP194	Skalar Analysis of Water		No	No	WET
TP170	Sulphate (as SO4) + Sulphur by ICP-OES		No	No	WET
TP126	TPHCWG in soil (C8 - C40)	TNRCC Method 1006 (modified)	No	Yes	WET
TP035	Total dissolved solids in water	BS1377, Part 3, 1990: Soils for Civil Engineering Purposes.	No	No	WET
TP189	Total organic carbon in soil	In-house documented method	No	No	DRY
TP129	Total sulphur in soil	In-house documented method	Yes	Yes	DRY
TP154	Volatiles in soil by headspace	USEPA Method 5021. Wisconsin DNR modified GRO method	Selected	Yes	WET
TP032	Water soluble boron in soil	MAFF Book 427: The Analysis of Agricultural Materials: Method 8	No	Yes	DRY
TP169	Water soluble sulphate in soil	In-house documented method	Yes	Yes	DRY

APPENDIX E
ECoW REPORT

Style: APPENDIX E File: P:\GINTW\PROJECTS\26491.GPJ Printed: 19/11/2023 11:28:55 Raeburn Drilling and Geotechnical, Whisteberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com