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Tier Environmental
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Attention :	Adrian Read
Date :	17th October, 2019
Your reference :	TE1154
Our reference :	Test Report 19/16190 Batch 2
Location :	IWHC Hotel
Date samples received :	10th October, 2019
Status :	Final report
Issue :	1

Fifteen samples were received for analysis on 10th October, 2019 of which fifteen 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

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Element Materials Technology

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read
EMT Job No: 19/16190

Report : Solid

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

EMT Sample No.	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	LOD/LOR	Units	Method No.
Sample ID	TSV1	TSV2	TSV3	TSV4	TSV5	TSV6	TSV7	TSV8	TSV9	TSV10			
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019			
Arsenic #	8.3	6.8	7.9	8.1	6.8	8.3	8.5	7.5	7.7	7.1	<0.5	mg/kg	TM30/PM15
Cadmium #	<0.1	0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Chromium #	71.7	76.9	57.1	59.5	71.3	64.2	68.1	64.8	76.3	62.4	<0.5	mg/kg	TM30/PM15
Copper #	22	29	20	21	18	25	23	18	19	22	<1	mg/kg	TM30/PM15
Lead #	60	56	56	120	43	65	61	51	52	48	<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	19.3	15.8	17.0	15.7	22.1	16.9	17.2	17.6	18.3	16.8	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	323	320	362	397	293	427	387	367	384	368	<50	mg/kg	TM50/PM29
Zinc #	63	67	51	49	46	59	56	48	49	55	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<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	<0.03	<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	0.06	<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	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.07	0.08	0.09	0.10	0.08	0.47	0.07	<0.03	0.08	0.07	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	0.28	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.16	0.19	0.17	0.18	0.16	0.68	0.13	0.07	0.14	0.12	<0.03	mg/kg	TM4/PM8
Pyrene #	0.16	0.19	0.16	0.18	0.15	0.62	0.13	0.06	0.13	0.12	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.11	0.13	0.10	0.12	0.10	0.32	0.09	<0.06	0.10	0.09	<0.06	mg/kg	TM4/PM8
Chrysene #	0.11	0.12	0.11	0.13	0.10	0.35	0.09	0.05	0.10	0.08	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.17	0.20	0.18	0.20	0.17	0.47	0.14	<0.07	0.12	0.12	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.10	0.12	0.10	0.10	0.09	0.28	0.08	<0.04	0.07	0.08	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.07	0.07	0.07	0.07	0.07	0.16	0.05	<0.04	<0.04	0.05	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.06	0.07	0.07	0.08	0.07	0.14	0.06	<0.04	<0.04	0.05	<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.0	1.2	1.1	1.2	1.0	3.9	0.8	<0.6	0.7	0.8	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.12	0.14	0.13	0.14	0.12	0.34	0.10	<0.05	0.09	0.09	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.05	0.06	0.05	0.06	0.05	0.13	0.04	<0.02	0.03	0.03	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	97	98	99	95	97	93	85	90	92	92	<0	%	TM4/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg	TM26/PM21
Natural Moisture Content	22.3	16.7	14.8	15.2	15.8	15.6	17.0	18.7	19.4	13.3	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	<0.0015	0.0104	0.0110	0.0099	0.0125	0.0159	0.0124	<0.0015	<0.0015	0.0181	<0.0015	g/l	TM38/PM20
Total Organic Carbon #	1.77	1.32	2.13	1.91	1.70	2.12	2.05	1.32	1.39	1.43	<0.02	%	TM21/PM24
pH #	6.83	8.21	6.67	6.40	6.37	6.70	6.37	6.66	6.63	7.45	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read
EMT Job No: 19/16190

Report : Solid

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

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	43-45	46-48	49-51	52-54	55-57						LOD/LOR	Units	Method No.
Sample ID	TSV11	TSV12	TSV13	TSV14	TSV15								
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J								
Sample Date	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	2	2	2	2	2								
Date of Receipt	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019								
Arsenic #	6.7	6.8	6.7	4.4	8.6						<0.5	mg/kg	TM30/PM15
Cadmium #	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	mg/kg	TM30/PM15
Chromium #	52.4	56.8	59.2	70.0	65.5						<0.5	mg/kg	TM30/PM15
Copper #	19	19	15	13	19						<1	mg/kg	TM30/PM15
Lead #	45	42	44	24	53						<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	mg/kg	TM30/PM15
Nickel #	15.2	16.1	16.8	20.9	17.5						<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1	<1						<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	395	354	323	548	354						<50	mg/kg	TM50/PM29
Zinc #	48	47	45	40	51						<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<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						<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<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						<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.10	0.06	0.06	0.05	0.08						<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.15	0.13	0.10	0.09	0.14						<0.03	mg/kg	TM4/PM8
Pyrene #	0.14	0.11	0.10	0.09	0.13						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.10	0.08	0.09	0.09	0.09						<0.06	mg/kg	TM4/PM8
Chrysene #	0.10	0.08	0.07	0.06	0.09						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.14	0.13	0.12	0.10	0.14						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.08	0.08	0.07	0.06	0.08						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.06	0.05	<0.04	<0.04	0.05						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.05	0.05	<0.04	<0.04	0.06						<0.04	mg/kg	TM4/PM8
PAH 16 Total	0.9	0.8	0.6	<0.6	0.9						<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.10	0.09	0.09	0.07	0.10						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.04	0.04	0.03	0.03	0.04						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	92	91	92	90	87						<0	%	TM4/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15						<0.15	mg/kg	TM26/PM21
Natural Moisture Content	12.9	14.0	15.1	23.4	17.0						<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3						<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0148	0.0183	<0.0015	0.0711	<0.0015						<0.0015	g/l	TM38/PM20
Total Organic Carbon #	1.62	1.38	2.29	0.77	1.92						<0.02	%	TM21/PM24
pH #	7.64	7.10	6.48	7.25	7.13						<0.01	pH units	TM73/PM11

