Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528700
Fax: (01244) 528701
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Meirion Humphreys

CERTIFICATE OF ANALYSIS

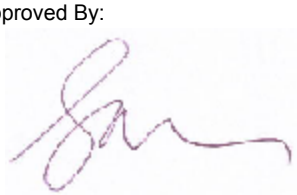
Date:	10 July 2017
Customer:	H_NCC_NPT
Sample Delivery Group (SDG):	170628-31
Your Reference:	
Location:	Docksway Landfill Site
Report No:	415465

We received 14 samples on Wednesday June 28, 2017 and 14 of these samples were scheduled for analysis which was completed on Monday July 10, 2017. 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.

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

Approved By:



Sonia McWhan

Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
15751805	GW03_09		0.00 - 0.00	27/06/2017
15751729	GW06_13		0.00 - 0.00	27/06/2017
15751829	GW06_34		0.00 - 0.00	27/06/2017
15751853	GW06_36		0.00 - 0.00	27/06/2017
15751876	GW06_37		0.00 - 0.00	27/06/2017
15751748	GW06_39		0.00 - 0.00	27/06/2017
15751758	GW07_40		0.00 - 0.00	27/06/2017
15751774	GW09_31		0.00 - 0.00	27/06/2017
15751793	GW09_32		0.00 - 0.00	27/06/2017
15751838	GW09_35		0.00 - 0.00	27/06/2017
15751709	GW12_30		0.00 - 0.00	27/06/2017
15751815	GW12_33		0.00 - 0.00	27/06/2017
15751720	GW12_38		0.00 - 0.00	27/06/2017
15751738	GW06_14A		0.00 - 0.00	27/06/2017

Maximum Sample/Coolbox Temperature (°C) : **14.8**

ISO5667-3 Water quality - Sampling - Part3 -
During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

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

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

			Lab Sample No(s)	15751805							15751729							15751829						
			Customer Sample Reference	GW03_09							GW06_13							GW06_34						
			AGS Reference																					
			Depth (m)	0.00 - 0.00							0.00 - 0.00							0.00 - 0.00						
			Container	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	
			Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 14		X							X							X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14				X							X							X				
Anions by Kone (w)	All	NDPs: 0 Tests: 14		X							X							X						
BOD True Total	All	NDPs: 0 Tests: 14			X							X							X					
COD Unfiltered	All	NDPs: 0 Tests: 14			X							X							X					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 14		X							X							X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 14						X							X							X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14					X							X							X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 14		X							X							X						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 14		X							X							X						
Ionic Balance	All	NDPs: 0 Tests: 14		X							X							X						
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 14					X							X							X			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 14						X							X							X		
pH Value	All	NDPs: 0 Tests: 14		X							X							X						
Sulphide	All	NDPs: 0 Tests: 14								X							X							

15751748	GW06_39		0.00 - 0.00	NaOH (ALE245)	GW								X						X				
				HNO3 Filtered (ALE204)	GW									X					X				
				H2SO4 (ALE244)	GW			X															
				250ml BOD (ALE212)	GW					X		X											
				1000ml glass bottle (ALE220)	GW		X			X				X			X		X				X	
15751876	GW06_37		0.00 - 0.00	ZnAc (ALE246)	GW																			X
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW								X								X			
				HNO3 Filtered (ALE204)	GW									X					X				
				H2SO4 (ALE244)	GW			X															
				250ml BOD (ALE212)	GW					X		X											
				1000ml glass bottle (ALE220)	GW		X			X				X			X		X				X	
15751853	GW06_36		0.00 - 0.00	ZnAc (ALE246)	GW																			X
				Vial (ALE297)	GW																			
				NaOH (ALE245)	GW								X								X			
				HNO3 Filtered (ALE204)	GW									X					X				
				H2SO4 (ALE244)	GW			X															
				250ml BOD (ALE212)	GW					X		X											
				1000ml glass bottle (ALE220)	GW		X			X				X			X		X				X	
15751829	GW06_34		0.00 - 0.00	ZnAc (ALE246)	GW																			X

CERTIFICATE OF ANALYSIS

Validated

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)								15751805							15751729							15751829				
Customer Sample Reference								GW03_09							GW06_13							GW06_34				
AGS Reference																										
Depth (m)								0.00 - 0.00							0.00 - 0.00							0.00 - 0.00				
Container	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)					
Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW					
VOC MS (W)	All	NDPs: 0 Tests: 14				X							X							X					

15751748	GW06_39		0.00 - 0.00	NaOH (ALE245)	GW		
				HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
				1000ml glass bottle (ALE220)	GW		
15751876	GW06_37		0.00 - 0.00	ZnAc (ALE246)	GW		
				Vial (ALE297)	GW		x
				NaOH (ALE245)	GW		
				HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
				1000ml glass bottle (ALE220)	GW		
15751853	GW06_36		0.00 - 0.00	ZnAc (ALE246)	GW		
				Vial (ALE297)	GW		x
				NaOH (ALE245)	GW		
				HNO3 Filtered (ALE204)	GW		
				H2SO4 (ALE244)	GW		
				250ml BOD (ALE212)	GW		
				1000ml glass bottle (ALE220)	GW		
15751829	GW06_34		0.00 - 0.00	ZnAc (ALE246)	GW		

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			15751748		15751758							15751774							15751793			
Customer Sample Reference			GW06_39		GW07_40							GW09_31							GW09_32			
AGS Reference																						
Depth (m)			0.00 - 0.00		0.00 - 0.00							0.00 - 0.00							0.00 - 0.00			
Container			Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 14			X							X							X			
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14					X							X							X	
Anions by Kone (w)	All	NDPs: 0 Tests: 14			X							X							X			
BOD True Total	All	NDPs: 0 Tests: 14				X							X							X		
COD Unfiltered	All	NDPs: 0 Tests: 14				X							X							X		
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 14			X							X							X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 14							X							X						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14						X							X							X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 14			X							X							X			
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 14			X							X							X			
Ionic Balance	All	NDPs: 0 Tests: 14			X							X							X			
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 14						X							X							X
Nitrite by Kone (w)	All	NDPs: 0 Tests: 14							X							X						
pH Value	All	NDPs: 0 Tests: 14			X							X							X			
Sulphide	All	NDPs: 0 Tests: 14		X							X							X				

15751815	GW12_33		0.00 - 0.00	H2SO4 (ALE244)	GW		X													
				250ml BOD (ALE212)	GW				X	X										
				1000ml glass bottle (ALE220)	GW	X		X			X			X	X	X			X	
15751709	GW12_30		0.00 - 0.00	ZnAc (ALE246)	GW															X
				Vial (ALE297)	GW															
				NaOH (ALE245)	GW							X						X		
				HNO3 Filtered (ALE204)	GW								X				X			
				H2SO4 (ALE244)	GW		X													
				250ml BOD (ALE212)	GW				X	X										
				1000ml glass bottle (ALE220)	GW	X		X			X			X	X	X			X	
15751838	GW09_35		0.00 - 0.00	ZnAc (ALE246)	GW															X
				Vial (ALE297)	GW															
				NaOH (ALE245)	GW							X						X		
				HNO3 Filtered (ALE204)	GW								X				X			
				H2SO4 (ALE244)	GW		X													
				250ml BOD (ALE212)	GW				X	X										
				1000ml glass bottle (ALE220)	GW	X		X			X			X	X	X			X	
15751793	GW09_32		0.00 - 0.00	ZnAc (ALE246)	GW															X
				Vial (ALE297)	GW															
				NaOH (ALE245)	GW							X						X		

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)	15751748								15751758								15751774						15751793
Customer Sample Reference	GW06_39								GW07_40								GW09_31						GW09_32
AGS Reference																							
Depth (m)	0.00 - 0.00								0.00 - 0.00								0.00 - 0.00						0.00 - 0.00
Container	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)		Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)		Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	
Sample Type	GW	GW	GW	GW	GW	GW	GW		GW	GW	GW	GW	GW	GW	GW		GW	GW	GW	GW	GW	GW	
VOC MS (W)	All	NDPs: 0 Tests: 14																					
	X								X								X						

	H2SO4 (ALE244)	GW				
	250ml BOD (ALE212)	GW				
	1000ml glass bottle (ALE220)	GW				
	ZnAc (ALE246)	GW				
0.00 - 0.00				GW12_33		15751815
	Vial (ALE297)	GW	X			
	NaOH (ALE245)	GW				
	HNO3 Filtered (ALE204)	GW				
	H2SO4 (ALE244)	GW				
	250ml BOD (ALE212)	GW				
	1000ml glass bottle (ALE220)	GW				
	ZnAc (ALE246)	GW				
0.00 - 0.00				GW12_30		15751709
	Vial (ALE297)	GW	X			
	NaOH (ALE245)	GW				
	HNO3 Filtered (ALE204)	GW				
	H2SO4 (ALE244)	GW				
	250ml BOD (ALE212)	GW				
	1000ml glass bottle (ALE220)	GW				
	ZnAc (ALE246)	GW				
0.00 - 0.00				GW09_35		15751838
	Vial (ALE297)	GW	X			
	NaOH (ALE245)	GW				
	HNO3 Filtered (ALE204)	GW				
	H2SO4 (ALE244)	GW				
	250ml BOD (ALE212)	GW				
	1000ml glass bottle (ALE220)	GW				
	ZnAc (ALE246)	GW				
0.00 - 0.00				GW09_32		15751793
	Vial (ALE297)	GW	X			
	NaOH (ALE245)	GW				

CERTIFICATE OF ANALYSIS

Validated

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			15751815							15751720							15751738			
Customer Sample Reference			GW12_33							GW12_38							GW06_14A			
AGS Reference																				
Depth (m)			0.00 - 0.00							0.00 - 0.00							0.00 - 0.00			
Container			HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 14					X							X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 14							X							X				
Anions by Kone (w)	All	NDPs: 0 Tests: 14					X							X						
BOD True Total	All	NDPs: 0 Tests: 14						X							X					
COD Unfiltered	All	NDPs: 0 Tests: 14						X							X					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 14					X							X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 14		X							X							X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 14	X							X							X			
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 14					X							X						
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 14					X							X						
Ionic Balance	All	NDPs: 0 Tests: 14					X							X						
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 14	X							X							X			
Nitrite by Kone (w)	All	NDPs: 0 Tests: 14		X							X							X		
pH Value	All	NDPs: 0 Tests: 14					X							X						
Sulphide	All	NDPs: 0 Tests: 14				X							X							X

