



Royal Haskoning
Rightwell House
Bretton
Bretton
Peterborough
Cambridgeshire
PE3 8DW

Attention: Darren Banner-Perry

CERTIFICATE OF ANALYSIS

Date: 10 December 2015
Customer: H_RHASKON_PT
Sample Delivery Group (SDG): 151126-120
Your Reference: 9Y0074
Location: Cole Green Inert Landfill
Report No: 341605

We received 4 samples on Thursday November 26, 2015 and 3 of these samples were scheduled for analysis which was completed on Thursday December 10, 2015. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan
Operations Manager





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12520484	BHIL01		5.00	24/11/2015
12520485	TPIL03		0.40	25/11/2015
12520486	TPIL07		0.30	25/11/2015
12520487	TPIL07		2.00	25/11/2015

Only received samples which have had analysis scheduled will be shown on the following pages.



SDG: 151126-120
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Order Number:
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SOLID Results Legend <input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	12520485	12520486	12520487		
	Customer Sample Reference	TPIL03	TPIL07	TPIL07		
	AGS Reference					
	Depth (m)	0.40	0.30	2.00		
	Container	250g Amber Jar 1kg TUB 60g VOC (ALE215)	250g Amber Jar 1kg TUB 60g VOC (ALE215)	60g VOC (ALE215)		
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Boron Water Soluble	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
CEN Readings	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EPH CWG (Aliphatic) Filtered GC (W)	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EPH CWG (Aromatic) Filtered GC (W)	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
GRO by GC-FID (S)	All	NDPs: 0 Tests: 3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
GRO by GC-FID (W)	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Mercury Dissolved	All	NDPs: 0 Tests: 2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PCBs by GCMS	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
pH	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	



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SOLID Results Legend <input checked="" type="checkbox"/> Test <input checked="" type="checkbox"/> No Determination Possible	Lab Sample No(s)	12520485	12520486	12520487
	Customer Sample Reference	TPIL03	TPIL07	TPIL07
	AGS Reference			
	Depth (m)	0.40	0.30	2.00
	Container	250g Amber Jar 1kg TUB	250g Amber Jar 1kg TUB	60g VOC (ALE215) 250g Amber Jar 60g VOC (ALE215) 250g Amber Jar 1kg TUB
pH Value of Filtered Water	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Sample description	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Organic Carbon	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TPH CWG Filtered (W)	All	NDPs: 0 Tests: 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TPH CWG GC (S)	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
VOC MS (S)	All	NDPs: 0 Tests: 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
12520485	TPIL03	0.40	Light Brown	Silty Clay	0.063 - 0.1 mm	Stones	Vegetation
12520486	TPIL07	0.30	Dark Brown	Sandy Clay	0.1 - 2 mm	Stones	Vegetation
12520487	TPIL07	2.00	Black	Sandy Clay Loam	0.1 - 2 mm	Brick	Glass & Stones

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



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Results Legend		Customer Sample Ref.	TPIL03	TPIL07	TPIL07			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40	0.30	2.00			
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.		25/11/2015	25/11/2015	25/11/2015			
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
				26/11/2015	26/11/2015	26/11/2015		
			151126-120	151126-120	151126-120			
			12520485	12520486	12520487			
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	18	13	24			
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	<0.01			
Cresols	<0.01 mg/kg	TM062 (S)	<0.01	<0.01	0.0131			
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015	<0.015	0.0524			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035	<0.035	0.0655			
Organic Carbon, Total	<0.2 %	TM132	0.214	0.815	3.04			
pH	1 pH Units	TM133	7.9	8.26	7.39			
Cyanide, Total	<1 mg/kg	TM153	<1	<1	1.05			
Cyanide, Free	<1 mg/kg	TM153	<1	<1	<1			
PCB congener 118	<3 µg/kg	TM168	<3	<3	127			
PCB congener 81	<3 µg/kg	TM168	<3	<3	<3			
PCB congener 77	<3 µg/kg	TM168	<3	<3	20.4			
PCB congener 123	<3 µg/kg	TM168	<3	<3	<3			
PCB congener 114	<3 µg/kg	TM168	<3	<3	<3			
PCB congener 105	<3 µg/kg	TM168	<3	<3	58.6			
PCB congener 126	<3 µg/kg	TM168	<3	<3	<3			
PCB congener 167	<3 µg/kg	TM168	<3	<3	8.62			
PCB congener 156	<3 µg/kg	TM168	<3	<3	17.7			
PCB congener 157	<3 µg/kg	TM168	<3	<3	3.16			
PCB congener 169	<3 µg/kg	TM168	<3	<3	<3			
PCB congener 189	<3 µg/kg	TM168	<3	<3	<3			
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36	<36	235			
Arsenic	<0.6 mg/kg	TM181	10.4	18	17.2			
Barium	<0.6 mg/kg	TM181	57.9	95.5	349			
Beryllium	<0.01 mg/kg	TM181	0.973	1.13	0.835			
Cadmium	<0.02 mg/kg	TM181	0.267	0.347	5.26			
Chromium	<0.9 mg/kg	TM181	22.6	26.3	38.3			
Copper	<1.4 mg/kg	TM181	15.3	28.2	256			
Lead	<0.7 mg/kg	TM181	17.7	46.1	902			
Mercury	<0.14 mg/kg	TM181	<0.14	<0.14	0.384			
Nickel	<0.2 mg/kg	TM181	21.6	27.1	39.7			
Selenium	<1 mg/kg	TM181	<1	<1	<1			



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Validated

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Results Legend			Customer Sample Ref.	TPIL03	TPIL07	TPIL07			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40	0.30	2.00			
M	mCERTS accredited.			Soil/Solid	Soil/Solid	Soil/Solid			
aq	Aqueous / settled sample.			25/11/2015	25/11/2015	25/11/2015			
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted test.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery			26/11/2015	26/11/2015	26/11/2015			
(F)	Trigger breach confirmed			151126-120	151126-120	151126-120			
1-5&*\$@	Sample deviation (see appendix)			12520485	12520486	12520487			
Component	LOD/Units	Method							
Vanadium	<0.2 mg/kg	TM181	35.9	44.3	33.8				
			#	#	#				
Zinc	<1.9 mg/kg	TM181	57.9	84.7	1640				
			M	M	M				
Boron, water soluble	<1 mg/kg	TM222	<1	<1	18.4				
			M	M	M				



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Semi Volatile Organic Compounds

Results Legend		Customer Sample Ref.	TPIL03	TPIL07	TPIL07		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference					
M	mCERTS accredited.		0.40	0.30	2.00		
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid		
diss.filt	Dissolved / filtered sample.		25/11/2015	25/11/2015	25/11/2015		
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		26/11/2015	26/11/2015	26/11/2015		
(F)	Trigger breach confirmed		151126-120	151126-120	151126-120		
1-5&*\$@	Sample deviation (see appendix)		12520485	12520486	12520487		
Component	LOD/Units		Method				
Phenol	<100 µg/kg	TM157	<100	<100	330		
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<200		
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<200		
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<200		
Isophorone	<100 µg/kg	TM157	<100	<100	<200		
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<200		
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<200		
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<200		
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<200		
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	2590		
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<200		
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<200		
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	1370		
Dibenzofuran	<100 µg/kg	TM157	<100	<100	519		
Carbazole	<100 µg/kg	TM157	<100	<100	400		
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	1900		
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	35300		
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<200		
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<200		
Azobenzene	<100 µg/kg	TM157	<100	<100	<200		
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<200		
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<200		
4-Methylphenol	<100 µg/kg	TM157	<100	<100	1000		
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<200		
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<200		
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<200		
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<200		
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<200		
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<200		
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<200		
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<200		
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<200		



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TPH CWG (S)

Results Legend		Customer Sample Ref.	TPIL03	TPIL07	TPIL07		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40	0.30	2.00		
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		25/11/2015	25/11/2015	25/11/2015		
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-5&*\$@	Sample deviation (see appendix)						
				26/11/2015	26/11/2015	26/11/2015	
			151126-120	151126-120	151126-120		
			12520485	12520486	12520487		
Component	LOD/Units	Method					
GRO Surrogate % recovery**	%	TM089	83	83	37		
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	5600		
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5		
Benzene	<10 µg/kg	TM089	<10	<10	<10		
Toluene	<2 µg/kg	TM089	<2	<2	34.1		
Ethylbenzene	<3 µg/kg	TM089	<3	4.6	603		
m,p-Xylene	<6 µg/kg	TM089	<6	<6	500		
o-Xylene	<3 µg/kg	TM089	<3	<3	122		
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	622		
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	1260		
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	30.1		
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	198		
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	1350		
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	1110		
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	27000		
Aliphatics >C16-C21	<100 µg/kg	TM173	132	<100	96300		
Aliphatics >C21-C35	<100 µg/kg	TM173	1830	3050	976000		
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	249000		
Total Aliphatics >C12-C44	<100 µg/kg	TM173	1960	3050	1350000		
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	11.8		
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	34.1		
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	2120		
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	743		
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	20000		
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	1360	86700		
Aromatics >EC21-EC35	<100 µg/kg	TM173	4040	10300	484000		
Aromatics >EC35-EC44	<100 µg/kg	TM173	2570	5470	154000		
Aromatics >EC40-EC44	<100 µg/kg	TM173	542	2700	65400		
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	6610	17100	745000		
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	8580	20200	2100000		



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VOC MS (S)

Results Legend		Customer Sample Ref.	TPIL03	TPIL07	TPIL07		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40	0.30	2.00		
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		25/11/2015	25/11/2015	25/11/2015		
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-5&*\$@	Sample deviation (see appendix)						
Component	LOD/Units		Method				
Dibromofluoromethane**	%	TM116	108	113	112		
Toluene-d8**	%	TM116	101	102	94.3		
4-Bromofluorobenzene**	%	TM116	85.1	87.2	82.6		
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	<6	<60		
Chloromethane	<7 µg/kg	TM116	<7	<7	<70		
Vinyl Chloride	<6 µg/kg	TM116	<6	<6	<60		
Bromomethane	<10 µg/kg	TM116	<10	<10	<100		
Chloroethane	<10 µg/kg	TM116	<10	<10	<100		
Trichlorofluoromethane	<6 µg/kg	TM116	<6	<6	<60		
1,1-Dichloroethene	<10 µg/kg	TM116	<10	<10	<100		
Carbon Disulphide	<7 µg/kg	TM116	<7	<7	<70		
Dichloromethane	<10 µg/kg	TM116	<10	<10	<100		
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	<10	<100		
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	<10	<100		
1,1-Dichloroethane	<8 µg/kg	TM116	<8	<8	<80		
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6	<6	<60		
2,2-Dichloropropane	<10 µg/kg	TM116	<10	<10	<100		
Bromochloromethane	<10 µg/kg	TM116	<10	<10	<100		
Chloroform	<8 µg/kg	TM116	<8	<8	<80		
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7	<7	<70		
1,1-Dichloropropene	<10 µg/kg	TM116	<10	<10	<100		
Carbontetrachloride	<10 µg/kg	TM116	<10	<10	<100		
1,2-Dichloroethane	<5 µg/kg	TM116	<5	<5	<50		
Benzene	<9 µg/kg	TM116	<9	<9	<90		
Trichloroethene	<9 µg/kg	TM116	<9	<9	<90		
1,2-Dichloropropane	<10 µg/kg	TM116	<10	<10	<100		
Dibromomethane	<9 µg/kg	TM116	<9	<9	<90		
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	<70		
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<100		
Toluene	<7 µg/kg	TM116	<7	<7	<70		
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10	<100		
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	<10	<100		



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VOC MS (S)

