

FAIRHURST

Large-Scale National Grid Data

Published 1994 - 1995

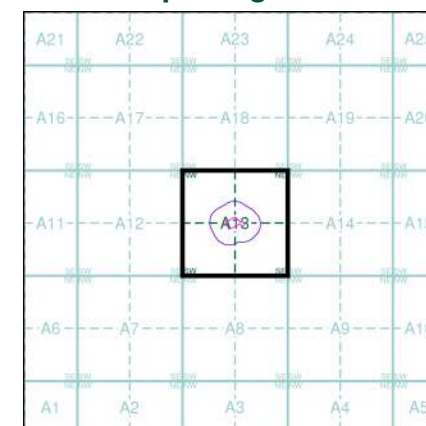
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SJ8498NE	SJ8598NW
1995	1994
1:1,250	1:1,250
SJ8498SW	
1995	
1:1,250	

Historical Map - Segment A13



Order Details

Order Number: 302490219_1_1
Customer Ref: 143404
National Grid Reference: 384790, 398380
Slice: A
Site Area (Ha): 0.47
Search Buffer (m): 100

Site Details

Flat 1, Burlington House, 22, Tariff Street, MANCHESTER, M1 2DN

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
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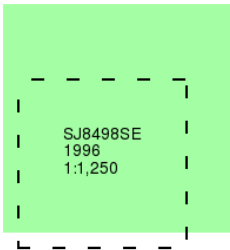
Large-Scale National Grid Data

Published 1996

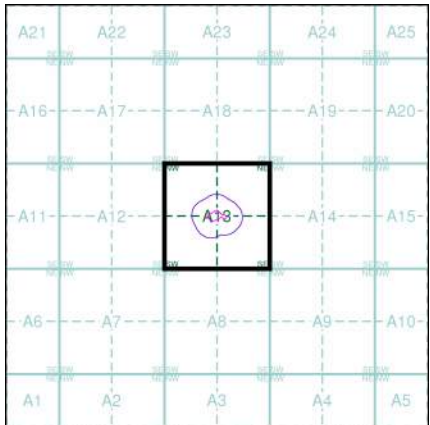
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Map Name(s) and Date(s)



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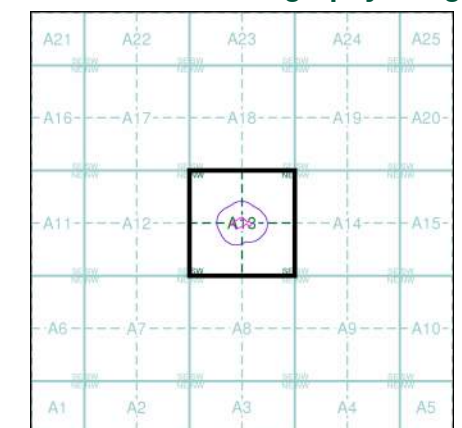
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Historical Aerial Photography

Published 2000

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



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Envirocheck[®] Report:

Historical Data Report Datasheet

Order Details:

Order Number:

302490219_1_1

Customer Reference:

143404

National Grid Reference:

384790, 398380

Slice:

A

Site Area (Ha):

0.47

Search Buffer (m):

1000

Site Details:

Flat 1, Burlington House

22

Tariff Street

MANCHESTER

M1 2DN

Client Details:

Mr J Blacker

Fairhurst Group LLP

51a St Pauls Street

Leeds

LS1 2TE

Report Section	Page Number
Summary	-
Historical Building Plans Information	1
Historical Land Use Information	7
Historical Tanks and Energy Facilities	13
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Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination. For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

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Report Version v53.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Historical Building Plans Information					
Areas Cleared Due To Enemy Action	pg 1			1	18
Above Ground Fuel Tanks (100m)	pg 1		2	n/a	n/a
Asbestos (100m)	pg 2	9	36	n/a	n/a
Benzene/Benzole/Naphtha, Naphthalene/Kerosene (100m)				n/a	n/a
Electricity Generation (100m)				n/a	n/a
Electricity Sub-Station (100m)	pg 4		3	n/a	n/a
Gas Industry (100m)				n/a	n/a
Gas Storage (100m)				n/a	n/a
Gas Use (100m)	pg 4	1	9	n/a	n/a
Oil Industry (100m)				n/a	n/a
Oil Storage (100m)				n/a	n/a
Oil Use (100m)	pg 4		3	n/a	n/a
Paint based Oils (100m)				n/a	n/a
Paraffin (100m)				n/a	n/a
Petrol and Diesel Industry (100m)				n/a	n/a
Petrol and Diesel Storage (100m)				n/a	n/a
Petrol and Diesel Use (100m)				n/a	n/a
Potential Fuel Gas (100m)				n/a	n/a
Potential Fuel Oil (100m)				n/a	n/a
Potential Fuel Use (100m)				n/a	n/a
Potential Petrol and Diesel (100m)				n/a	n/a
Potential Tanks (100m)				n/a	n/a
Potentially Fuel-related Tanks (100m)	pg 4		2	n/a	n/a
Underground Fuel Tanks (100m)	pg 5	9	13	n/a	n/a
Historical Land Use Information					
Former Marshes					
Historical Flood Liabilities					
Potentially Contaminative Industrial Uses (Past Land Use)	pg 7		11	16	63
Potentially Infilled Land (Non-Water)	pg 11				1
Potentially Infilled Land (Water)	pg 11	1	5	12	14

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m
Historical Tanks and Energy Facilities					
Electrical Sub Station Facilities (100m)				n/a	n/a
Electricity Industry Facilities (100m)				n/a	n/a
Gas Industry Facilities (100m)				n/a	n/a
Gas Monitoring Facilities (100m)				n/a	n/a
Miscellaneous Power Facilities (100m)				n/a	n/a
Oil Industry Facilities (100m)				n/a	n/a
Petroleum Storage Facilities (100m)				n/a	n/a
Potential Tanks (100m)	pg 13	2	6	n/a	n/a
Tanks (100m)	pg 13		2	n/a	n/a

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_233_1962_geo1	A18SW (N)	429	1	384661 398836
2	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A17SE (NW)	580	1	384444 398896
3	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A18SW (NW)	592	1	384466 398923
4	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A17SE (NW)	596	1	384379 398874
5	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A17SE (NW)	624	1	384332 398873
6	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A17SE (NW)	642	1	384401 398943
7	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A18SW (N)	653	1	384563 399039
8	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_228_1962_geo1	A17SE (NW)	655	1	384355 398930
9	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A18SW (N)	664	1	384545 399044
10	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_346_1968_geo1	A8SE (S)	670	1	384921 397699
11	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_346_1962_geo1	A8SE (S)	670	1	384921 397699
12	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 083_232_1962_geo1	A17SE (NW)	684	1	384446 399018
13	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 082_018_1970_geo1	A7NE (SW)	776	1	384132 397880
14	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 082_018_1962_geo1	A7NE (SW)	776	1	384132 397880
15	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_344_1962_geo1	A8SW (S)	812	1	384717 397536
16	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_344_1962_geo1	A8SW (S)	823	1	384698 397526
17	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_344_1962_geo1	A8SW (S)	831	1	384685 397519
18	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 084_343_1962_geo1	A8SW (S)	872	1	384625 397484
19	Areas Cleared Due To Enemy Action Use: Areas Cleared Due To Enemy Action Plan Name: 082_002_1962_geo1	A12NW (W)	907	1	383835 398550
20	Above Ground Fuel Tanks Map Text: Oil Tank Plan Name: 082_007_1970_geo1	A13SW (SW)	74	1	384683 398319
20	Above Ground Fuel Tanks Map Text: Oil Tank Plan Name: 082_007_1962_geo1	A13SW (SW)	75	1	384683 398318

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
21	Asbestos Map Text: ASB Plan Name: 083_223_1928_geo1	A13NE (E)	0	1	384822 398393
21	Asbestos Map Text: ASB Plan Name: 083_223_1928_geo1	A13NE (NE)	0	1	384799 398405
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (E)	0	1	384822 398392
21	Asbestos Map Text: ASB Clad Plan Name: 083_223_1962_geo1	A13NW (NW)	0	1	384782 398387
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SW (SW)	0	1	384787 398382
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (SE)	0	1	384795 398369
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (E)	7	1	384853 398370
21	Asbestos Map Text: ASB Clad Plan Name: 083_223_1962_geo1	A13NE (NE)	12	1	384840 398408
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	15	1	384808 398426
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	29	1	384854 398418
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	33	1	384854 398424
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	34	1	384849 398427
21	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	37	1	384832 398438
22	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NW (NW)	0	1	384756 398399
22	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SW (W)	0	1	384761 398379
22	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SW (S)	0	1	384779 398361
22	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (NW)	34	1	384745 398440
22	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (NW)	41	1	384737 398443
23	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (E)	27	1	384877 398371
23	Asbestos Map Text: Wd & ASB Lined Plan Name: 083_223_1962_geo1	A13SE (E)	28	1	384873 398361
23	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (SE)	31	1	384867 398350

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
23	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (SE)	33	1	384866 398346
24	Asbestos Map Text: ASB Plan Name: 082_007_1962_geo1	A13SW (W)	31	1	384712 398356
24	Asbestos Map Text: ASB Plan Name: 082_007_1962_geo1	A13SW (SW)	31	1	384715 398351
24	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SW (SW)	31	1	384715 398351
24	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SW (W)	31	1	384712 398356
24	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SW (W)	36	1	384709 398352
25	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (NW)	42	1	384738 398446
25	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (NW)	48	1	384737 398451
25	Asbestos Map Text: ASB Lined Ceiling Plan Name: 083_231_1962_geo1	A13NW (NW)	64	1	384743 398473
25	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (NW)	64	1	384728 398465
26	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NW (N)	48	1	384788 398474
26	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NE (N)	51	1	384791 398476
26	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NE (N)	91	1	384813 398513
26	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NE (N)	93	1	384811 398516
27	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NE (N)	49	1	384815 398466
27	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (NE)	52	1	384847 398447
27	Asbestos Map Text: ASB Plan Name: 083_231_1962_geo1	A13NE (N)	56	1	384820 398471
28	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SW (S)	83	1	384740 398265
29	Asbestos Map Text: ASB Clad Plan Name: 083_223_1962_geo1	A13NE (E)	87	1	384935 398405
29	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13SE (E)	89	1	384940 398383
29	Asbestos Map Text: ASB Plan Name: 083_223_1962_geo1	A13NE (E)	99	1	384950 398391

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SE (S)	90	1	384804 398273
30	Asbestos Map Text: ASB Plan Name: 082_007_1970_geo1	A13SE (S)	93	1	384806 398270
31	Asbestos Map Text: ASB Ceil Plan Name: 082_007_1970_geo1	A13SW (SW)	100	1	384682 398276
32	Electricity Sub-Stations Map Text: Elec Sub Statn Plan Name: 082_007_1970_geo1	A13SW (SW)	27	1	384749 398320
33	Electricity Sub-Stations Map Text: Elec Sub Statn Plan Name: 082_007_1970_geo1	A13SW (SW)	77	1	384679 398319
33	Electricity Sub-Stations Map Text: Elec Sub Statn Plan Name: 082_007_1962_geo1	A13SW (SW)	78	1	384679 398319
34	Gas Use Map Text: (G.E.) Plan Name: 083_223_1928_geo1	A13SE (SE)	0	1	384802 398374
35	Gas Use Map Text: (Gas Eng) Plan Name: 082_007_1917_geo1	A13SW (SW)	61	1	384691 398332
35	Gas Use Map Text: Gas Eng Plan Name: 082_007_1917_geo1	A13SW (SW)	87	1	384681 398297
35	Gas Use Map Text: Gas Eng Plan Name: 082_007_1917_geo1	A13SW (SW)	95	1	384681 398284
36	Gas Use Map Text: Gas Heater Plan Name: 082_006_1970_geo1	A13NW (W)	86	1	384650 398426
36	Gas Use Map Text: Gas Heater Plan Name: 082_006_1960_geo1	A13NW (W)	87	1	384649 398428
36	Gas Use Map Text: Gas Heater Plan Name: 082_006_1962_geo1	A13NW (W)	87	1	384649 398427
37	Gas Use Map Text: (G.E.) Plan Name: 083_223_1928_geo1	A13NE (E)	92	1	384938 398411
37	Gas Use Map Text: (G.E.) Plan Name: 083_223_1928_geo1	A13SE (E)	93	1	384944 398385
37	Gas Use Map Text: (G.E.) Plan Name: 083_223_1928_geo1	A13SE (E)	94	1	384946 398378
38	Oil Use Map Text: Oil Fuel Heater Plan Name: 083_231_1962_geo1	A13NW (NW)	41	1	384700 398421
39	Oil Use Map Text: Oil Fuel Heaters Plan Name: 082_007_1970_geo1	A13SW (SW)	69	1	384685 398326
39	Oil Use Map Text: Oil Fuel Heaters Plan Name: 082_007_1962_geo1	A13SW (SW)	70	1	384685 398326
40	Potentially Fuel-related Tanks Map Text: Tank Plan Name: 083_223_1928_geo1	A13NE (NE)	35	1	384857 398423
41	Potentially Fuel-related Tanks Map Text: Tank Plan Name: 083_223_1928_geo1	A13SE (E)	76	1	384916 398340

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1928_geo1	A13NW (N)	0	1	384777 398417
42	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1962_geo1	A13NW (N)	0	1	384777 398416
42	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_223_1962_geo1	A13NW (NW)	0	1	384766 398398
42	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_223_1962_geo1	A13NW (W)	0	1	384760 398395
42	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_223_1962_geo1	A13SW (SW)	0	1	384783 398370
42	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1962_geo1	A13SW (W)	0	1	384762 398381
42	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_231_1931_geo1	A13NW (NW)	14	1	384754 398422
42	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_231_1962_geo1	A13NE (N)	24	1	384797 398448
42	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_231_1931_geo1	A13NE (N)	29	1	384794 398454
43	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1928_geo1	A13SE (E)	0	1	384816 398386
43	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_223_1962_geo1	A13NE (E)	0	1	384814 398387
43	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1962_geo1	A13NE (NE)	9	1	384827 398403
43	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1928_geo1	A13NE (NE)	11	1	384827 398406
44	Underground Fuel Tanks Map Text: Sunk Petrol Tanks Plan Name: 083_223_1962_geo1	A13SW (SW)	0	1	384777 398366
45	Underground Fuel Tanks Map Text: Sunk Oil Tank Plan Name: 083_231_1962_geo1	A13NW (NW)	47	1	384694 398424
46	Underground Fuel Tanks Map Text: Sunk Petrol & Oil Tanks Plan Name: 083_223_1962_geo1	A13NE (NE)	55	1	384842 398453
46	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 083_223_1928_geo1	A13NE (NE)	62	1	384848 398458
47	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 082_007_1962_geo1	A13SW (S)	71	1	384780 398281
47	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 082_007_1936_geo1	A13SW (S)	72	1	384782 398281
48	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 082_007_1970_geo1	A13SW (W)	91	1	384656 398333
48	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 082_007_1936_geo1	A13SW (W)	92	1	384655 398332

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	Underground Fuel Tanks Map Text: Sunk Petrol Tank Plan Name: 082_007_1962_geo1	A13SW (W)	92	1	384655 398332