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

Sample Types -
S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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LE - Land Leachate
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TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)			15751815	15751720	15751738
Customer Sample Reference			GW12_33	GW12_38	GW06_14A
AGS Reference					
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Container			HNO3 Filtered (ALE204)	HNO3 Filtered (ALE204)	HNO3 Filtered (ALE204)
			NaOH (ALE245)	NaOH (ALE245)	NaOH (ALE245)
			Vial (ALE297)	Vial (ALE297)	Vial (ALE297)
			ZnAc (ALE246)	ZnAc (ALE246)	ZnAc (ALE246)
			1000ml glass bottle (ALE220)	1000ml glass bottle (ALE220)	
			250ml BOD (ALE212)	250ml BOD (ALE212)	
			H2SO4 (ALE244)	H2SO4 (ALE244)	
Sample Type			GW	GW	GW
VOC MS (W)	All	NDPs: 0 Tests: 14	X	X	X

Validated

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	GW03_09	GW06_13	GW06_34	GW06_36	GW06_37	GW06_39
Customer Sample Ref.			GW03_09	GW06_13	GW06_34	GW06_36	GW06_37	GW06_39
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Sample Type			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
Date Sampled			27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
Sampled Time			.	.	.	.	.	.
Date Received			28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017
SDG Ref			170628-31	170628-31	170628-31	170628-31	170628-31	170628-31
Lab Sample No.(s)			15751805	15751729	15751829	15751853	15751876	15751748
AGS Reference								
Ionic balance	% Diff	Calulation	-28.7	13.7	3.11	7.38	4.76	-11.2
Alkalinity, Total as CaCO3	<2 mg/l	TM043	465 #	880 #	625 #	955 #	980 #	890 #
BOD, unfiltered	<1 mg/l	TM045	<1 #	3.57 #	11.6 #	<1 #	9.73 #	<1 #
Carbon, Organic (diss.filt)	<3 mg/l	TM090	5.23	11.6	12.2	12	19.4	14.1
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	1.42 #	22.9 #	4.67 #	13.3 #	19.2 #	0.227 #
Sulphide	<0.01 mg/l	TM101	0.0911 #	0.838 #	4.35 #	0.144 #	4.99 #	0.0242 #
COD, unfiltered	<7 mg/l	TM107	35 #	163 #	57.5 #	199 #	161 #	69.8 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	2.22 #	7.6 #	1.59 #	9.49 #	10.4 #	4.15 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	4.2 #	29.5 #	27.6 #	7.28 #	6.84 #	2.51 #
Boron (diss.filt)	<5 µg/l	TM152	380 #	2040 #	697 #	1240 #	1320 #	1030 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #	<1 #	5.59 #
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	0.969 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<1 µg/l	TM152	677 #	428 #	2310 #	805 #	451 #	732 #
Nickel (diss.filt)	<0.4 µg/l	TM152	2.07 #	0.656 #	1.08 #	0.503 #	1.15 #	5.75 #
Selenium (diss.filt)	<0.5 µg/l	TM152	<0.5 #	<0.5 #	0.526 #	0.544 #	<0.5 #	0.509 #
Zinc (diss.filt)	<1 µg/l	TM152	1.72 #	<1 #	3.28 #	<1 #	1.34 #	1.49 #
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172	<46 #	<46 #	<46 #	<46 #	<46 #	55 #
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184	147 #	130 #	46.5 #	67.1 #	27.9 #	294 #
Chloride	<2 mg/l	TM184	495 #	2580 #	220 #	3430 #	3720 #	978 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184	1.22 #	3.49 #	3.6 #	6.27 #	5.52 #	0.524 #
Nitrate as NO3	<0.3 mg/l	TM184	2.69	<0.3	<0.3	<0.3	<0.3	3.09
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	0.613 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	0.704 #
Cyanide, Total	<0.05 mg/l	TM227	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Potassium (diss.filt)	<1 mg/l	TM228	15.9	69.1	23.9	66.9	81	50.3
Iron (diss.filt)	<0.019 mg/l	TM228	0.319	2.28	0.768	4.36	3.71	<0.095
Hardness, Total as CaCO3	<1 mg/l	TM228	373	1090	565	1750	1510	984
pH	<1 pH Units	TM256	7.06 #	7.73 #	7.67 #	7.7 #	7.6 #	7.63 #

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	Customer Sample Ref.	GW07_40	GW09_31	GW09_32	GW09_35	GW12_30	GW12_33
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017
			SDG Ref	170628-31	170628-31	170628-31	170628-31	170628-31	170628-31
			Lab Sample No.(s)	15751758	15751774	15751793	15751838	15751709	15751815
			AGS Reference						
Ionic balance	% Diff	Calulation		53.1	9.85	47.1	-12.9	10.7	-35
Alkalinity, Total as CaCO3	<2 mg/l	TM043		685 #	365 #	590 #	925 #	630 #	1020 #
BOD, unfiltered	<1 mg/l	TM045		2.19 #	3.14 #	<1 #	2.94 #	2.93 #	8.45 #
Carbon, Organic (diss.filt)	<3 mg/l	TM090		15.5	5.79	6.55	14.3	20.1	22.7
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		9.16 #	1.43 #	2.49 #	14.7 #	8.46 #	8.64 #
Sulphide	<0.01 mg/l	TM101		0.239 #	0.0375 #	0.184 #	0.664 #	0.182 #	0.103 #
COD, unfiltered	<7 mg/l	TM107		68.6 #	64 #	61.6 #	152 #	61.9 #	53.9 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		2 #	1.25 #	1.91 #	9.41 #	1.52 #	3.38 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		9.52 #	21.5 #	3.45 #	5.93 #	12.5 #	7.65 #
Boron (diss.filt)	<5 µg/l	TM152		1110 #	476 #	930 #	1210 #	1500 #	656 #
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 #	<0.3 #	0.507 #	<0.3 #	<0.3 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #	0.284 #	<0.2 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<1 µg/l	TM152		774 #	2570 #	698 #	1240 #	138 #	1240 #
Nickel (diss.filt)	<0.4 µg/l	TM152		2.39 #	4.94 #	1.48 #	2.33 #	1.03 #	1.08 #
Selenium (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #	0.729 #	<0.5 #	0.611 #	<0.5 #
Zinc (diss.filt)	<1 µg/l	TM152		1.3 #	1.66 #	1.9 #	<1 #	<1 #	<1 #
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172		<46 #	<46 #	<46 #	<46 #	<46 #	<46 #
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		<2 #	175 #	181 #	139 #	35 #	<2 #
Chloride	<2 mg/l	TM184		305 #	142 #	267 #	3470 #	198 #	775 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		9.54 #	0.095 #	<0.05 #	13.6 #	<0.05 #	0.051 #
Nitrate as NO3	<0.3 mg/l	TM184		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #	<0.1 #
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Potassium (diss.filt)	<1 mg/l	TM228		54.1	9.06	30.8	55.9	31	17.7
Iron (diss.filt)	<0.019 mg/l	TM228		1.8	5.35	0.795	1.26	0.0763	1.46
Hardness, Total as CaCO3	<1 mg/l	TM228		1100	396	596	1340	264	355
pH	<1 pH Units	TM256		8.2 #	7.62 #	7.51 #	7.36 #	7.26 #	7.38 #

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	Customer Sample Ref.	GW12_38	GW06_14A				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Ground Water (GW)	Ground Water (GW)				
			Date Sampled	27/06/2017	27/06/2017				
			Sampled Time	.	.				
			Date Received	28/06/2017	28/06/2017				
			SDG Ref	170628-31	170628-31				
			Lab Sample No.(s)	15751720	15751738				
			AGS Reference						
Ionic balance	% Diff	Calulation		-14.5	8.48				
Alkalinity, Total as CaCO3	<2 mg/l	TM043		370 #	1310 #				
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1.67 #				
Carbon, Organic (diss.filt)	<3 mg/l	TM090		4.96	17.5				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		9.85 #	14.5 #				
Sulphide	<0.01 mg/l	TM101		0.0507 #	0.0593 #				
COD, unfiltered	<7 mg/l	TM107		128 #	192 #				
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		10.3 #	8.27 #				
Arsenic (diss.filt)	<0.5 µg/l	TM152		4.7 #	9.59 #				
Boron (diss.filt)	<5 µg/l	TM152		1210 #	844 #				
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #				
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #				
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 #	<0.3 #				
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #				
Manganese (diss.filt)	<1 µg/l	TM152		917 #	1650 #				
Nickel (diss.filt)	<0.4 µg/l	TM152		0.727 #	0.906 #				
Selenium (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #				
Zinc (diss.filt)	<1 µg/l	TM152		<1 #	<1 #				
EPH Range >C10 - C40 (aq)	<46 µg/l	TM172		<46 #	81.1 #				
Nitrite as NO2	<0.05 mg/l	TM184		<0.05 #	<0.05 #				
Sulphate	<2 mg/l	TM184		574 #	83 #				
Chloride	<2 mg/l	TM184		3790 #	2780 #				
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		<0.05 #	0.069 #				
Nitrate as NO3	<0.3 mg/l	TM184		<0.3	<0.3				
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1 #	<0.1 #				
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #				
Potassium (diss.filt)	<1 mg/l	TM228		58.3	71.3				
Iron (diss.filt)	<0.019 mg/l	TM228		2.22	6.37				
Hardness, Total as CaCO3	<1 mg/l	TM228		1200	1640				
pH	<1 pH Units	TM256		7.31 #	7.33 #				

