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

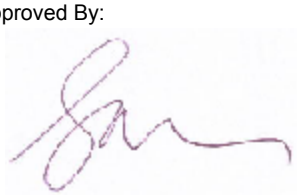
Date:	12 January 2018
Customer:	H_NCC_NPT
Sample Delivery Group (SDG):	171214-18
Your Reference:	
Location:	Docksway Landfill Site
Report No:	439856

We received 16 samples on Thursday December 14, 2017 and 16 of these samples were scheduled for analysis which was completed on Friday January 12, 2018. 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

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
16751431	C3_Asb		0.00 - 0.00	13/12/2017
16751489	GW03_09		0.00 - 0.00	13/12/2017
16751398	GW06_13		0.00 - 0.00	13/12/2017
16751523	GW06_34		0.00 - 0.00	13/12/2017
16751376	GW06_37		0.00 - 0.00	13/12/2017
16751409	GW06_39		0.00 - 0.00	13/12/2017
16751420	GW07_40		0.00 - 0.00	13/12/2017
16751473	GW09_32		0.00 - 0.00	13/12/2017
16751366	GW09_35		0.00 - 0.00	13/12/2017
16751452	GW12_30		0.00 - 0.00	13/12/2017
16751505	GW12_33		0.00 - 0.00	13/12/2017
16751387	GW12_38		0.00 - 0.00	13/12/2017
16751362	SW_23		0.00 - 0.00	13/12/2017
16751436	SW_24		0.00 - 0.00	13/12/2017
16751440	SW_25		0.00 - 0.00	13/12/2017
16751447	SW_1A		0.00 - 0.00	13/12/2017

Maximum Sample/Coolbox Temperature (°C) : **2.8**

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:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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)			16751431	16751489									16751398								16751523		
Customer Sample Reference			C3_Asb	GW03_09									GW06_13								GW06_34		
AGS Reference																							
Depth (m)			0.00 - 0.00	0.00 - 0.00									0.00 - 0.00								0.00 - 0.00		
Container			1lplastic (ALE221)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	
Sample Type			SW	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: 11			X								X								X		
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 6			X																X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 11					X								X								
Anions by Kone (w)	All	NDPs: 0 Tests: 11			X								X								X		
Asbestos in Water*	All	NDPs: 0 Tests: 1	X																				
BOD True Total	All	NDPs: 0 Tests: 11				X								X								X	
COD Unfiltered	All	NDPs: 0 Tests: 11				X								X								X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 11			X								X								X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 11							X								X						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 11						X								X							
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 11		X								X								X			
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 11		X								X								X			
Ionic Balance	All	NDPs: 0 Tests: 11			X								X								X		
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 11						X								X							
Nitrite by Kone (w)	All	NDPs: 0 Tests: 11							X								X						

16751409	GW06_39		0.00 - 0.00	Vial (ALE297)	GW																														
				NaOH (ALE245)	GW																		X												X
				HNO3 Filtered (ALE204)	GW																				X								X		
				H2SO4 (ALE244)	GW						X																								
				250ml BOD (ALE212)	GW												X		X																
				1lplastic (ALE221)	GW		X		X				X								X										X				
				1000ml glass bottle (ALE220)	GW																						X		X						
16751376	GW06_37		0.00 - 0.00	ZnAc (ALE246)	GW																														
				Vial (ALE297)	GW																														
				NaOH (ALE245)	GW																		X												X
				HNO3 Filtered (ALE204)	GW																				X								X		
				H2SO4 (ALE244)	GW						X																								
				250ml BOD (ALE212)	GW												X		X																
				1lplastic (ALE221)	GW		X						X								X										X				
				1000ml glass bottle (ALE220)	GW																						X		X						
16751523	GW06_34		0.00 - 0.00	ZnAc (ALE246)	GW																														
				Vial (ALE297)	GW																														
				NaOH (ALE245)	GW																		X												X
				HNO3 Filtered (ALE204)	GW																				X								X		
				H2SO4 (ALE244)	GW						X																								

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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)			16751431	16751489									16751398								16751523			
Customer Sample Reference			C3_Asb	GW03_09									GW06_13								GW06_34			
AGS Reference																								
Depth (m)			0.00 - 0.00	0.00 - 0.00									0.00 - 0.00								0.00 - 0.00			
Container			1lplastic (ALE221)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)		
Sample Type			SW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW		
pH Value	All	NDPs: 0 Tests: 11			X								X								X			
Sulphide	All	NDPs: 0 Tests: 11									X								X					
VOC MS (W)	All	NDPs: 0 Tests: 11								X								X						

