envirolab
Units 7 & 8, Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

Final Test Report

Envirolab Job Number:	18/03075
Issue Number:	1
Date:	30-Apr-18
Client:	Ian Farmer Associates (Newcastle) Unit 4, Faraday Close Pattinson North Industrial Estate Washington Tyne and Wear NE38 8QJ
Project Manager:	Ceg/Chris Spencer
Project Name:	South Tyneside District Hospital
Project Ref:	18678
Order No:	73030
Date Samples Received:	24-Apr-18
Date Instructions Received:	24-Apr-18
Date Analysis Completed:	30-Apr-18

Notes - Soil analysis

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones >10mm are removed or excluded from the sample prior to analysis and reported results corrected to a whole sample basis.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis.

Notes - General

This report shall not be reproduced, except in full, without written approval from Envirolab.

Subscript "A" indicates analysis performed on the sample as received. "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve, unless asbestos is found to be present in which case all analysis is performed on the sample as received.

All analysis is performed on the dried and crushed sample for samples with Matrix Code 7 and this supercedes any "A" subscripts.

All analysis is performed on the sample as received for soil samples from outside the European Union and this supercedes any "D" subscripts

Superscript "M" indicates method accredited to MCERTS.

For complex, multi-compound analysis, quality control results do not always fall within chart limits for every compound and we have criteria for reporting in these situations.

If results are in italic font they are associated with such quality control failures and may be unreliable.

A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid

Predominant Matrix Codes: 1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample

Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited

Secondary Matrix Codes: A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

IS indicates Insufficient sample for analysis, NDP indicates No Determination Possible and NAD indicates No Asbestos Detected.

Superscript # indicates method accredited to ISO 17025.

Analytical results reflect the quality of the sample at the time of analysis only. Opinions and interpretations expressed are outside the scope of our accreditation.

Please contact us if you need any further information.

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

John Gustafson
Managing Director

UKAS TESTING
No. 1247

mCERTS
THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

envirolab

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	18/03075/1						
Client Sample Number				Topsoil				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				M11987/1						
Depth to Top										
Depth to Bottom										
Date Sampled				20/04/2018						
Sample Type				Soil						
Sample Matrix Code				6AE						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	Y	Y	**7.99**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.12**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.03**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	Y	N	**10.4**				-	-	10
Total Organic Carbon (%)$_D$	A-T-032	Y	Y	**8.29**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**11.9**				100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**23**				500	-	-
Sum of 7 PCBs (mg/kg)$_D$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	Y	N	0.005	0.006	0.013	**0.060**	0.5	2	25
Barium	A-T-025	Y	N	0.081	0.037	0.186	**0.420**	20	100	300
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	Y	N	0.013	0.007	0.030	**0.080**	2	50	100
Mercury	A-T-025	Y	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	Y	N	0.006	0.002	0.014	**0.030**	0.5	10	30
Nickel	A-T-025	Y	N	0.002	<0.001	0.005	**0.010**	0.4	10	40
Lead	A-T-025	Y	N	0.020	0.010	0.047	**0.120**	0.5	10	50
Antimony	A-T-025	Y	N	0.008	0.003	0.018	**0.040**	0.06	0.7	5
Selenium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.1	0.5	7
Zinc	A-T-025	Y	N	0.029	0.004	0.066	**0.060**	4	50	200
Chloride	A-T-026	Y	N	10	2	23	**23**	800	15000	25000
Fluoride	A-T-026	Y	N	0.6	0.5	1.4	**5.0**	10	150	500
Sulphate as SO_4	A-T-026	Y	N	20	15	46	**162**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	165	59	379	**703**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	Y	7.2	7.8					
Conductivity (µS/cm)	A-T-037	N	N	329	118					
Mass Sample (kg)				0.200						
Dry Matter (%)	A-T-044	N	N	83.4						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.150						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.330						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	18/03075/2						
Client Sample Number				Ash				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				M11987/2						
Depth to Top										
Depth to Bottom										
Date Sampled				20/04/2018						
Sample Type				Soil						
Sample Matrix Code				6A						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	Y	Y	**8.12**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**<0.01**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**<0.01**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	Y	N	**13.6**				-	-	10
Total Organic Carbon (%)$_D$	A-T-032	Y	Y	**12.4**				3	5	6
PAH Sum of 17 (mg/kg) $_A$	A-T-019	N	N	**3.53**				100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**17**				500	-	-
Sum of 7 PCBs (mg/kg)$_D$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	Y	N	0.003	0.005	0.007	**0.050**	0.5	2	25
Barium	A-T-025	Y	N	0.070	0.042	0.172	**0.460**	20	100	300
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	Y	N	0.010	0.004	0.025	**0.050**	0.5	10	70
Copper	A-T-025	Y	N	0.007	0.003	0.018	**0.030**	2	50	100
Mercury	A-T-025	Y	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	Y	N	0.018	0.006	0.045	**0.070**	0.5	10	30
Nickel	A-T-025	Y	N	0.002	<0.001	0.004	**<0.01**	0.4	10	40
Lead	A-T-025	Y	N	0.027	0.008	0.067	**0.100**	0.5	10	50
Antimony	A-T-025	Y	N	0.009	0.004	0.023	**0.050**	0.06	0.7	5
Selenium	A-T-025	Y	N	0.002	<0.001	0.004	**<0.01**	0.1	0.5	7
Zinc	A-T-025	Y	N	0.039	<0.001	0.095	**0.050**	4	50	200
Chloride	A-T-026	Y	N	7	1	17	**17**	800	15000	25000
Fluoride	A-T-026	Y	N	1.0	0.6	2.5	**7.0**	10	150	500
Sulphate as SO_4	A-T-026	Y	N	29	7	71	**92**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	167	54	408	**670**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	Y	7.4	7.8					
Conductivity (µS/cm)	A-T-037	N	N	334	107					
Mass Sample (kg)				0.200						
Dry Matter (%)	A-T-044	N	N	79.8						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.150						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.280						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab