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	Customer Sample Ref.	GW03_09	GW06_13	GW06_34	GW06_36	GW06_37	GW06_39
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017
			SDG Ref	170628-31	170628-31	170628-31	170628-31	170628-31	170628-31
			Lab Sample No.(s)	15751805	15751729	15751829	15751853	15751876	15751748
			AGS Reference						
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	Customer Sample Ref.	GW07_40	GW09_31	GW09_32	GW09_35	GW12_30	GW12_33
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017	27/06/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017	28/06/2017
			SDG Ref	170628-31	170628-31	170628-31	170628-31	170628-31	170628-31
			Lab Sample No.(s)	15751758	15751774	15751793	15751838	15751709	15751815
			AGS Reference						
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
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	Customer Sample Ref.							
			GW12_38	GW06_14A						
			Depth (m)	0.00 - 0.00	0.00 - 0.00					
			Sample Type	Ground Water (GW)	Ground Water (GW)					
			Date Sampled	27/06/2017	27/06/2017					
			Sampled Time	.	.					
			Date Received	28/06/2017	28/06/2017					
			SDG Ref	170628-31	170628-31					
			Lab Sample No.(s)	15751720	15751738					
			AGS Reference							
Benzene	<1 µg/l	TM208	<1 #	<1 #						
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #						
o-Xylene	<1 µg/l	TM208	<1 #	<1 #						
Naphthalene	<1 µg/l	TM208	<1 #	<1 #						

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample [1]	Surrogate Corrected
Calulation				
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples		
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids		
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)		
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water		
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser		
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser		
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit		
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter		
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS		
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters		
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers		
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters		
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		
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES		
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		

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

Chemical testing (unless subcontracted) performed at ALS Environmental Hawarden (Method codes TM) or ALS Environmental Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS

SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	15751805	15751729	15751829	15751853	15751876	15751748	15751758	15751774	15751793	15751838
Customer Sample Ref.	GW03_09	GW06_13	GW06_34	GW06_36	GW06_37	GW06_39	GW07_40	GW09_31	GW09_32	GW09_35
AGS Ref.										
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3	03-Jul-2017	04-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
Alkalinity Filtered as CaCO3	03-Jul-2017	04-Jul-2017	03-Jul-2017	03-Jul-2017	30-Jun-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	30-Jun-2017
Ammoniacal Nitrogen	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017
Anions by Kone (w)	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017
BOD True Total	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
COD Unfiltered	28-Jun-2017	29-Jun-2017	28-Jun-2017	29-Jun-2017	28-Jun-2017	28-Jun-2017	28-Jun-2017	28-Jun-2017	29-Jun-2017	28-Jun-2017
Conductivity (at 20 deg.C)	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	29-Jun-2017	29-Jun-2017	29-Jun-2017	29-Jun-2017	04-Jul-2017
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
Dissolved Metals by ICP-MS	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017
Dissolved Organic/Inorganic Carbon	30-Jun-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	30-Jun-2017	30-Jun-2017	29-Jun-2017	30-Jun-2017	04-Jul-2017
EPH (DRO) (C10-C40) Aqueous (W)	05-Jul-2017	05-Jul-2017	04-Jul-2017	04-Jul-2017	05-Jul-2017	03-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017
Ionic Balance	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017
Metals by iCap-OES Dissolved (W)	04-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017	07-Jul-2017	06-Jul-2017	04-Jul-2017	06-Jul-2017	06-Jul-2017
Nitrite by Kone (w)	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017
pH Value	30-Jun-2017	04-Jul-2017	30-Jun-2017	03-Jul-2017	30-Jun-2017	29-Jun-2017	03-Jul-2017	03-Jul-2017	29-Jun-2017	30-Jun-2017
Sulphide	30-Jun-2017	30-Jun-2017	30-Jun-2017	04-Jul-2017	30-Jun-2017	04-Jul-2017	04-Jul-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017
VOC MS (W)	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017

Lab Sample No(s)	15751709	15751815	15751720	15751738
Customer Sample Ref.	GW12_30	GW12_33	GW12_38	GW06_14A
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
Alkalinity Filtered as CaCO3	03-Jul-2017	03-Jul-2017	03-Jul-2017	30-Jun-2017
Ammoniacal Nitrogen	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017
Anions by Kone (w)	04-Jul-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017
BOD True Total	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
COD Unfiltered	28-Jun-2017	28-Jun-2017	28-Jun-2017	29-Jun-2017
Conductivity (at 20 deg.C)	29-Jun-2017	04-Jul-2017	04-Jul-2017	04-Jul-2017
Cyanide Comp/Free/Total/Thiocyanate	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017
Dissolved Metals by ICP-MS	06-Jul-2017	06-Jul-2017	06-Jul-2017	06-Jul-2017
Dissolved Organic/Inorganic Carbon	30-Jun-2017	04-Jul-2017	30-Jun-2017	04-Jul-2017
EPH (DRO) (C10-C40) Aqueous (W)	06-Jul-2017	06-Jul-2017	05-Jul-2017	05-Jul-2017
Ionic Balance	10-Jul-2017	10-Jul-2017	10-Jul-2017	10-Jul-2017
Metals by iCap-OES Dissolved (W)	04-Jul-2017	06-Jul-2017	06-Jul-2017	07-Jul-2017
Nitrite by Kone (w)	30-Jun-2017	30-Jun-2017	30-Jun-2017	30-Jun-2017
pH Value	03-Jul-2017	30-Jun-2017	04-Jul-2017	30-Jun-2017
Sulphide	30-Jun-2017	30-Jun-2017	04-Jul-2017	30-Jun-2017
VOC MS (W)	03-Jul-2017	03-Jul-2017	03-Jul-2017	03-Jul-2017

CERTIFICATE OF ANALYSIS

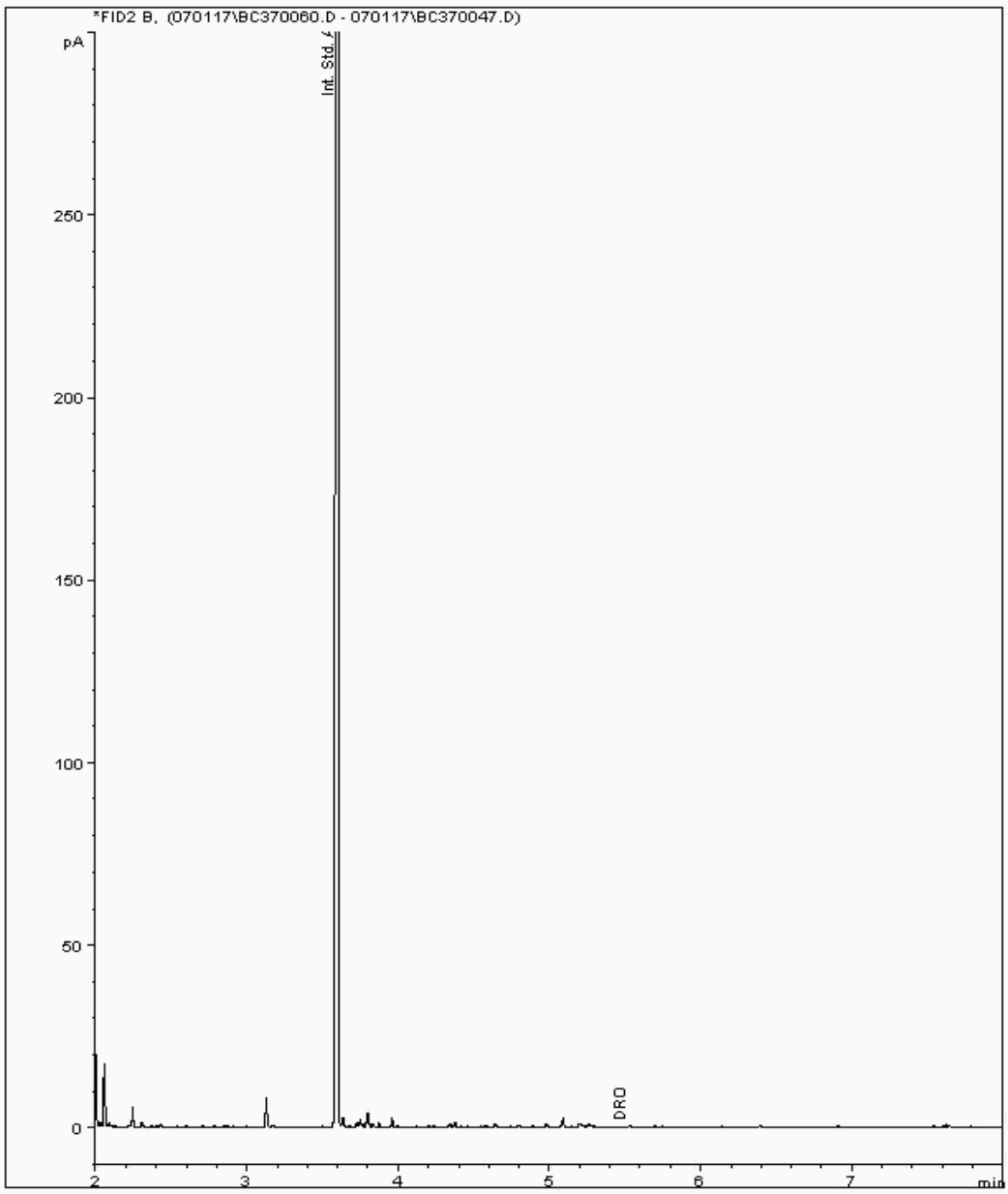
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15752775 **Sample ID :** GW09_32 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748776-
Date Acquired : 02/07/2017 10:32:05 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