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
49	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1923	A13SE (S)	84	1	384809 398282
49	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1923	A13SE (S)	129	1	384821 398237
50	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13SE (SE)	90	1	384848 398274
51	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1895 - 1956	A13SW (S)	142	1	384749 398205
52	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1993	A13NE (E)	167	1	385002 398454
53	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13NE (NE)	177	1	384941 398540
54	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1923	A13SE (SE)	209	1	384895 398164
55	Potentially Contaminative Industrial Uses (Past Land Use) Use: Natural and man-made textile manufacture and products Date of Mapping: 1909 - 1923	A13SE (SE)	210	1	384984 398214
56	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1993	A13SE (S)	211	1	384837 398154
57	Potentially Contaminative Industrial Uses (Past Land Use) Use: Sawmilling, planing & impregnation [i.e. treatment of timber] Date of Mapping: 1923	A13NE (NE)	212	1	385020 398508
58	Potentially Contaminative Industrial Uses (Past Land Use) Use: Metal casting/foundries Date of Mapping: 1895	A13SE (SE)	225	1	384982 398192
59	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13NE (NE)	263	1	385046 398556
60	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13SE (SE)	324	1	385066 398136
61	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13NE (NE)	339	1	385106 398602
62	Potentially Contaminative Industrial Uses (Past Land Use) Use: Hospitals Date of Mapping: 1923	A13SW (SW)	341	1	384533 398085
63	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A13SE (SE)	352	1	385068 398099
64	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8NW (SW)	398	1	384573 397992
65	Potentially Contaminative Industrial Uses (Past Land Use) Use: Coal storage and depot Date of Mapping: 1848	A14NW (NE)	399	1	385199 398576
66	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1923	A14SW (SE)	403	1	385166 398127
67	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1956	A18SE (N)	433	1	384845 398855
68	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8NW (S)	438	1	384607 397934

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
69	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A14NW (E)	469	1	385319 398414
70	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1993	A8NE (SE)	474	1	384996 397917
71	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1923	A8NW (SW)	478	1	384527 397925
72	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1923	A14SW (SE)	483	1	385281 398157
73	Potentially Contaminative Industrial Uses (Past Land Use) Use: Glass & glass products exc. flat glass [manufacture] Date of Mapping: 1848	A19SW (NE)	488	1	385190 398731
74	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A14SW (E)	497	1	385336 398267
75	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A18SE (N)	502	1	384932 398907
76	Potentially Contaminative Industrial Uses (Past Land Use) Use: Glass & glass products exc. flat glass [manufacture] Date of Mapping: 1923	A14NW (E)	518	1	385359 398480
77	Potentially Contaminative Industrial Uses (Past Land Use) Use: Hospitals Date of Mapping: 1894 - 1993	A14SW (E)	526	1	385378 398382
78	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1895	A8NW (SW)	555	1	384517 397844
79	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1994	A7NE (SW)	557	1	384375 397937
80	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8NW (S)	561	1	384590 397809
81	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A19SW (NE)	573	1	385130 398888
82	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A14SW (E)	577	1	385403 398209
83	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1895 - 1993	A14SW (SE)	587	1	385382 398126
84	Potentially Contaminative Industrial Uses (Past Land Use) Use: Transport support & cargo handling Date of Mapping: 1909 - 1923	A14SW (E)	601	1	385451 398332
85	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1895 - 1993	A8NE (S)	604	1	384941 397770
86	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1895 - 1956	A9NW (SE)	609	1	385265 397931
87	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848	A8NE (S)	617	1	385038 397781
88	Potentially Contaminative Industrial Uses (Past Land Use) Use: Machinery: engines, building and general industrial [manufacture] Date of Mapping: 1923	A14NE (E)	623	1	385472 398442
89	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1993	A19SW (NE)	626	1	385264 398852

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
90	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1956	A18SE (N)	629	1	384958 399031
91	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1994	A12NE (W)	642	1	384119 398595
92	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A19SW (NE)	644	1	385361 398773
93	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1993	A14SE (E)	647	1	385483 398234
94	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923 - 1993	A14SE (E)	670	1	385521 398353
95	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SW (S)	671	1	384706 397677
96	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SW (S)	709	1	384629 397649
97	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1993	A9NW (SE)	714	1	385295 397817
98	Potentially Contaminative Industrial Uses (Past Land Use) Use: Metal casting/foundries Date of Mapping: 1895	A8SW (S)	729	1	384594 397636
99	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A19SW (NE)	733	1	385424 398836
100	Potentially Contaminative Industrial Uses (Past Land Use) Use: Road haulage Date of Mapping: 1994	A18NW (N)	739	1	384669 399155
101	Potentially Contaminative Industrial Uses (Past Land Use) Use: Glass & glass products exc. flat glass [manufacture] Date of Mapping: 1848	A18NE (NE)	744	1	385119 399092
102	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923 - 1993	A8SE (S)	767	1	385055 397629
103	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A14NE (E)	786	1	385625 398524
104	Potentially Contaminative Industrial Uses (Past Land Use) Use: Gas manufacture & distribution Date of Mapping: 1848 - 1956	A18NW (N)	790	1	384603 399194
105	Potentially Contaminative Industrial Uses (Past Land Use) Use: Natural and man-made textile manufacture and products Date of Mapping: 1848	A8SE (S)	803	1	384953 397570
105	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1895 - 1923	A8SE (S)	819	1	384937 397550
106	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SW (S)	805	1	384614 397554
107	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1993	A9SW (SE)	817	1	385246 397658
108	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SE (S)	827	1	384892 397531
109	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1994	A17SW (NW)	832	1	384095 398930

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
110	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1895 - 1956	A9NE (SE)	844	1	385493 397830
111	Potentially Contaminative Industrial Uses (Past Land Use) Use: Dyes & pigments [manufacture] Date of Mapping: 1848	A8SE (S)	855	1	385010 397528
111	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SE (S)	862	1	385004 397519
112	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923 - 1956	A9NE (SE)	859	1	385517 397835
113	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1993	A19NW (N)	871	1	385135 399224
114	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SW (S)	886	1	384602 397473
115	Potentially Contaminative Industrial Uses (Past Land Use) Use: Dyes & pigments [manufacture] Date of Mapping: 1848	A9SW (SE)	894	1	385158 397530
116	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1895 - 1956	A9NE (SE)	898	1	385605 397889
117	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1938	A7SE (SW)	909	1	384247 397592
118	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A14NE (E)	918	1	385733 398635
119	Potentially Contaminative Industrial Uses (Past Land Use) Use: Brewing & malting Date of Mapping: 1923	A9SW (SE)	918	1	385241 397540
120	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1895	A8SW (S)	925	1	384539 397446
121	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1994	A17NE (N)	928	1	384446 399289
122	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848 - 1990	A17NE (N)	930	1	384447 399291
123	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1894 - 1993	A19SE (NE)	937	1	385544 399011
124	Potentially Contaminative Industrial Uses (Past Land Use) Use: Metal casting/foundries Date of Mapping: 1909 - 1956	A17NE (N)	938	1	384427 399292
125	Potentially Contaminative Industrial Uses (Past Land Use) Use: Hospitals Date of Mapping: 1956	A14NE (E)	938	1	385788 398439
126	Potentially Contaminative Industrial Uses (Past Land Use) Use: Cemetery or Graveyard Date of Mapping: 1848	A17SW (NW)	939	1	384035 399025
127	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1923	A8SW (S)	942	1	384480 397445
128	Potentially Contaminative Industrial Uses (Past Land Use) Use: Factory or works - use not specified Date of Mapping: 1956 - 1994	A18NW (N)	948	1	384570 399349
129	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1894 - 1956	A18NW (N)	949	1	384684 399369

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
130	Potentially Contaminative Industrial Uses (Past Land Use) Use: Rubber natural products manufacture Date of Mapping: 1923	A18NW (N)	950	1	384572 399351
131	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1895 - 1994	A17NE (NW)	961	1	384192 399188
132	Potentially Contaminative Industrial Uses (Past Land Use) Use: Natural and man-made textile manufacture and products Date of Mapping: 1848	A19SE (NE)	963	1	385572 399018
133	Potentially Contaminative Industrial Uses (Past Land Use) Use: Clay bricks & tiles [manufacture] Date of Mapping: 1848	A14NE (E)	971	1	385793 398617
134	Potentially Contaminative Industrial Uses (Past Land Use) Use: Railways Date of Mapping: 1848	A17NW (NW)	972	1	384101 399133
135	Potentially Contaminative Industrial Uses (Past Land Use) Use: Rubber natural products manufacture Date of Mapping: 1923	A9NE (SE)	992	1	385702 397868
136	Potentially Infilled Land (Non-Water) Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1993	A14NE (E)	971	1	385793 398617
137	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A13NW (NW)	0	1	384784 398392
138	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A13NE (NE)	29	1	384851 398421
139	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A13SE (SE)	63	1	384826 398301
140	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A13NE (E)	63	1	384915 398387
141	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13SE (E)	117	1	384966 398354
142	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A13SE (E)	120	1	384965 398341
143	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1909	A13NE (E)	281	1	385121 398460
144	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A14NW (E)	301	1	385135 398482
145	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A14NW (E)	307	1	385139 398485
146	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A13NE (NE)	319	1	385100 398580
147	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A13SE (SE)	360	1	385063 398085
148	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A14NW (NE)	361	1	385173 398545
149	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A13SE (SE)	364	1	385116 398129
150	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A14SW (SE)	383	1	385172 398168

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
151	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A18SE (NE)	386	1	385039 398724
152	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A8NW (SW)	399	1	384499 398038
153	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A14SW (E)	418	1	385269 398351
154	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A8NW (SW)	493	1	384489 397930
155	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A14SW (E)	530	1	385381 398361
156	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A14SW (E)	535	1	385357 398203
157	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A19SW (NE)	558	1	385208 398812
158	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A14SW (E)	569	1	385419 398336
159	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A19SW (NE)	586	1	385288 398769
160	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A19SW (NE)	628	1	385207 398902
161	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A8SW (S)	696	1	384624 397663
162	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1894	A18NW (N)	743	1	384558 399132
163	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7NE (SW)	816	1	384136 397812
164	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A7NE (SW)	827	1	384134 397798
165	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A19SE (NE)	830	1	385497 398902
166	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1923	A8SW (S)	833	1	384779 397515
167	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1956	A8SE (S)	858	1	384836 397493
168	Potentially Infilled Land (Water) Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1848	A7NW (SW)	877	1	384046 397827

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
169	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1948	A13NE (NE)	0	1	384810 398401
169	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1971	A13NE (NE)	0	1	384793 398389
169	Potential Tanks Scale of Mapping: 1:2,500 Date of Mapping: 1955 - 1965	A13NE (NE)	2	1	384816 398406
169	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1954	A13NE (NE)	2	1	384816 398406
169	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1971	A13NE (NE)	18	1	384830 398414
170	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1971	A13NW (N)	30	1	384787 398456
171	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1971	A13NE (NE)	51	1	384862 398439
172	Potential Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1971	A13SE (E)	82	1	384930 398356
173	Tanks Scale of Mapping: 1:2,500 Date of Mapping: 1955 - 1965	A13NE (NE)	37	1	384857 398426
173	Tanks Scale of Mapping: 1:1,250 Date of Mapping: 1954	A13NE (NE)	37	1	384857 398426

The following plans have been analysed for Historical Building Plans Information:

Plan Name:	Town:	Published Date:	Last Pasted Date:
083_223_1928_geo1	Manchester Vol 2	1928	1928
083_223_1962_geo1	Manchester Vol 2	1928	1962
083_231_1931_geo1	Manchester Vol 2	1931	1931
083_231_1962_geo1	Manchester Vol 2	1931	1962
082_007_1917_geo1	Manchester Vol 1	1886	1917
082_007_1936_geo1	Manchester Vol 1	1936	1936
082_007_1962_geo1	Manchester Vol 1	1936	1962
082_007_1970_geo1	Manchester Vol 1	1936	1970
081_206_1889_geo1	Manchester Carriers	1889	1889
082_006_1962_geo1	Manchester Vol 1	1960	1962
082_006_1917_geo1	Manchester Vol 1	1886	1917
082_006_1970_geo1	Manchester Vol 1	1960	1970
082_006_1960_geo1	Manchester Vol 1	1960	1960
083_220_1928_geo1	Manchester Vol 2	1928	1928
083_220_1962_geo1	Manchester Vol 2	1928	1962
083_235_1927_geo1	Manchester Vol 2	1927	1927
083_235_1962_geo1	Manchester Vol 2	1927	1962

The following mapping has been analysed for Historical Land Use Information:

1:10,560	Mapsheet	Published Date
Lancashire And Furness	104_00	1848
Cheshire	003A_00	1882
Lancashire And Furness	104_NE	1894
Lancashire And Furness	104_NW	1895
Lancashire And Furness	104_SE	1895
Lancashire And Furness	104_SW	1896
Lancashire And Furness	104_NE	1909
Lancashire And Furness	104_NW	1909
Lancashire And Furness	104_SE	1909
Lancashire And Furness	104_SW	1909
Lancashire And Furness	104_NE	1923
Lancashire And Furness	104_NW	1923
Lancashire And Furness	104_SE	1923
Lancashire And Furness	104_SW	1938
Ordnance Survey Plan	SJ89NE	1956
Ordnance Survey Plan	SJ89NW	1956
1:10,000	Mapsheet	Published Date
Ordnance Survey Plan	SJ89NE	1993
Ordnance Survey Plan	SJ89NW	1994

The following mapping has been analysed for Historical Tanks and Energy Facilities:

1:2,500	Mapsheet	Published Date
Ordnance Survey Plan	SJ8498	1951
Ordnance Survey Plan	SJ8598	1951
Ordnance Survey Plan	SJ8598	1953
Ordnance Survey Plan	SJ8498	1955
Ordnance Survey Plan	SJ8498	1965
Ordnance Survey Plan	SJ8598	1965
Ordnance Survey Plan	SJ8498	1969
Ordnance Survey Plan	SJ8598	1969
1:1,250	Mapsheet	Published Date
Ordnance Survey Plan	SJ8498NE	1948
Ordnance Survey Plan	SJ8498SE	1948
Ordnance Survey Plan	SJ8498SW	1948
Ordnance Survey Plan	SJ8598NW	1948
Ordnance Survey Plan	SJ8498SW	1951
Ordnance Survey Plan	SJ8598NW	1952
Ordnance Survey Plan	SJ8498NE	1953
Ordnance Survey Plan	SJ8498SE	1954
Ordnance Survey Plan	SJ8598SW	1955
Ordnance Survey Plan	SJ8498NE	1963
Ordnance Survey Plan	SJ8498NW	1963
Ordnance Survey Plan	SJ8598NW	1963
Ordnance Survey Plan	SJ8498SW	1968
Ordnance Survey Plan	SJ8598NW	1968
Ordnance Survey Plan	SJ8498SE	1971
Ordnance Survey Plan	SJ8598SW	1981
Ordnance Survey Plan	SJ8498NE	1986
Ordnance Survey Plan	SJ8498NW	1986
Ordnance Survey Plan	SJ8498SW	1986
Ordnance Survey Plan	SJ8598NW	1988
Ordnance Survey Plan	SJ8598SW	1989

Contact	Name and Address	Contact Details
1	Landmark Information Group Limited Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9966 Fax: 0844 844 9951 Email: helpdesk@landmark.co.uk Website: www.landmark.co.uk

Historical Building Plans Information

This data set contains potentially contaminative features such as asbestos, petrol, oil and tanks captured from Historical Building Plans. The Historical Building Plans were produced by the London-based firm Charles E. Goad Ltd. as fire insurance plans, dating back to 1885. The firm ceased production of fire insurance plans in 1970. Most of the important towns and cities of the British Isles are covered. Historical Building Plans are usually at the scales of 1:480 (1 inch to 40 feet) for the British Isles. They were updated every 5-6 years by means of revision sheets designed to be pasted on to the original plans.