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#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40	0.30	2.00		
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid		
aq	Aqueous / settled sample.		25/11/2015	25/11/2015	25/11/2015		
diss.filt	Dissolved / filtered sample.		26/11/2015	26/11/2015	26/11/2015		
tot.unfilt	Total / unfiltered sample.		151126-120	151126-120	151126-120		
*	Subcontracted test.		12520485	12520486	12520487		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-5&*\$@	Sample deviation (see appendix)						
Component	LOD/Units		Method				
1,3-Dichloropropane	<7 µg/kg	TM116	<7	<7	<70		
			M	M	M		
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<50		
			M	M	M		
Dibromochloromethane	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
1,2-Dibromoethane	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
Chlorobenzene	<5 µg/kg	TM116	<5	<5	<50		
			M	M	M		
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
Ethylbenzene	<4 µg/kg	TM116	<4	<4	698		
			M	M	M		
p/m-Xylene	<10 µg/kg	TM116	<10	<10	458		
			#	#	#		
o-Xylene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
Styrene	<10 µg/kg	TM116	<10	<10	<100		
			#	#	#		
Bromoform	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
Isopropylbenzene	<5 µg/kg	TM116	<5	<5	<50		
			#	#	#		
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	<16	<160		
			M	M	M		
Bromobenzene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
Propylbenzene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
2-Chlorotoluene	<9 µg/kg	TM116	<9	<9	<90		
			M	M	M		
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	<8	111		
			M	M	M		
4-Chlorotoluene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
tert-Butylbenzene	<14 µg/kg	TM116	<14	<14	<140		
			M	M	M		
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	<9	268		
			#	#	#		
sec-Butylbenzene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
4-Isopropyltoluene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	<8	<80		
			M	M	M		
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<5	<50		
			M	M	M		
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<110		
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	<10	<100		
			M	M	M		
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<14	<140		
			M	M	M		
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	<10	<100		
			#	#	#		
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<200		
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<200		
Naphthalene	<13 µg/kg	TM116	<13	<13	2460		
			M	M	M		



SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Asbestos Identification - Soil

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TPIL03 0.40 SOLID 25/11/2015 00:00:00 30/11/2015 21:03:19 151126-120 12520485 TM048	08/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TPIL07 0.30 SOLID 25/11/2015 00:00:00 30/11/2015 20:58:03 151126-120 12520486 TM048	08/12/15	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TPIL07 2.00 SOLID 25/11/2015 00:00:00 30/11/2015 20:46:40 151126-120 12520487 TM048	07/12/15	Lauren Sargeant	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.201	Natural Moisture Content (%)	14.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	87
Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520486
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	0.30

Solid Waste Analysis

Total Organic Carbon (%)	0.815
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000319	<0.00012	0.000638	<0.00024	0.5	2	25
Barium	0.0155	<0.00003	0.031	<0.00006	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.0002	0.04	1	5
Chromium	0.00123	<0.00022	0.00246	<0.00044	0.5	10	70
Copper	0.00117	<0.00085	0.00234	<0.0017	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002	0.01	0.2	2
Molybdenum	-	-	-	-	0.5	10	30
Nickel	0.000723	<0.00015	0.00145	<0.0003	0.4	10	40
Lead	0.000053	<0.00002	0.000106	<0.00004	0.5	10	50
Antimony	-	-	-	-	0.06	0.7	5
Selenium	0.000567	<0.00039	0.00113	<0.00078	0.1	0.5	7
Zinc	<0.00041	<0.00041	<0.00082	<0.00082	4	50	200
Chloride	-	-	-	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	-	-	-	-	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.032	<0.032	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.324
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Mcerts Certification does not apply to leachates

10/12/2015 16:22:01

16:21:50 10/12/2015

SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.201	Natural Moisture Content (%)	14.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	87
Particle Size <4mm	>95%		

Case	
SDG	151126-120
Lab Sample Number(s)	12520486
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	0.30

Solid Waste Analysis

Total Organic Carbon (%)	0.815	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	<0.024	-	-	-
Sum of 7 PCBs (mg/kg)	<0.021	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	8.26	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.02	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC12-EC16	0.02	<0.01	0.04	<0.02	-
Aromatics >EC16-EC21	0.024	<0.01	0.048	<0.02	-
Aromatics >EC21-EC35	0.065	<0.01	0.13	<0.02	-
Total Aromatics >EC12-EC35	0.109	<0.01	0.218	<0.02	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	0.109	<0.01	0.218	<0.02	-
pH Value of Filtered Water	8.5	<0.001	17	<0.002	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.1	-
Free Cyanide (W)	<0.05	<0.05	<0.1	<0.1	-
Phenol by HPLC (W)	<0.002	<0.002	<0.004	<0.004	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.00014	-
Cresols by HPLC (W)	<0.006	<0.006	<0.012	<0.012	-
Aromatics >EC16-EC35	0.089	<0.01	0.178	<0.02	-
Xylenols by HPLC (W)	<0.008	<0.008	<0.016	<0.016	-
Boron	<0.0094	<0.0094	<0.0188	<0.0188	-
Vanadium	0.000681	<0.00024	0.00136	<0.00048	-
SVOC MS (W) - Aqueous					
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,2-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,3-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.324
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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 10/12/2015 16:22:01



SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	
Mass Sample taken (kg)	0.201	Natural Moisture Content (%)	14.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	87
Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520486
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	0.30

Solid Waste Analysis

Total Organic Carbon (%)	0.815
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis

	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
1,4-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dimethylphenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.002	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Bromophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Chloro-3-methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Chlorophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
Azobenzene	<0.001	<0.001	<0.002	<0.002	-

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
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10/12/2015 16:22:01

16:21:50 10/12/2015



SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	
Mass Sample taken (kg)	0.201	Natural Moisture Content (%)	14.9
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Case

SDG	151126-120
Lab Sample Number(s)	12520486
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	0.30

Solid Waste Analysis

Total Organic Carbon (%)	0.815
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
Acenaphthylene	<0.001	<0.001	<0.002	<0.002	-
Acenaphthene	<0.001	<0.001	<0.002	<0.002	-
Anthracene	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethyl)ether	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethoxy)methane	<0.001	<0.001	<0.002	<0.002	-
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.004	<0.004	-
Butylbenzyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Benzo(a)anthracene	<0.001	<0.001	<0.002	<0.002	-
Benzo(b)fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Benzo(k)fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Benzo(a)pyrene	<0.001	<0.001	<0.002	<0.002	-
Benzo(ghi)perylene	<0.001	<0.001	<0.002	<0.002	-
Carbazole	<0.001	<0.001	<0.002	<0.002	-
Chrysene	<0.001	<0.001	<0.002	<0.002	-
Dibenzofuran	<0.001	<0.001	<0.002	<0.002	-
Di-n-butyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Diethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.002	<0.002	-
Dimethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Di-n-Octyl phthalate	<0.005	<0.005	<0.01	<0.01	-
Fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Fluorene	<0.001	<0.001	<0.002	<0.002	-

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
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10/12/2015 16:22:01

16:21:50 10/12/2015



SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
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Case

SDG	151126-120
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Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
Hexachlorobenzene	<0.001	<0.001	<0.002	<0.002	-
Hexachlorobutadiene	<0.001	<0.001	<0.002	<0.002	-
Pentachlorophenol	<0.001	<0.001	<0.002	<0.002	-
Phenol	<0.001	<0.001	<0.002	<0.002	-
N-nitrosodi-n-propylamine	<0.001	<0.001	<0.002	<0.002	-
Hexachloroethane	<0.001	<0.001	<0.002	<0.002	-
Nitrobenzene	<0.001	<0.001	<0.002	<0.002	-
Naphthalene	<0.001	<0.001	<0.002	<0.002	-
Isophorone	<0.001	<0.001	<0.002	<0.002	-
Hexachlorocyclopentadiene	<0.001	<0.001	<0.002	<0.002	-
Phenanthrene	<0.001	<0.001	<0.002	<0.002	-
Indeno (1,2,3-cd) Pyrene	<0.001	<0.001	<0.002	<0.002	-
Pyrene	<0.001	<0.001	<0.002	<0.002	-
TPH CWG (W)					
Surrogate Recovery	-	-	-	-	-
GRO TOT (C5-C12)	<0.05	<0.05	<0.1	<0.1	-
Aliphatics C5-C6	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C6-C8	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C8-C10	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C10-C12	<0.01	<0.01	<0.02	<0.02	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.02	-
Aromatics >C7-C8	<0.01	<0.01	<0.02	<0.02	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.006	-

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.324
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
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 Mcerts Certification does not apply to leachates

10/12/2015 16:22:01

16:21:50 10/12/2015



SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	
Mass Sample taken (kg)	0.201	Natural Moisture Content (%)	14.9
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	87
Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520486
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	0.30

Solid Waste Analysis

Total Organic Carbon (%)	0.815
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	8.26
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
TPH CWG (W)					
Aromatics >EC8 -EC10	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC10-EC12	<0.01	<0.01	<0.02	<0.02	-
Benzene by GC	<0.007	<0.007	<0.014	<0.014	-
Toluene by GC	<0.004	<0.004	<0.008	<0.008	-
Ethylbenzene by GC	<0.005	<0.005	<0.01	<0.01	-
m & p Xylene by GC	<0.008	<0.008	<0.016	<0.016	-
o Xylene by GC	<0.003	<0.003	<0.006	<0.006	-
Sum m&p and o Xylene by GC	<0.011	<0.011	<0.022	<0.022	-
Sum of BTEX by GC	<0.028	<0.028	<0.056	<0.056	-

Leach Test Information

Date Prepared	01-Dec-2015
pH (pH Units)	8.45
Conductivity (µS/cm)	204.00
Temperature (°C)	19.50
Volume Leachant (Litres)	0.324
Volume of Eluate VE1 (Litres)	

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 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.230	Natural Moisture Content (%)	31.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	76
Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	1.26
Sum of 7 PCBs (mg/kg)	1.46
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.39
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0118	<0.00012	0.0236	<0.00024	0.5	2	25
Barium	0.349	<0.00003	0.698	<0.00006	20	100	300
Cadmium	<0.0001	<0.0001	<0.0002	<0.0002	0.04	1	5
Chromium	0.00239	<0.00022	0.00478	<0.00044	0.5	10	70
Copper	0.0213	<0.00085	0.0426	<0.0017	2	50	100
Mercury Dissolved (CVAf)	<0.00001	<0.00001	<0.00002	<0.00002	0.01	0.2	2
Molybdenum	-	-	-	-	0.5	10	30
Nickel	0.0612	<0.00015	0.122	<0.0003	0.4	10	40
Lead	0.000497	<0.00002	0.000994	<0.00004	0.5	10	50
Antimony	-	-	-	-	0.06	0.7	5
Selenium	0.0131	<0.00039	0.0262	<0.00078	0.1	0.5	7
Zinc	0.136	<0.00041	0.272	<0.00082	4	50	200
Chloride	-	-	-	-	800	15000	25000
Fluoride	-	-	-	-	10	150	500
Sulphate (soluble)	-	-	-	-	1000	20000	50000
Total Dissolved Solids	-	-	-	-	4000	60000	100000
Total Monohydric Phenols (W)	0.16	<0.016	0.32	<0.032	1	-	-
Dissolved Organic Carbon	-	-	-	-	500	800	1000

Leach Test Information

Date Prepared	03-Dec-2015
pH (pH Units)	7.81
Conductivity (µS/cm)	2,880.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.295
Volume of Eluate VE1 (Litres)	

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 10/12/2015 16:22:01

SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.230	Natural Moisture Content (%)	31.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	76
Particle Size <4mm	>95%		

Case	
SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04	-	-	-
Loss on Ignition (%)	-	-	-	-
Sum of BTEX (mg/kg)	1.26	-	-	-
Sum of 7 PCBs (mg/kg)	1.46	-	-	-
Mineral Oil (mg/kg)	-	-	-	-
PAH Sum of 17 (mg/kg)	-	-	-	-
pH (pH Units)	7.39	-	-	-
ANC to pH 6 (mol/kg)	-	-	-	-
ANC to pH 4 (mol/kg)	-	-	-	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
Aliphatics >C12-C16	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C16-C21	<0.01	<0.01	<0.02	<0.02	-
Aliphatics >C21-C35	<0.01	<0.01	<0.02	<0.02	-
Total Aliphatics >C12-C35	<0.01	<0.01	<0.02	<0.02	-
Aromatics >EC12-EC16	0.044	<0.01	0.088	<0.02	-
Aromatics >EC16-EC21	0.027	<0.01	0.054	<0.02	-
Aromatics >EC21-EC35	0.027	<0.01	0.054	<0.02	-
Total Aromatics >EC12-EC35	0.098	<0.01	0.196	<0.02	-
TPH (Total Aliphatics + Total Aromatics) >C5-C35	1.37	<0.01	2.74	<0.02	-
pH Value of Filtered Water	8.1	<0.001	16	<0.002	-
Total Cyanide (W)	<0.05	<0.05	<0.1	<0.1	-
Free Cyanide (W)	<0.05	<0.05	<0.1	<0.1	-
Phenol by HPLC (W)	0.02	<0.002	0.04	<0.004	-
Beryllium	<0.00007	<0.00007	<0.00014	<0.00014	-
Cresols by HPLC (W)	0.09	<0.006	0.18	<0.012	-
Aromatics >EC16-EC35	0.054	<0.01	0.108	<0.02	-
Xylenols by HPLC (W)	0.05	<0.008	0.1	<0.016	-
Boron	3.4	<0.0094	6.8	<0.0188	-
Vanadium	0.00114	<0.00024	0.00228	<0.00048	-
SVOC MS (W) - Aqueous					
1,2,4-Trichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,2-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
1,3-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-