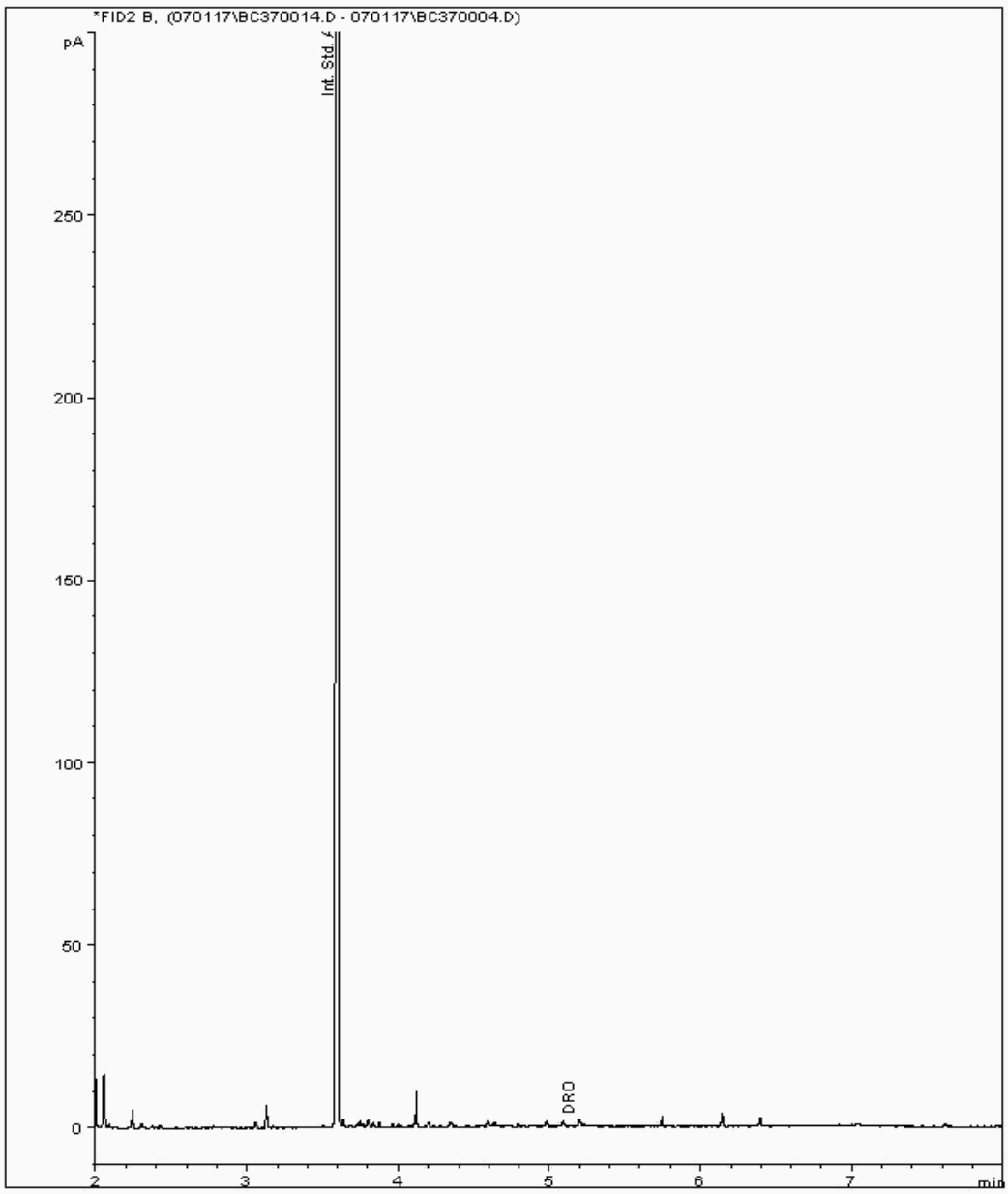
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15752803 **Sample ID :** GW06_39 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748725-
Date Acquired : 01/07/2017 17:46:22 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

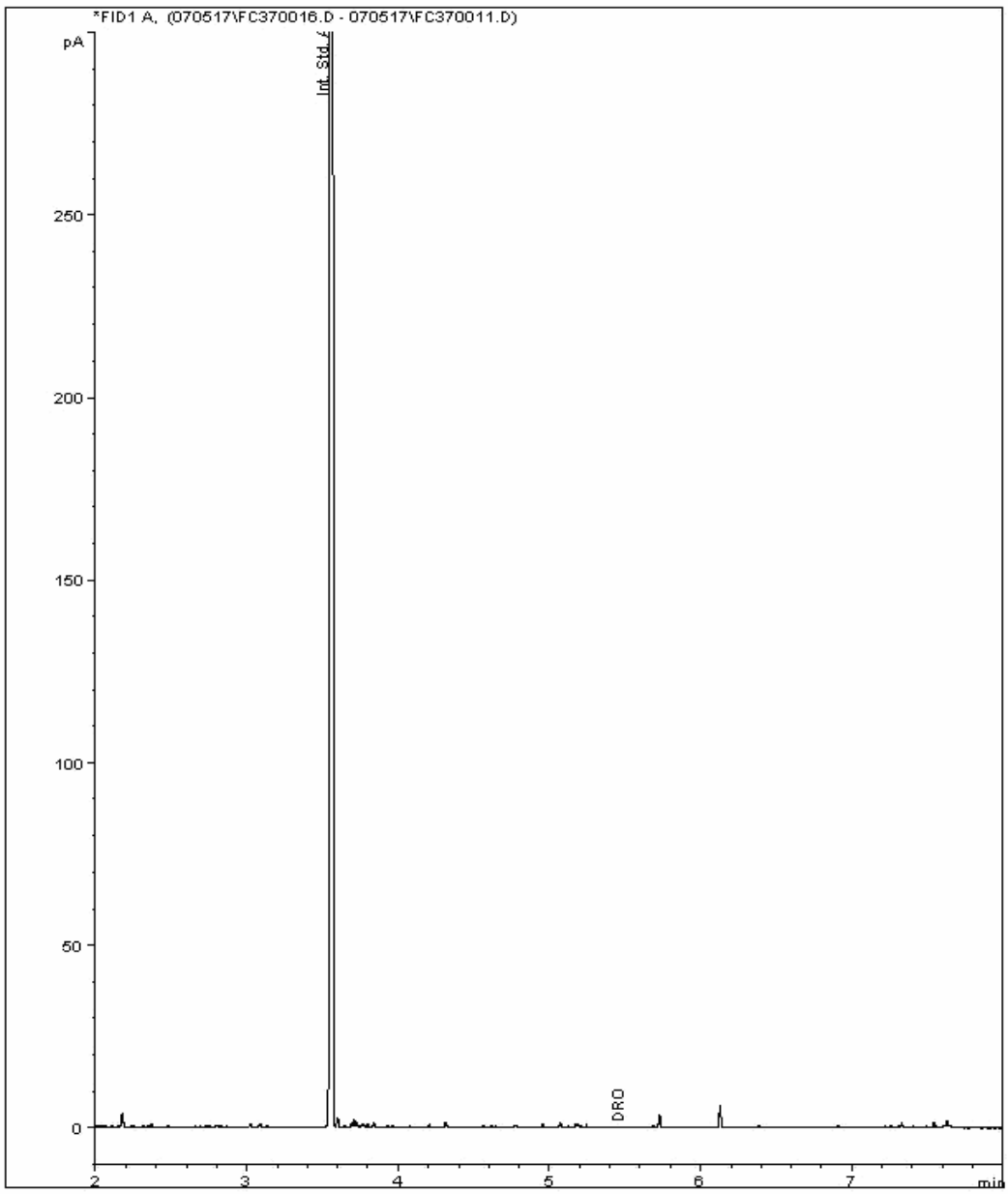
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15752879 **Sample ID :** GW12_30 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748622-
Date Acquired : 05/07/2017 22:20:17 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

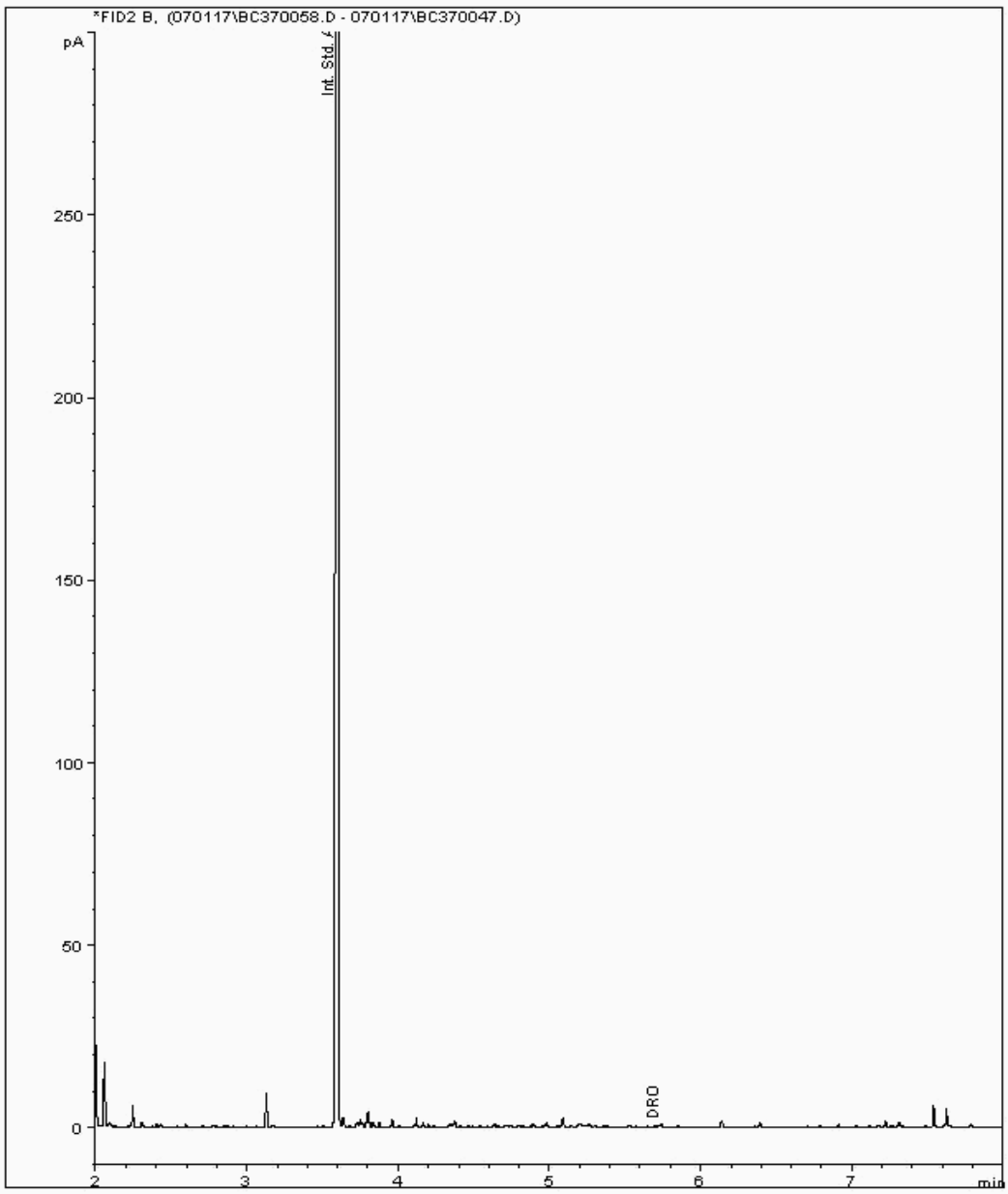
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15752950 **Sample ID :** GW09_31 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748759-
Date Acquired : 02/07/2017 09:48:25 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