It should be noted that Historical Building Plans are only available for certain major towns and cities and in some cases there may only be partial coverage of the search area. It cannot therefore be assumed that the absence of responses under the Historical Building Plans section of this report indicates that no hazards exist. Please check the Historical Building Plans Map List table in the Historical Map List section of this report to establish if Historical Building Plans are available for this search area.

Historical Land Use Information

Landmark's Historical Land Use Data is the result of combined analysis of historical map data captured at 1:10,560 and 1:10,000. A unique comprehensive database of Historic Land Use from the 1840's to 1996 it includes 67 different types of potentially contaminated past industrial land use. This entailed analysing over 60,000 maps and is drawn from at least four, and up to six historical map editions. In addition a seventh layer was also created, known as the land use layer, containing areas of infilled land which are plotted via comparison between two or more map editions.

Historical Tanks and Energy Facilities

In addition to HLU, additional analysis uncovered some of the most dangerous sources of contamination (past and present tanks, petrol storage, oil, gas, electricity, miscellaneous facilities). This data set covers over 390,000 Historical Tanks and Energy facilities in Great Britain and was captured from post war 1:2500 and 1:1250 Ordnance Survey historical mapping covering a period from 1943 to 1996.

APPENDIX E

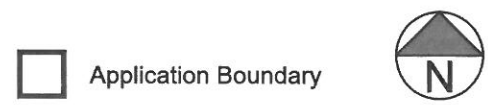
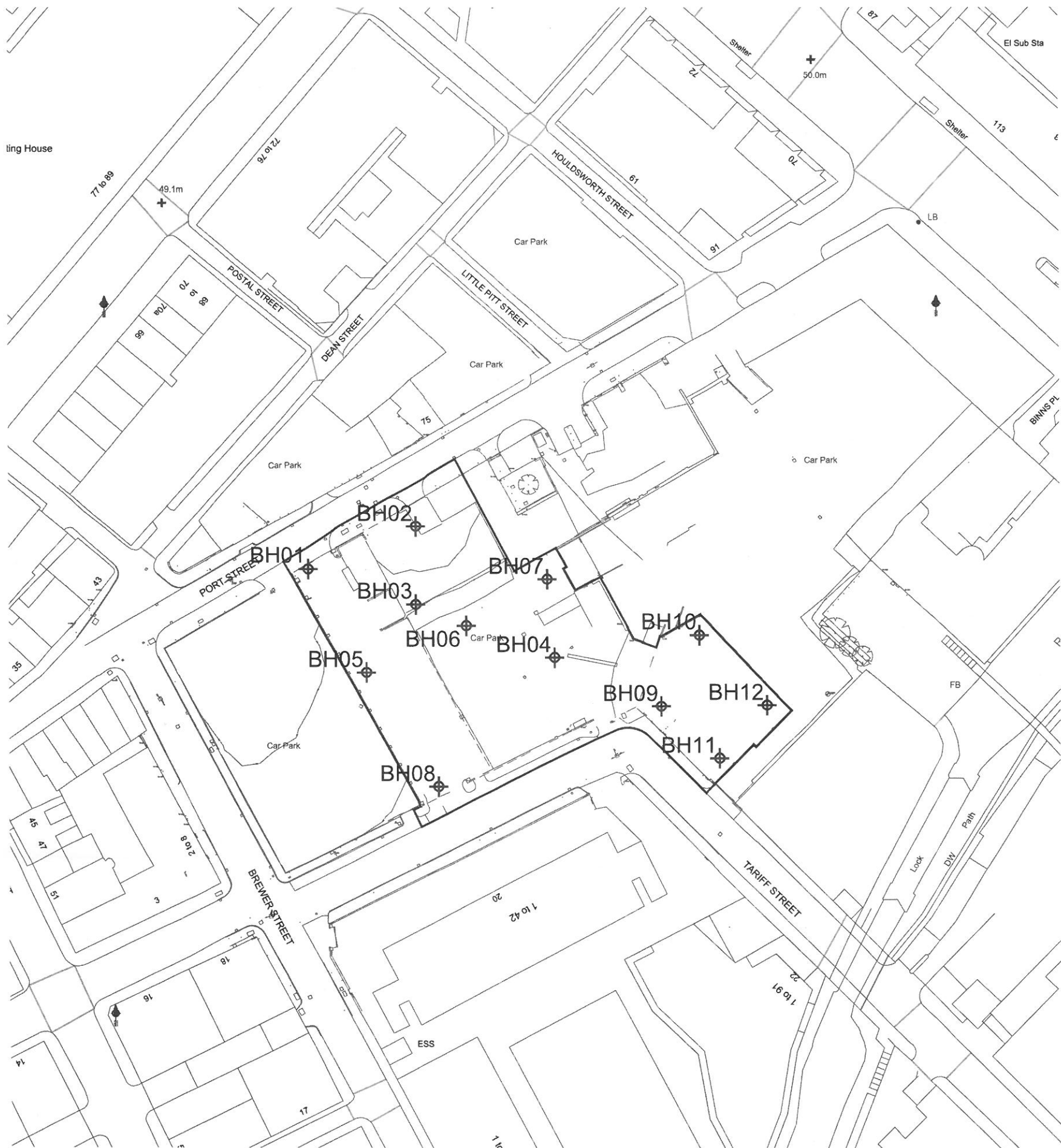
Site Investigation Data

May 2023 Exploratory Hole Plan

Borehole and Trial Pit Logs

Gas Monitoring Results

Laboratory Testing Results



Application Boundary

REV	DESCRIPTION	DRAWN	AUTH	DATE
P04	PLANNING	KM	CJG	28.11.22

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Architects

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CLIENT AXIS-RE / MARCO LIVING			
PROJECT 1NQ MANCHESTER			
DOCUMENT NAME 8198-LRW-ZZ-00-DR-A-00-010			
DESCRIPTION SITE EDGED RED APPLICATION BOUNDARY			
REVISION P04	SCALE 1:1250@ A4		
LRW PROJECT No. 8198	DATE CREATED 01.11.22	CREATED BY KM	AUTHORISED BY CJG
PURPOSE OF ISSUE PLANNING ☒ BUILDING REGS ☐ TENDER ☐ PRELIM/COMMENT ☐ APPROVAL ☐ CONSTRUCTION ☐			

Borehole Log

Borehole No.

BH01

Sheet 1 of 4

Project Name: TARIFF STREET

 Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

 Hole Type
CP

Location: MANCHESTER

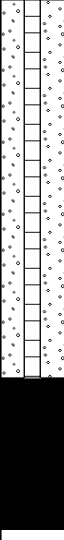
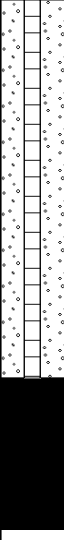
Level: 48.40

 Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

 Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	48.30		MADE GROUND: Light grey reinforced concrete	
		0.20			0.20	48.20		MADE GROUND: Brick and concrete fragments.	
		0.35			0.35	48.05		MADE GROUND: Light grey reinforced concrete	
		0.50	ES					MADE GROUND: Dark grey brown clayey sandy angular to subangular fine to medium gravel of brick, flint, coke, clinker concrete and slate. Sand is medium to coarse. Moderate hydrocarbon odour.	
		1.00	ES		1.00	47.40			1
		1.20		N=2 (1,0/1,0,0,1)					
		1.20 - 1.65	D					MADE GROUND: Soft to firm dark grey slightly gravelly slightly sandy reworked clay. Gravel is subangular to rounded fine to coarse of mixed lithologies including flint and brick. Strong hydrocarbon odour. Sand is fine to coarse.	
		2.00	ES		2.00	46.40			2
		2.00		N=2 (1,0/1,0,1,0)					
		2.00 - 2.45	D					MADE GROUND: Firm dark grey slightly sandy gravelly silty clay. Gravel is angular to subangular fine to coarse of mixed lithologies including brick, concrete, clinker and flint.	
		3.00		N=14 (1,1/2,3,4,5)	3.00	45.40			3
		3.00 - 3.45	D					Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mixed lithologies including flint.	
		3.00 - 3.50	B						
		3.20	ES						
		4.00		N=15 (1,2/3,3,4,5)					4
		4.00 - 4.45	D						
		5.00		N=14 (1,2/2,3,4,5)					5
		5.00 - 5.45	D						
		6.00		N=16 (2,3/3,4,4,5)					6
		6.00 - 6.45	D						
		7.50		N=21 (4,4/5,5,5,6)	7.50	40.90			7
		7.50 - 7.95	D					Grey brown slightly silty clayey gravelly fine SAND. Gravel is subangular to rounded fine to medium of flint and occasional coal fragments.	
		7.50 - 8.00	B						
		8.00	ES		8.00	40.40		Firm slightly gravelly silty very sandy laminated CLAY. Sand is fine. Gravel is subangular to rounded fine to medium of flint.	8
		8.50 - 9.00	B						
		9.00		N=18 (3,4/4,4,5,5)					9
		9.00 - 9.45	D						
									10

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH01

Sheet 2 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		10.50 10.50 - 10.95	D	N=17 (2,2/3,4,5,5)	11.00	37.40		Brown gravelly clayey fine to medium SAND. Gravel is subangular to rounded fine of flint and coal fragments.	11		
		12.00 12.00 - 12.45	D	N=17 (2,3/3,4,5,5)					12		
		13.00	ES		12.90	35.50		Soft brown slightly gravelly silty very sandy CLAY. Sand is fine to medium. Gravel is subangular to rounded fine of flint and coal fragments.	13		
		13.50 13.50 - 13.95	D	N=16 (2,3/3,4,5,4)					14		
		15.00 15.00 - 15.45 15.00 - 15.50	D B	N=50 (8,10/50 for 225mm)	15.00	33.40		Firm to stiff brown gravelly very sandy CLAY. Sand is fine to medium. Gravel is subangular to subrounded fine to coarse of mixed lithologies including flint.	15		
		16.50 16.50 - 16.95 16.50 - 17.00	D B	N=38 (3,3/4,8,10,16)	16.50	31.90				Brown slightly clayey slightly gravelly silty fine to medium SAND. Gravel is subrounded to rounded fine of mixed lithologies including chert.	16
		18.00 18.00	ES	N=50 (5,5/50 for 200mm)			17				
		18.00 - 18.45	D				18				
				19.50 19.50 - 19.95	D	N=50 (5,7/50 for 190mm)					19
									Continued on next sheet	20	

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH01

Sheet 3 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00 21.00 - 21.45	B	N=22 (3,4/4,6,6,6)					21
		21.80	B						22
		22.50 22.50 - 22.95 23.00	D ES	N=50 (6,7/50 for 140mm)					23
		24.00 24.00 - 24.45	B	N=50 (8,10/50 for 150mm)					24
		25.50 25.50 - 25.95 25.80 26.00 - 26.05 26.05 26.20	B B D D	N=50 (8,8/50 for 200mm)					26
		26.25 26.50		N=50 (25 for 50mm/50 for 30mm) N=50 (25 for 40mm/50 for 25mm) N=50 (25 for 19mm/50 for 30mm)					27
		27.50		N=50 (25 for 22mm/50 for 20mm)					28
		29.00		N=50 (25 for 10mm/50 for 25mm)					29
									30
									30

Weak red fine to medium grained SANDSTONE weathered recovered as sandy angular to subangular fine to coarse gravel. Sand is fine to coarse.
Moderately strong red fine to medium grained SANDSTONE.

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.



Borehole Log

Borehole No.

BH01

Sheet 4 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398397.50 - 384762.80

Hole Type
CP

Location: MANCHESTER

Level: 48.40

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		30.00		N=50 (25 for 7mm/50 for 20mm)					
		31.00		N=50 (25 for 10mm/50 for 30mm)					31
					32.00	16.40		End of borehole at 32.00 m	32
									33
									34
									35
									36
									37
									38
									39
									40

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 7.5m bgl, rising to 2.2m bgl after 20 minutes. 4. SPT refusals recorded at 15.0m bgl, 18.0m bgl 19.5m bgl and from 22.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 26.2m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 26.25m bgl. 8. Rotary open hole follow on undertaken from 26.25m bgl. 9. Monitoring standpipe installed to 9m bgl: 6.5m plain, 2.5m slotted as instructed.



Borehole Log

Borehole No.

BH02

Sheet 1 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398411.97 - 384775.54

Hole Type
CP

Location: MANCHESTER

Level: 48.84

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 20/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES		0.20	48.64		MADE GROUND: Tarmac and concrete fragments.	1
		0.50	ES		0.50	48.34		MADE GROUND: Dark brown gravelly sand. Gravel is subangular to subrounded fine to medium of mixed lithologies including concrete. sand is fine to medium.	
		1.20 1.20 - 1.65	D	N=13 (2,2/3,3,3,4)				MADE GROUND: Light brown sandy gravel. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick and concrete. sand is medium to coarse.	
		1.70	ES		1.70	47.14		MADE GROUND: Grey brown soft gravelly clay. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick and sandstone.	2
		2.00 2.00 - 2.45 2.00 - 2.50 2.30	D B ES	N=13 (3,3/3,3,4,3)	2.30	46.54		MADE GROUND: Very soft black sandy gravelly silty clay. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick. Sand is fine to medium.	
		3.00 - 3.45	U		3.00	45.84		Stiff brown gravelly CLAY. Gravel is subrounded fine of mixed lithologies including sandstone.	
		3.50 3.50	D ES					Firm brown sandy gravelly CLAY with bands of fine to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and siltstone. Sand is fine to coarse.	6
		4.00 4.00 - 4.45 4.00 - 4.50	D B	N=13 (2,2/3,3,3,4)					
		5.00 5.00 - 5.45	D	N=14 (3,3/3,3,4,4)					
		6.00 6.00 - 6.45 6.00 - 6.45 6.50	ES B U D		6.00	42.84		Firm brown sandy gravelly CLAY with bands of fine to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and siltstone. Sand is fine to coarse.	7
		7.50 7.50 - 7.95	D	N=16 (3,3/4,4,4,4)					
		8.00	D						
		9.00 9.00 - 9.45 9.00 - 9.50	D B	N=15 (2,3/3,4,4,4)					9
		10.00	ES						

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 2m rising to 1.8m after 20 minutes. 4. Chiselling between 14.8m bgl and 15.2m bgl for 2 hours. 5. SPT refusals recorded from 15.0m bgl. 6. SPT refusal recorded at 26.5m bgl on Sandstone bedrock. 7. Chiselling undertaken for 30 minutes on Sandstone bedrock. 8. SPT refusal recorded at 26.7m bgl. 6. Borehole backfilled as instructed.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH02

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398411.97 - 384775.54

Hole Type
CP

Location: MANCHESTER

Level: 48.84

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 20/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U	N=18 (3,4/4,4,5,5)	12.50	36.34		Becoming firm to stiff from 10.5m bgl.	11
		11.00	D						
		12.00	D						12
		12.00 - 12.45	B						
		12.00 - 12.50	D	N=50 (25 for 40mm/50 for 60mm)	13.50	35.34		Brown very gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of mixed lithologies including flint and siltstone.	13
		12.50	D						
		13.50 - 13.95	U						
		13.50 - 14.00	B					Very stiff brown gravelly sandy CLAY with moderate cobble content of sandstone. Gravel is angular to subangular fine to medium of mixed lithologies including flint and sandstone. . Sand is fine to coarse.	14
		15.00	ES	N=50 (25 for 40mm/50 for 60mm)	18.50	30.34		Sandstone boulder encountered between 14.8m bgl and 15.2m bgl.	15
		15.00	D						
		15.00 - 15.45	D						16
		16.50 - 16.95	U						
		17.00	D	N=50 (25 for 50mm/50 for 40mm)	18.50	30.34			17
		17.00 - 17.50	B						
		18.00	D						18
		18.50 - 18.95	D					Very Dense brown very gravelly fine to medium SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies including sandstone and siltstone.	19
		19.50	D	N=50 (25 for 85mm/50 for 95mm)	18.50	30.34			
		19.50 - 19.95	B						20
		19.50 - 20.00	B					Continued on next sheet	