Element Materials Technology

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read
EMT Job No: 19/16190

Report : NRA Leachate

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

EMT Sample No.	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	LOD/LOR	Units	Method No.
Sample ID	TSV1	TSV2	TSV3	TSV4	TSV5	TSV6	TSV7	TSV8	TSV9	TSV10			
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019			
Dissolved Arsenic	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	ug/l	TM30/PM14
Dissolved Boron	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	ug/l	TM30/PM14
Dissolved Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Chromium	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Copper	<7	<7	<7	9	<7	<7	<7	<7	<7	<7	<7	ug/l	TM30/PM14
Dissolved Lead	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM30/PM14
Dissolved Mercury	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM30/PM14
Dissolved Nickel	2	<2	<2	<2	<2	3	<2	<2	<2	2	<2	ug/l	TM30/PM14
Dissolved Selenium	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Zinc	7	8	5	5	4	5	6	<3	5	7	<3	ug/l	TM30/PM14
PAH MS													
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM4/PM30
Acenaphthylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Acenaphthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Fluorene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Phenanthrene	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Anthracene	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Fluoranthene	<0.01	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Pyrene	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(a)anthracene	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Chrysene	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(bk)fluoranthene	<0.01	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(a)pyrene	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Indeno(123cd)pyrene	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Dibenzo(ah)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
PAH 16 Total	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	80	78	83	79	81	80	85	85	77	75	<0	%	TM4/PM30
Total Phenols HPLC	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/l	TM26/PM0
pH	6.31	7.70	7.85	8.02	7.62	7.29	7.23	7.21	7.07	7.21	<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

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Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read
EMT Job No: 19/16190

Report : NRA Leachate

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

EMT Sample No.	43-45	46-48	49-51	52-54	55-57						LOD/LOR	Units	Method No.
Sample ID	TSV11	TSV12	TSV13	TSV14	TSV15								
Depth													
COC No / misc													
Containers	V J	V J	V J	V J	V J								
Sample Date	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	2	2	2	2	2								
Date of Receipt	10/10/2019	10/10/2019	10/10/2019	10/10/2019	10/10/2019								
Dissolved Arsenic	<2.5	<2.5	<2.5	<2.5	<2.5						<2.5	ug/l	TM30/PM14
Dissolved Boron	<12	<12	<12	<12	<12						<12	ug/l	TM30/PM14
Dissolved Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Dissolved Chromium	<1.5	<1.5	<1.5	<1.5	<1.5						<1.5	ug/l	TM30/PM14
Dissolved Copper	10	<7	<7	7	8						<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	<2	<2	<2	<2	<2						<2	ug/l	TM30/PM14
Dissolved Selenium	<3	<3	<3	<3	<3						<3	ug/l	TM30/PM14
Dissolved Zinc	3	4	<3	8	8						<3	ug/l	TM30/PM14
PAH MS													
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	ug/l	TM4/PM30
Acenaphthylene	<0.01	<0.01	0.13	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Acenaphthene	<0.01	<0.01	0.19	<0.01	0.01						<0.01	ug/l	TM4/PM30
Fluorene	<0.01	<0.01	0.21	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Phenanthrene	<0.01	<0.01	0.15	<0.01	0.02						<0.01	ug/l	TM4/PM30
Anthracene	<0.01	<0.01	0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Fluoranthene	<0.01	<0.01	0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Pyrene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(a)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Chrysene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(bk)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(a)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Indeno(123cd)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Dibenzo(ah)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
PAH 16 Total	<0.1	<0.1	0.7	<0.1	<0.1						<0.1	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	74	79	77	80	77						<0	%	TM4/PM30
Total Phenols HPLC	<0.1	<0.1	<0.1	<0.1	<0.1						<0.1	mg/l	TM26/PM0
pH	7.39	6.84	7.76	7.61	7.33						<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read

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). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

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

Signed on behalf of Element Materials Technology:

Ryan Butterworth
Asbestos Team Leader

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/16190	2	TSV1		14	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV2		17	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV3		20	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV4		23	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV5		26	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV6		29	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV7		32	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/16190	2	TSV7		32	14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV8		35	11/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					11/10/2019	**Asbestos Fibres**	NAD
					11/10/2019	**Asbestos ACM**	NAD
					11/10/2019	**Asbestos Type**	NAD
					11/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV9		38	11/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					11/10/2019	**Asbestos Fibres**	NAD
					11/10/2019	**Asbestos ACM**	NAD
					11/10/2019	**Asbestos Type**	NAD
					11/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV10		41	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV11		44	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV12		47	14/10/2019	**General Description (Bulk Analysis)**	Soil/Stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV13		50	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV14		53	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD
19/16190	2	TSV15		56	14/10/2019	**General Description (Bulk Analysis)**	soil-stones
					14/10/2019	**Asbestos Fibres**	NAD
					14/10/2019	**Asbestos ACM**	NAD
					14/10/2019	**Asbestos Type**	NAD
					14/10/2019	**Asbestos Level Screen**	NAD

Client Name: Tier Environmental
Reference: TE1154
Location: IWHC Hotel
Contact: Adrian Read

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 19/16190						

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.: 19/16190

SOILS

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.

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.

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 overesitimate 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.

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 UKAS requirement 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.

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.

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 calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	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

EMT Job No: 19/16190

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	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 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	No
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 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 8270 method for the solvent extraction and determination of 16 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
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	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	No
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.			AR	No
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	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: 19/16190

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	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 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	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 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	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
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. 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