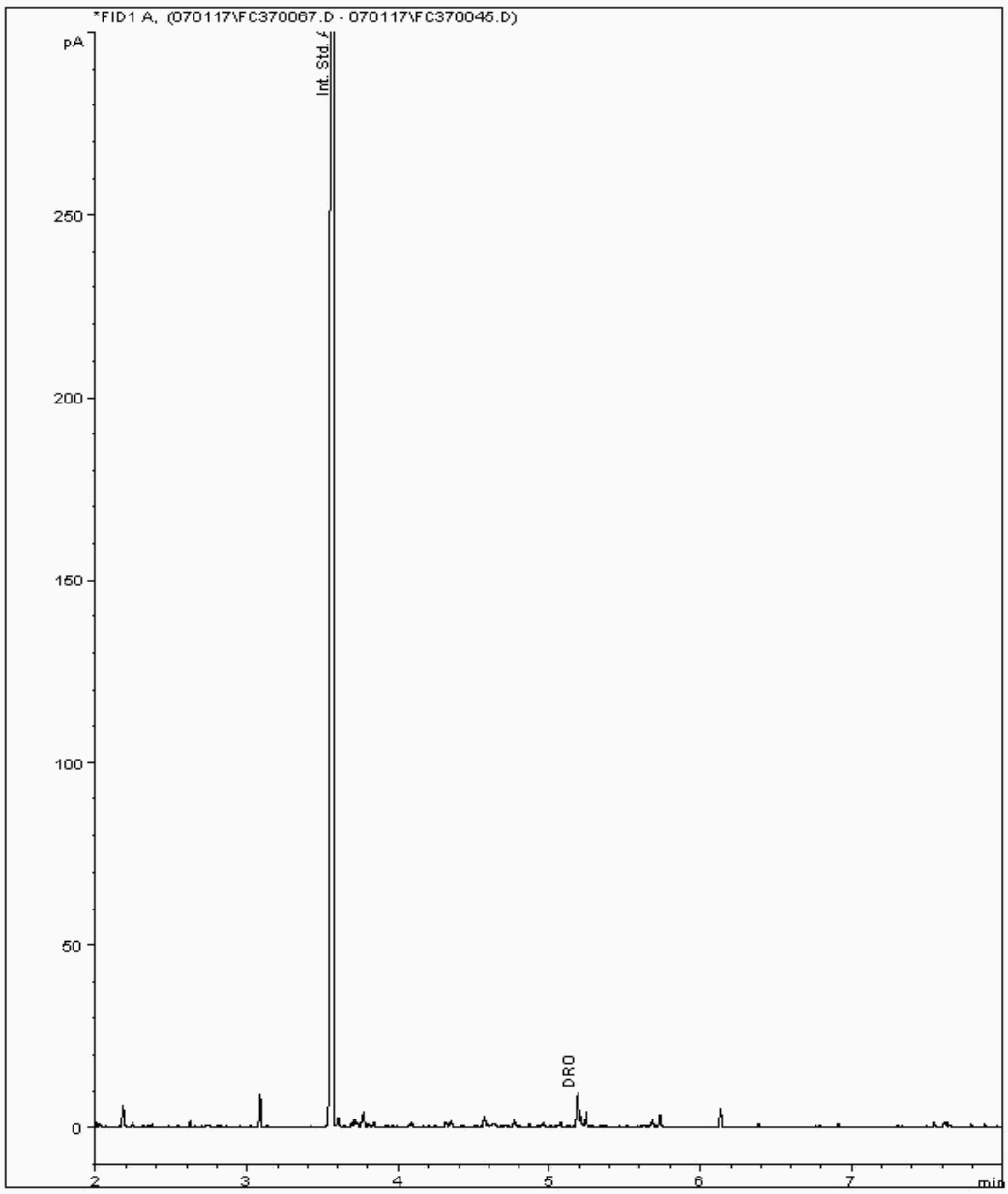
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15752978 **Sample ID :** GW07_40 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748742-
Date Acquired : 02/07/2017 13:05:36 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

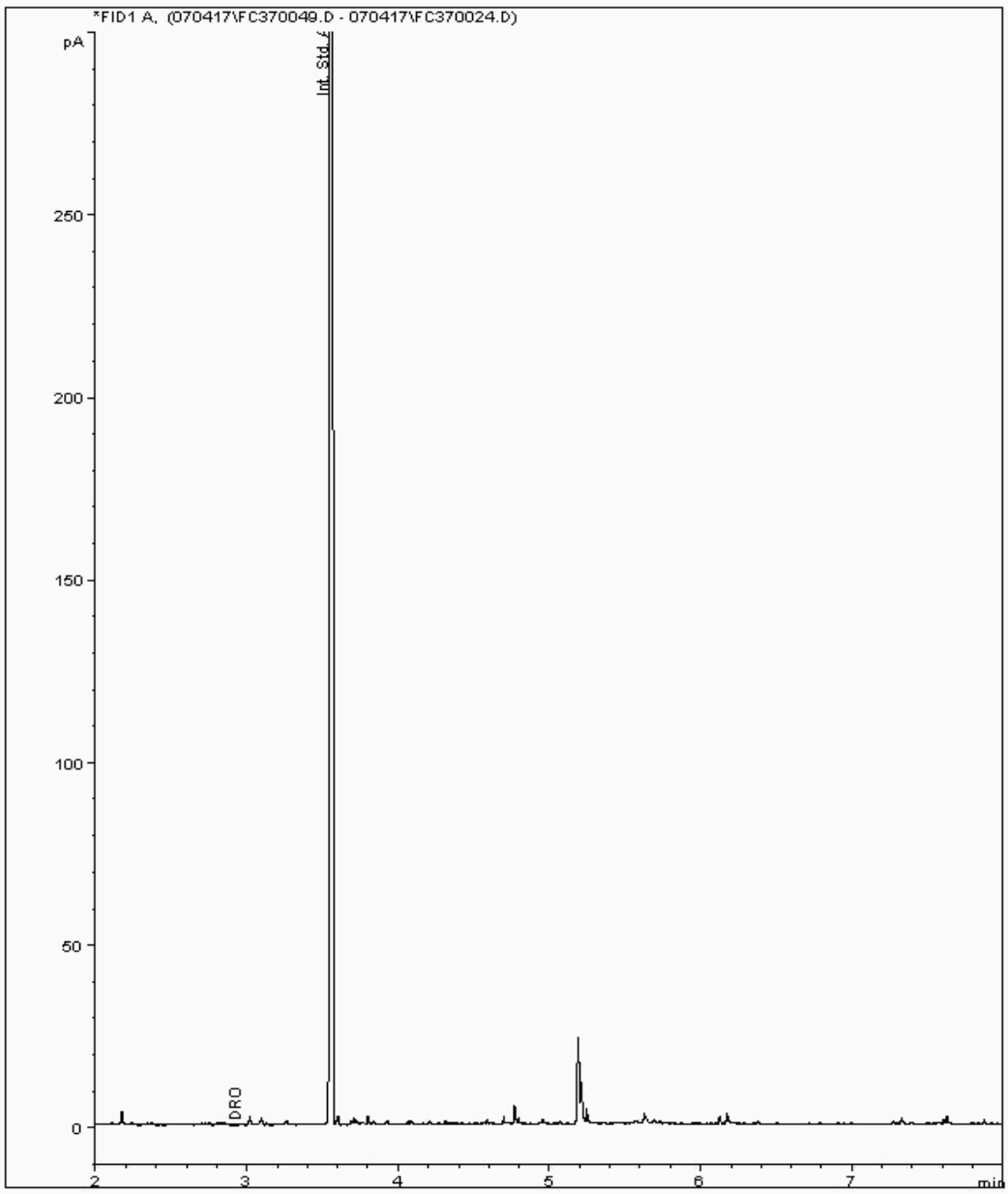
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763117 **Sample ID :** GW06_14A **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748699-
Date Acquired : 05/07/2017 10:34:49 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