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 2m rising to 1.8m after 20 minutes. 4. Chiselling between 14.8m bgl and 15.2m bgl for 2 hours. 5. SPT refusals recorded from 15.0m bgl. 6. SPT refusal recorded at 26.5m bgl on Sandstone bedrock. 7. Chiselling undertaken for 30 minutes on Sandstone bedrock. 8. SPT refusal recorded at 26.7m bgl. 6. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH02

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398411.97 - 384775.54

Hole Type
CP

Location: MANCHESTER

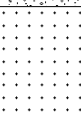
Level: 48.84

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 20/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description					
		Depth (m)	Type	Results									
		20.00	ES		22.00	26.84			21				
		21.00	D	N=50 (25 for 90mm/50 for 95mm)									
		21.00 - 21.45											
		22.50	D B	N=50 (25 for 80mm/50 for 100mm)	22.20	22.64		Very dense brown gravelly medium to coarse SAND. Gravel is subrounded to rounded fine to coarse of mixed lithologies including sandstone, siltstone quartzite and flint.	22				
		22.50 - 22.95											
		22.50 - 23.00							23				
		24.00	D	N=50 (25 for 85mm/50 for 125mm)	26.20	22.64			24				
		24.00 - 24.45											
		25.00	ES						25				
		25.50	D	N=50 (25 for 90mm/50 for 125mm)									
		25.50 - 25.95							26				
		26.50	D D	N=50 (25 for 40mm/50 for 30mm)	26.95	21.89		Weak dark red medium grained residually weathered SANDSTONE recovered as sandy angular to subangular medium to coarse gravel. Sand is medium to coarse.					
		26.50 - 26.70											
		26.70											
		26.70		N=50 (25 for 40mm/50 for 25mm)				End of borehole at 26.95 m					
								27					
								28					
								29					
								30					

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 2m rising to 1.8m after 20 minutes. 4. Chiselling between 14.8m bgl and 15.2m bgl for 2 hours. 5. SPT refusals recorded from 15.0m bgl. 6. SPT refusal recorded at 26.5m bgl on Sandstone bedrock. 7. Chiselling undertaken for 30 minutes on Sandstone bedrock. 8. SPT refusal recorded at 26.7m bgl. 6. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH03

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398399.49 - 384776.33

Hole Type
CP

Location: MANCHESTER

Level: 48.13

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 18/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.20	47.93		MADE GOUND: Tarmac and concrete.	
					0.80	47.33		MADE GROUND: Brown very gravelly sand. Gravel is subangular to subrounded coarse to medium of mixed lithologies including sandstone and brick. sand is fine to medium.	
		1.00	ES					MADE GROUND: Dark brown gravelly silty sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick and sandstone. Sand is fine to medium.	1
		1.20		N=9 (1,2/2,4,2,1)					
		1.20 - 1.65	D						
		2.00		N=6 (1,0/0,2,2,2)					2
		2.00 - 2.45	D						
		2.00 - 2.50	B						
					2.80	45.33		Stiff brown grey gravelly CLAY. Gravel is subangular to subrounded medium to coarse of mixed lithologies including chert.	3
		3.00	ES						
		3.00		N=15 (2,3/3,4,4,4)					
		3.00 - 3.45	D						
		4.00 - 4.45	U						4
		4.50	D						
		5.00		N=17 (2,3/4,4,4,5)					5
		5.00 - 5.45	D						
					5.45	42.68		End of borehole at 5.45 m	6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH04

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398388.97 - 384803.85

Hole Type
CP

Location: MANCHESTER

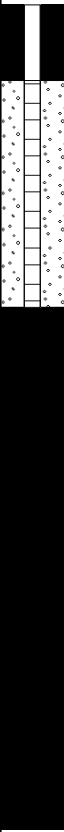
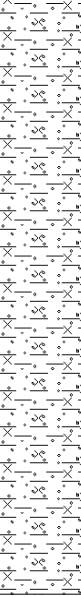
Level: 47.59

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.30	47.29		MADE GROUND: Light grey concrete.	
		0.50	ES		0.50	47.09		MADE GROUND: Light brown grey very gravelly medium sand. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete and quartzite.	
		1.00	ES					MADE GROUND: Soft to firm dark brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete. Sand is fine to medium.	1
		1.20		N=15 (2,3/3,4,4,4)				Firm brown mottled grey gravelly silty CLAY. Gravel is angular to subangular fine to medium of mixed lithologies including siltstone.	
		1.20 - 1.65	D		1.50	46.09			
		2.00		N=15 (2,2/3,4,4,4)					2
		2.00 - 2.45	D						
		2.00 - 2.50	B						
		3.00 - 3.45	U						3
		3.50	D						
		3.50	ES						
		4.00		N=15 (2,2/2,4,4,5)					4
		4.00 - 4.45	D						
		4.00 - 4.50	B						
		5.00		N=14 (3,3/3,3,4,4)					5
		5.00 - 5.45	D		5.45	42.14		End of borehole at 5.45 m	6

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.8m bgl after 20 minutes. 4. Standpipe installed to 2.0m: 0.5m plain, 1.5m slotted.



Borehole Log

Borehole No.

BH05

Sheet 1 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

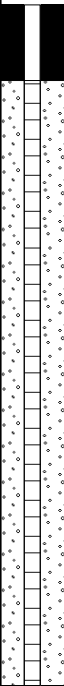
Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	ES		0.30	47.65		MADE GROUND: Light grey concrete.	
		0.50	D		0.50	47.45		MADE GROUND: Light brown gravelly medium to coarse sand. Gravel is angular to subangular fine to coarse of mixed lithologies including limestone.	
		0.50	ES		0.80	47.15		MADE GROUND: Dark brown gravelly sandy clay. Gravel is angular to subangular fine to coarse of mixed lithologies including concrete and sandstone.	1
		1.00	ES						
		1.20		N=9 (1,2/2,2,3,2)					
		1.20 - 1.65	B		1.70	46.25		MADE GROUND: dark brown gravelly sandy silty clay. Gravel angular to subangular fine to medium of mixed lithologies including brick glass. sand medium to coarse	2
		2.00	ES						
		2.00		N=2 (1,0/1,0,0,1)					
		2.00 - 2.45	B						
		2.00 - 2.45	D					MADE GROUND: Soft dark grey black slightly gravelly slightly sandy very silty clay. Sand is fine to medium. Gravel is angular to subangular fine to medium of mixed lithologies including glass and brick.	
								Moderate hydrocarbin odour and slight sheen identified at 2.0m bgl.	3
		3.00	ES		3.00	44.95		MADE GROUND: soft to firm brown sandy gravelly clay. Gravel is angular to subangular fine to coarse of mixed lithologies including brick and sandstone, sand is fine to medium.	
		3.00 - 3.45	B						
		3.00 - 3.45	D						
		4.00		N=6 (1,1/1,1,2,2)	4.00	43.95		Soft brown gravelly CLAY. Gravel is subangular to subrounded medium to coarse of mixed lithologies including sandstone.	4
		4.00 - 4.45	B						
		4.00 - 4.45	D						
		4.60	ES		4.60	43.35		Soft dark brown sandy gravelly CLAY. Gravel is medium to fine subangular to subrounded of mixed lithologies including limestone. sand is fine to medium.	5
		5.00 - 5.45	U						
		5.50	B						
		6.00		N=0 (0,0/0,0,0,0)					6
		6.00 - 6.45	B						
		6.00 - 6.45	D						
									7
		7.50 - 7.95	U						
		8.00	D		8.10	39.85		firm dark brown gravelly CLAY. Gravel is medium to coarse subangular to subrounded of mixed lithologies including sandstone.	8
		8.10	D						
		9.00	ES						9
		9.00		N=30 (2,3/4,6,8,12)					
		9.00 - 9.45	B						
		9.00 - 9.45	D						

Continued on next sheet

10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH05

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

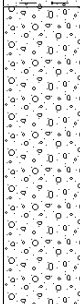
Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 10.50 - 10.95 10.50 - 10.95	B D	N=27 (2,3/3,4,7,13)	13.50	34.45			11
		12.00 12.00 - 12.45 12.00 - 12.45	B D	N=30 (2,3/5,5,8,12)					12
		13.50 13.50	ES	N=50 (3,10/50 for 115mm)					13
		13.50 - 13.95 13.50 - 13.95	B D					Stiff very sandy gravelly CLAY. Gravel is fine to medium subangular to subrounded of mixed lithologies including sandstone. sand is fine to medium.	14
		15.00 15.00 - 15.45 15.00 - 15.45	B D	N=50 (8,17/50 for 115mm)					15
		16.50 16.50 - 16.95 16.50 - 16.95 17.00	B D ES	N=50 (25 for 25mm/50 for 125mm)					16
		18.00 18.00 - 18.45	D	N=50 (25 for 95mm/50 for 115mm)		18.00	29.95		Dense sandy subangular to subrounded fine to coarse GRAVEL of mixed lithologies including sandstone with moderate cobble content of sandstone. Sand is fine to coarse.
		19.50 19.50	D	N=50 (25 for 80mm/50 for 95mm)		18			
						19			

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.



Borehole Log

Borehole No.

BH05

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398387.87 - 384769.02

Hole Type
CP

Location: MANCHESTER

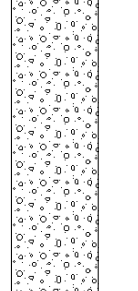
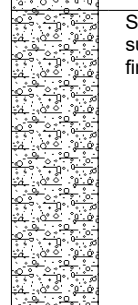
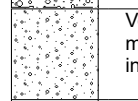
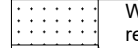
Level: 47.95

Scale
1:50

Client: FAIRHURST

Dates: 15/05/2023 - 15/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00	D	N=50 (25 for 125mm/50 for 125mm)				Stiff brown sandy cobbly gravelly CLAY. Gravel is subangular to subrounded fine to coarse. sand is fine to coarse.	21
		21.00 - 21.45							
		22.00	ES	N=50 (25 for 105mm/50 for 200mm)	22.00	25.95		Stiff brown sandy cobbly gravelly CLAY. Gravel is subangular to subrounded fine to coarse. sand is fine to coarse.	22
		22.50							
		22.50 - 22.95	D						
		24.00	D	N=50 (25 for 95mm/50 for 100mm)	24.00	23.95		Very dense sandy subangular to subrounded, medium to coarse GRAVEL of mixed lithologies including sandstone. sand is fine to medium.	24
		24.00 - 24.45							
		24.60	D	N=50 (25 for 5mm/50 for 55mm)	24.60	23.35		Weak red SANDSTONE residually weathered recovered as very dense sandy angular to subangular fine to coarse gravel. sand is medium to coarse.	25
		24.60							
		24.90	D	N=50 (25 for 2mm/50 for 40mm)	24.90	23.05		End of borehole at 24.90 m	
		24.90							
									26
									27
									28
									29
									30

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. Groundwater encountered at 0.8m bgl. 4. SPT refusals recorded from 13.5m bgl. 5. SPT refusal on Sandstone bedrock recorded at 24.6m bgl. 6. Chiselling undertaken on Sandstone bedrock for 30 minutes. 7. SPT refusal recorded at 24.9m bgl. 8. Standpipe installed to 4.5m: 0.5m plain, 4.0m slotted.



Borehole Log

Borehole No.

BH06

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398399.15 - 384787.92

Hole Type
CP

Location: MANCHESTER

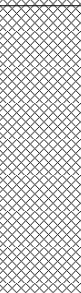
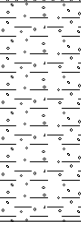
Level: 47.59

Scale
1:50

Client: FAIRHURST

Dates: 18/05/2023 - 18/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	47.29		MADE GROUND: Concrete	
					0.70	46.89		MADE GROUND: Brick and concrete fragments.	
		1.20 1.20 - 1.65	D	N=0 (1,0/0,0,0,0)	1.50	46.09		MADE GROUND: Brown very gravelly sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick, concrete and glass.	1
		2.00 2.00	ES	N=0 (1,0/0,0,0,0)				MADE GROUND: Dark brown Black very gravelly sandy silty clay. gravel is angular to subangular fine to medium of mixed lithologies including brick. sand is fine to medium.	2
		2.00 - 2.45	D						
		2.00 - 2.50	B						
		3.00 - 3.45	U						3
		3.50	D		3.50	44.09		MADE GROUND: Stiff browny red gravelly clay. Gravel is angular to subangular fine to medium of mixed lithologies including sandstone and brick.	4
		4.00 4.00	ES	N=10 (2,2/2,2,3,3)	4.00	43.59			
		4.00 - 4.45	D					Firm grey brown gravelly CLAY. Gravel is subangular to subrounded fine to medium of mixed lithologies including sandstone.	
		4.00 - 4.50	B						
		5.00 5.00 - 5.45	D	N=12 (2,2/2,3,3,4)	5.45	42.14		End of borehole at 5.45 m	5
									6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.6m bgl after 20 minutes. 4. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH07

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398406.60 - 384800.95

Hole Type
CP

Location: MANCHESTER

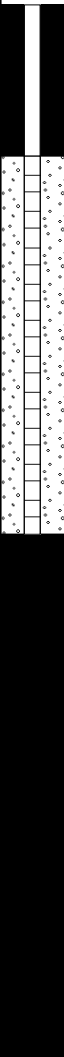
Level: 47.65

Scale
1:50

Client: FAIRHURST

Dates: 17/05/2023 - 17/05/2023

Logged By
KJ

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.30	47.35		MADE GROUND: CONCRETE	
					0.70	46.95		MADE GROUND: Brown very gravelly sand. Gravel is angular to subangular medium to coarse of mixed lithologies including brick and sandstone. sand is medium to coarse.	
		1.20 1.20 - 1.65 1.50	D ES	N=0 (1,0/0,0,0,0)	1.50	46.15		MADE GROUND: Brown sandy gravelly clay. Gravel subangular to subrounded coarse to medium of mixed lithologies including brick and sandstone. sand is fine to medium.	1
		2.00 2.00 - 2.45	D	N=0 (1,0/0,0,0,0)				MADE GROUND: Firm brown gravelly clay. Gravel is angular to sub angular medium to coarse of mixed lithologies including brick and limestone.	2
		3.00 - 3.45	U		3.00	44.65		Soft brown very sandy gravelly CLAY. Gravel is angular to subangular fine to medium of mixed lithologies including sandstone. sand is fine.	3
		3.50	D						
		3.80	ES						
		4.00 4.00 - 4.45 4.00 - 4.50	D B	N=13 (1,2/2,2,4,5)					4
		5.00 5.00 - 5.45	D	N=12 (2,2/2,3,3,4)					5
		6.50 - 6.95	U						6
		7.00	D		7.00	40.65		End of borehole at 7.00 m	7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. Groundwater encountered at 1.0m bgl, rising to 0.6m bgl after 20 minutes. 4. Monitoring standpipe installed to 3.5m bgl: 1m plain, 2.5m slotted.



Borehole Log

Borehole No.