Leach Test Information

Date Prepared	03-Dec-2015
pH (pH Units)	7.81
Conductivity (µS/cm)	2,880.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.295
Volume of Eluate VE1 (Litres)	

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SDG: 151126-120
 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

Location: Cole Green Inert Landfill
 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	
Mass Sample taken (kg)	0.230	Natural Moisture Content (%)	31.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	76
Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	1.26
Sum of 7 PCBs (mg/kg)	1.46
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.39
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
1,4-Dichlorobenzene	<0.001	<0.001	<0.002	<0.002	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.002	-
2,4-Dimethylphenol	0.015	<0.001	0.03	<0.002	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.002	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.002	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.002	-
2-Methylphenol	0.00609	<0.001	0.0122	<0.002	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Bromophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Chloro-3-methylphenol	<0.001	<0.001	<0.002	<0.002	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Chlorophenylphenylether	<0.001	<0.001	<0.002	<0.002	-
4-Methylphenol	0.0527	<0.001	0.105	<0.002	-
4-Nitroaniline	<0.001	<0.001	<0.002	<0.002	-
4-Nitrophenol	<0.001	<0.001	<0.002	<0.002	-
Azobenzene	<0.001	<0.001	<0.002	<0.002	-

Leach Test Information

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pH (pH Units)	7.81
Conductivity (µS/cm)	2,880.00
Temperature (°C)	17.40
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Volume of Eluate VE1 (Litres)	

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 Client Reference: 9Y0074

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 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

Order Number:
 Report Number: 341605
 Superseded Report:

CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.230	Natural Moisture Content (%)	31.6
Mass of dry sample (kg)	0.175	Dry Matter Content (%)	76
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Case

SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	1.26
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Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.39
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
Acenaphthylene	<0.001	<0.001	<0.002	<0.002	-
Acenaphthene	<0.001	<0.001	<0.002	<0.002	-
Anthracene	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethyl)ether	<0.001	<0.001	<0.002	<0.002	-
Bis(2-chloroethoxy)methane	<0.001	<0.001	<0.002	<0.002	-
Bis(2-ethylhexyl) phthalate	<0.002	<0.002	<0.004	<0.004	-
Butylbenzyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Benzo(a)anthracene	<0.001	<0.001	<0.002	<0.002	-
Benzo(b)fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Benzo(k)fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Benzo(a)pyrene	<0.001	<0.001	<0.002	<0.002	-
Benzo(ghi)perylene	<0.001	<0.001	<0.002	<0.002	-
Carbazole	0.00111	<0.001	0.00222	<0.002	-
Chrysene	<0.001	<0.001	<0.002	<0.002	-
Dibenzofuran	<0.001	<0.001	<0.002	<0.002	-
Di-n-butyl phthalate	0.00344	<0.001	0.00688	<0.002	-
Diethyl phthalate	0.0014	<0.001	0.0028	<0.002	-
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.002	<0.002	-
Dimethyl phthalate	<0.001	<0.001	<0.002	<0.002	-
Di-n-Octyl phthalate	<0.005	<0.005	<0.01	<0.01	-
Fluoranthene	<0.001	<0.001	<0.002	<0.002	-
Fluorene	<0.001	<0.001	<0.002	<0.002	-

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CEN 2:1 SINGLE STAGE LEACHATE TEST

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Client Reference		Site Location	Cole Green Inert Landfill
Mass Sample taken (kg)	0.230	Natural Moisture Content (%)	31.6
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Case

SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	1.26
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ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
SVOC MS (W) - Aqueous					
Hexachlorobenzene	<0.001	<0.001	<0.002	<0.002	-
Hexachlorobutadiene	<0.001	<0.001	<0.002	<0.002	-
Pentachlorophenol	<0.001	<0.001	<0.002	<0.002	-
Phenol	<0.001	<0.001	<0.002	<0.002	-
N-nitrosodi-n-propylamine	<0.001	<0.001	<0.002	<0.002	-
Hexachloroethane	<0.001	<0.001	<0.002	<0.002	-
Nitrobenzene	<0.001	<0.001	<0.002	<0.002	-
Naphthalene	<0.001	<0.001	<0.002	<0.002	-
Isophorone	<0.001	<0.001	<0.002	<0.002	-
Hexachlorocyclopentadiene	<0.001	<0.001	<0.002	<0.002	-
Phenanthrene	0.00119	<0.001	0.00238	<0.002	-
Indeno (1,2,3-cd) Pyrene	<0.001	<0.001	<0.002	<0.002	-
Pyrene	<0.001	<0.001	<0.002	<0.002	-
TPH CWG (W)					
Surrogate Recovery	-	-	-	-	-
GRO TOT (C5-C12)	1.27	<0.05	2.54	<0.1	-
Aliphatics C5-C6	0.023	<0.01	0.046	<0.02	-
Aliphatics >C6-C8	0.057	<0.01	0.114	<0.02	-
Aliphatics >C8-C10	0.238	<0.01	0.476	<0.02	-
Aliphatics >C10-C12	0.29	<0.01	0.58	<0.02	-
Aromatics C6-C7	<0.01	<0.01	<0.02	<0.02	-
Aromatics >C7-C8	0.014	<0.01	0.028	<0.02	-
MTBE GC-FID	<0.003	<0.003	<0.006	<0.006	-

Leach Test Information

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pH (pH Units)	7.81
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 Job: H_RHASKON_PTB-95
 Client Reference: 9Y0074

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 Customer: Royal Haskoning
 Attention: Darren Banner-Perry

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CEN 2:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/1

Client Reference		Site Location	Cole Green Inert Landfill
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Particle Size <4mm	>95%		

Case

SDG	151126-120
Lab Sample Number(s)	12520487
Sampled Date	25-Nov-2015
Customer Sample Ref.	TPIL07
Depth (m)	2.00

Solid Waste Analysis

Total Organic Carbon (%)	3.04
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	1.26
Sum of 7 PCBs (mg/kg)	1.46
Mineral Oil (mg/kg)	-
PAH Sum of 17 (mg/kg)	-
pH (pH Units)	7.39
ANC to pH 6 (mol/kg)	-
ANC to pH 4 (mol/kg)	-

Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l)		2:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection	
TPH CWG (W)					
Aromatics >EC8 -EC10	0.446	<0.01	0.892	<0.02	-
Aromatics >EC10-EC12	0.193	<0.01	0.386	<0.02	-
Benzene by GC	<0.007	<0.007	<0.014	<0.014	-
Toluene by GC	0.014	<0.004	0.028	<0.008	-
Ethylbenzene by GC	0.142	<0.005	0.284	<0.01	-
m & p Xylene by GC	0.118	<0.008	0.236	<0.016	-
o Xylene by GC	0.027	<0.003	0.054	<0.006	-
Sum m&p and o Xylene by GC	0.145	<0.011	0.29	<0.022	-
Sum of BTEX by GC	0.301	<0.028	0.602	<0.056	-

Leach Test Information

Date Prepared	03-Dec-2015
pH (pH Units)	7.81
Conductivity (µS/cm)	2,880.00
Temperature (°C)	17.40
Volume Leachant (Litres)	0.295
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable
 Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation
 Mcerts Certification does not apply to leachates

10/12/2015 16:22:01

16:21:50 10/12/2015



SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample ¹	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990; BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser		
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone		
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID		
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate		
TM245	By GC-FID	Determination of GRO by Headspace in waters		
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter		
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	12520485	12520486	12520487
	TPIL03	TPIL07	TPIL07
AGS Ref.			
Depth	0.40	0.30	2.00
Type	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	08-Dec-2015	08-Dec-2015	07-Dec-2015
Boron Water Soluble	07-Dec-2015	03-Dec-2015	03-Dec-2015
CEN 2:1 Leachate (1 Stage)		01-Dec-2015	03-Dec-2015
CEN Readings		04-Dec-2015	04-Dec-2015
Cyanide Comp/Free/Total/Thiocyanate	09-Dec-2015	07-Dec-2015	09-Dec-2015
Dissolved Metals by ICP-MS		08-Dec-2015	08-Dec-2015
EPH CWG (Aliphatic) Filtered GC (W)		10-Dec-2015	10-Dec-2015
EPH CWG (Aliphatic) GC (S)	09-Dec-2015	03-Dec-2015	03-Dec-2015
EPH CWG (Aromatic) Filtered GC (W)		10-Dec-2015	10-Dec-2015
EPH CWG (Aromatic) GC (S)	09-Dec-2015	03-Dec-2015	03-Dec-2015
GRO by GC-FID (S)	07-Dec-2015	03-Dec-2015	03-Dec-2015
GRO by GC-FID (W)		07-Dec-2015	08-Dec-2015
Mercury Dissolved		07-Dec-2015	09-Dec-2015
Metals in solid samples by OES	08-Dec-2015	03-Dec-2015	03-Dec-2015
PCBs by GCMS	09-Dec-2015	03-Dec-2015	03-Dec-2015
pH	08-Dec-2015	08-Dec-2015	08-Dec-2015
pH Value of Filtered Water		04-Dec-2015	08-Dec-2015
Phenols by HPLC (S)	08-Dec-2015	08-Dec-2015	08-Dec-2015
Phenols by HPLC (W)		07-Dec-2015	08-Dec-2015
Sample description	04-Dec-2015	30-Nov-2015	01-Dec-2015
Semi Volatile Organic Compounds	09-Dec-2015	06-Dec-2015	06-Dec-2015
SVOC MS (W) - Aqueous		09-Dec-2015	09-Dec-2015
Total Organic Carbon	08-Dec-2015	08-Dec-2015	02-Dec-2015
TPH CWG Filtered (W)		10-Dec-2015	10-Dec-2015
TPH CWG GC (S)	09-Dec-2015	03-Dec-2015	03-Dec-2015
VOC MS (S)	08-Dec-2015	03-Dec-2015	04-Dec-2015



SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

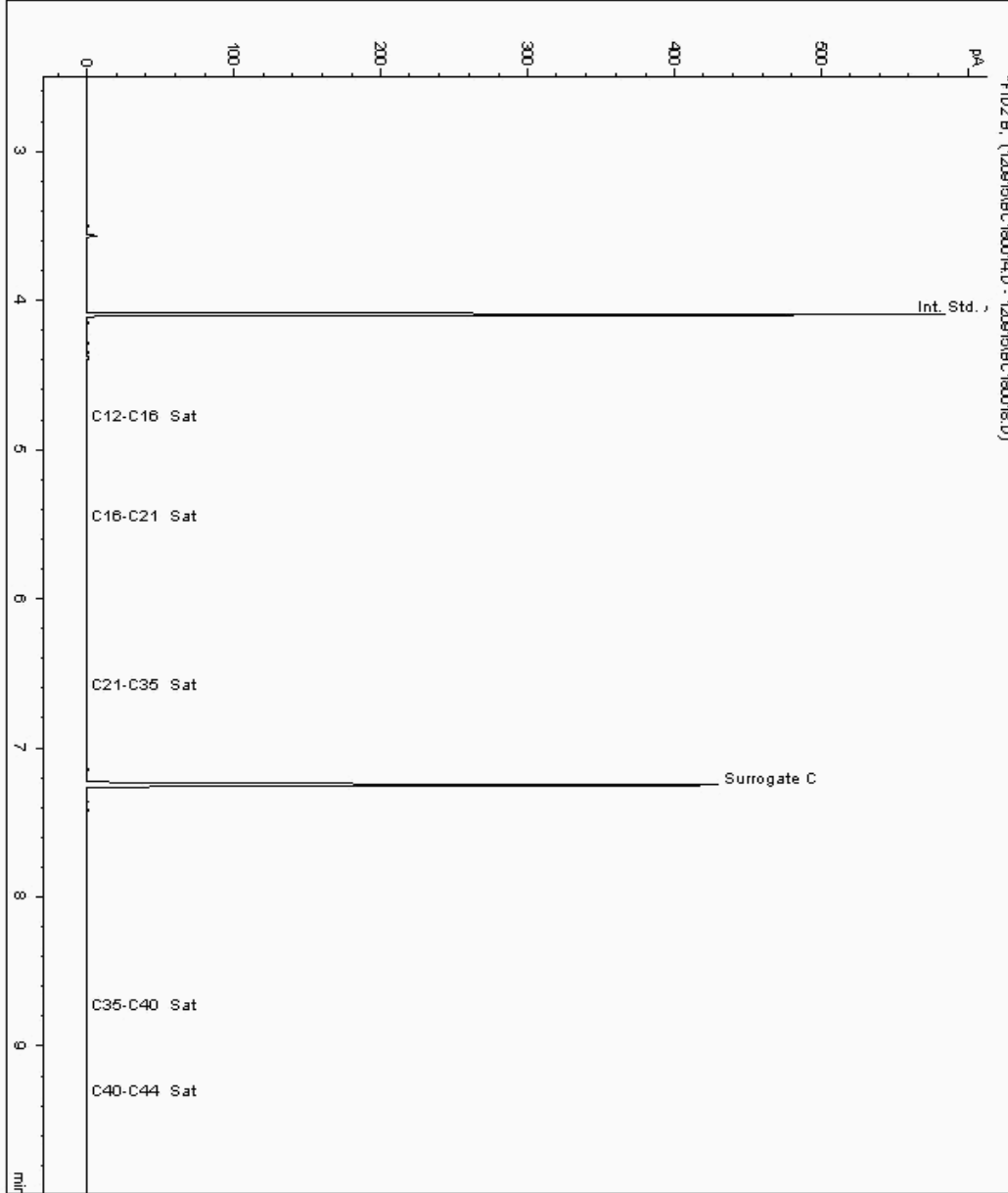
Analysis: EPH CWG (Aliphatic) Filtered GC (W)

Sample No : 12566033
Sample ID : TPIL07

Depth : 0.30

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11859215-
Date Acquired : 10/12/2015 06:12:01 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.012





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

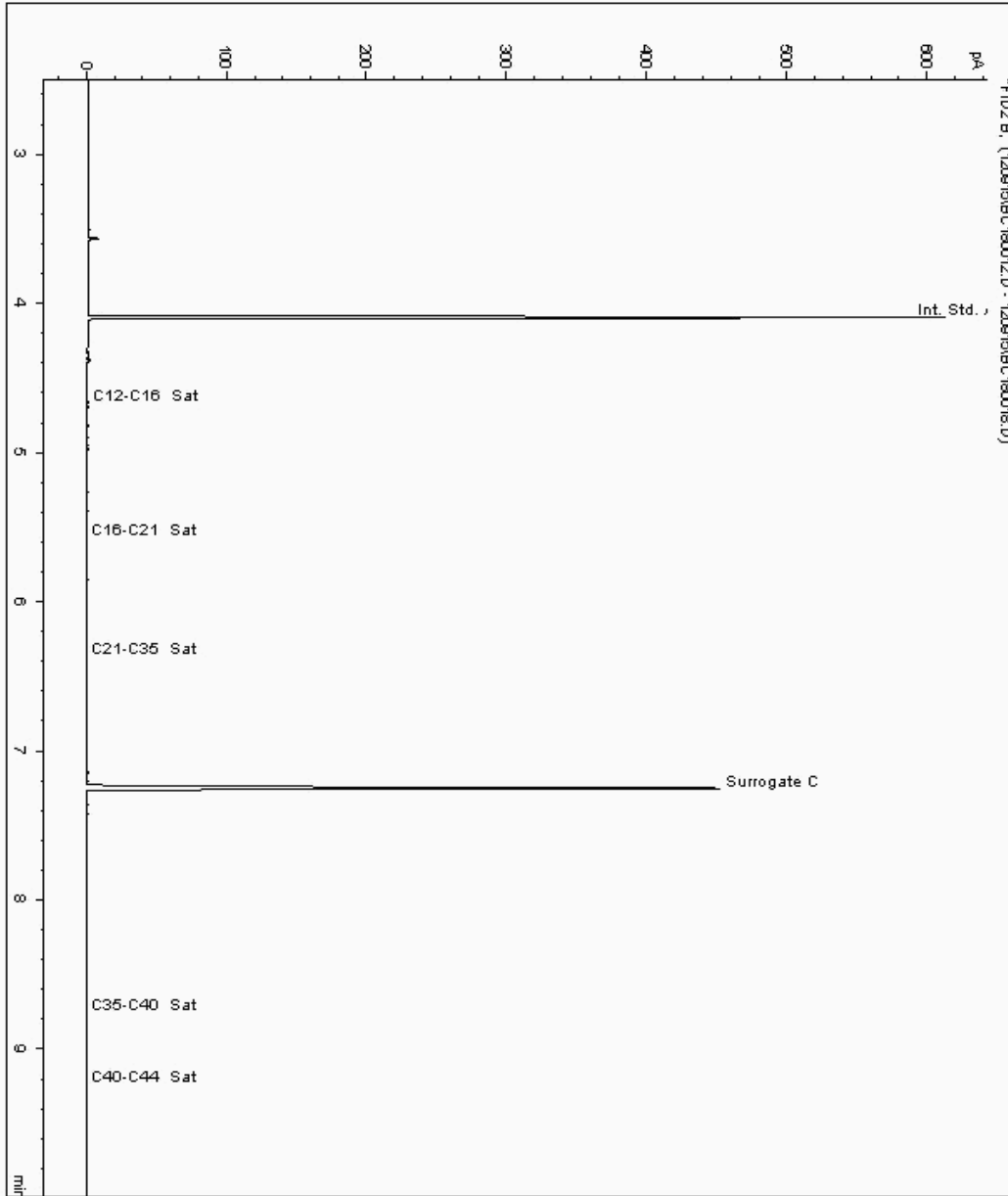
Analysis: EPH CWG (Aliphatic) Filtered GC (W)

Sample No : 12576664
Sample ID : TPIL07

Depth : 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11859230-
Date Acquired : 10/12/2015 05:35:09 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

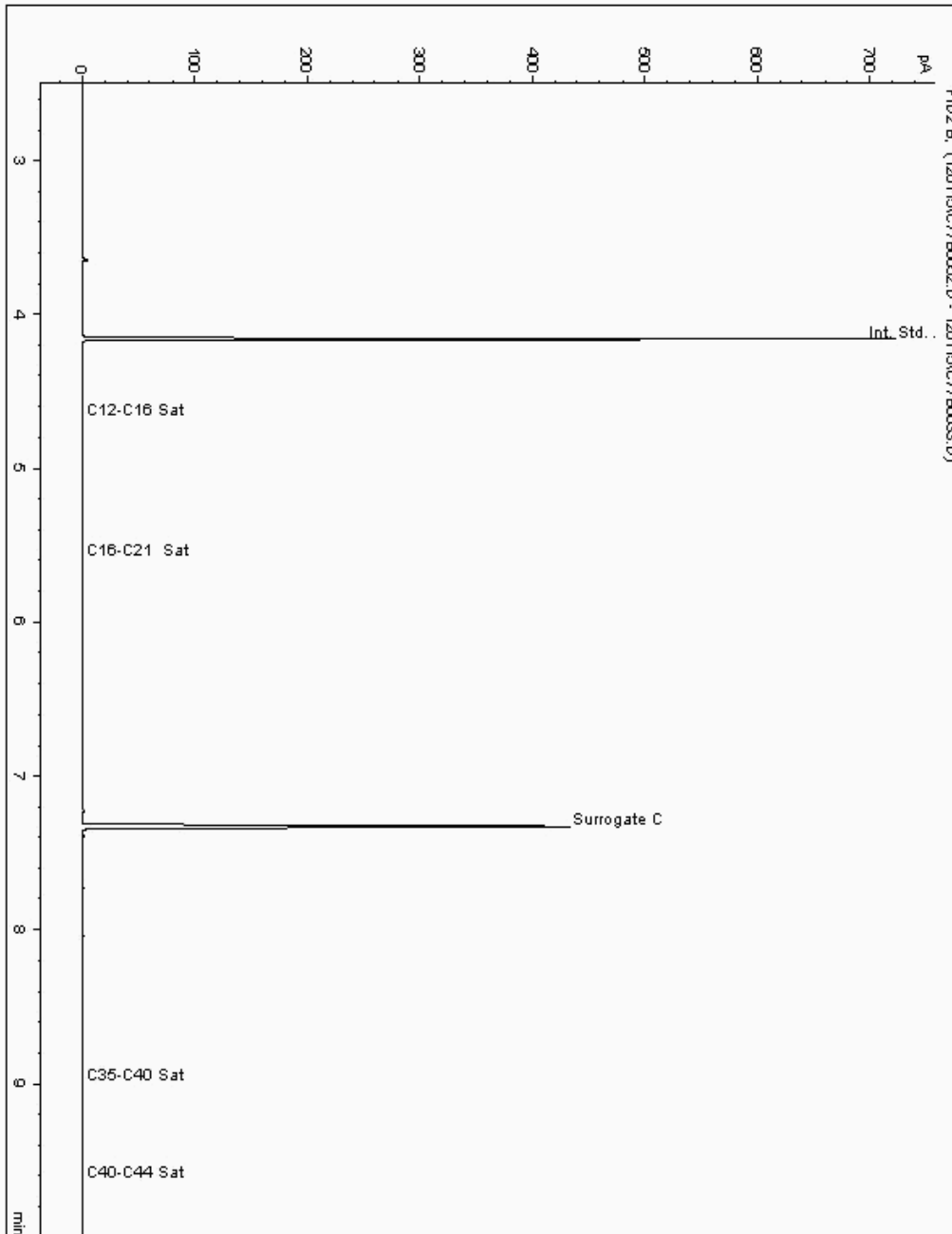
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 12545614
Sample ID : TPIL07

Depth : 0.30

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11858945-
Date Acquired : 02/12/2015 00:55:35 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.970