16751409	GW06_39		0.00 - 0.00	Vial (ALE297)	GW						X
				NaOH (ALE245)	GW						
				HNO3 Filtered (ALE204)	GW						
				H2SO4 (ALE244)	GW						
				250ml BOD (ALE212)	GW						
				1lplastic (ALE221)	GW		X				
				1000ml glass bottle (ALE220)	GW						
16751376	GW06_37		0.00 - 0.00	ZnAc (ALE246)	GW				X		
				Vial (ALE297)	GW						X
				NaOH (ALE245)	GW						
				HNO3 Filtered (ALE204)	GW						
				H2SO4 (ALE244)	GW						
				250ml BOD (ALE212)	GW						
				1lplastic (ALE221)	GW		X				
				1000ml glass bottle (ALE220)	GW						
16751523	GW06_34		0.00 - 0.00	ZnAc (ALE246)	GW				X		
				Vial (ALE297)	GW						X
				NaOH (ALE245)	GW						
				HNO3 Filtered (ALE204)	GW						
				H2SO4 (ALE244)	GW						

Validated

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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)			16751409							16751420								16751473				16751366
Customer Sample Reference			GW06_39							GW07_40								GW09_32				GW09_35
AGS Reference																						
Depth (m)			0.00 - 0.00							0.00 - 0.00								0.00 - 0.00				0.00 - 0.00
Container			ZnAc (ALE246)	1000ml glass bottle (ALE220)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1plastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)
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: 11			X							X								X		
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 6			X							X								X		
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 11					X							X								X
Anions by Kone (w)	All	NDPs: 0 Tests: 11			X							X								X		
BOD True Total	All	NDPs: 0 Tests: 11				X							X								X	
COD Unfiltered	All	NDPs: 0 Tests: 11				X							X								X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 11			X							X								X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 11		X												X						
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 11						X							X							
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 11		X							X								X			
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 11		X							X								X			
Ionic Balance	All	NDPs: 0 Tests: 11			X							X								X		
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 11						X							X							
Nitrite by Kone (w)	All	NDPs: 0 Tests: 11			X											X						
pH Value	All	NDPs: 0 Tests: 11			X							X								X		

16751505	GW12_33		0.00 - 0.00	ZnAc (ALE246)	GW
				Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Filtered (ALE204)	GW
				H2SO4 (ALE244)	GW
				250ml BOD (ALE212)	GW
				1lplastic (ALE221)	GW
				1000ml glass bottle (ALE220)	GW
16751452	GW12_30		0.00 - 0.00	ZnAc (ALE246)	GW
				Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Filtered (ALE204)	GW
				H2SO4 (ALE244)	GW
				250ml BOD (ALE212)	GW
				1lplastic (ALE221)	GW
				1000ml glass bottle (ALE220)	GW
16751366	GW09_35		0.00 - 0.00	ZnAc (ALE246)	GW
				Vial (ALE297)	GW
				NaOH (ALE245)	GW
				HNO3 Filtered (ALE204)	GW

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:** 439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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)			16751409							16751420								16751473				16751366
Customer Sample Reference			GW06_39							GW07_40								GW09_32				GW09_35
AGS Reference																						
Depth (m)			0.00 - 0.00							0.00 - 0.00								0.00 - 0.00				0.00 - 0.00
Container			ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Sulphide	All	NDPs: 0 Tests: 11	X							X								X				
VOC MS (W)	All	NDPs: 0 Tests: 11							X								X					

16751505	GW12_33		0.00 - 0.00	ZnAc (ALE246)	GW	X			
				Vial (ALE297)	GW		X		
				NaOH (ALE245)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				250ml BOD (ALE212)	GW				
				1lplastic (ALE221)	GW				
				1000ml glass bottle (ALE220)	GW				
16751452	GW12_30		0.00 - 0.00	ZnAc (ALE246)	GW	X			
				Vial (ALE297)	GW		X		
				NaOH (ALE245)	GW				
				HNO3 Filtered (ALE204)	GW				
				H2SO4 (ALE244)	GW				
				250ml BOD (ALE212)	GW				
				1lplastic (ALE221)	GW				
				1000ml glass bottle (ALE220)	GW				
16751366	GW09_35		0.00 - 0.00	ZnAc (ALE246)	GW	X			
				Vial (ALE297)	GW			X	
				NaOH (ALE245)	GW				
				HNO3 Filtered (ALE204)	GW				