BH08

Sheet 1 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

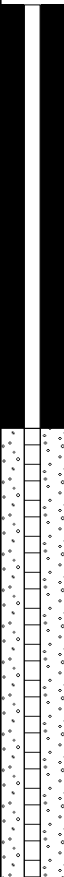
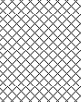
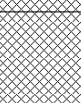
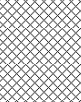
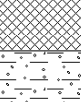
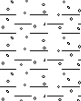
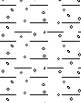
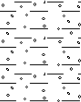
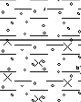
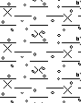
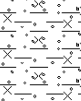
Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	47.82		MADE GROUND: Concrete	
		0.20			0.20	47.72		MADE GROUND: Brick and concrete fragments.	
		0.45			0.45	47.47		MADE GROUND: Concrete.	
		0.48			0.48	47.44		MADE GROUND: Asphalt.	
		0.50	D					MADE GROUND: Grey to dark grey mottled orange slightly silty clayey very sandy angular to subangular fine to coarse gravel of mixed lithologies including brick, coke, clinker, asphalt, sandstone, glass and slate. Sand is fine to coarse.	1
		0.50	ES						
		1.00	ES						
		1.20		N=3 (1,0/0,1,1,1)					
		1.20 - 1.65	D					MADE GROUND: Very soft dark grey sandy silty gravelly reworked clay. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse of mixed lithologies including brick, coke, clinker, asphalt, sandstone, glass and slate.	2
		2.00	ES		1.60	46.32			
		2.00		N=2 (1,0/1,0,1,0)					
		2.00 - 2.45	B						
		2.00 - 2.45	D					Firm brown mottled grey slightly gravelly CLAY with lenses of orange silt. Gravel is angular to subangular fine to coarse of mixed lithologies including flint.	3
		3.00	ES		3.20	44.72			
		3.00		N=13 (2,2/3,3,3,4)					
		3.00 - 3.45	B						
		3.00 - 3.45	D					Firm to stiff grey brown thinly laminated slightly gravelly silty CLAY. Gravel is angular to subangular fine to mixed lithologies.	4
		4.00	ES						
		4.00		N=12 (2,2/2,3,3,4)					
		4.00 - 4.45	B						
		4.00 - 4.45	D					Firm to stiff grey brown thinly laminated slightly gravelly silty CLAY. Gravel is angular to subangular fine to mixed lithologies.	5
		5.00	ES						
		5.00		N=13 (2,2/3,3,3,4)					
		5.00 - 5.45	B						
		5.00 - 5.45	D					Firm to stiff grey brown thinly laminated slightly gravelly silty CLAY. Gravel is angular to subangular fine to mixed lithologies.	6
		5.80	D		5.80	42.12			
		6.00	ES						
		6.00		N=10 (1,2/2,2,3,3)					
		6.00 - 6.45	B					Firm to stiff grey brown thinly laminated slightly gravelly silty CLAY. Gravel is angular to subangular fine to mixed lithologies.	7
		6.00 - 6.45	D						
		7.50 - 7.95	U						
		8.00	D					Firm to stiff grey brown thinly laminated slightly gravelly silty CLAY. Gravel is angular to subangular fine to mixed lithologies.	8
		9.00		N=12 (2,2/3,3,3,3)					
		9.00 - 9.45	B						
		9.00 - 9.45	D						
								Becoming firm from 9.5m bgl.	9
								Continued on next sheet	10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.





GROUNDTECH
CONSULTING

Borehole Log

Borehole No.

BH08

Sheet 2 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U		10.50	37.42		Stiff to very stiff brown mottled grey gravelly silty very sandy CLAY. Sand is fine to medium. Gravel is subrounded to rounded fine to coarse of mixed lithologies including flint.	11
		11.00 11.00	D ES						11
		12.00		N=45 (6,7/8,11,12,14)					12
		12.00 - 12.45 12.00 - 12.45 12.00 - 12.45	B D D						13
		13.50		N=46 (6,7/9,10,13,14)					14
		13.50 - 13.95 13.50 - 13.95	B D						14
		15.00		N=50 (7,7/50 for 235mm)					15
		15.00 - 15.45 15.00 - 15.45	B D						16
		16.00	ES						16
		16.50		N=50 (8,9/50 for 210mm)	16.30	31.62		Brown medium to coarse slightly silty clayey gravelly SAND. Gravel is subrounded to rounded fine to medium of mixed lithologies including flint and quartzite.	17
		16.50 - 16.95 16.50 - 16.95	B D						17
		18.00		N=50 (8,9/50 for 200mm)					18
		18.00 - 18.45 18.00 - 18.45	B D						18
		19.50		N=50 (25 for 95mm/50 for 105mm)	19.00	28.92		Interbedded brown slightly gravelly fine to coarse SAND and firm sandy CLAY with high cobble content of quartzite and siltstone. Gravel is subangular to rounded fine to coarse of mixed lithologies including flint, quartzite and siltstone. Siltstone cobble encountered between 19.1m bgl and 19.2m bgl.	19
		19.50 - 19.95 19.50 - 19.95	B D						20

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.



Borehole Log

Borehole No.

BH08

Sheet 3 of 3

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398368.72 - 384780.04

Hole Type
CP

Location: MANCHESTER

Level: 47.92

Scale
1:50

Client: FAIRHURST

Dates: 10/05/2023 - 10/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		21.00	B	N=50 (25 for 115mm/50 for 125mm)				bgl.	21
		21.00 - 21.45							22
		22.50	B	N=50 (25 for 115mm/50 for 115mm)				Flint cobble encountered between 22.6m bgl and 22.8m bgl.	23
		22.50 - 22.95							24
		24.00	B	N=50 (12,13/50 for 125mm)					25
		24.00 - 24.45							26
		25.50	B	N=50 (12,13/50 for 165mm)					27
		25.50 - 25.95							28
		27.00	B	N=50 (25 for 100mm/50 for 210mm)	27.20	20.72		Weak red SANDSTONE residually weatehred recovered as very dense sandy angular to subangular medium to coarse gravel.	29
		27.00 - 27.45							30
		27.70	D	N=50 (25 for 50mm/50 for 40mm)	27.90	20.02			
		27.70							
		27.90	D	N=50 (25 for 10mm/50 for 30mm)				End of borehole at 27.90 m	
		27.90							

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Chiselling undertaken between 19.1m bgl and 19.2m bgl for 1 hour. 5. Chiselling undertaken between 22.6m bgl and 22.8m bgl for 1 hour. 6. Chiselling undertaken between 26.9m bgl and 27.0m bgl for 40 minutes. 7. SPT refusal recorded at 27.7m bgl on Sandstone bedrock. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 27.9m bgl. 10. Monitoring standpipe installed to 5.8m bgl: 2.8m plain, 3m slotted.



Borehole Log

Borehole No.

BH09

Sheet 1 of 1

Project Name: TARIFF STREET

 Project No.
GRO-22079

Co-ords: 398406.67 - 384801.00

 Hole Type
CP

Location: MANCHESTER

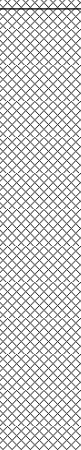
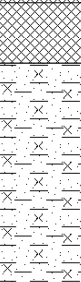
Level: 47.69

 Scale
1:50

Client: FAIRHURST

Dates: 09/05/2023 - 09/05/2023

 Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	D		0.10	47.59		MADE GROUND: Black tarmac.	1
		0.20	ES					MADE GROUND: Dark grey very sandy silty angular to subangular fine to coarse gravel of mixed lithologies including brick, sandstone, glass, limestone and clinker with moderate cobble content of sandstone.	
		0.50	ES						
		1.00	B						
		1.00	ES						
		1.50		N=9 (1,1/2,2,2,3)					
		1.50 - 1.95	D						
		1.50 - 2.00	B						
		2.00	ES						
		2.20	D	N=10 (2,1/1,2,3,4)					2
		2.50							
		2.50 - 2.95	D						
		2.50 - 3.00	B						
		3.00	ES						
		3.10			3.10	44.59		MADE GROUND: Soft dark grey dark brown slightly silty sandy gravelly clay with frequent fragments of timber. Gravel is angular to subangular fine to coarse of mixed lithologies including brick and concrete. Sand is fine.	3
		3.50 - 3.95	U					Firm to stiff brown sandy silty CLAY. Sand is fine.	
		4.00	D						
		4.00	ES						
		4.50		N=19 (3,3/3,4,5,7)					4
		4.50 - 4.95	D						
		4.50 - 5.00	B						
		5.00	ES						
		5.00			5.00	42.69		End of borehole at 5.00 m	5
									6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH10

Sheet 1 of 2

Project Name: TARIFF STREET

 Project No.
GRO-22079

Co-ords: 398393.75 - 384833.39

 Hole Type
CP

Location: MANCHESTER

Level: 48.07

 Scale
1:50

Client: FAIRHURST

Dates: 11/05/2023 - 11/05/2023

 Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	ES	N=12 (3,2/2,3,3,4)	0.35	47.72		MADE GROUND: Black tarmac.	1
		0.40	D					MADE GROUND: Dark grey silty sandy angular to subangular fine to coarse gravel of brick, asphalt, glass, sandstone, coke and clinker.	
		0.50	ES						
		1.00	B	N=12 (3,2/2,3,3,4)	1.20	46.87		MADE GROUND: Soft to firm dark grey mottled brown orange sandy gravelly clay. Sand is fine to coarse. Gravel is angular to subrounded fine to medium of mixed lithologies including brick, coal, clinker and flint. (Reworked).	2
		1.00	ES						
		1.50	D						
		1.50 - 1.95	D	N=15 (2,3/4,3,4,4)	1.80	46.27		Firm to stiff brown mottled grey slightly gravelly thinly laminated CLAY with grey veins of silt. Gravel is subrounded to rounded fine of flint.	3
		1.50 - 2.00	B						
		2.00	ES						
		2.20	D	N=15 (2,3/4,3,4,4)					4
		2.50	D						
		2.50 - 2.95	B						
		2.50 - 3.00	B	N=17 (2,3/4,4,4,5)					5
		3.00	ES						
		3.50 - 3.95	U						
		4.00	D	N=17 (2,3/4,4,4,5)					6
		4.00	ES						
		4.50	D						
		4.50 - 4.95	D	N=19 (3,4/4,5,5,5)					7
		5.00	ES						
		5.20	D						
		5.50	D	N=19 (3,4/4,5,5,5)					8
		5.50 - 5.95	D						
		5.50 - 6.00	B						
		6.00	ES	N=23 (1,3/5,5,6,7)					9
		6.50	D						
		7.00	D						
		7.00 - 7.45	D	N=25 (4,5/6,6,6,7)					10
		8.00	D						
		8.50	D						
		8.50 - 8.95	D	N=25 (4,5/6,6,6,7)					11
		8.50 - 9.00	B						
		10.00	D						

Continued on next sheet

Becomes soft to firm from 5.4m bgl.

Becomes firm to stiff from 9.4m bgl.

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. SPT refusal recorded at 13.5m bgl. 5. SPT refusals recorded at 18.0m bgl on large boulder. 6. 2.5 hours chiselling undertaken. 7. SPT refusal recorded at 18.1m bgl. 8. Borehole terminated as instructed and standpipe installed to 18m: 14.5m plain, 3.5m slotted.



Borehole Log

Borehole No.

BH10

Sheet 2 of 2

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398393.75 - 384833.39

Hole Type
CP

Location: MANCHESTER

Level: 48.07

Scale
1:50

Client: FAIRHURST

Dates: 11/05/2023 - 11/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.50 - 10.95	U						
		11.00 11.00	D ES						11
		12.00 12.00 - 12.45 12.00 - 12.50	D B	N=28 (5,4/5,6,8,9)					12
		13.00	D						13
		13.50 13.50 - 13.95	D	N=50 (6,8/50 for 150mm)					14
		14.50	D						
		15.00 15.00 - 15.95	D	N=39 (4,5/7,7,7, 18)	15.00	33.07		Brown silty clayey gravelly fine to coarse SAND. Gravel is angular to subrounded of mixed lithologies including flint and quartzite.	15
		16.00 16.00	D ES						16
		16.50 16.50 - 16.95	D	N=31 (6,5/6,8,8,9)					17
		17.50	D						
		18.00 18.00	D	N=50 (25 for 8mm/50 for 0mm)	18.10	29.97		Boulder encountered at 18.1m bgl. End of borehole at 18.10 m	18
		18.10 18.10	D	N=50 (25 for 0mm/50 for 0mm)					19
									20

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.2m bgl. 3. No groundwater encountered. 4. SPT refusal recorded at 13.5m bgl. 5. SPT refusals recorded at 18.0m bgl on large boulder. 6. 2.5 hours chiselling undertaken. 7. SPT refusal recorded at 18.1m bgl. 8. Borehole terminated as instructed and standpipe installed to 18m: 14.5m plain, 3.5m slotted.



Borehole Log

Borehole No.

BH11

Sheet 1 of 1

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398372.23 - 384839.75

Hole Type
CP

Location: MANCHESTER

Level: 48.15

Scale
1:50

Client: FAIRHURST

Dates: 05/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D		0.15	48.00		MADE GROUND: Dark grey tarmac.	
		0.20	ES					MADE GROUND: Soft dark grey sandy gravelly clay. Sand is fine to coarse. Gravel is angular to rounded fine to medium of mixed lithologies including brick, glass, flint and slate.	
		0.40	B						
		0.50	ES						
		1.00	D						1
		1.00	ES						
		1.50		N=15 (2,3/3,4,4,4)					
		1.50 - 1.95	D						
		1.50 - 2.00	B						2
		2.00	ES						
		2.20	D						
		2.50		N=18 (4,3/4,4,5,5)					
		2.50 - 2.95	D		2.70	45.45			
		2.50 - 3.00	B						3
		3.00	ES					Firm to stiff slightly sandy gravelly silty thinly laminated CLAY. Sand is fine. Gravel is subangular to rounded fine to medium of mixed lithologies including siltstone.	
		3.50 - 3.95	U						4
		4.00	D						
		4.00	ES						
		4.50		N=20 (2,3/4,5,5,6)					
		4.50 - 4.95	D						
		4.50 - 5.00	B						
		5.00	ES		5.00	43.15		End of borehole at 5.00 m	5
									6
									7
									8
									9
									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. Borehole backfilled as instructed.



Borehole Log

Borehole No.

BH12

Sheet 1 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

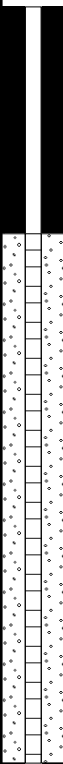
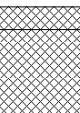
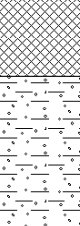
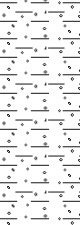
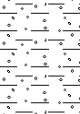
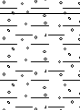
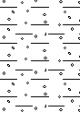
Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20	D	N=27 (6,5/6,6,7,8)	0.15	47.91		MADE GROUND: Dark grey orange very gravelly fine to coarse SAND of red brick dust. Gravel is angular to subrounded fine to medium of mixed lithologies coke, clinker, glass and occasional flint.	1
		0.20	ES						
		0.50	B						
		0.50	ES						
		1.00	ES						
		1.10	D						
		1.20	B						
		1.50	ES						
		1.50 - 1.95	D						
		2.50	N=24 (4,5/5,6,6,7)		D		46.86	MADE GROUND: Dark grey mottled brown orange very sandy angular to subangular fine to coarse gravel of mixed lithologies including brick, coke, clinker, concrete and limestone. Sand is fine to coarse of potash, brick fragments and silica.	2
		2.50 - 2.95							
		3.50							
		3.50 - 3.95							
		4.50	N=28 (3,5/6,7,7,8)	D		4.50	43.56	Firm to stiff brown mottled grey thinly laminated CLAY with occasional angular fine gravel of flint.	3
		4.50 - 4.95							
		5.50							
		5.50 - 5.95							
		6.00 - 6.45	N=24 (5,4/5,5,6,8)	U		4.50	43.56	Increasing gravel content from 2.5m bgl.	4
		6.50							
		7.00							
		7.00 - 7.45							
		8.50	N=32 (6,6/7,8,8,9)	D		4.50	43.56	Stiff brown slightly gravelly CLAY. Gravel is subangular to rounded fine to medium of mixed lithologies including flint.	5
		8.50 - 8.95							
		6.00 - 6.45							
6.50									
7.00		N=27 (5,5/5,7,7,8)	D		4.50	43.56		6	
7.00 - 7.45									
8.50									
8.50 - 8.95									
Continued on next sheet									10

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.