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

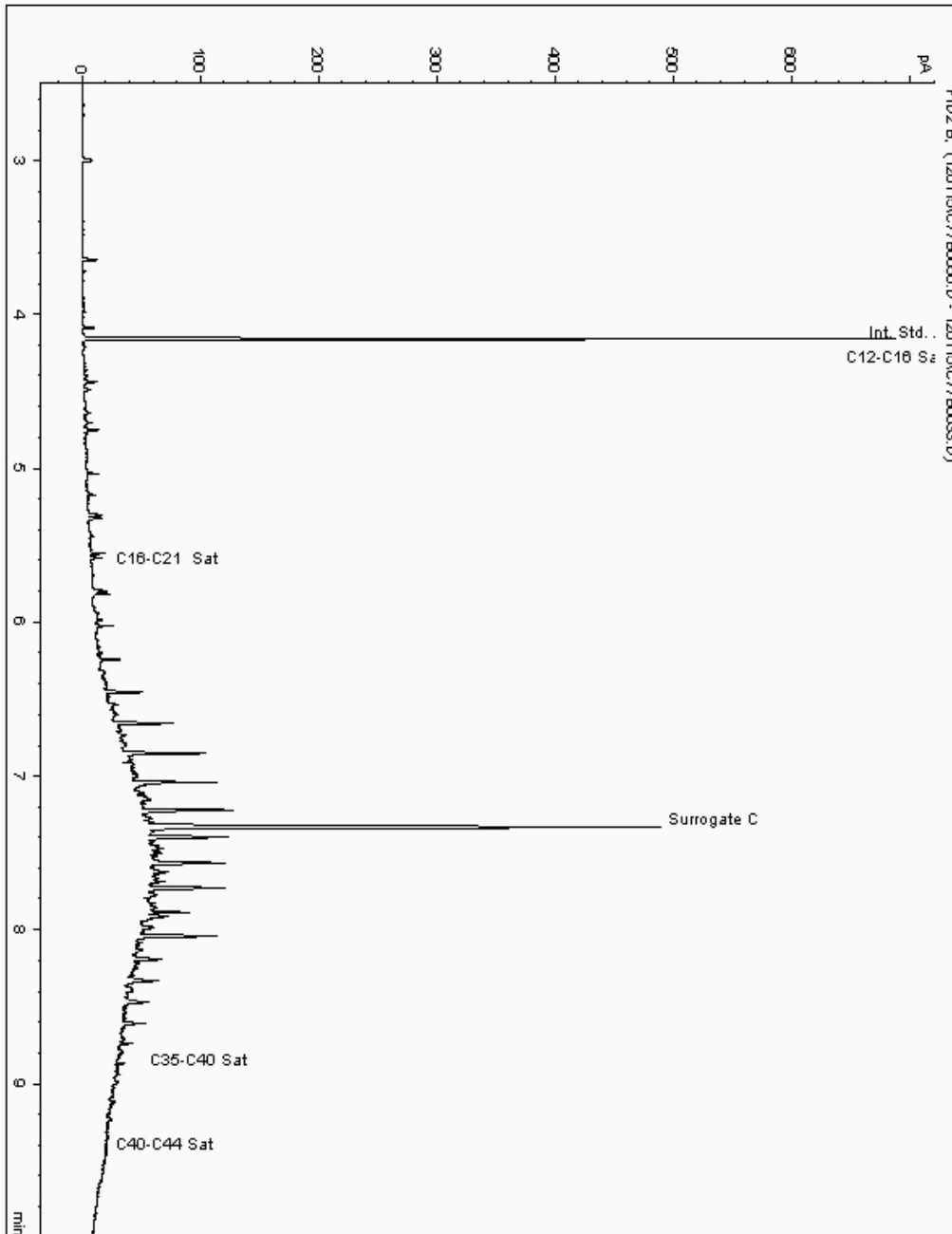
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 12545650
Sample ID : TPIL07

Depth : 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11858970-
Date Acquired : 02/12/2015 00:23:41 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.050





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

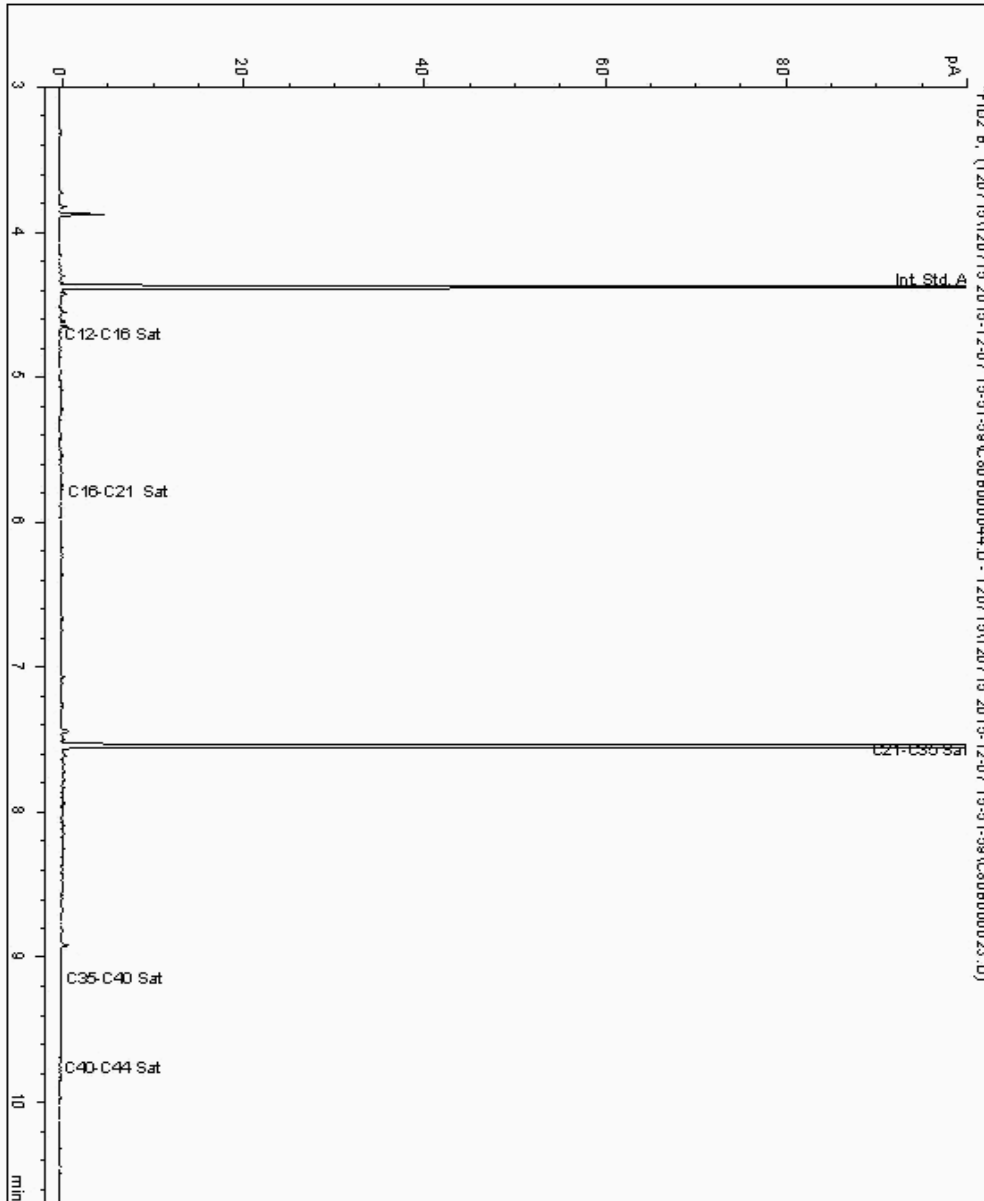
Analysis: EPH CWG (Aliphatic) GC (S)

Sample No : 12572472
Sample ID : TPIL03

Depth : 0.40

Alcontrol/Geochem Analytical Services
Speciated TPH - SATS (C12 - C40)

Sample Identity: 11858920-
Date Acquired : 08/12/15 02:24:38
Units : ppb
Dilution :
CF : 1
Multiplier : 0.980





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

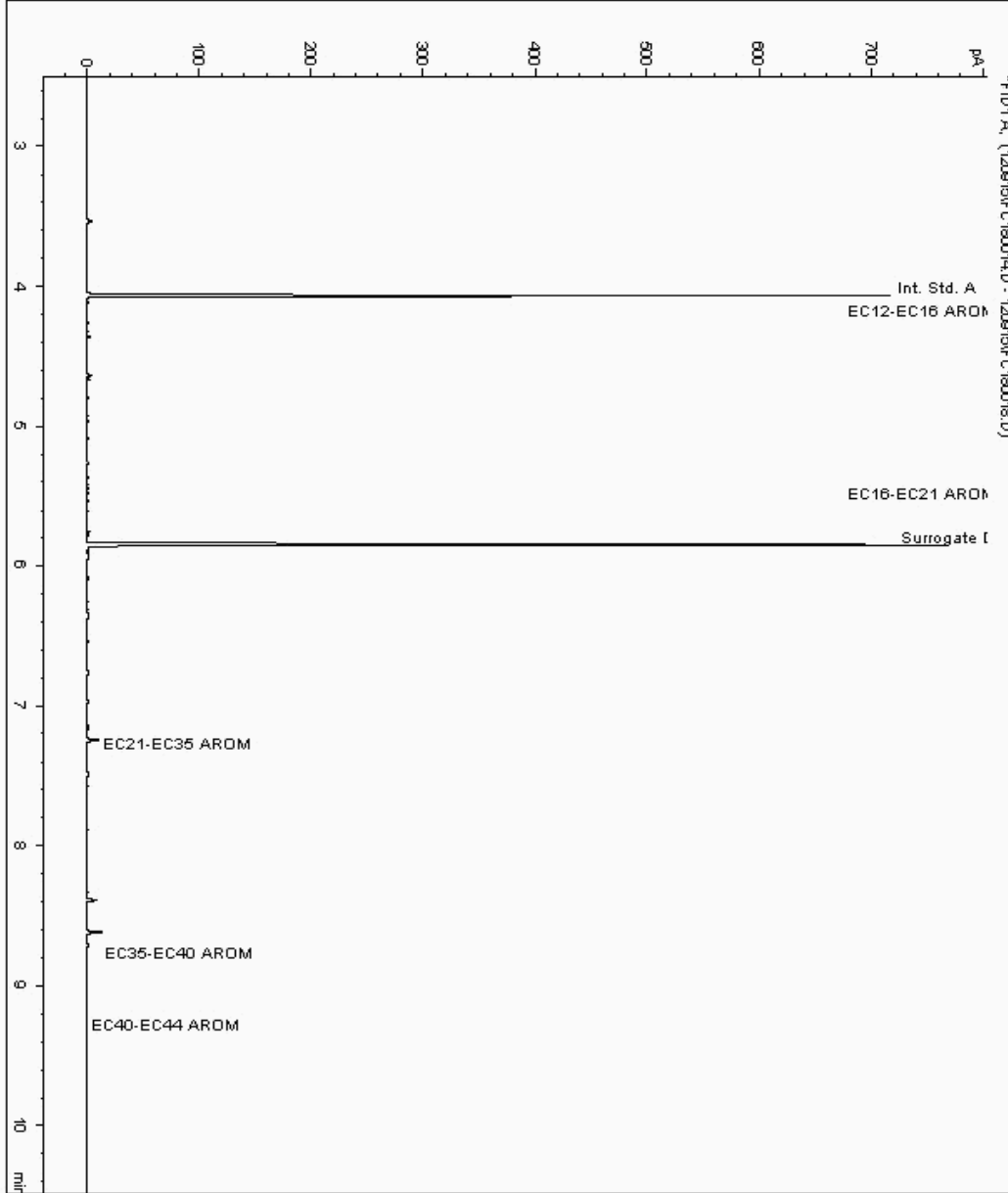
Analysis: EPH CWG (Aromatic) Filtered GC (W)

Sample No : 12566033
Sample ID : TPIL07

Depth : 0.30

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 11859216-
Date Acquired : 10/12/2015 06:12:02 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.012