Validated

CERTIFICATE OF ANALYSIS

SDG:	171214-18	Client Reference:		Report Number:	439856
Location:	Docksway Landfill Site	Order Number:	700111791	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)			16751387								16751362			16751436			16751440			16751447	
Customer Sample Reference			GW12_38								SW_23			SW_24			SW_25			SW_1A	
AGS Reference																					
Depth (m)			0.00 - 0.00								0.00 - 0.00			0.00 - 0.00			0.00 - 0.00			0.00 - 0.00	
Container			1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	1lplastic (ALE221)	250ml BOD (ALE212)	DO KIT + DO 250 ml glass	1lplastic (ALE221)	H2SO4 (ALE244)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Alkalinity as CaCO3	All	NDPs: 0 Tests: 11		X																	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 11				X															
		NDPs: 0 Tests: 4											X			X	X				X
Anions by Kone (w)	All	NDPs: 0 Tests: 11		X																	
		NDPs: 0 Tests: 4									X			X			X			X	
BOD True Total	All	NDPs: 0 Tests: 11			X																
		NDPs: 0 Tests: 4										X			X			X		X	
COD Unfiltered	All	NDPs: 0 Tests: 11			X																
		NDPs: 0 Tests: 4										X			X			X		X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 11		X																	
		NDPs: 0 Tests: 4									X			X			X			X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 11						X													
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 11					X														
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 11	X																		
Dissolved Oxygen by Titration	All	NDPs: 0 Tests: 1																	X		

CERTIFICATE OF ANALYSIS

Validated

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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)										16751387	16751362	16751436	16751440	16751447								
Customer Sample Reference										GW12_38	SW_23	SW_24	SW_25	SW_1A								
AGS Reference																						
Depth (m)										0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00								
Container										1000ml glass bottle (ALE220)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	1lplastic (ALE221)	250ml BOD (ALE212)	H2SO4 (ALE244)	1lplastic (ALE221)	250ml BOD (ALE212)	DO KIT + DO 250 ml glass	1lplastic (ALE221)	H2SO4 (ALE244)
Sample Type										GW	GW	GW	GW	GW	GW	GW	GW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 11								X																		
Ionic Balance	All	NDPs: 0 Tests: 11									X																	
Metals by iCap-OES Dissolved (W)	All	NDPs: 0 Tests: 11												X														
Nitrite by Kone (w)	All	NDPs: 0 Tests: 11													X													
pH Value	All	NDPs: 0 Tests: 11									X																	
		NDPs: 0 Tests: 4																X			X			X			X	
Sulphide	All	NDPs: 0 Tests: 11															X											
Suspended Solids	All	NDPs: 0 Tests: 1																						X				
VOC MS (W)	All	NDPs: 0 Tests: 11														X												