Borehole Log

Borehole No.

BH12

Sheet 2 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

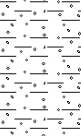
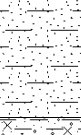
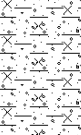
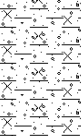
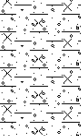
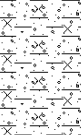
Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.00		N=49 (6,9/11,12,12,14)	11.00	37.06		Brown slightly gravelly silty clayey fine to medium SAND. Gravel is subangular to rounded fine to medium of mixed lithologies including flint.	11
		10.00 - 10.45	D						
		10.00 - 10.50	B						
		11.50		N=21 (4,4/5,5,5,6)					12
		11.50	ES						
		11.50 - 11.95	D						
		12.00 - 12.50	B		12.90	35.16			13
		13.00		N=24 (6,5/5,6,6,7)					
		13.00 - 13.45	D						
		14.50		N=30 (7,7/6,7,8,9)					14
		14.50 - 14.95	D						
		14.50 - 15.00	B						15
		15.50	D						16
		16.00		N=44 (8,10/9,10,11,14)					
		16.00 - 16.45	D						
		16.00 - 16.50	B						17
		16.50	ES						
		17.00	D						18
		17.50 - 17.95	U						
		18.00	D		18.90	29.16			19
		19.00		N=47 (4,6/10,12,12,13)					
		19.00 - 19.45	D						
		19.00 - 19.50	B						20
		20.00	D						

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.



Borehole Log

Borehole No.

BH12

Sheet 3 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

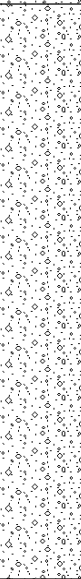
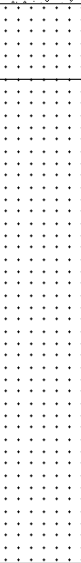
Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		20.50 20.50 - 20.95 20.50 - 21.00	D B	N=33 (6,6/7,9,8,9)	21.00	27.06			21
		21.50 21.50	D ES						
		22.00 22.00 - 22.95	B	N=44 (7,8/8,10,11,15)					
		23.00	D		24.80	23.26			23
		23.50 23.50 - 23.95	B	N=50 (16,9/50 for 116mm)					
		24.20 24.20	D						
		24.20 - 24.90	B	N=50 (25 for 0mm/50 for 0mm)					
		25.00 25.00 - 25.45 25.50	B D	N=50 (25 for 100mm/50 for 105mm)					
		26.30 26.30	D	N=50 (25 for 33mm/50 for 19mm)					
		26.80 26.80	D	N=50 (25 for 20mm/50 for 16mm)	26.80	21.26			27
		27.00		N=50 (25 for 20mm/50 for 35mm)					
		28.00		N=50 (25 for 15mm/50 for 20mm)					
		29.00		N=50 (25 for 10mm/50 for 15mm)					
									28
									29
									30

Continued on next sheet

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.



Borehole Log

Borehole No.

BH12

Sheet 4 of 4

Project Name: TARIFF STREET

Project No.
GRO-22079

Co-ords: 398379.56 - 384846.97

Hole Type
CP

Location: MANCHESTER

Level: 48.06

Scale
1:50

Client: FAIRHURST

Dates: 02/05/2023 - 05/05/2023

Logged By
JKP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		30.00		N=50 (25 for 5mm/50 for 10mm)					
		31.00		N=50 (25 for 5mm/50 for 8mm)					31
		32.00		N=50 (25 for 2mm/50 for 4mm)	32.00	16.06			32
								End of borehole at 32.00 m	33
									34
									35
									36
									37
									38
									39
									40

Remarks

1. Location cleared for utilities using a GPR survey. 2. Hand excavated inspection pit undertaken to 1.20m bgl. 3. No groundwater encountered. 4. SPT refusals recorded from 23.5m bgl. 5. Chiselling undertaken between 24.0m bgl and 24.2m bgl for 1 hour. 6. Chiselling undertaken between 24.2m bgl and 24.8m bgl for 5 hours. 7. SPT refusal on Sandstone bedrock recorded at 26.3m bgl. 8. Chiselling undertaken on Sandstone bedrock for 30 minutes. 9. SPT refusal recorded at 26.8m bgl. 10. Rotary open hole follow on undertaken from 26.8m bgl. 11. Monitoring standpipe installed to 5m bgl: 1.5m plain, 3.5m slotted as instructed.



PERMANENT GROUND GAS MONITORING FORM



SITE NAME:		TARIFF STREET, MANCHESTER				ENGINEER:		Jack Perkins				
CLIENT:		FAIRHURST				DATE:		5-6/6/23				
JOB NO:		GRO-22079										
Pressure Trend:		Falling	Weather:	Sunny			Equipment:		GFM 436			
Ambient:		O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)					
Start		20.7	0.0	0.0	0.0	0.0	0.0					
Finish		20.7	0.0	0.0	0.0	0.0	0.0					

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
BH01	0.0	0.0	0.00	0.0	0.0	0.0	1.8	0.9	14.3	17.9	0.0	0.0	0.0	0.0	0.0018	0.0000	1016	4.4	N	N/A	N/A	2.44
BH04	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	20.3	20.6	0.0	0.0	0.0	0.0	0.0000	0.0000	1016	1.3	N	N/A	N/A	0.93
BH05	0.0	0.0	0.00	0.0	0.0	0.0	3.2	1.3	2.2	14.4	0.0	0.0	0.0	0.0	0.0032	0.0000	1016	2.0	N	N/A	N/A	0.91
BH07	0.0	0.0	0.00	0.0	0.0	0.0	0.6	0.4	19.2	19.9	0.0	0.0	0.0	0.0	0.0006	0.0000	1016	3.5	N	N/A	N/A	0.76
BH08	0.0	0.0	0.00	0.0	0.0	0.0	1.4	0.5	16.9	19.7	0.0	0.0	0.0	0.0	0.0014	0.0000	1016	1.4	N	N/A	N/A	3.83
BH10	0.0	0.0	0.00	2.0	0.7	40.0	3.9	1.7	0.3	12.0	0.0	0.0	0.0	0.0	0.0039	0.0020	1017	1.0	N	N/A	N/A	NGW
BH12	0.0	0.0	0.00	0.0	0.0	0.0	6.3	4.8	2.0	5.5	0.0	0.0	0.0	0.0	0.0063	0.0000	1017	1.1	N	N/A	N/A	NGW

Notes:

PERMANENT GROUND GAS MONITORING FORM



SITE NAME:	TARIFF STREET, MANCHESTER					ENGINEER:	Jack Perkins						
CLIENT:	FAIRHURST					DATE:	05/07/2023						
JOB NO:	GRO-22079												
Pressure Trend:	Steady	Weather:	Raining			Equipment:	GFM 436						
Ambient:	O ₂ (%v/v)	CH ₄ (%v/v)	CO ₂ (%v/v)	LEL	H ₂ S (ppm)	CO (ppm)							
Start	20.7	0.0	0.0	0.0	0.0	0.0							
Finish	20.7	0.0	0.0	0.0	0.0	0.0							

BH Ref.	Gas Flow Rate (l/hr)		Borehole Pressure (mb)	Methane (%v/v)			Carbon Dioxide (%v/v)		Oxygen (%v/v)		Hydrogen Sulphide (ppm)		Carbon Monoxide (ppm)		Q _{hg} CO ₂ (l/hr)	Q _{hg} CH ₄ (l/hr)	Atmos Press (mb)	PID (ppm)	Sheen (Y/N)	LNAPL (Y/N)	DNAPL (Y/N)	Depth to Water (m bgl)
	Peak	Steady		Peak	Steady	LEL	Peak	Steady	Peak	Steady	Peak	Steady	Peak	Steady								
BH01	0.0	0.0	0.00	0.0	0.0	0.0	1.9	1.5	11.0	13.9	0.0	0.0	0.0	0.0	0.0019	0.0000	1000	-	N	N/A	N/A	2.29
BH04	0.0	0.0	0.00	0.0	0.0	0.0	0.3	0.3	18.6	18.8	0.0	0.0	0.0	0.0	0.0003	0.0000	1000	-	N	N/A	N/A	0.79
BH05	0.0	0.0	0.00	0.0	0.0	0.0	1.3	1.1	2.8	12.8	0.0	0.0	0.0	0.0	0.0013	0.0000	1000	-	N	N/A	N/A	0.81
BH07	0.0	0.0	0.00	0.0	0.0	0.0	0.7	0.6	19.2	19.2	0.0	0.0	0.0	0.0	0.0007	0.0000	1000	-	N	N/A	N/A	0.73
BH08	0.0	0.0	0.00	0.0	0.0	0.0	0.5	0.3	19.8	20.1	0.0	0.0	0.0	0.0	0.0005	0.0000	1000	-	N	N/A	N/A	1.78
BH10	0.0	0.0	0.00	0.0	0.0	0.0	1.8	0.9	1.6	10.4	0.0	0.0	0.0	0.0	0.0018	0.0000	1001	-	N	N/A	N/A	NGW
BH12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: BH12 covered by car.

Groundtech Consulting Limited

PO Box 499
Manchester
United Kingdom
M28 8EE



4225



Attention : James Doyle
Date : 19th June, 2023
Your reference : GRO-22079
Our reference : Test Report 23/7158 Batch 1
Location : Tariff Street
Date samples received : 5th May, 2023
Status : Final Report
Issue : 2

Nineteen samples were received for analysis on 5th May, 2023 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tariff Street
Contact: James Doyle
EMT Job No: 23/7158

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	10-12	25-27	28-30						Please see attached notes for all abbreviations and acronyms		
Sample ID	BH01	BH01	BH01	BH12	BH12								
Depth	0.50	1.00	3.20	0.50	1.00								
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T								
Sample Date	02/05/2023	02/05/2023	02/05/2023	02/05/2023	02/05/2023								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023						LOD/LOR	Units	Method No.
Arsenic #	-	16.7	-	19.3	-						<0.5	mg/kg	TM30/PM15
Cadmium #	-	<0.1	-	<0.1	-						<0.1	mg/kg	TM30/PM15
Chromium #	-	48.3	-	48.9	-						<0.5	mg/kg	TM30/PM15
Copper #	-	104	-	51	-						<1	mg/kg	TM30/PM15
Lead #	-	106	-	120	-						<5	mg/kg	TM30/PM15
Mercury #	-	0.3	-	0.5	-						<0.1	mg/kg	TM30/PM15
Nickel #	-	35.6	-	30.0	-						<0.7	mg/kg	TM30/PM15
Selenium #	-	<1	-	<1	-						<1	mg/kg	TM30/PM15
Sulphur as S	-	0.15	-	0.10	-						<0.01	%	TM30/PM15
Total Sulphate as SO4 #	-	1186	-	636	-						<50	mg/kg	TM50/PM29
Water Soluble Boron #	-	3.4	-	1.7	-						<0.1	mg/kg	TM74/PM32
Zinc #	-	84	-	82	-						<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	<0.03	<0.03	<0.03						<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	<0.05	<0.05	<0.05						<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	0.06	<0.03	<0.03	<0.03						<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	<0.03	<0.03	<0.03	<0.03						<0.03	mg/kg	TM4/PM8
Pyrene #	-	<0.03	<0.03	<0.03	<0.03						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	<0.06	<0.06	<0.06						<0.06	mg/kg	TM4/PM8
Chrysene #	-	<0.02	<0.02	<0.02	<0.02						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	<0.07	<0.07	<0.07	<0.07						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Coronene	-	<0.04	-	-	<0.04						<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	<0.6	<0.6	-						<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	<0.64	-	-	<0.64						<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	<0.05	<0.05	<0.05						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	<0.02	<0.02	<0.02						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	99	103	103	95						<0	%	TM4/PM8
EPH (C8-C40) (EH_1D_Total) #	-	-	-	274	-						<30	mg/kg	TM5/PM8
EPH >C8-C10 (EH_1D_Total) #	-	-	<5	-	-						<5	mg/kg	TM5/PM8
EPH >C10-C12 (EH_1D_Total) #	-	-	<10	-	-						<10	mg/kg	TM5/PM8
EPH >C12-C16 (EH_1D_Total) #	-	-	<10	-	-						<10	mg/kg	TM5/PM8
EPH >C16-C21 (EH_1D_Total) #	-	-	27	-	-						<10	mg/kg	TM5/PM8
EPH >C21-C35 (EH_1D_Total) #	-	-	97	-	-						<10	mg/kg	TM5/PM8
EPH >C35-C40 (EH_1D_Total) #	-	-	16	-	-						<10	mg/kg	TM5/PM8
EPH >C8-C40 (EH_1D_Total) #	-	-	140	-	-						<30	mg/kg	TM5/PM8

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tariff Street
Contact: James Doyle
EMT Job No: 23/7158

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	10-12	25-27	28-30						Please see attached notes for all abbreviations and acronyms		
Sample ID	BH01	BH01	BH01	BH12	BH12								
Depth	0.50	1.00	3.20	0.50	1.00								
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T								
Sample Date	02/05/2023	02/05/2023	02/05/2023	02/05/2023	02/05/2023								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023						LOD/LOR	Units	Method No.
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	<30	-	-	<30						<30	mg/kg	TM5/PM8/PM16
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	-	<0.1	-	-	-						<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	-	0.6	-	-	-						<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL)	-	0.9	-	-	-						<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	-	6.4	-	-	-						<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	-	<4	-	-	-						<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	-	<7	-	-	-						<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	-	<7	-	-	-						<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	-	<19	-	-	-						<19	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 (HS_1D_AR) #	-	<0.1	-	-	-						<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	-	<0.1	-	-	-						<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	-	<0.1	-	-	-						<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	-	<0.2	-	-	-						<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	-	<4	-	-	-						<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	-	<7	-	-	-						<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	-	<7	-	-	-						<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	-	<19	-	-	-						<19	mg/kg	TM5/PM8/PM16
Total aliphatics and aromatics (C5-35) (EH+HS_CU_1D_Total)	-	<38	-	-	-						<38	mg/kg	TM5/PM8/PM16
MTBE #	-	51	-	-	<5						<5	ug/kg	TM36/PM12
Benzene #	-	26	-	-	<5						<5	ug/kg	TM36/PM12
Toluene #	-	<5	-	-	<5						<5	ug/kg	TM36/PM12
Ethylbenzene #	-	10	-	-	<5						<5	ug/kg	TM36/PM12
m/p-Xylene #	-	14	-	-	<5						<5	ug/kg	TM36/PM12
o-Xylene #	-	<5	-	-	<5						<5	ug/kg	TM36/PM12
PCB 28 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 52 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 101 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 118 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 138 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 153 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
PCB 180 #	-	<5	-	-	<5						<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	<35	-	-	<35						<35	ug/kg	TM17/PM8
Total Phenols HPLC	-	<0.15	-	<0.15	-						<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	-	25.3	21.4	26.1	34.0						<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	-	<0.3	-						<0.3	mg/kg	TM38/PM20