Landfill WAC analysis must not be used for hazardous waste classification purposes. This analysis is only applicable for landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Sample Details								Landfill Waste Acceptance Criteria Limits		
Lab Sample ID	Method	ISO17025	MCERTS	18/03075/3						
Client Sample Number				Clay				Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill	Hazardous Waste Landfill
Client Sample ID				M11987/3						
Depth to Top										
Depth to Bottom										
Date Sampled				20/04/2018						
Sample Type				Soil						
Sample Matrix Code				6						
Solid Waste Analysis										
pH (pH Units)$_D$	A-T-031	Y	Y	**8.09**				-	>6	-
ANC to pH 4 (mol/kg)$_D$	A-T-ANC	N	N	**0.03**				-	to be evaluated	to be evaluated
ANC to pH 6 (mol/kg)$_D$	A-T-ANC	N	N	**0.01**				-	to be evaluated	to be evaluated
Loss on Ignition (%)$_D$	A-T-030	Y	N	**4.8**				-	-	10
Total Organic Carbon (%)$_D$	A-T-032	Y	Y	**1.95**				3	5	6
PAH Sum of 17 (mg/kg)$_A$	A-T-019	N	N	**<0.08**				100	-	-
Mineral Oil (mg/kg)$_A$	A-T-007	N	N	**<10**				500	-	-
Sum of 7 PCBs (mg/kg)$_D$	A-T-004	N	N	**<0.007**				1	-	-
Sum of BTEX (mg/kg)$_A$	A-T-022	N	N	**<0.01**				6	-	-
Eluate Analysis				**2:1**	**8:1**	**2:1**	**Cumulative 10:1**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)**		
				mg/l		**mg/kg**				
Arsenic	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.5	2	25
Barium	A-T-025	Y	N	0.029	0.009	0.071	**0.120**	20	100	300
Cadmium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.04	1	5
Chromium	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.5	10	70
Copper	A-T-025	Y	N	0.002	<0.001	0.004	**<0.01**	2	50	100
Mercury	A-T-025	Y	N	<0.0005	<0.0005	<0.001	**<0.005**	0.01	0.2	2
Molybdenum	A-T-025	Y	N	0.015	0.013	0.037	**0.130**	0.5	10	30
Nickel	A-T-025	Y	N	<0.001	<0.001	<0.002	**<0.01**	0.4	10	40
Lead	A-T-025	Y	N	0.002	<0.001	0.004	**<0.01**	0.5	10	50
Antimony	A-T-025	Y	N	0.001	<0.001	0.003	**<0.01**	0.06	0.7	5
Selenium	A-T-025	Y	N	0.002	<0.001	0.004	**<0.01**	0.1	0.5	7
Zinc	A-T-025	Y	N	0.017	<0.001	0.041	**0.020**	4	50	200
Chloride	A-T-026	Y	N	3	<1.00	8	**<10**	800	15000	25000
Fluoride	A-T-026	Y	N	0.7	0.6	1.6	**6.0**	10	150	500
Sulphate as SO_4	A-T-026	Y	N	16	3	39	**46**	1000	20000	50000
Total Dissolved Solids	A-T-035	N	N	160	59	392	**711**	4000	60000	100000
Phenol Index	A-T-050	N	N	<0.01	<0.01	<0.02	**<0.1**	1	-	-
Dissolved Organic Carbon	A-T-032	N	N	<20.0	<20.0	<40	**<200**	500	800	1000
Leach Test Information										
pH (pH Units)	A-T-031	N	Y	7.9	7.9					
Conductivity (µS/cm)	A-T-037	N	N	319	119					
Mass Sample (kg)				0.201						
Dry Matter (%)	A-T-044	N	N	79.5						
Stage 1										
Volume Leachant, L_2 (l)	A-T-046			0.350						
Filtered Eluate Volume, VE_1 (l)	A-T-046			0.150						
Stage 2										
Volume Leachant, L_8 (l)	A-T-046			1.280						