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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.	C3_Asb	GW03_09	GW06_13	GW06_34	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	Surface Water (SW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017
			SDG Ref	171214-18	171214-18	171214-18	171214-18	171214-18	171214-18
			Lab Sample No.(s)	16751431	16751489	16751398	16751523	16751376	16751409
			AGS Reference						
Ionic balance	% Diff	Calulation			16.2	-5.91	16.5	-1.98	-14.3
Chrysotile*	-	SUB (ASB)		Not Detected					
Crocidolite*	-	SUB (ASB)		Not Detected					
Amosite*	-	SUB (ASB)		Not Detected					
Fibrous Anthophyllite*	-	SUB (ASB)		Not Detected					
Fibrous Actinolite*	-	SUB (ASB)		Not Detected					
Alkalinity, Total as CaCO3	<2 mg/l	TM043			325 #	880 #	860 #	1080 #	965 #
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043			320		800		950
BOD, unfiltered	<1 mg/l	TM045			<1.67 ♦	<1 ♦	312 ♦ #	7.9 ♦	3.12 ♦
Carbon, Organic (diss.filt)	<3 mg/l	TM090			6.61	12.6	37.2	31.7	15.8
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099			0.366 #	12.5 #	24.3 #	36.3 #	3.84 #
Sulphide	<0.01 mg/l	TM101			<0.01 #	0.254 #	6.25 #	0.609 #	0.0211 #
COD, unfiltered	<7 mg/l	TM107			70.9 #	79.6 #	360 #	176 #	96.4 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120			0.911 #	7.4 #	2.46 #	12 #	5.73 #
Arsenic (diss.filt)	<0.5 µg/l	TM152			12.1 #	9.51 #	126 #	10.6 #	8 #
Boron (diss.filt)	<5 µg/l	TM152			384 #	1430 #	1310 #	1340 #	1130 #
Cadmium (diss.filt)	<0.08 µg/l	TM152			<0.08 #	<0.08 #	<0.08 #	<0.08 #	<0.08 #
Chromium (diss.filt)	<1 µg/l	TM152			<1 #	<1 #	<1 #	<1 #	<1 #
Copper (diss.filt)	<0.3 µg/l	TM152			<0.3 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152			0.509 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<1 µg/l	TM152			2240 #	230 #	903 #	356 #	555 #
Nickel (diss.filt)	<0.4 µg/l	TM152			5.39 #	1.28 #	1.98 #	0.805 #	5.24 #
Selenium (diss.filt)	<0.5 µg/l	TM152			<0.5 #	<0.5 #	<0.5 #	<0.5 #	<0.5 #
Zinc (diss.filt)	<1 µg/l	TM152			11.3 #	18.6 #	3.63 #	2.24 #	6.35 #
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172			102	<100	1730	124	120
Nitrite as NO2	<0.05 mg/l	TM184			0.147 #	<0.05 #	<0.05 #	<0.05 #	0.686 #
Sulphate	<2 mg/l	TM184			93.8 #	135 #	109 #	<2 #	113 #
Chloride	<2 mg/l	TM184			126 #	2490 #	504 #	4590 #	1760 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184			0.053 #	3.45 #	<0.05 #	7.51 #	0.719 #
Nitrate as NO3	<0.3 mg/l	TM184			3.66	<0.3	<0.3	<0.3	12
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184			0.872 #	<0.1 #	<0.1 #	<0.1 #	2.91 #
Cyanide, Total	<0.05 mg/l	TM227			<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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.	C3_Asb	GW03_09	GW06_13	GW06_34	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	Surface Water (SW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
			Date Sampled	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017
			SDG Ref	171214-18	171214-18	171214-18	171214-18	171214-18	171214-18
			Lab Sample No.(s)	16751431	16751489	16751398	16751523	16751376	16751409
			AGS Reference						
Potassium (diss.filt)	<1 mg/l	TM228			8.94	51	50.2	73.2	53.8
Iron (diss.filt)	<0.019 mg/l	TM228			4.67	0.676	8.96	4.17	1.96
Hardness, Total as CaCO3	<1 mg/l	TM228			390	988	762	1830	936
pH	<1 pH Units	TM256			7.01 #	7.76 #	7.45 #	7.62 #	7.56 #