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

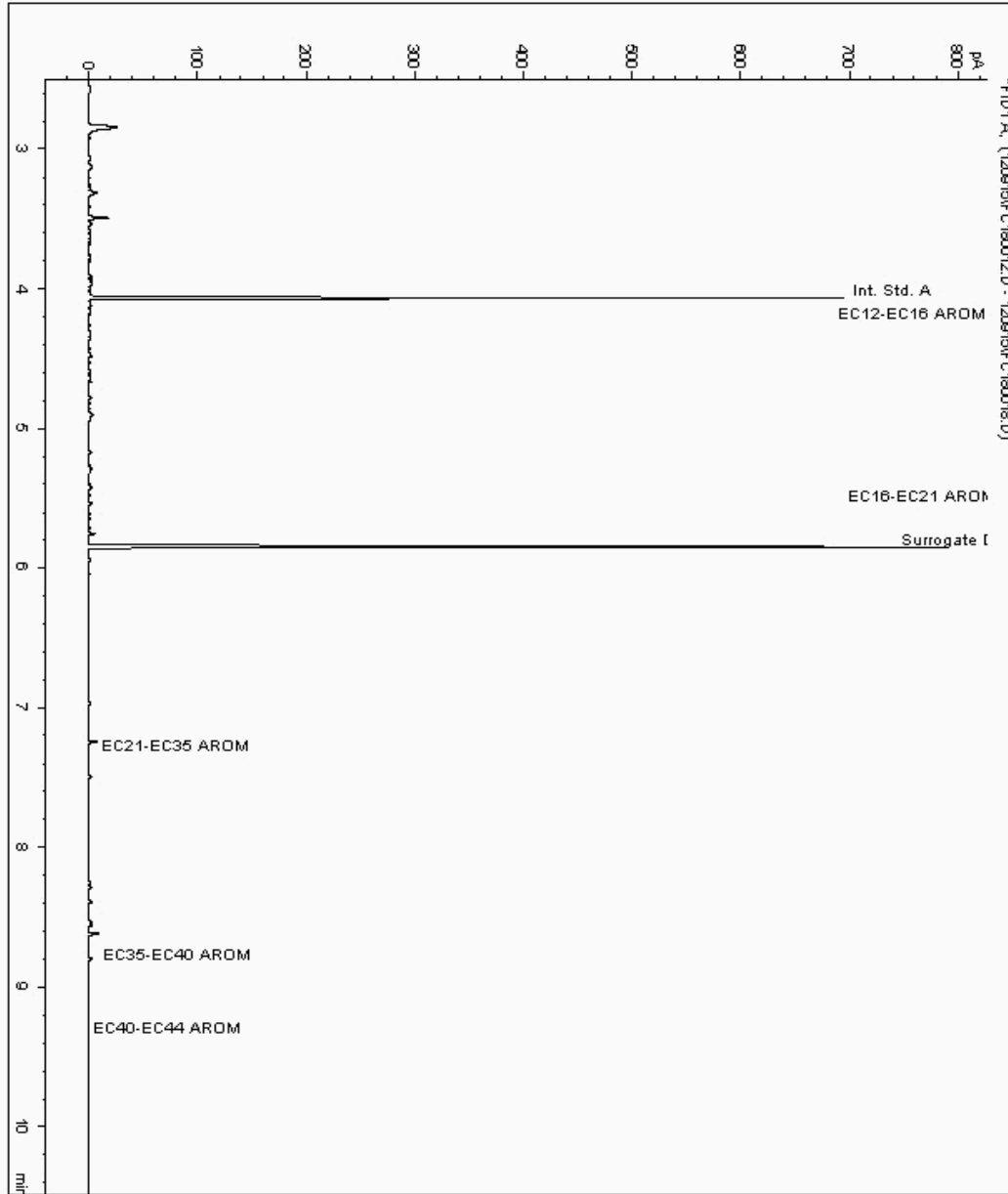
Analysis: EPH CWG (Aromatic) Filtered GC (W)

Sample No : 12576664
Sample ID : TPIL07

Depth : 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 11859231-
Date Acquired : 10/12/2015 05:35:09 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.008





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

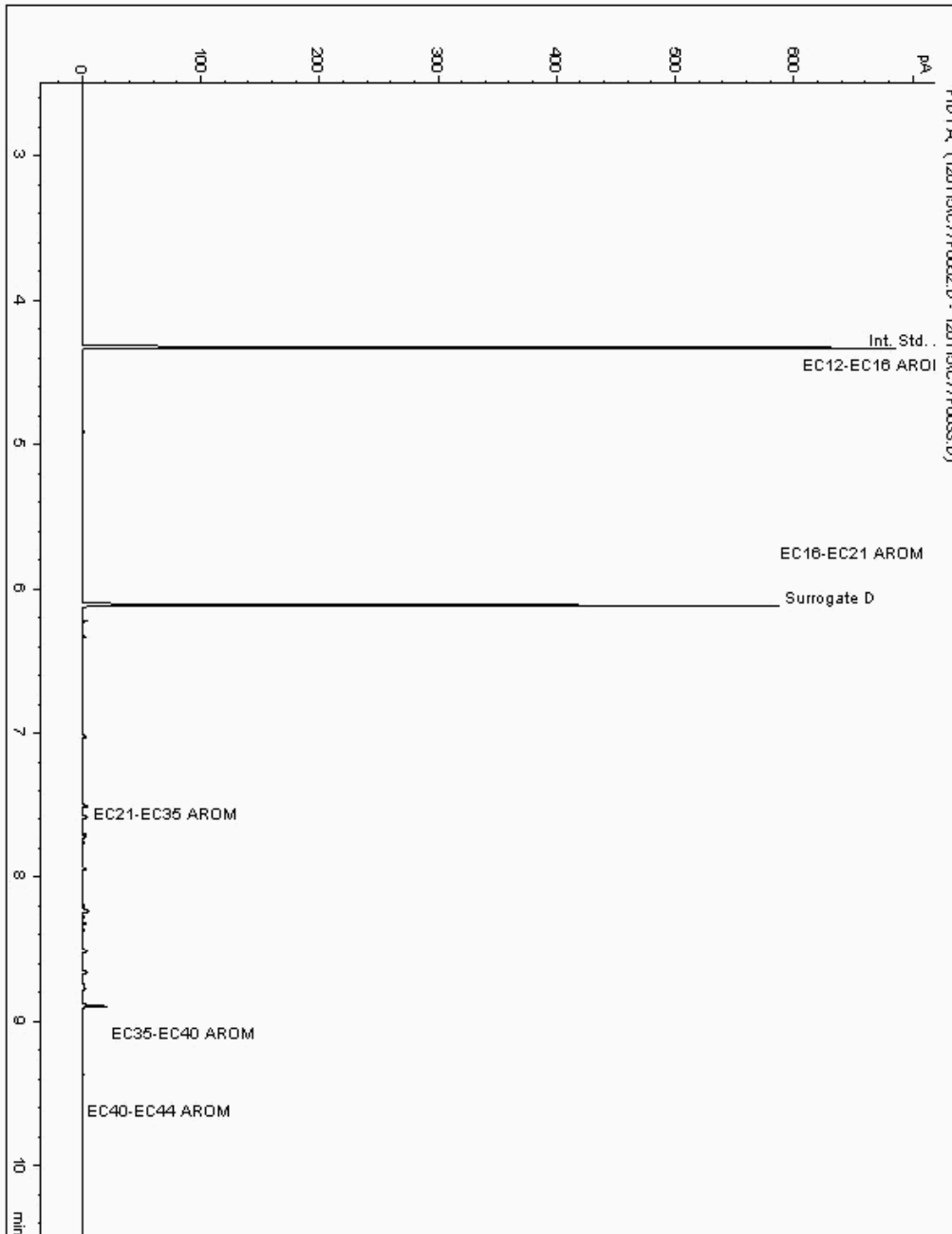
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 12545614
Sample ID : TPIL07

Depth : 0.30

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 11858946-
Date Acquired : 02/12/2015 00:55:34 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 0.970





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

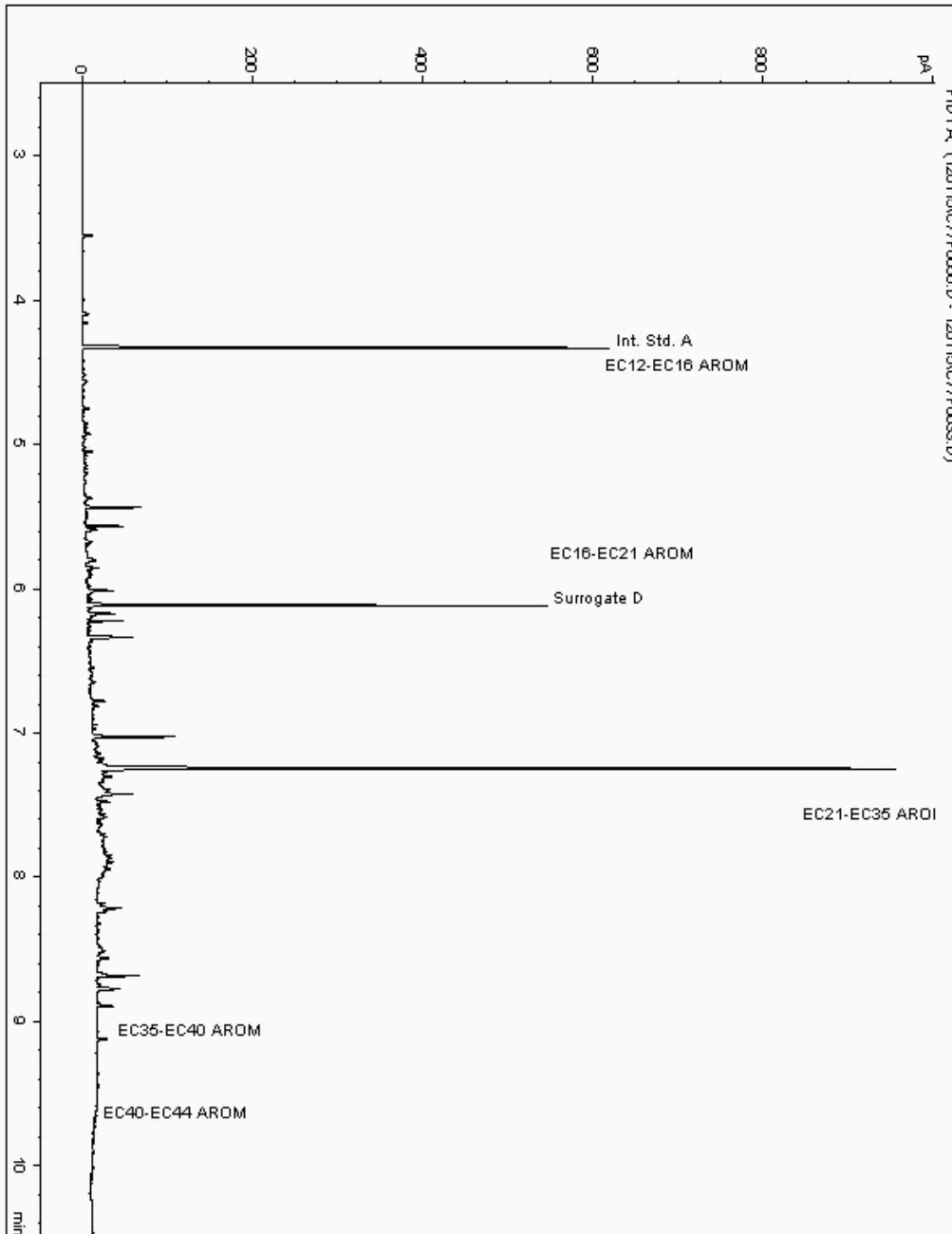
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 12545650
Sample ID : TPIL07

Depth : 2.00

Alcontrol/Geochem Analytical Services
Speciated TPH - AROM (C12 - C40)

Sample Identity: 11858971-
Date Acquired : 02/12/2015 00:23:42 PM
Units : ppb
Dilution :
CF : 1
Multiplier : 1.050