Element Materials Technology

Client Name:	Groundtech Consulting Limited	Report : Solid
Reference:	GRO-22079	
Location:	Tariff Street	Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub
Contact:	James Doyle	
EMT Job No:	23/7158	

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

[illegible]

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	24.6
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	80.3
Particle Size <4mm =	>95%		
EMT Job No	23/7158	Landfill Waste Acceptance Criteria Limits	
Sample No	30		
Client Sample No	BH12		
Depth/Other	1.00		
Sample Date	02/05/2023		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	3.58	3	5
Loss on Ignition (%)	6.6	-	10
Sum of BTEX (mg/kg)	<0.025	6	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-
PAH Sum of 17(mg/kg)	<0.64	100	-
pH (pH Units)	7.85	-	>6
ANC to pH 7 (mol/kg)	0.11	-	to be evaluated
ANC to pH 4 (mol/kg)	0.39	-	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg
	C ₁₀ mg/l	A ₁₀ mg/kg	
Arsenic	0.0027	0.027	0.5
Barium	0.087	0.87	20
Cadmium	<0.0005	<0.005	0.04
Chromium	<0.0015	<0.015	0.5
Copper	<0.007	<0.07	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.023	0.23	0.5
Nickel	<0.002	<0.02	0.4
Lead	<0.005	<0.05	0.5
Antimony	0.003	0.03	0.06
Selenium	<0.003	<0.03	0.1
Zinc	<0.003	<0.03	4
Chloride	0.4	4	800
Fluoride	0.6	6	10
Sulphate as SO ₄	41.0	410	1000
Total Dissolved Solids	190	1900	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	6	60	500

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	47.2
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	67.9
Particle Size <4mm =	>95%		
EMT Job No	23/7158	Landfill Waste Acceptance Criteria Limits	
Sample No	6		
Client Sample No	BH01		
Depth/Other	1.00		
Sample Date	02/05/2023		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	5.83	3	5
Loss on Ignition (%)	7.0	-	10
Sum of BTEX (mg/kg)	0.050	6	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-
PAH Sum of 17(mg/kg)	<0.64	100	-
pH (pH Units)	8.13	-	>6
ANC to pH 7 (mol/kg)	0.11	-	to be evaluated
ANC to pH 4 (mol/kg)	0.42	-	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg
	C ₁₀ mg/l	A ₁₀ mg/kg	
Arsenic	0.0065	0.065	0.5
Barium	0.101	1.01	20
Cadmium	<0.0005	<0.005	0.04
Chromium	<0.0015	<0.015	0.5
Copper	<0.007	<0.07	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.041	0.41	0.5
Nickel	0.002	0.02	0.4
Lead	<0.005	<0.05	0.5
Antimony	0.005	0.05	0.06
Selenium	<0.003	<0.03	0.1
Zinc	<0.003	<0.03	4
Chloride	2.6	26	800
Fluoride	0.6	6	10
Sulphate as SO ₄	220.3	2204	1000
Total Dissolved Solids	496	4963	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	7	70	500

Matrix : Solid

Location: Tariff Street

Contact: James Doyle

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/7158

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/7158

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

EMT Job No: 23/7158

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

EMT Job No: 23/7158

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	A hot hydrochloric acid digest is performed on a dried and ground sample, and the resulting liquor is analysed.	Yes		AD	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM77	Modified DDCE/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes

EMT Job No: 23/7158

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.			AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE



4225



Attention : Jamie Parr
Date : 5th June, 2023
Your reference : GR022079
Our reference : Test Report 23/7490 Batch 1
Location : Tariff Street
Date samples received : 12th May, 2023
Status : Final Report
Issue : 1

Twenty seven samples were received for analysis on 12th May, 2023 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GR022079
Location: Tariff Street
Contact: Jamie Parr
EMT Job No: 23/7490

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	4-6	10-12	25-27	40-42	46-48	64-66	70-72				Please see attached notes for all abbreviations and acronyms		
Sample ID	BH08	BH08	BH09	BH10	BH10	BH11	BH11						
Depth	1.00	3.00	1.00	0.20	1.00	0.50	2.00						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	10/05/2023	10/05/2023	09/05/2023	10/05/2023	10/05/2023	05/05/2023	05/05/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023				LOD/LOR	Units	Method No.
Arsenic #	-	10.1	8.5	-	28.1	-	13.4				<0.5	mg/kg	TM30/PM15
Cadmium #	-	<0.1	0.8	-	7.9	-	<0.1				<0.1	mg/kg	TM30/PM15
Chromium #	-	44.5	411.6 ^{AA}	-	48.0	-	44.4				<0.5	mg/kg	TM30/PM15
Copper #	-	57	66	-	119	-	62				<1	mg/kg	TM30/PM15
Lead #	-	27	204	-	384	-	160				<5	mg/kg	TM30/PM15
Mercury #	-	<0.1	<0.1	-	0.3	-	0.2				<0.1	mg/kg	TM30/PM15
Nickel #	-	35.2	28.0	-	38.7	-	33.2				<0.7	mg/kg	TM30/PM15
Selenium #	-	<1	2	-	<1	-	<1				<1	mg/kg	TM30/PM15
Zinc #	-	75	96	-	805	-	83				<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	<0.04	0.46 ^{AB}	3.68 ^{AB}	4.11 ^{AB}	-	0.07				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	<0.30 ^{AB}	1.79 ^{AB}	1.80 ^{AB}	-	<0.03				<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	1.75 ^{AB}	1.31 ^{AB}	1.17 ^{AB}	-	<0.05				<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	1.45 ^{AB}	1.51 ^{AB}	1.45 ^{AB}	-	<0.04				<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	0.07	11.69 ^{AB}	16.38 ^{AB}	14.60 ^{AB}	-	0.14				<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	3.27 ^{AB}	4.98 ^{AB}	4.47 ^{AB}	-	<0.04				<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	0.05	15.57 ^{AB}	30.82 ^{AB}	31.02 ^{AB}	-	0.16				<0.03	mg/kg	TM4/PM8
Pyrene #	-	0.04	13.49 ^{AB}	29.02 ^{AB}	30.08 ^{AB}	-	0.19				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	5.90 ^{AB}	15.03 ^{AB}	14.92 ^{AB}	-	0.12				<0.06	mg/kg	TM4/PM8
Chrysene #	-	0.04	6.15 ^{AB}	17.90 ^{AB}	17.17 ^{AB}	-	0.15				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	<0.07	9.47 ^{AB}	30.85 ^{AB}	29.63 ^{AB}	-	0.21				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	4.29 ^{AB}	14.64 ^{AB}	14.32 ^{AB}	-	0.11				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	<0.04	4.57 ^{AB}	13.75 ^{AB}	12.89 ^{AB}	-	0.10				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	<0.40 ^{AB}	1.57 ^{AB}	1.57 ^{AB}	-	<0.04				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	4.26 ^{AB}	12.99 ^{AB}	12.96 ^{AB}	-	0.11				<0.04	mg/kg	TM4/PM8
Coronene	-	<0.04	-	2.42 ^{AB}	-	-	-				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	82.3 ^{AB}	-	192.2 ^{AB}	-	1.4				<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	<0.64	-	198.64 ^{AB}	-	-	-				<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	6.82 ^{AB}	22.21 ^{AB}	21.33 ^{AB}	-	0.15				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	2.65 ^{AB}	8.64 ^{AB}	8.30 ^{AB}	-	0.06				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	83	93 ^{AB}	95 ^{AB}	94 ^{AB}	-	102				<0	%	TM4/PM8
EPH (C8-C40) (EH_1D_Total) #	250	-	3032	-	3652	-	312				<30	mg/kg	TM5/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	<30	-	-	-	-	-				<30	mg/kg	TM5/PM8/PM16
MTBE #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
Benzene #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
Toluene #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
m/p-Xylene #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
o-Xylene #	-	<5 ^{SV}	-	-	-	-	-				<5	ug/kg	TM36/PM12
PCB 28 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GR022079
Location: Tariff Street
Contact: Jamie Parr
EMT Job No: 23/7490

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	4-6	10-12	25-27	40-42	46-48	64-66	70-72				Please see attached notes for all abbreviations and acronyms		
Sample ID	BH08	BH08	BH09	BH10	BH10	BH11	BH11						
Depth	1.00	3.00	1.00	0.20	1.00	0.50	2.00						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	10/05/2023	10/05/2023	09/05/2023	10/05/2023	10/05/2023	05/05/2023	05/05/2023						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023	12/05/2023				LOD/LOR	Units	Method No.
PCB 52 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
PCB 101 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
PCB 118 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
PCB 138 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
PCB 153 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
PCB 180 #	-	<5	-	-	-	-	-				<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	<35	-	-	-	-	-				<35	ug/kg	TM17/PM8
Total Phenols HPLC	-	<0.15	<0.15	-	<0.15	-	<0.15				<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	20.4	24.4	6.2	22.0	16.3	-	24.2				<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	-	<0.3	-	<0.3				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	0.1376	0.0434	-	0.1119	-	0.1090				<0.0015	g/l	TM38/PM20
Total Cyanide #	-	<0.5	<0.5	-	<0.5	-	<0.5				<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	1.49	-	-	-	-	-				<0.02	%	TM21/PM24
Organic Matter	-	2.6	6.0	-	15.4	-	6.2				<0.2	%	TM21/PM24
ANC at pH4	-	0.11	-	-	-	-	-				<0.03	mol/kg	TM77/PM0
ANC at pH7	-	0.14	-	-	-	-	-				<0.03	mol/kg	TM77/PM0
Loss on Ignition #	-	2.5	-	-	-	-	-				<1.0	%	TM22/PM0
pH #	-	8.48	8.86	-	7.99	-	8.18				<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	-	NAD	-	Chrysotile	NAD	-					None	Subcontracted

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	29.6
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	77.2
Particle Size <4mm =	>95%		
EMT Job No	23/7490	Landfill Waste Acceptance Criteria Limits	
Sample No	12		
Client Sample No	BH08		
Depth/Other	3.00		
Sample Date	10/05/2023		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	1.49	3	5
Loss on Ignition (%)	2.5	-	10
Sum of BTEX (mg/kg)	<0.025	6	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	<30	500	-
PAH Sum of 17(mg/kg)	<0.64	100	-
pH (pH Units)	8.48	-	>6
ANC to pH 7 (mol/kg)	0.14	-	to be evaluated
ANC to pH 4 (mol/kg)	0.11	-	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg
	C ₁₀ mg/l	A ₁₀ mg/kg	
Arsenic	0.0038	0.038	0.5
Barium	0.044	0.44	20
Cadmium	<0.0005	<0.005	0.04
Chromium	<0.0015	<0.015	0.5
Copper	0.010	0.10	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.018	0.18	0.5
Nickel	<0.002	<0.02	0.4
Lead	<0.005	<0.05	0.5
Antimony	0.004	0.04	0.06
Selenium	<0.003	<0.03	0.1
Zinc	<0.003	<0.03	4
Chloride	1.6	16	800
Fluoride	0.8	8	10
Sulphate as SO ₄	28.3	283	1000
Total Dissolved Solids	132	1319	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	3	30	500

Client Name: Groundtech Consulting Limited **Matrix : Solid**

Reference: GR022079

Location: Tariff Street

Contact: Jamie Parr

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/7490

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/7490

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes

EMT Job No: 23/7490

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

EMT Job No: 23/7490

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE



4225



Attention : Jamie Parr
Date : 5th June, 2023
Your reference : GRO-22079
Our reference : Test Report 23/7732 Batch 1
Location : Tariff Street
Date samples received : 17th May, 2023
Status : Final Report
Issue : 1

Twenty one samples were received for analysis on 17th May, 2023 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Phil Sommerton BSc

Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tariff Street
Contact: Jamie Parr
EMT Job No: 23/7732

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	7-9	22-24	36-38	54-56							Please see attached notes for all abbreviations and acronyms		
Sample ID	BH04	BH05	BH07	BH10									
Depth	1.00	2.00	1.50	6.00									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	15/05/2023	15/05/2023	15/05/2023	11/05/2023									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	17/05/2023	17/05/2023	17/05/2023	17/05/2023							LOD/LOR	Units	Method No.
Arsenic #	11.8	142.2	34.6	-							<0.5	mg/kg	TM30/PM15
Cadmium #	0.7	3.3	1.1	-							<0.1	mg/kg	TM30/PM15
Chromium #	36.4	56.2	51.1	-							<0.5	mg/kg	TM30/PM15
Copper #	29	647 ^{AA}	186	-							<1	mg/kg	TM30/PM15
Lead #	171	779	370	-							<5	mg/kg	TM30/PM15
Mercury #	<0.1	2.8	1.2	-							<0.1	mg/kg	TM30/PM15
Nickel #	25.6	72.1	39.8	-							<0.7	mg/kg	TM30/PM15
Selenium #	<1	4	<1	-							<1	mg/kg	TM30/PM15
Zinc #	86	1965	807	-							<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	2.36	1.33	<0.04							<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.85	0.63	<0.03							<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	5.54	3.43	<0.05							<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	5.06	2.51	<0.04							<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.57	12.09	18.13	0.07							<0.03	mg/kg	TM4/PM8
Anthracene #	0.18	5.81	5.43	<0.04							<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.84	63.33	30.35	0.08							<0.03	mg/kg	TM4/PM8
Pyrene #	0.72	49.70	24.90	0.07							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.35	16.48	10.60	<0.06							<0.06	mg/kg	TM4/PM8
Chrysene #	0.40	17.14	11.29	<0.02							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.58	20.70	15.51	<0.07							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.35	8.96	6.60	<0.04							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.24	7.47	5.76	<0.04							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.90	0.72	<0.04							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.23	7.30	5.69	<0.04							<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	<0.04							<0.04	mg/kg	TM4/PM8
PAH 16 Total	4.5	223.7	142.9	-							<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	<0.64							<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.42	14.90	11.17	<0.05							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.16	5.80	4.34	<0.02							<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	93	92	100	77							<0	%	TM4/PM8
EPH (C8-C40) (EH_1D_Total) #	216	3802	1583	-							<30	mg/kg	TM5/PM8

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tariff Street
Contact: Jamie Parr
EMT Job No: 23/7732

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	7-9	22-24	36-38	54-56							Please see attached notes for all abbreviations and acronyms		
Sample ID	BH04	BH05	BH07	BH10									
Depth	1.00	2.00	1.50	6.00									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	15/05/2023	15/05/2023	15/05/2023	11/05/2023									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	17/05/2023	17/05/2023	17/05/2023	17/05/2023							LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 (HS_1D_AL) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>C6-C8 (HS_1D_AL) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>C8-C10 (HS_1D_AL) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>C10-C12 (EH_CU_1D_AL) #	-	<0.2	-	-							<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 (EH_CU_1D_AL) #	-	15	-	-							<4	mg/kg	TM5/PM8/PM16
>C16-C21 (EH_CU_1D_AL) #	-	173	-	-							<7	mg/kg	TM5/PM8/PM16
>C21-C35 (EH_CU_1D_AL) #	-	2095	-	-							<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-35 (EH+HS_CU_1D_AL)	-	2283	-	-							<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Aromatics													
>C5-EC7 (HS_1D_AR) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>EC7-EC8 (HS_1D_AR) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>EC8-EC10 (HS_1D_AR) #	-	<0.1 ^{SV}	-	-							<0.1	mg/kg	TM36/PM12
>EC10-EC12 (EH_CU_1D_AR) #	-	3.5	-	-							<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 (EH_CU_1D_AR) #	-	70	-	-							<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 (EH_CU_1D_AR) #	-	899	-	-							<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 (EH_CU_1D_AR) #	-	2077	-	-							<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 (EH+HS_CU_1D_AR) #	-	3050	-	-							<19	mg/kg	TM5/PM8/PM16/PM12/PM10
Total aliphatics and aromatics (C5-35) (EH+HS_CU_1D_Total)	-	5333	-	-							<38	mg/kg	TM5/PM8/PM16/PM12/PM10
MTBE #	-	<5 ^{SV}	-	-							<5	ug/kg	TM36/PM12
Benzene #	-	<5 ^{SV}	-	-							<5	ug/kg	TM36/PM12
Toluene #	-	<5 ^{SV}	-	-							<5	ug/kg	TM36/PM12
Ethylbenzene #	-	<5 ^{SV}	-	-							<5	ug/kg	TM36/PM12
m/p-Xylene #	-	10 ^{SV}	-	-							<5	ug/kg	TM36/PM12
o-Xylene #	-	<5 ^{SV}	-	-							<5	ug/kg	TM36/PM12
Total Phenols HPLC	<0.15	<0.15	<0.15	-							<0.15	mg/kg	TM26/PM21B
Natural Moisture Content	21.4	67.5	40.2	18.8							<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	-							<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.2607	0.2002	0.2620	-							<0.0015	g/l	TM38/PM20
Total Cyanide #	<0.5	56.1	44.0	-							<0.5	mg/kg	TM89/PM45
Organic Matter	3.8	16.2	13.6	-							<0.2	%	TM21/PM24
pH #	8.45	8.44	8.17	-							<0.01	pH units	TM73/PM11
Asbestos Type*	NAD	-	NAD	-							None		Subcontracted