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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_32	GW09_35	GW12_30	GW12_33	GW12_38
			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	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017
			SDG Ref	171214-18	171214-18	171214-18	171214-18	171214-18	171214-18
			Lab Sample No.(s)	16751420	16751473	16751366	16751452	16751505	16751387
			AGS Reference						
Ionic balance	% Diff	Calulation		16.3	-13	-29.3	-9.61	-7.37	5.64
Alkalinity, Total as CaCO3	<2 mg/l	TM043		705 #	375 #	910 #	695 #	1020 #	585 #
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043		685	365	895			
BOD, unfiltered	<1 mg/l	TM045		2.81 ♦	6.49 ♦	8.3 ♦	<2.5 ♦ #	8.38 ♦	<2.5 ♦
Carbon, Organic (diss.filt)	<3 mg/l	TM090		17.7	28.3	11.6	22.9	28	8.75
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		9.61 #	4.63 #	13.2 #	5.96 #	19.6 #	9.99 #
Sulphide	<0.01 mg/l	TM101		0.0627 #	0.319 #	0.406 #	0.0182 #	0.248 #	0.251 #
COD, unfiltered	<7 mg/l	TM107		52 #	90 #	107 #	63.4 #	99.2 #	126 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		2.11 #	4.37 #	10.8 #	1.65 #	4.94 #	5.78 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		13.8 #	11.7 #	8.77 #	15 #	26.1 #	6.75 #
Boron (diss.filt)	<5 µg/l	TM152		1230 #	377 #	887 #	1380 #	506 #	1300 #
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 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #
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		302 #	2090 #	831 #	118 #	2600 #	584 #
Nickel (diss.filt)	<0.4 µg/l	TM152		2.02 #	4.18 #	1.7 #	1.47 #	6.23 #	1.31 #
Selenium (diss.filt)	<0.5 µg/l	TM152		<0.5 #	0.627 #	0.511 #	<0.5 #	0.63 #	<0.5 #
Zinc (diss.filt)	<1 µg/l	TM152		4.8 #	7.61 #	2.24 #	3.89 #	4.35 #	3.16 #
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172		<100	162	<100	<100	115	576
Nitrite as NO2	<0.05 mg/l	TM184		0.084 2 #	<0.05 #	<0.05 #	0.074 #	<0.05 #	<0.05 #
Sulphate	<2 mg/l	TM184		23.9 #	447 #	136 #	33.4 #	50.3 #	411 #
Chloride	<2 mg/l	TM184		395 #	1300 #	4200 #	245 #	1410 #	1920 #
Phosphate (ortho) as PO4	<0.05 mg/l	TM184		8.04 #	<0.05 #	9.73 #	<0.05 #	0.064 #	1.45 #
Nitrate as NO3	<0.3 mg/l	TM184		0.877	<0.3	<0.3	<0.3	<0.3	<0.3
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.224 #	<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		38.9	25.6	44.3	31.4	33.7	52.1
Iron (diss.filt)	<0.019 mg/l	TM228		1.16	6.67	2.73	0.208	10.5	1.32
Hardness, Total as CaCO3	<1 mg/l	TM228		524	792	1180	281	1030	972
pH	<1 pH Units	TM256		7.95 #	7.08 #	7.53 #	7.52 #	7.51 #	7.51 #

Validated

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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.	SW_23	SW_24	SW_25	SW_1A		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
			Date Sampled	13/12/2017	13/12/2017	13/12/2017	13/12/2017		
			Sampled Time	.	.	.	.		
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017		
			SDG Ref	171214-18	171214-18	171214-18	171214-18		
			Lab Sample No.(s)	16751362	16751436	16751440	16751447		
			AGS Reference						
Suspended solids, Total	<2 mg/l	TM022				141 #			
BOD, unfiltered	<1 mg/l	TM045		2.31 ♦	3.23 ♦	2.07 #	2.27 ♦ #		
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		7.77 #	<0.2 #	2.14 #	<0.2 #		
COD, unfiltered	<7 mg/l	TM107		27.7 #	38.5 #	45.9 #	24.8 #		
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		1.16 #	0.417 #	1.1 #	0.611 #		
Chloride	<2 mg/l	TM184		120 #	38.3 #	73.7 #	153 #		
Oxygen, dissolved	<0.3 mg/l	TM187				8.37			
pH	<1 pH Units	TM256		7.82 #	8.18 #	7.65 #	7.74 #		

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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_37	GW06_39	GW07_40
			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	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017
			Sampled Time	.	.	.	.	.	.
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017
			SDG Ref	171214-18	171214-18	171214-18	171214-18	171214-18	171214-18
			Lab Sample No.(s)	16751489	16751398	16751523	16751376	16751409	16751420
			AGS Reference						
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**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.	GW09_32	GW09_35	GW12_30	GW12_33	GW12_38
			Depth (m)	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)
			Date Sampled	13/12/2017	13/12/2017	13/12/2017	13/12/2017	13/12/2017
			Sampled Time	.	.	.	.	.
			Date Received	14/12/2017	14/12/2017	14/12/2017	14/12/2017	14/12/2017
			SDG Ref	171214-18	171214-18	171214-18	171214-18	171214-18
			Lab Sample No.(s)	16751473	16751366	16751452	16751505	16751387
			AGS Reference					
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #

Table of Results - Appendix

Method No	Reference	Description
Calulation		
SUB (ASB)		
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
TM187	Winkler, L.W, Ber Deutsch. Chem. Ges, 21,2843,1888."	Dissolved Oxygen in Natural and Waste Waters HMSO 1979 ISBN 011 751442
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