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

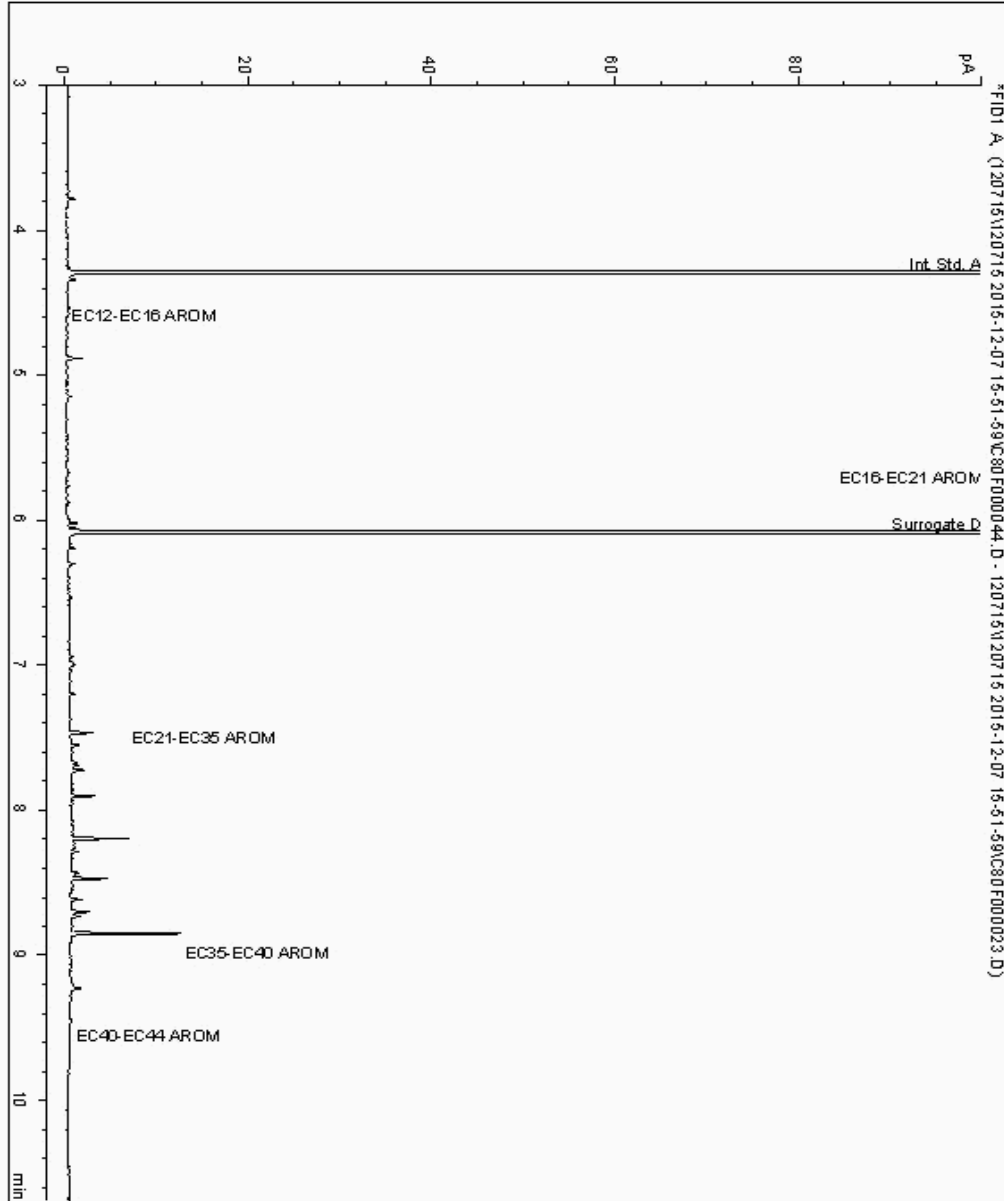
Analysis: EPH CWG (Aromatic) GC (S)

Sample No : 12572472
Sample ID : TPIL03

Depth : 0.40

Alcontrol/Geochem Analytical Services
Speciated TPH - AROMS (C12 - C44)

Sample Identity: 11858921-
Date Acquired : 08/12/15 02:24:38
Units : ppb
Dilution :
CF : 1
Multiplier : 0.980





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

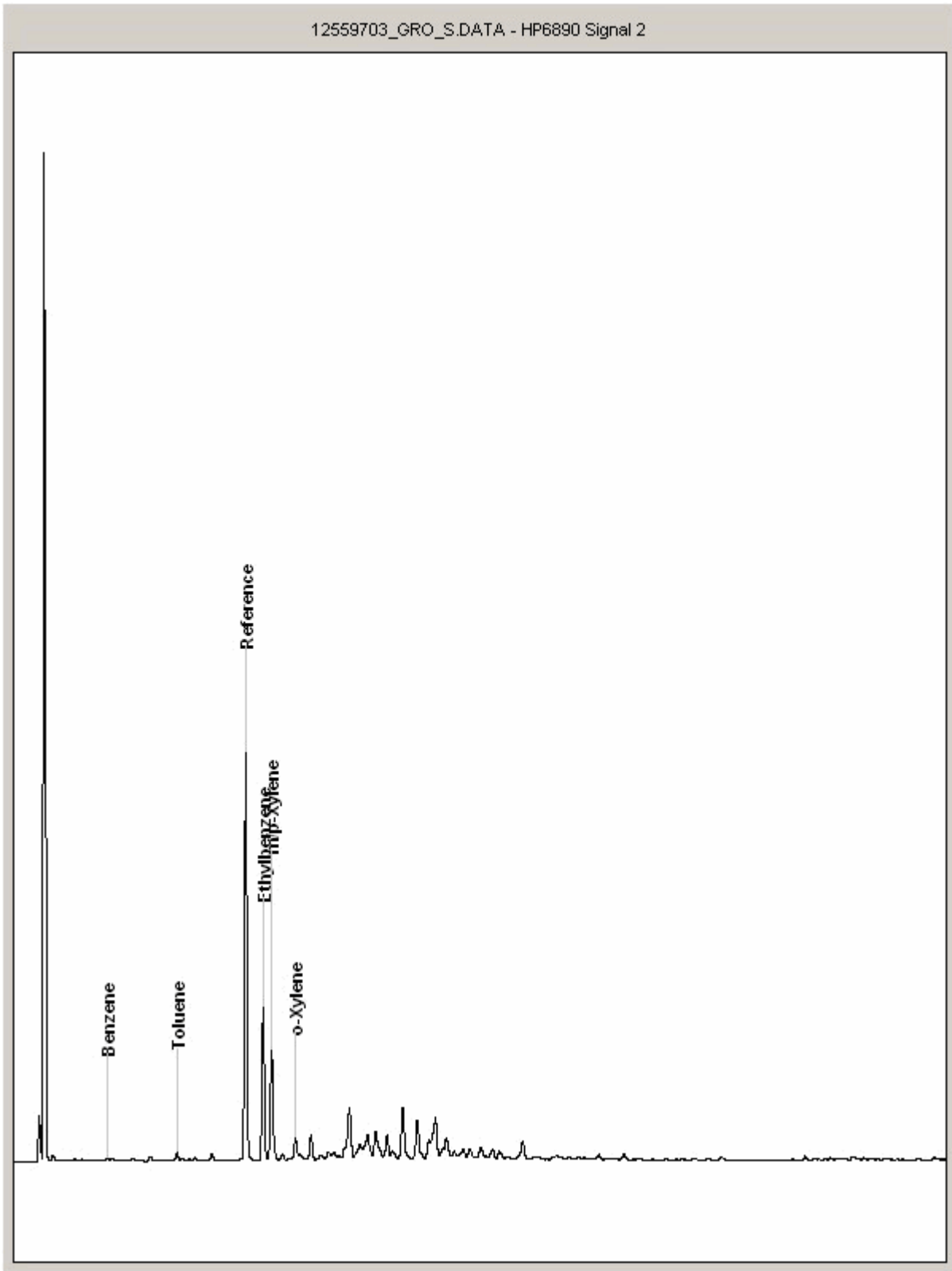
Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12559703
Sample ID : TPIL07

Depth : 2.00





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

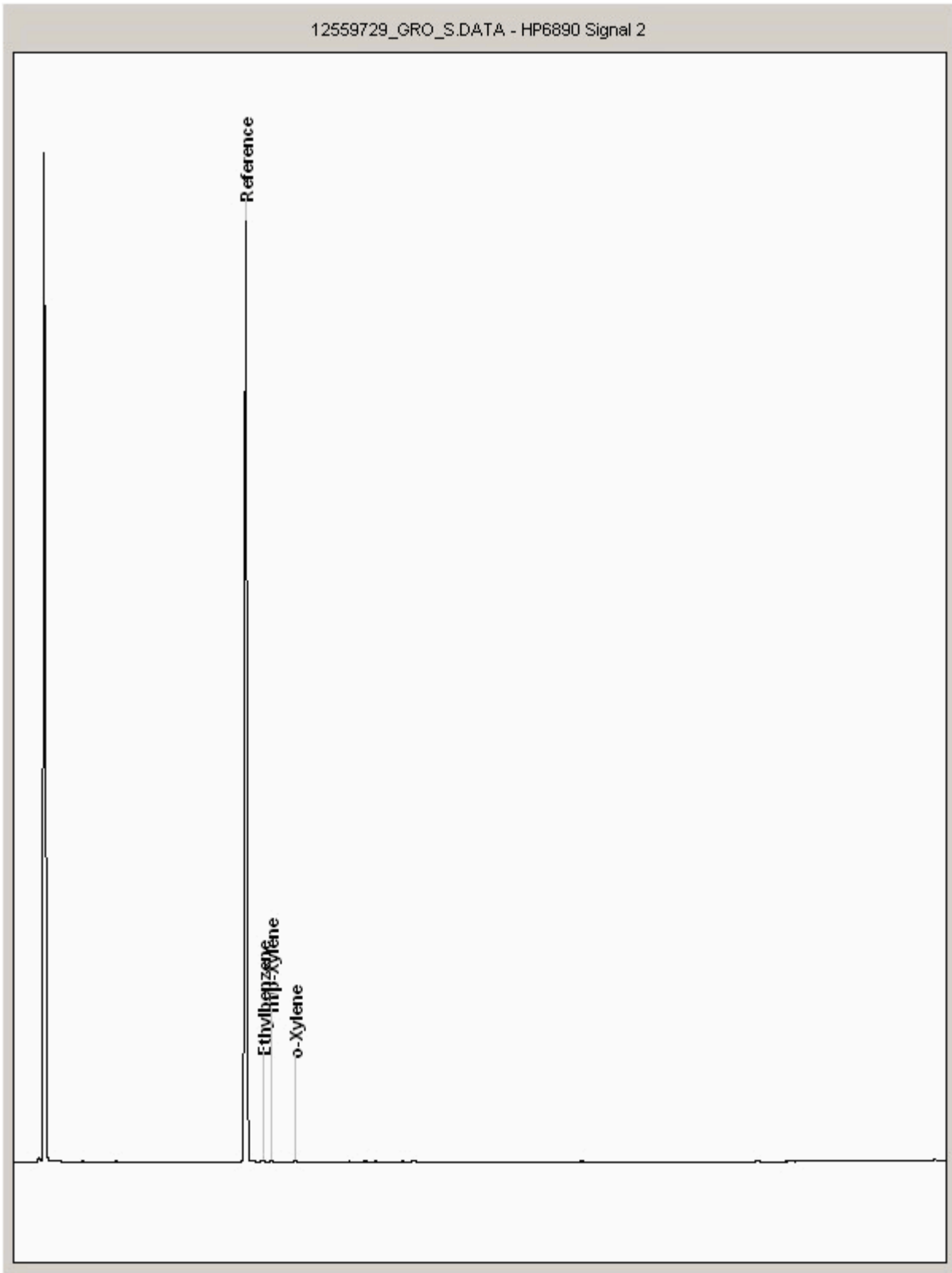
Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12559729
Sample ID : TPIL03

Depth : 0.40





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

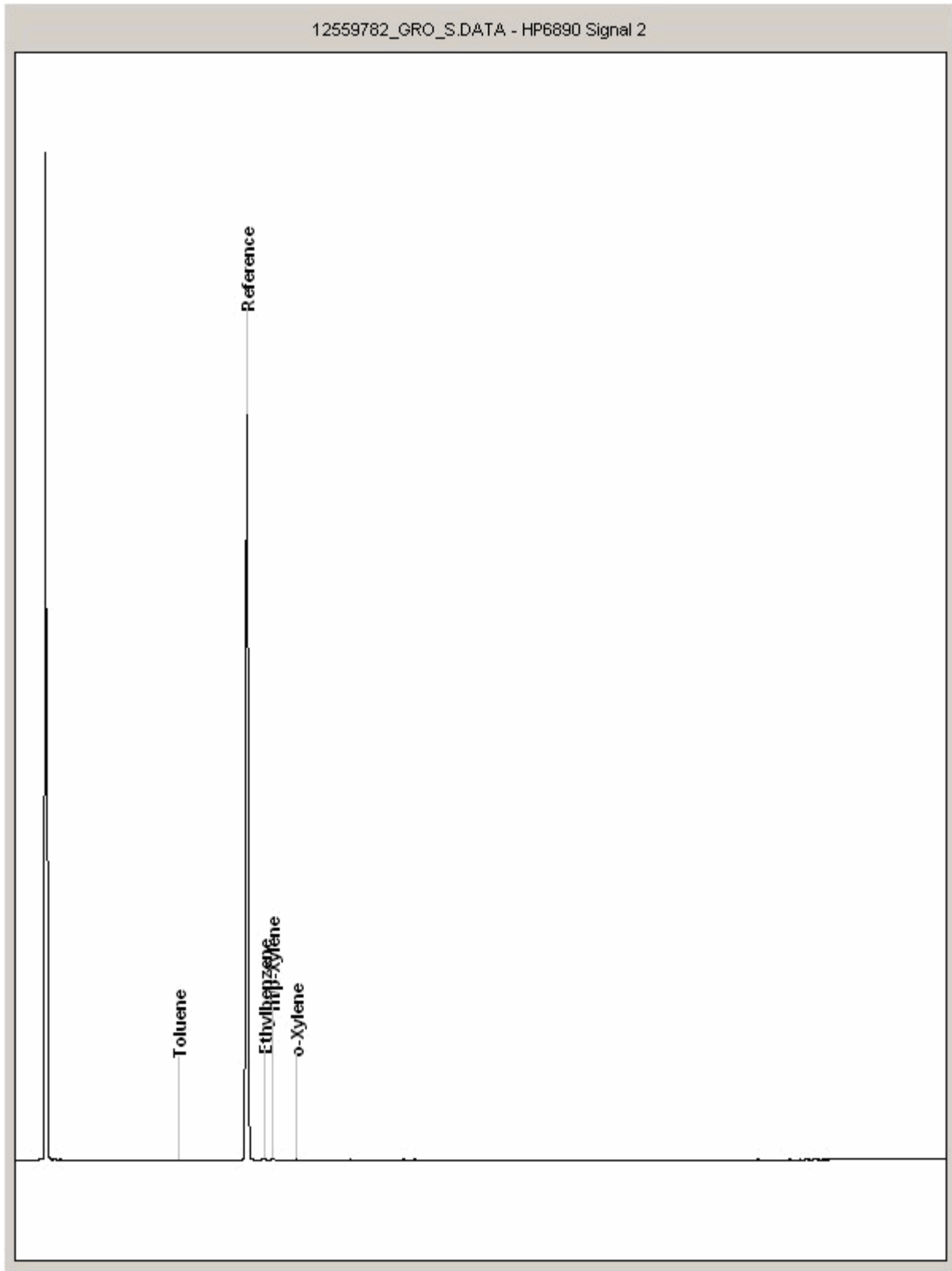
Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (S)