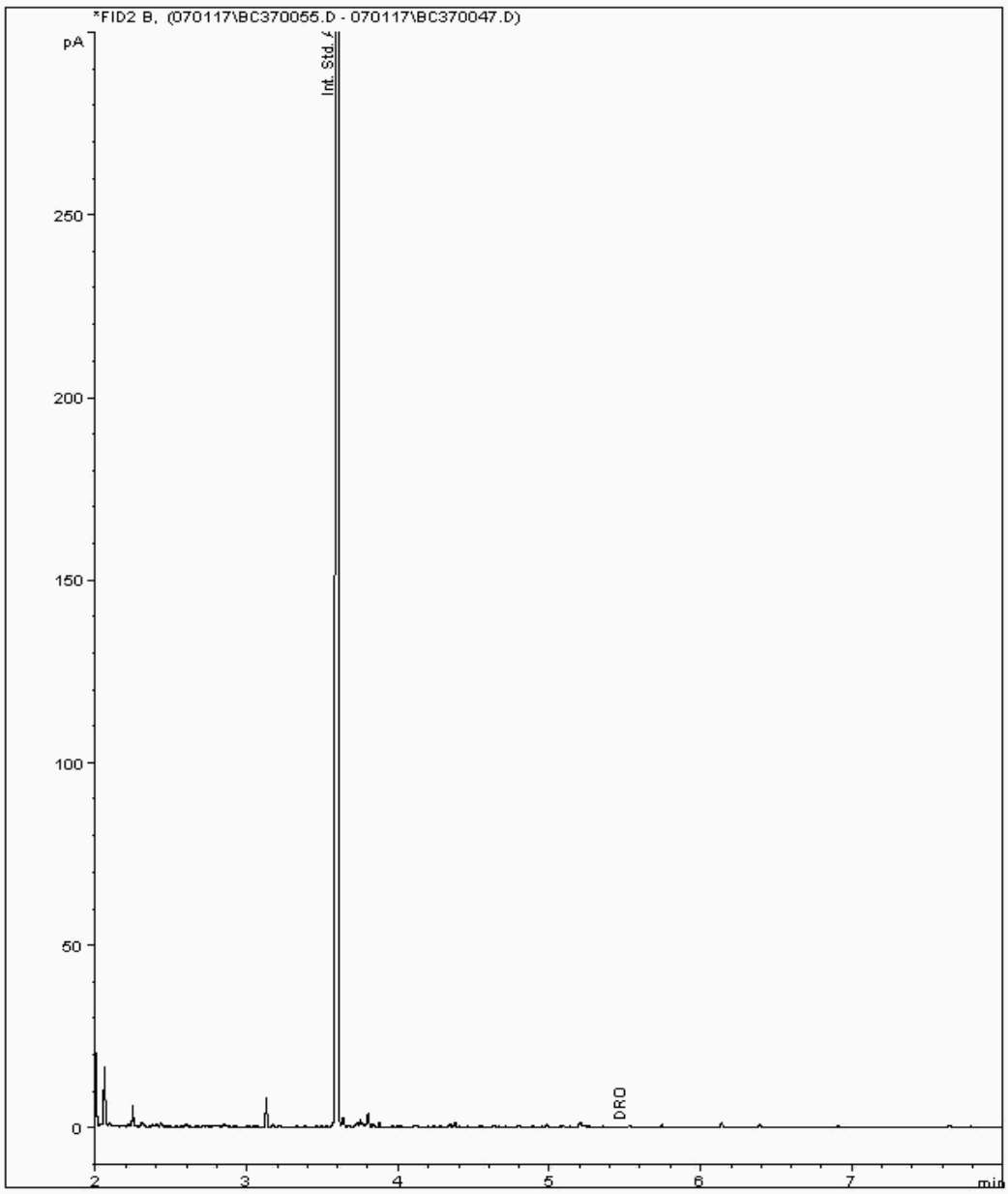
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763137 **Sample ID :** GW06_36 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748899-
Date Acquired : 02/07/2017 08:43:01 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

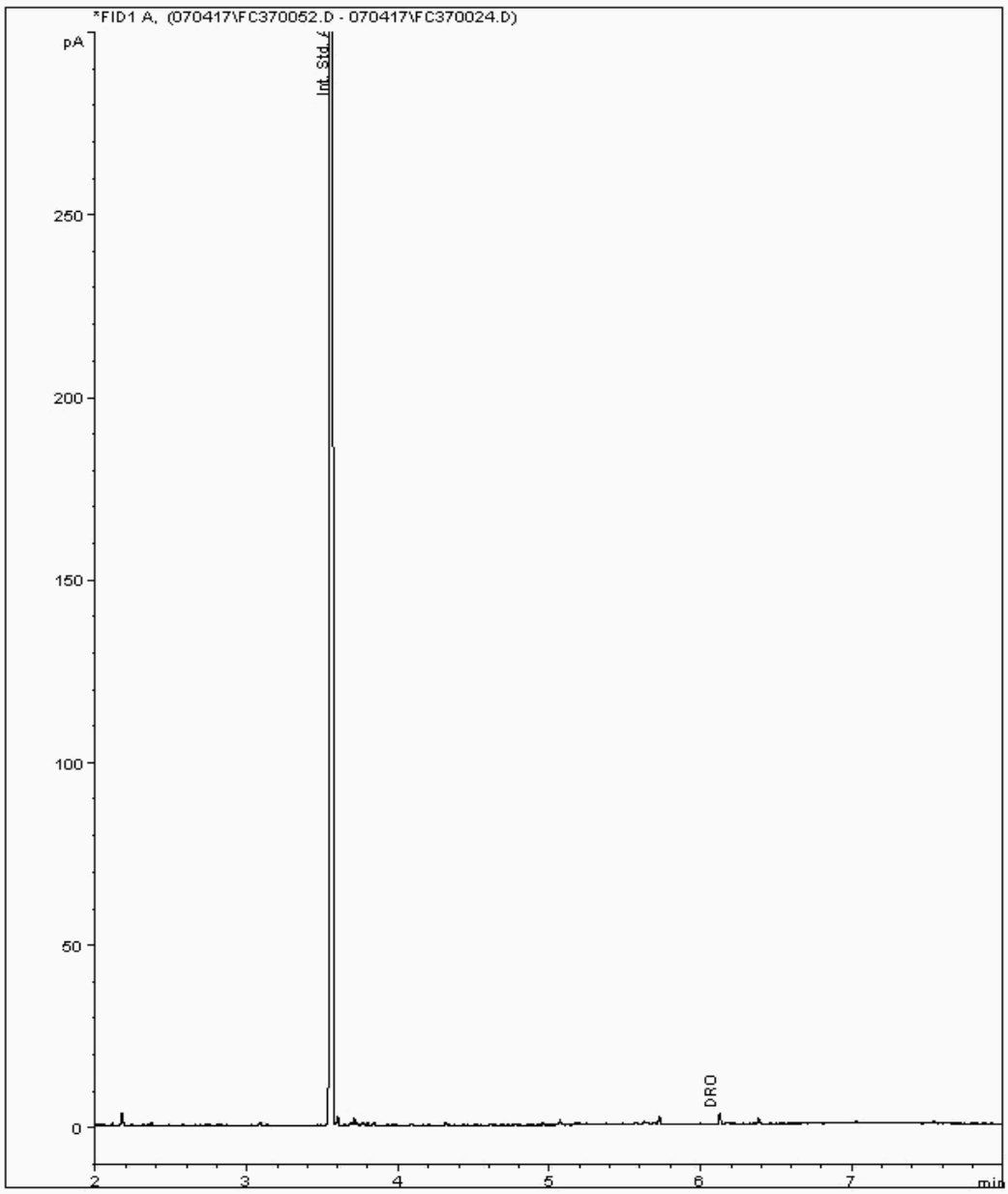
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763171 **Sample ID :** GW03_09 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748793-
Date Acquired : 05/07/2017 11:37:28 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

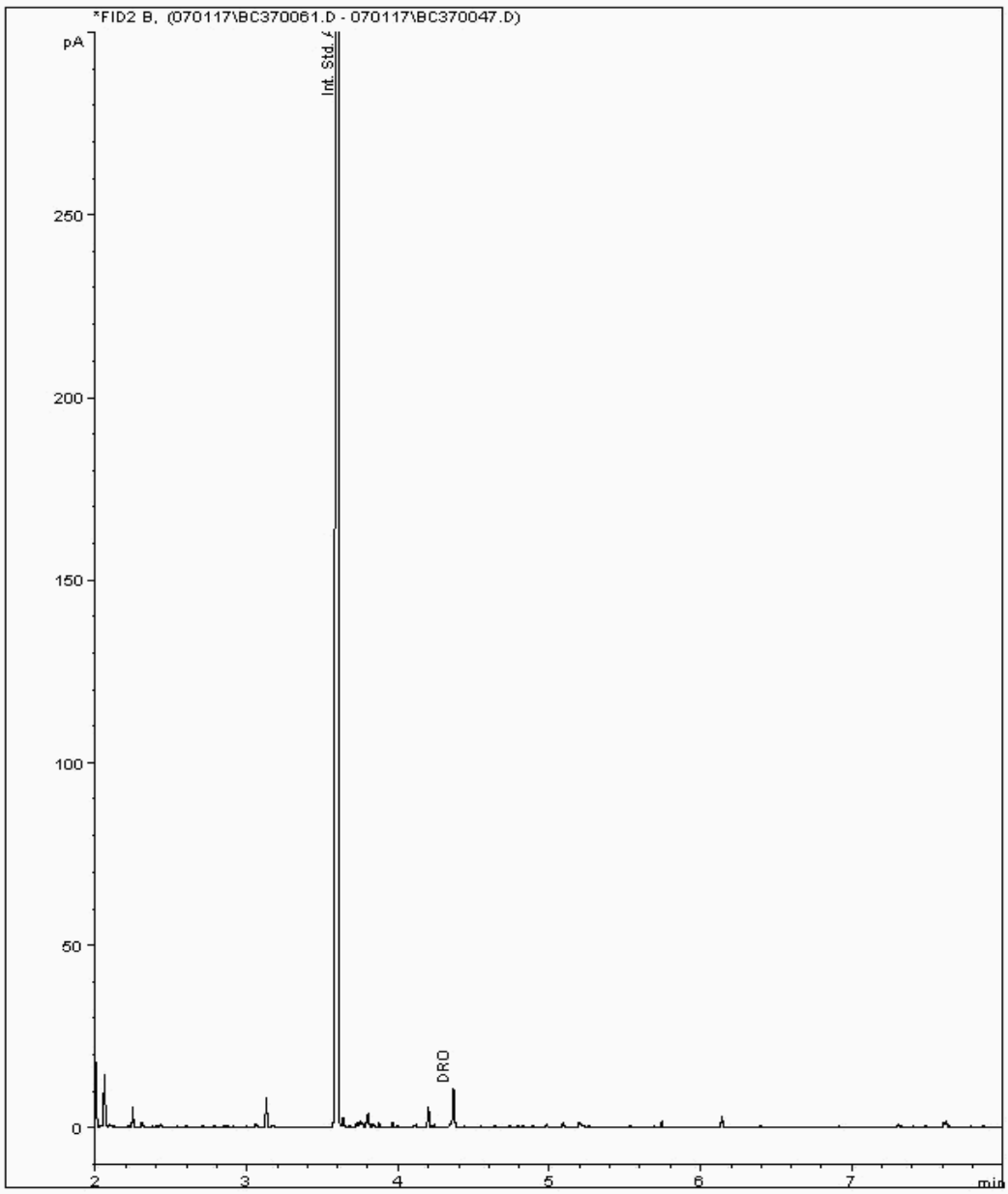
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763199 **Sample ID :** GW09_35 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748882-
Date Acquired : 02/07/2017 10:53:59 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