Stated acceptance limits are for guidance only and Envirolab cannot be held responsible for any discrepancies with current legislation

envirolab
Units 7 & 8 Sandpits Business Park
Mottram Road, Hyde, Cheshire, SK14 3AR

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 18/03075
Issue Number: 1 **Date:** 30 April, 2018

Client:
Ian Farmer Associates (Newcastle)
Unit 4, Faraday Close
Pattinson North Industrial Estate
Washington
Tyne and Wear
NE38 8QJ

Project Manager: Ceg/Chris Spencer
Project Name: South Tyneside District Hospital
Project Ref: 18678
Order No: 73030
Date Samples Received: 24/04/18
Date Instructions Received: 24/04/18
Date Analysis Completed: 30/04/18

Prepared by:

[redacted]

Melanie Marshall
Laboratory Coordinator

Approved by:

[redacted]

John Gustafson
Managing Director

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 1247

Envirolab Job Number: 18/03075

Client Project Name: South Tyneside District Hospital

Client Project Ref: 18678

Lab Sample ID	18/03075/1	18/03075/2	18/03075/3						Units	Method ref
Client Sample No	Topsoil	Ash	Clay							
Client Sample ID	M11987/1	M11987/2	M11987/3							
Depth to Top										
Depth To Bottom										
Date Sampled	20-Apr-18	20-Apr-18	20-Apr-18							
Sample Type	Soil	Soil	Soil							
Sample Matrix Code	6AE	6A	6							
% Stones >10mm$_A$	9.5	13.8	<0.1						% w/w	A-T-044
Antimony$_D$	7	5	<5						mg/kg	A-T-024s
Arsenic$_D^{M\#}$	9	23	2						mg/kg	A-T-024s
Barium$_D$	428	993	138						mg/kg	A-T-024s
Cadmium$_D^{M\#}$	2.0	2.7	2.3						mg/kg	A-T-024s
Copper$_D^{M\#}$	97	141	14						mg/kg	A-T-024s
Chromium$_D^{M\#}$	35	35	42						mg/kg	A-T-024s
Lead$_D^{M\#}$	252	784	37						mg/kg	A-T-024s
Mercury$_D$	0.27	0.59	0.34						mg/kg	A-T-024s
Molybdenum$_D^{M\#}$	5	7	<1						mg/kg	A-T-024s
Nickel$_D^{M\#}$	48	66	26						mg/kg	A-T-024s
Selenium$_D^{M\#}$	2	2	3						mg/kg	A-T-024s
Zinc$_D^{M\#}$	637	241	59						mg/kg	A-T-024s

REPORT NOTES

General:
This report shall not be reproduced, except in full, without written approval from Envirolab.
All samples contained within this report, and any received with the same delivery, will be disposed of one month after the date of this report.
Analytical results reflect the quality of the sample at the time of analysis only.
Opinions and interpretations expressed are outside the scope of our accreditation.
If results are in italic font they are associated with an AQC failure and there is insufficient sample to repeat the analysis. These are not accredited and are unreliable.
A deviating samples report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.

Soil chemical analysis:
All results are reported as dry weight (<40°C).
For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.
For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts
All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH analysis of water by method A-T-007:
Free and visible oils are excluded from the sample used for analysis so that the reported result represents the dissolved phase only.

Electrical Conductivity of water by Method A-T-037:
Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Asbestos:
Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.
Stones etc. are not removed from the sample prior to analysis.
Quantification of asbestos is a 3 stage process including visual identification, hand picking and weighing and fibre counting by sedimentation/phase contrast optical microscopy if required. If asbestos is identified as being present but is not in a form that is suitable for analysis by hand picking and weighing (normally if the asbestos is present as free fibres) quantification by sedimentation is performed. Where ACMs are found a percentage asbestos is assigned to each with reference to 'HSG264, Asbestos: The survey guide' and the calculated asbestos content is expressed as a percentage of the dried soil sample aliquot used.

Predominant Matrix Codes:
1 = SAND, 2 = LOAM, 3 = CLAY, 4 = LOAM/SAND, 5 = SAND/CLAY, 6 = CLAY/LOAM, 7 = OTHER, 8 = Asbestos bulk ID sample.
Samples with Matrix Code 7 & 8 are not predominantly a SAND/LOAM/CLAY mix and are not covered by our BSEN 17025 or MCERTS accreditations, with the exception of bulk asbestos which are BSEN 17025 accredited.
Secondary Matrix Codes:
A = contains stones, B = contains construction rubble, C = contains visible hydrocarbons, D = contains glass/metal, E = contains roots/twigs.

Key:
IS indicates Insufficient Sample for analysis.
US indicates Unsuitable Sample for analysis.
NDP indicates No Determination Possible.
NAD indicates No Asbestos Detected.
N/A indicates Not Applicable.
Superscript # indicates method accredited to ISO 17025.
Superscript "M" indicates method accredited to MCERTS.
Subscript "A" indicates analysis performed on the sample as received.
Subscript "D" indicates analysis performed on the dried sample, crushed to pass a 2mm sieve

Please contact us if you need any further information.