Sample No : 12559782
Sample ID : TPIL07

Depth : 0.30





SDG: 151126-120
Job: H_RHASKON_PT8-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

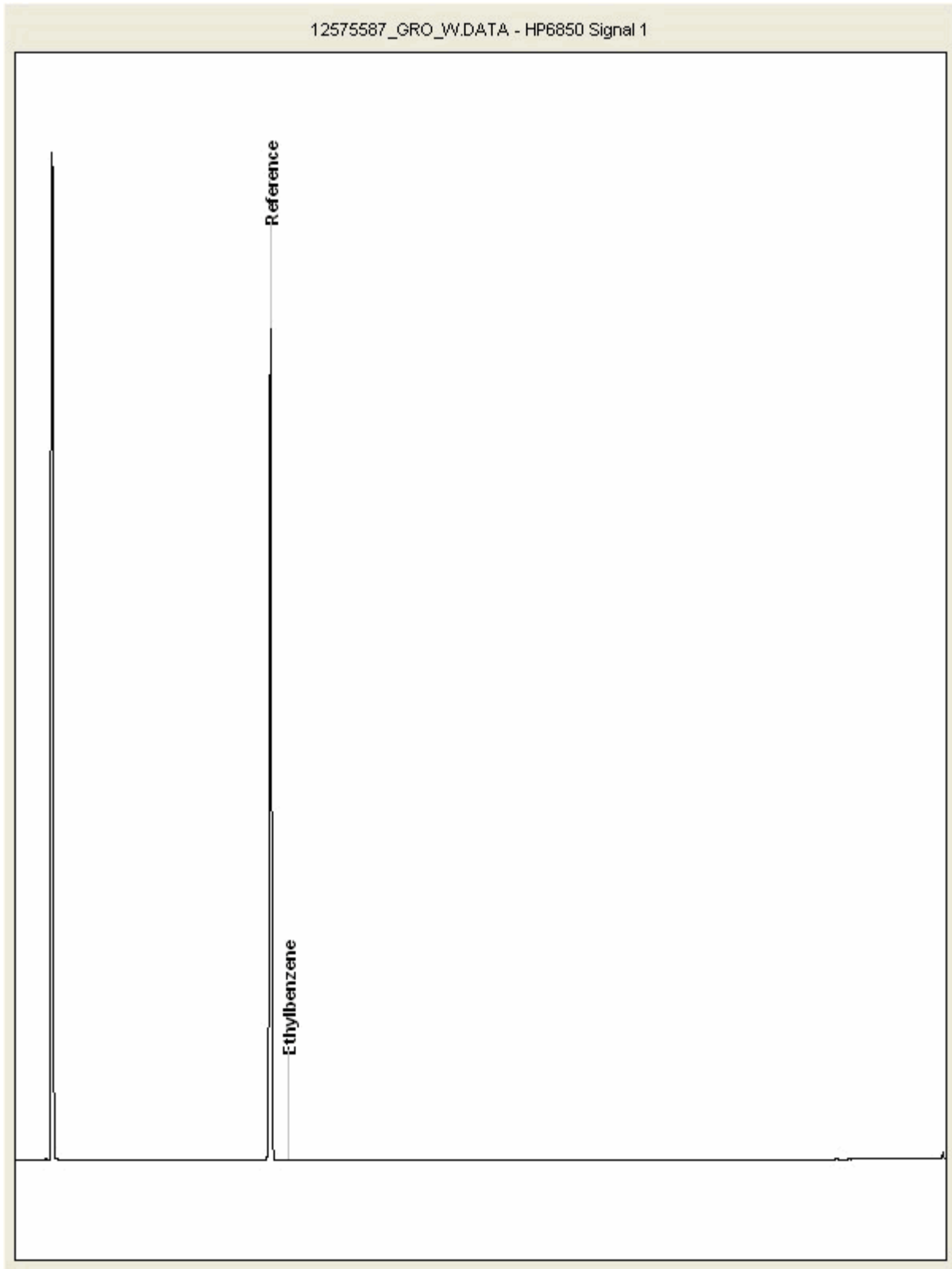
Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 12575587
Sample ID : TPIL07

Depth : 0.30





SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

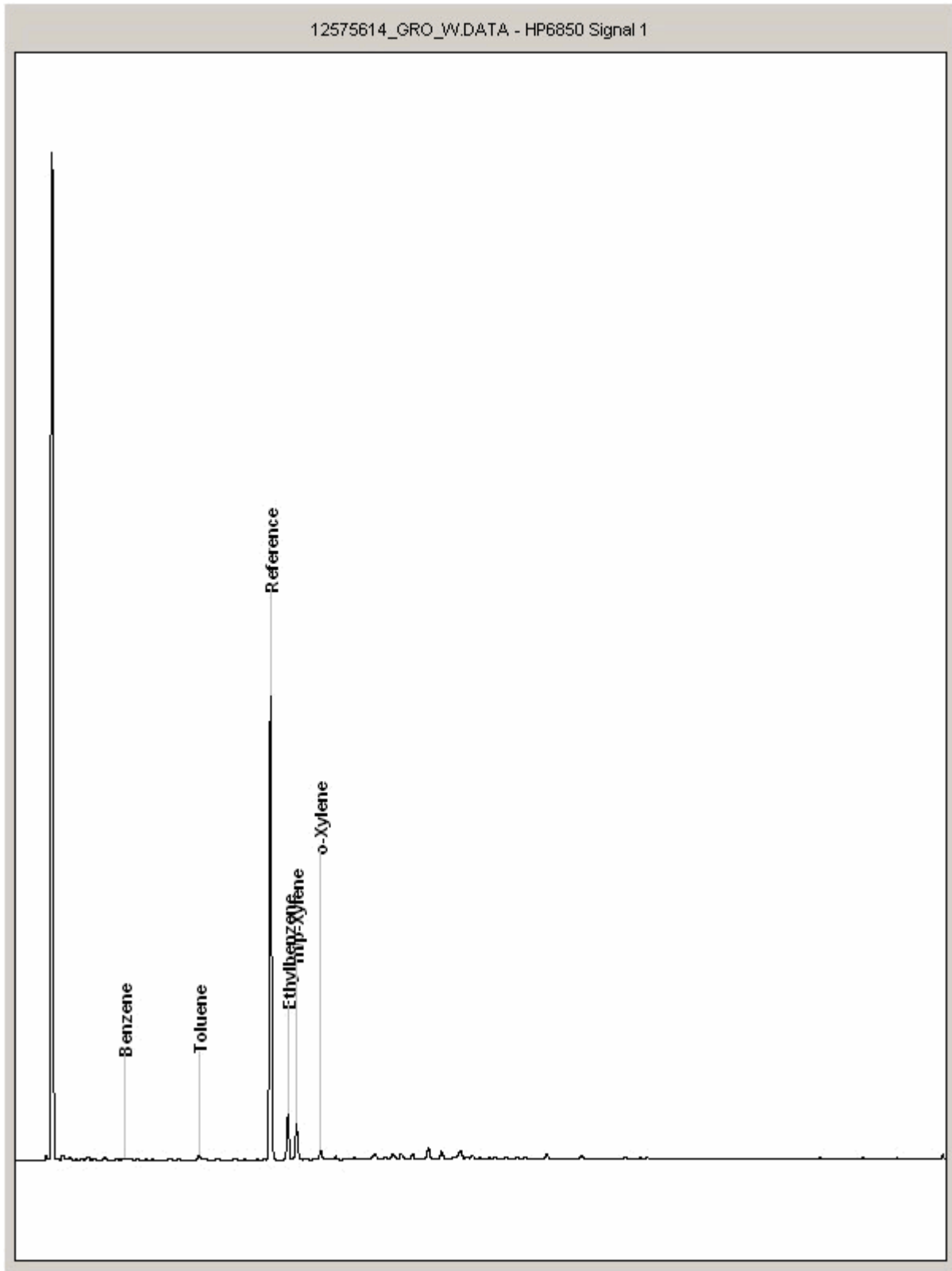
Order Number:
Report Number: 341605
Superseded Report:

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 12575614
Sample ID : TPIL07

Depth : 2.00



SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Appendix

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

12. Results relate only to the items tested

13. **Surrogate recoveries** -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.

19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

20. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

22. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

23. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

24. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

SOLID MATRICES EXTRACTION SUMMARY				
ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DCM	SOX THERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOX THERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DCM	SOX THERM	ATROSCAN
ELEMENTAL SULPHUR	D&C	DCM	SOX THERM	HPLC
PHENOLSBY GMS	WET	DCM	SOX THERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOX THERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOX THERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GC-FD
EPH (MINO L)	D&C	HEXANEACETONE	END OVEREND	GC-FD
EPH (CLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GC-FD
EPH CWG BY GC	D&C	HEXANEACETONE	END OVEREND	GC-FD
PCB TOT/ PCB CON	D&C	HEXANEACETONE	END OVEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MICROWAVE TM218.	GC-MS
C8-C40(C6-C40)EZ FLASH	WET	HEXANEACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	GC-EZ
SEM VOLATILE ORGANIC COMPOUNDS	WET	DCMACE TONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY			
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREXTRACTION (STIR -BAR)	GCMS
EPH	HEXANE	STIRREXTRACTION (STIR -BAR)	GC FD
EPH CWG	HEXANE	STIRREXTRACTION (STIR -BAR)	GC FD
MINERAL OIL	HEXANE	STIRREXTRACTION (STIR -BAR)	GC FD
PCB 7 CONGENERS	HEXANE	STIRREXTRACTION (STIR -BAR)	GCMS
PCB TOTAL	HEXANE	STIRREXTRACTION (STIR -BAR)	GCMS
SVOC	DCM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PESTOC/OPP	DCM	LIQUID/LIQUID SHAKE	GCMS
TRAZNE HERBS	DCM	LIQUID/LIQUID SHAKE	GCMS
PHENOL SMS	DCM	SOLID PHASE EXTRACTION	GCMS
THF by INFRARED (R)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by R	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anorthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

SDG: 151126-120
Job: H_RHASKON_PTB-95
Client Reference: 9Y0074

Location: Cole Green Inert Landfill
Customer: Royal Haskoning
Attention: Darren Banner-Perry

Order Number:
Report Number: 341605
Superseded Report:

Appendix General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICS and SVOC TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible. The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5 -C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preselection was performed
§	Sampled on date not provided
♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.