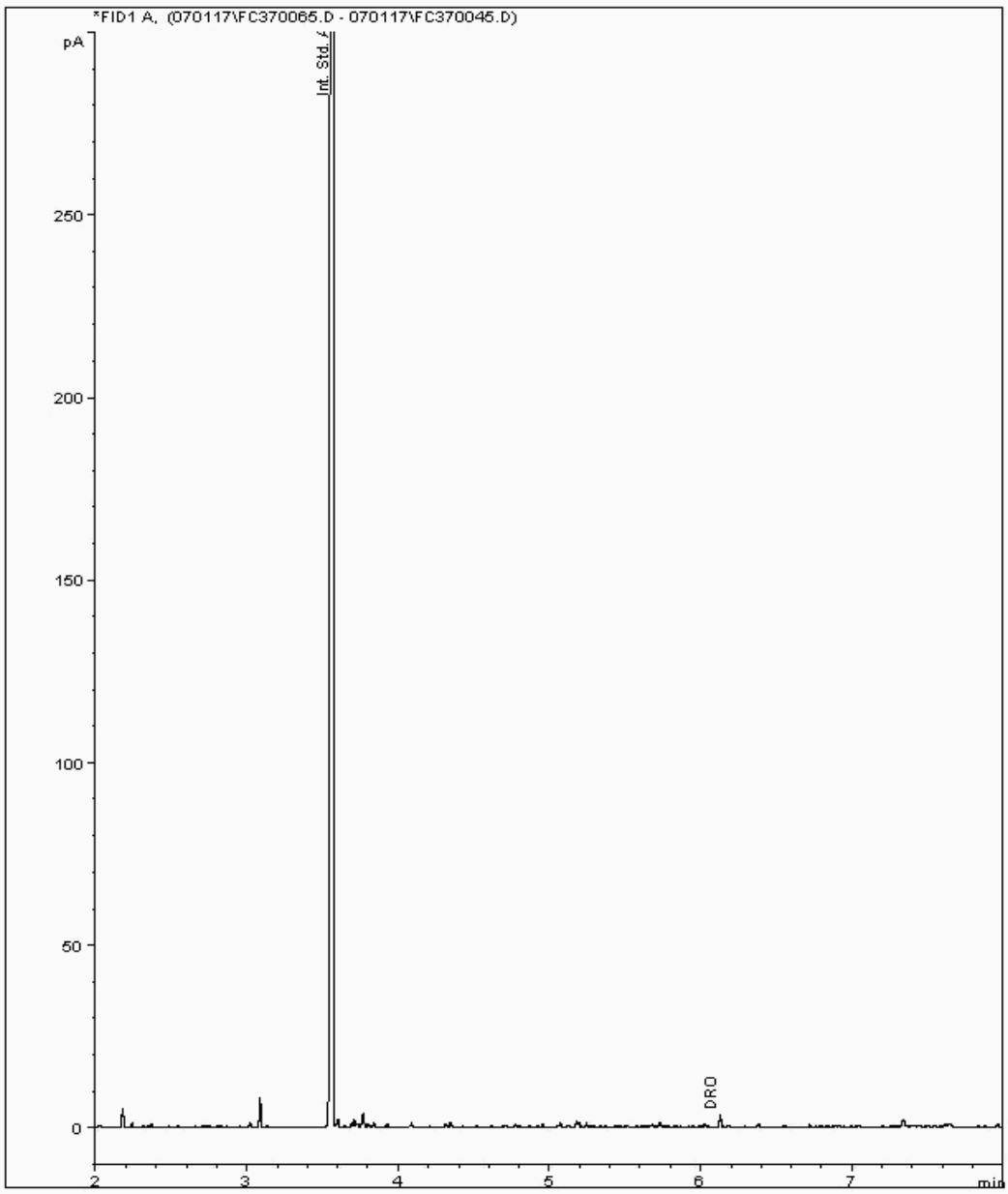
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763223 **Sample ID :** GW06_34 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748846-
Date Acquired : 02/07/2017 12:21:31 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

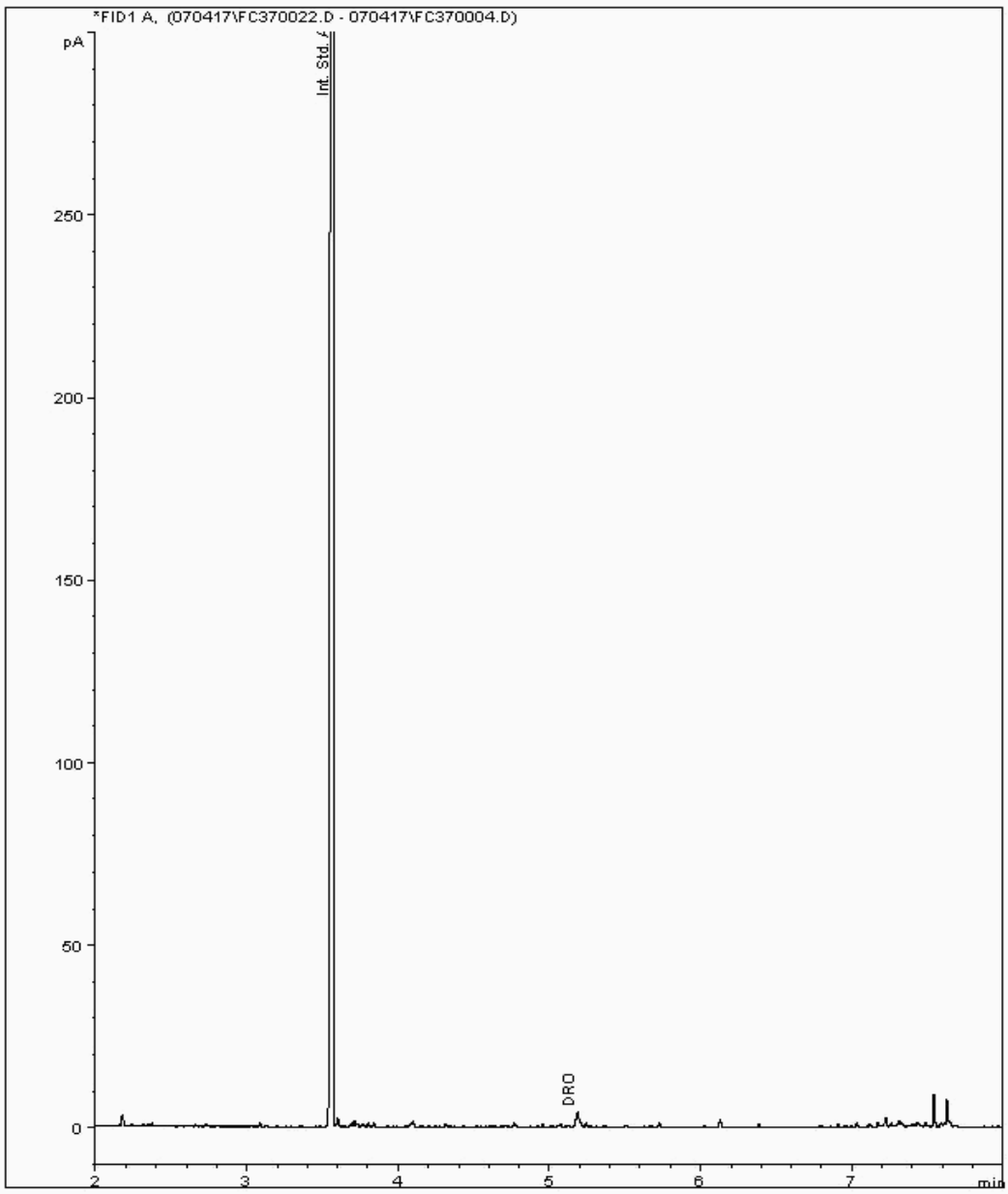
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763233 **Sample ID :** GW06_37 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748916-
Date Acquired : 05/07/2017 00:45:40 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

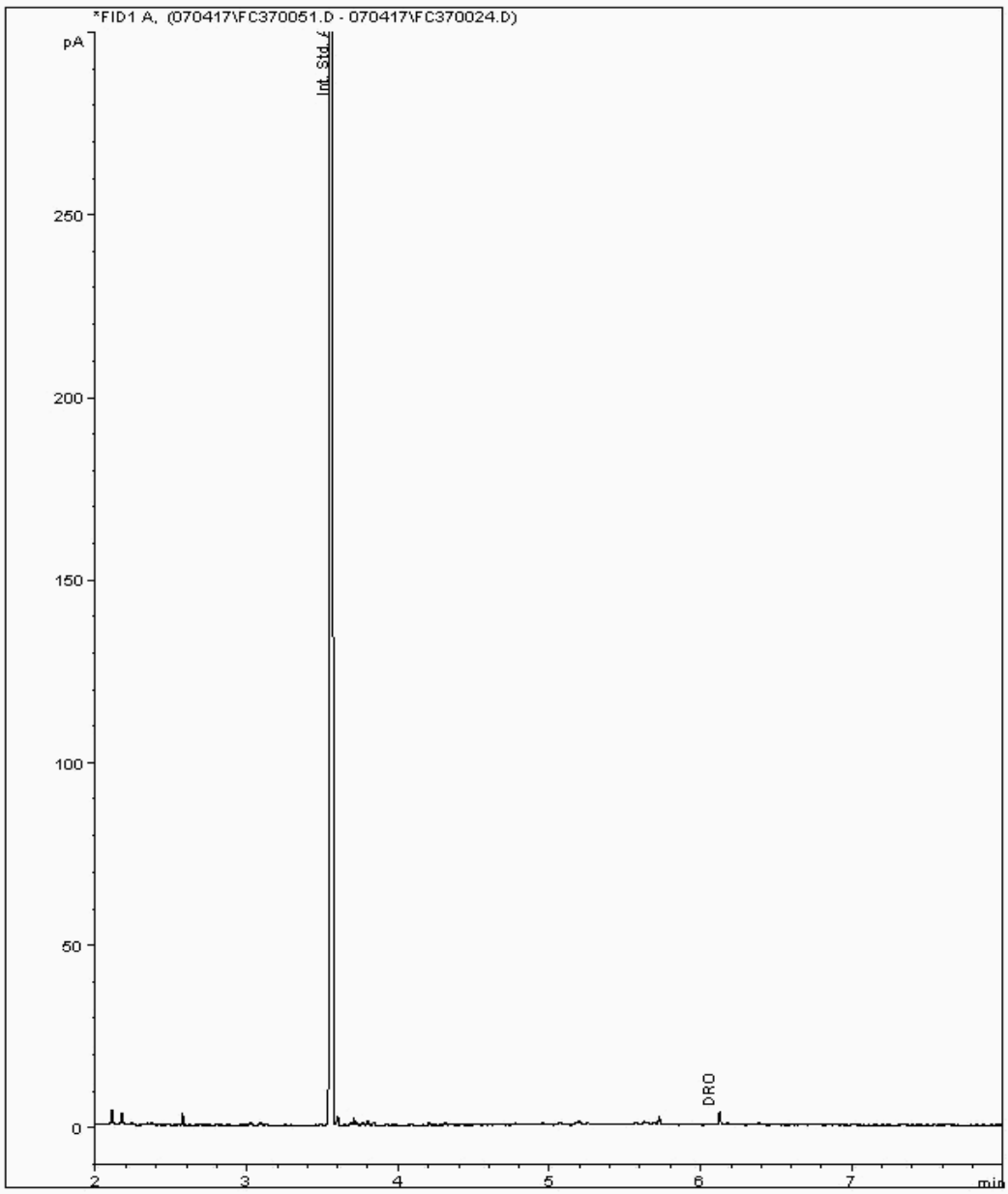
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763267 **Sample ID :** GW12_38 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748643-
Date Acquired : 05/07/2017 11:15:22 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