Matrix : Solid

[illegible]

QF-PM 3.1.11 v3

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/7732

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/7732

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes

EMT Job No: 23/7732

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Groundtech Consulting Limited

PO Box 499
Manchester
United Kingdom
M28 8EE



4225



Attention : Jamie Parr
Date : 28th June, 2023
Your reference : GRO-22079
Our reference : Test Report 23/8362 Batch 1
Location : Tarriff Street
Date samples received : 25th May, 2023
Status : Final Report
Issue : 2

Sixteen samples were received for analysis on 25th May, 2023 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tarriff Street
Contact: Jamie Parr
EMT Job No: 23/8362

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	10-12	34-35	36-38	42-44						Please see attached notes for all abbreviations and acronyms		
Sample ID	BH02	BH02	BH03	BH03	BH06								
Depth	0.20	2.30	1.00	3.00	2.00								
COC No / misc													
Containers	V J T	V J T	J T	V J T	V J T								
Sample Date	18/05/2023	18/05/2023	19/05/2023	19/05/2023	16/05/2023								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	25/05/2023	25/05/2023	25/05/2023	25/05/2023	25/05/2023						LOD/LOR	Units	Method No.
Arsenic #	-	23.6	-	15.7	91.9						<0.5	mg/kg	TM30/PM15
Cadmium #	-	<0.1	-	<0.1	4.2						<0.1	mg/kg	TM30/PM15
Chromium #	-	33.0	-	48.2	58.0						<0.5	mg/kg	TM30/PM15
Copper #	-	87	-	51	463 ^{AA}						<1	mg/kg	TM30/PM15
Lead #	-	128	-	125	908						<5	mg/kg	TM30/PM15
Mercury #	-	0.7	-	0.3	3.0						<0.1	mg/kg	TM30/PM15
Nickel #	-	30.3	-	25.2	75.9						<0.7	mg/kg	TM30/PM15
Selenium #	-	1	-	<1	2						<1	mg/kg	TM30/PM15
Zinc #	-	91	-	121	2471						<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	0.08	-	1.89 ^{AB}	0.74						<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	-	0.87 ^{AB}	0.34						<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	-	2.07 ^{AB}	1.54						<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	-	2.08 ^{AB}	1.40						<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	0.19	-	14.39 ^{AB}	4.42						<0.03	mg/kg	TM4/PM8
Anthracene #	-	0.05	-	4.93 ^{AB}	1.84						<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	0.22	-	31.51 ^{AB}	18.55						<0.03	mg/kg	TM4/PM8
Pyrene #	-	0.19	-	27.38 ^{AB}	14.92						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	0.14	-	12.96 ^{AB}	4.64						<0.06	mg/kg	TM4/PM8
Chrysene #	-	0.16	-	14.22 ^{AB}	5.11						<0.02	mg/kg	TM4/PM8
Benzo(k)fluoranthene #	-	0.22	-	28.06 ^{AB}	6.06						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	0.10	-	12.74 ^{AB}	3.73						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	0.08	-	13.90 ^{AB}	2.04						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	-	1.50 ^{AB}	0.46						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	0.10	-	12.33 ^{AB}	2.33						<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	0.42						<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	1.5	-	180.8 ^{AB}	68.1						<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	68.54						<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	0.16	-	20.20 ^{AB}	4.36						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	0.06	-	7.86 ^{AB}	1.70						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	96	-	93 ^{AB}	94						<0	%	TM4/PM8
EPH (C8-C40) (EH_1D_Total) #	-	472	-	519	7015						<30	mg/kg	TM5/PM8
Mineral Oil (C10-C40) (EH_CU_1D_AL)	-	-	-	-	1910						<30	mg/kg	TM5/PM8/PM16
MTBE #	-	-	-	-	<5 ^{SV}						<5	ug/kg	TM36/PM12
Benzene #	-	-	-	-	<5 ^{SV}						<5	ug/kg	TM36/PM12
Toluene #	-	-	-	-	<5 ^{SV}						<5	ug/kg	TM36/PM12
Ethylbenzene #	-	-	-	-	<5 ^{SV}						<5	ug/kg	TM36/PM12
m/p-Xylene #	-	-	-	-	8 ^{SV}						<5	ug/kg	TM36/PM12
o-Xylene #	-	-	-	-	<5 ^{SV}						<5	ug/kg	TM36/PM12
PCB 28 #	-	-	-	-	<5						<5	ug/kg	TM17/PM8

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tarriff Street
Contact: Jamie Parr
EMT Job No: 23/8362

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

[illegible]

Mass of sample taken (kg)	-	Moisture Content Ratio (%) =	63.1
Mass of dry sample (kg) =	0.09	Dry Matter Content Ratio (%) =	61.3
Particle Size <4mm =	>95%		
EMT Job No	23/8362	Landfill Waste Acceptance Criteria Limits	
Sample No	44		
Client Sample No	BH06		
Depth/Other	2.00		
Sample Date	16/05/2023		
Batch No	1		
Solid Waste Analysis		Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill
Total Organic Carbon (%)	10.35	3	5
Loss on Ignition (%)	12.1	-	10
Sum of BTEX (mg/kg)	<0.025	6	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-
Mineral Oil (mg/kg) (EH_CU_1D_AL)	1910	500	-
PAH Sum of 17(mg/kg)	68.54	100	-
pH (pH Units)	7.76	-	>6
ANC to pH 7 (mol/kg)	<0.03	-	to be evaluated
ANC to pH 4 (mol/kg)	1.17	-	to be evaluated
Eluate Analysis	10:1 conc ⁿ leached		Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg
	C ₁₀ mg/l	A ₁₀ mg/kg	
Arsenic	0.0232	0.232	0.5
Barium	0.155	1.55	20
Cadmium	<0.0005	<0.005	0.04
Chromium	<0.0015	<0.015	0.5
Copper	<0.007	<0.07	2
Mercury	<0.001	<0.01	0.01
Molybdenum	0.028	0.28	0.5
Nickel	0.002	<0.02	0.4
Lead	<0.005	<0.05	0.5
Antimony	0.002	<0.02	0.06
Selenium	<0.003	<0.03	0.1
Zinc	<0.003	<0.03	4
Chloride	7.2	72	800
Fluoride	<0.3	<3	10
Sulphate as SO ₄	20.7	207	1000
Total Dissolved Solids	182	1820	4000
Phenol	<0.01	<0.1	1
Dissolved Organic Carbon	9	90	500

Client Name: Groundtech Consulting Limited
Reference: GRO-22079
Location: Tarriff Street
Contact: Jamie Parr

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

[illegible]

Client Name: Groundtech Consulting Limited

Reference: GRO-22079

Location: Tarriff Street

Contact: Jamie Parr

Matrix : Solid

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/8362

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/8362

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270D v5:2014. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3:1990/USEPA 160.1/3 (TDS/TS: 1971) Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.	Yes		AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes

EMT Job No: 23/8362

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21B	As Received samples are extracted in Methanol: Water (60:40) by reciprocal shaker.			AR	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GC/FID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

EMT Job No: 23/8362

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide, Sulphide and Thiocyanate analysis.	Yes		AR	Yes
TM170	Determination of Trace Metals by ICP-MS (Inductively Coupled Plasma – Mass Spectrometry): Modified USEPA Method 200.8, Rev. 5.4, 1994; Modified EPA Method 6020A, Rev.1, Feb 2007; Modified BS EN ISO 17294-2:2016	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 9214 - 340.2 (EPA 1998)	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.			AR	
Subcontracted	See attached subcontractor report for accreditation status and provider.					AR	

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE



4225



Attention : Jamie Perkins
Date : 26th July, 2023
Your reference : GR0-22079
Our reference : Test Report 23/11126 Batch 1
Location : Tariff Street
Date samples received : 7th July, 2023
Status : Final Report
Issue : 1

Five samples were received for analysis on 7th July, 2023 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GR0-22079
Location: Tariff Street
Contact: Jamie Perkins
EMT Job No: 23/11126

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

EMT Sample No.	1-3	4-6	7-9	10-12	13-15						Please see attached notes for all abbreviations and acronyms		
Sample ID	BH01	BH04	BH05	BH07	BH08								
Depth													
COC No / misc													
Containers	V P G	V P G	V P G	V P G	V P G								
Sample Date	05/07/2023	05/07/2023	05/07/2023	05/07/2023	05/07/2023								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1						LOD/LOR	Units	Method No.
Date of Receipt	07/07/2023	07/07/2023	07/07/2023	07/07/2023	07/07/2023								
Dissolved Arsenic #	12.7	4.7	4.2	5.6	7.3						<2.5	ug/l	TM30/PM14
Dissolved Boron	179	128	377	374	193						<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	<7	<7						<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5						<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1	<1	<1	<1						<1	ug/l	TM30/PM14
Dissolved Nickel #	3	<2	<2	<2	<2						<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Dissolved Zinc #	5	7	8	39	14						<3	ug/l	TM30/PM14
PAH MS													
Naphthalene #	0.2	<0.1	0.6	<0.1	0.2						<0.1	ug/l	TM4/PM30
Acenaphthylene #	<0.005	0.006	<0.005	<0.005	<0.005						<0.005	ug/l	TM4/PM30
Acenaphthene #	0.024	0.008	0.232	1.158	0.013						<0.005	ug/l	TM4/PM30
Fluorene #	0.014	<0.005	0.058	0.396	0.008						<0.005	ug/l	TM4/PM30
Phenanthrene #	0.027	0.032	0.110	1.265	0.026						<0.005	ug/l	TM4/PM30
Anthracene #	0.029	0.007	0.027	0.241	<0.005						<0.005	ug/l	TM4/PM30
Fluoranthene #	0.016	0.134	0.264	1.259	0.014						<0.005	ug/l	TM4/PM30
Pyrene #	0.018	0.137	0.222	1.013	0.016						<0.005	ug/l	TM4/PM30
Benzo(a)anthracene #	0.006	0.062	0.074	0.351	0.007						<0.005	ug/l	TM4/PM30
Chrysene #	0.005	0.077	0.084	0.405	0.005						<0.005	ug/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.008	0.192	0.111	0.528	0.008						<0.008	ug/l	TM4/PM30
Benzo(a)pyrene #	<0.005	0.093	0.056	0.304	<0.005						<0.005	ug/l	TM4/PM30
Indeno(123cd)pyrene #	<0.005	0.066	0.029	0.167	<0.005						<0.005	ug/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.005	0.012	0.008	0.031	<0.005						<0.005	ug/l	TM4/PM30
Benzo(ghi)perylene #	<0.005	0.073	0.031	0.168	<0.005						<0.005	ug/l	TM4/PM30
PAH 16 Total #	0.339	0.899	1.906	7.286	0.297						<0.173	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.008	0.138	0.080	0.380	<0.008						<0.008	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.008	0.054	0.031	0.148	<0.008						<0.008	ug/l	TM4/PM30
PAH Surrogate % Recovery	83	80	86	77	85						<0	%	TM4/PM30
MTBE #	<5	-	<5	-	<5						<5	ug/l	TM36/PM12
Benzene #	<5	-	<5	-	<5						<5	ug/l	TM36/PM12
Toluene #	<5	-	<5	-	<5						<5	ug/l	TM36/PM12
Ethylbenzene #	<5	-	<5	-	<5						<5	ug/l	TM36/PM12
m/p-Xylene #	<5	-	<5	-	<5						<5	ug/l	TM36/PM12
o-Xylene #	<5	-	13	-	<5						<5	ug/l	TM36/PM12

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: GR0-22079
Location: Tariff Street
Contact: Jamie Perkins
EMT Job No: 23/11126

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

EMT Sample No.	1-3	4-6	7-9	10-12	13-15						Please see attached notes for all abbreviations and acronyms		
Sample ID	BH01	BH04	BH05	BH07	BH08								
Depth													
COC No / misc													
Containers	V P G	V P G	V P G	V P G	V P G								
Sample Date	05/07/2023	05/07/2023	05/07/2023	05/07/2023	05/07/2023								
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water								
Batch Number	1	1	1	1	1								
Date of Receipt	07/07/2023	07/07/2023	07/07/2023	07/07/2023	07/07/2023						LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<10	-	<10	-	<10						<10	ug/l	TM36/PM12
>C6-C8 #	<10	-	<10	-	<10						<10	ug/l	TM36/PM12
>C8-C10 #	12	-	<10	-	<10						<10	ug/l	TM36/PM12
>C10-C12 #	<5	-	<5	-	<5						<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	12	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
Aromatics													
>C5-EC7 #	<10	-	<10	-	<10						<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	-	<10	-	<10						<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	-	17	-	<10						<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	-	<5	-	<5						<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	-	<10	-	<10						<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	-	17	-	<10						<10	ug/l	TM5/PM16/PM30
Total aliphatics and aromatics(C5-35) #	12	-	17	-	<10						<10	ug/l	TM5/PM16/PM30
Total Phenols HPLC	<0.15	-	<0.15	-	<0.15						<0.15	mg/l	TM26/PM0
Sulphate as SO4 #	296.3	243.9	666.8	507.6	110.3						<0.5	mg/l	TM38/PM0
Total Cyanide #	<0.01	-	0.02	-	<0.01						<0.01	mg/l	TM89/PM0
Hexavalent Chromium	<6	<6	<6	<6	<6						<6	ug/l	TM38/PM0
Sulphide	<0.01	-	<0.01	-	<0.01						<0.01	mg/l	TM107/PM0
pH #	8.26	8.05	7.87	7.51	7.77						<0.01	pH units	TM73/PM0
Total Organic Carbon #	11	6	16	4	<2						<2	mg/l	TM60/PM0

Matrix : Liquid

4 of 11

Client Name: Groundtech Consulting Limited

Reference: GR0-22079

Location: Tariff Street

Contact: Jamie Perkins

[illegible]

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 23/11126

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 23/11126

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5	Modified 8015B v2:1996 method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM36	Modified US EPA method 8015B v2:1996. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results will be re-run using GC-MS to double check, when requested.	PM12	Modified US EPA method 5021A v2:2014. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM0	No preparation is required.				

EMT Job No: 23/11126

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060A (2002), APHA SMEWW 5310B:1999 22nd Edition, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667 (1999). Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM0	No preparation is required.				

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