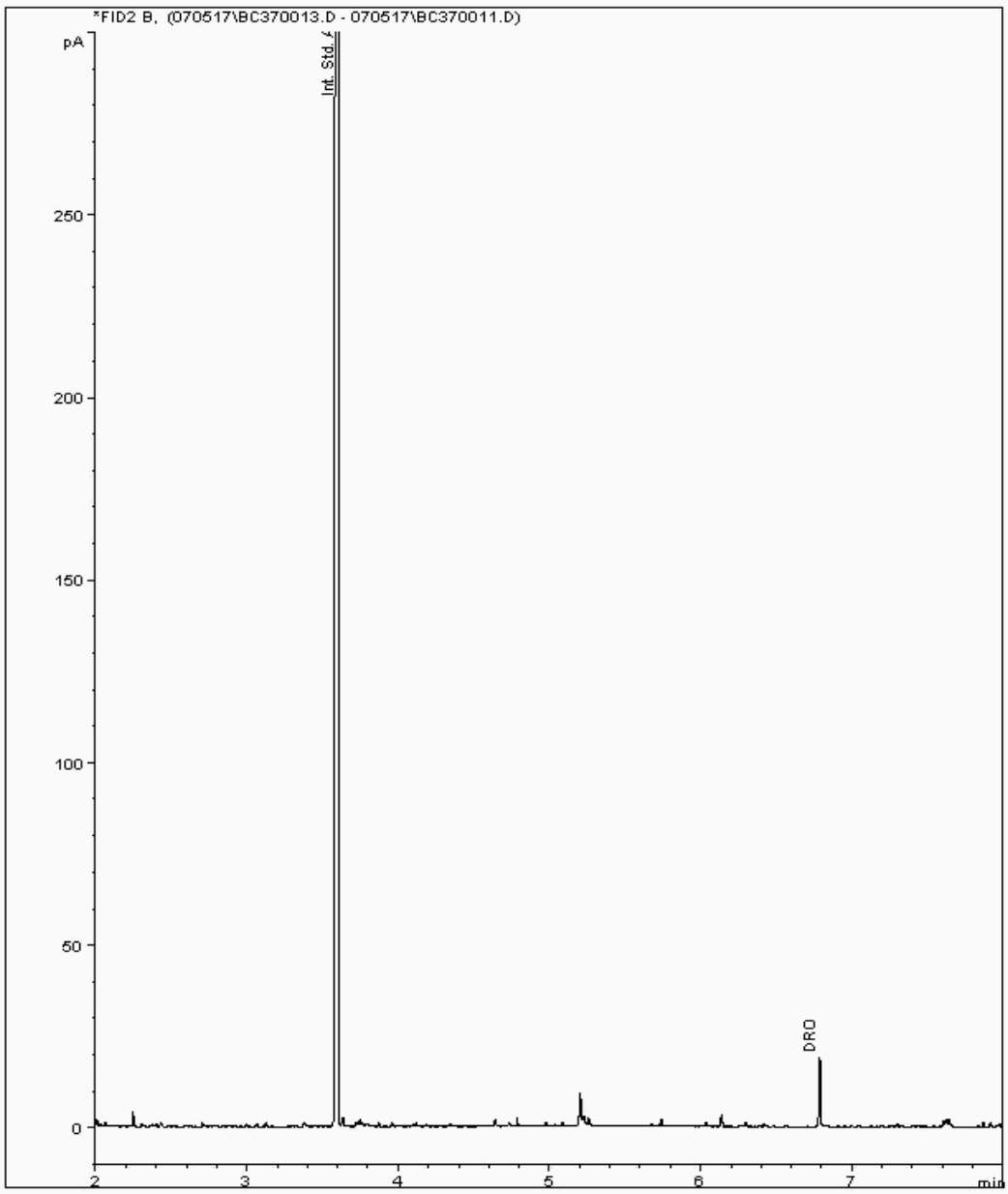
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15763332 **Sample ID :** GW12_33 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748829-
Date Acquired : 05/07/2017 21:12:14 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

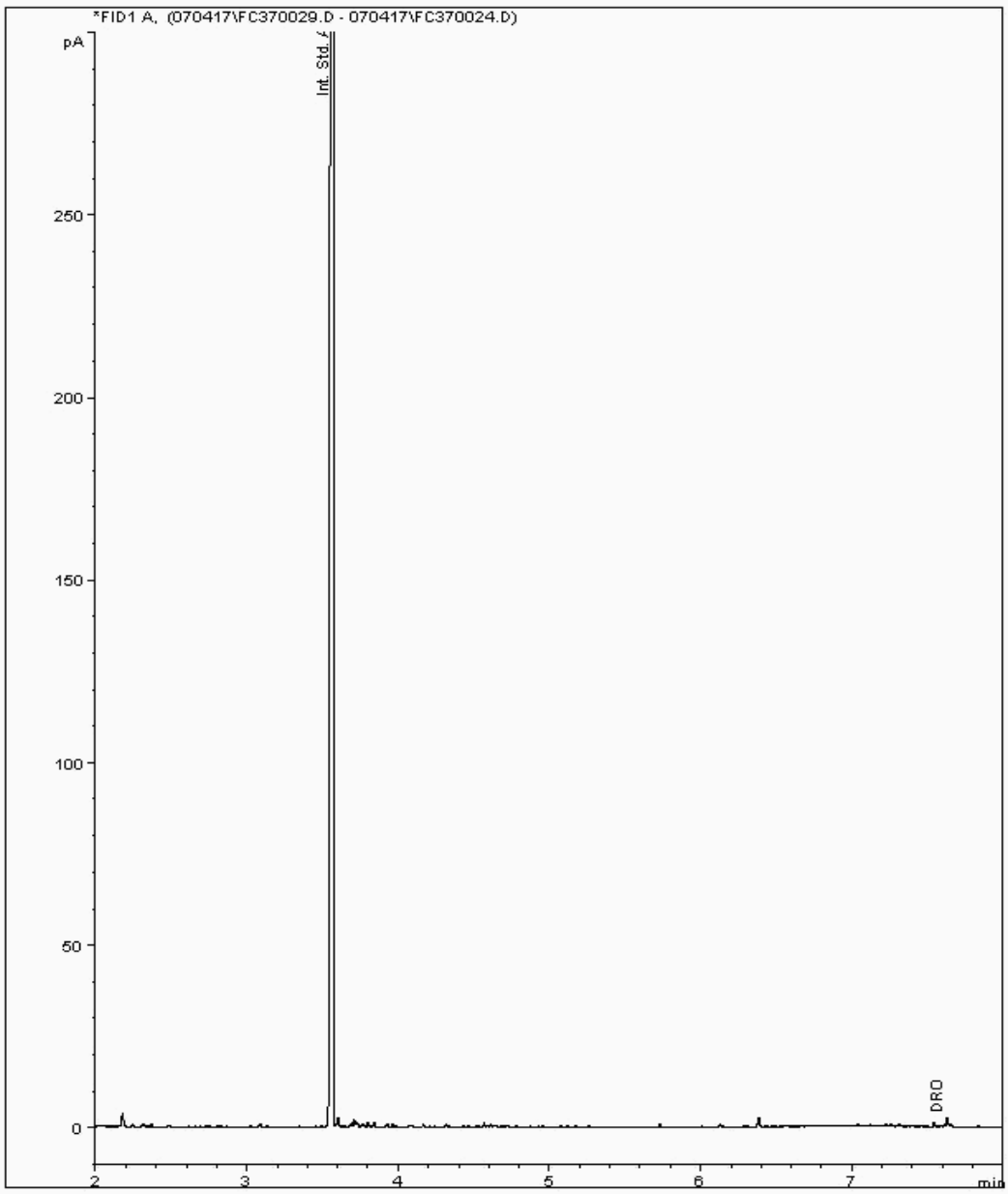
SDG:	170628-31	**Client Reference:**		**Report Number:**	415465
Location:	Docksway Landfill Site	**Order Number:**	700095479	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 15770014 **Sample ID :** GW06_13 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 14748663-
Date Acquired : 05/07/2017 03:22:22 PM
Units : mg/l



Appendix

General

1. Results are expressed on a dry weight basis (dried at 35ºC) 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. ALS 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 (NDP). 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 (Limit of Detection) 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 Dimethyphenol, 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 leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

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. 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.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

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 presevation 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 ALS (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 ALS (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.