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:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	16751431	16751489	16751398	16751523	16751376	16751409	16751420	16751473	16751366	16751452
Customer Sample Ref.	C3_Asb	GW03_09	GW06_13	GW06_34	GW06_37	GW06_39	GW07_40	GW09_32	GW09_35	GW12_30
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	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Alkalinity as CaCO3		27-Dec-2017	22-Dec-2017	21-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	27-Dec-2017	22-Dec-2017	22-Dec-2017
Alkalinity Filtered as CaCO3		04-Jan-2018	21-Dec-2017	04-Jan-2018	21-Dec-2017	04-Jan-2018	04-Jan-2018	04-Jan-2018	04-Jan-2018	21-Dec-2017
Ammoniacal Nitrogen		04-Jan-2018	22-Dec-2017	04-Jan-2018	22-Dec-2017	04-Jan-2018	04-Jan-2018	04-Jan-2018	04-Jan-2018	22-Dec-2017
Anions by Kone (w)		04-Jan-2018	28-Dec-2017	04-Jan-2018	28-Dec-2017	04-Jan-2018	04-Jan-2018	04-Jan-2018	09-Jan-2018	28-Dec-2017
Asbestos in Water*	03-Jan-2018									
BOD True Total		09-Jan-2018	09-Jan-2018	22-Dec-2017	09-Jan-2018	09-Jan-2018	09-Jan-2018	09-Jan-2018	09-Jan-2018	21-Dec-2017
COD Unfiltered		27-Dec-2017	23-Dec-2017	27-Dec-2017	23-Dec-2017	27-Dec-2017	23-Dec-2017	23-Dec-2017	23-Dec-2017	23-Dec-2017
Conductivity (at 20 deg.C)		21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017
Cyanide Comp/Free/Total/Thiocyanate		18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017
Dissolved Metals by ICP-MS		27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017
Dissolved Organic/Inorganic Carbon		19-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	18-Dec-2017	19-Dec-2017	18-Dec-2017	18-Dec-2017
EPH (DRO) (C10-C40) Aqueous (W)		23-Dec-2017	23-Dec-2017	23-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	23-Dec-2017	21-Dec-2017	23-Dec-2017
Ionic Balance		10-Jan-2018	02-Jan-2018	10-Jan-2018	02-Jan-2018	10-Jan-2018	10-Jan-2018	10-Jan-2018	12-Jan-2018	02-Jan-2018
Metals by iCap-OES Dissolved (W)		09-Jan-2018	27-Dec-2017	09-Jan-2018	29-Dec-2017	12-Jan-2018	09-Jan-2018	09-Jan-2018	12-Jan-2018	27-Dec-2017
Nitrite by Kone (w)		04-Jan-2018	15-Dec-2017	04-Jan-2018	15-Dec-2017	04-Jan-2018	04-Jan-2018	04-Jan-2018	04-Jan-2018	15-Dec-2017
pH Value		22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017
Sulphide		27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017	27-Dec-2017
VOC MS (W)		20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017	20-Dec-2017

Lab Sample No(s)	16751505	16751387	16751362	16751436	16751440	16751447
Customer Sample Ref.	GW12_33	GW12_38	SW_23	SW_24	SW_25	SW_1A
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
Type	Ground Water	Ground Water	Surface Water	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	21-Dec-2017	22-Dec-2017				
Alkalinity Filtered as CaCO3	21-Dec-2017	21-Dec-2017				
Ammoniacal Nitrogen	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017
Anions by Kone (w)	28-Dec-2017	28-Dec-2017	28-Dec-2017	28-Dec-2017	28-Dec-2017	28-Dec-2017
BOD True Total	09-Jan-2018	09-Jan-2018	09-Jan-2018	09-Jan-2018	20-Dec-2017	24-Dec-2017
COD Unfiltered	27-Dec-2017	27-Dec-2017	23-Dec-2017	23-Dec-2017	23-Dec-2017	23-Dec-2017
Conductivity (at 20 deg.C)	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017	21-Dec-2017
Cyanide Comp/Free/Total/Thiocyanate	18-Dec-2017	18-Dec-2017				
Dissolved Metals by ICP-MS	27-Dec-2017	27-Dec-2017				
Dissolved Organic/Inorganic Carbon	19-Dec-2017	18-Dec-2017				
Dissolved Oxygen by Titration					14-Dec-2017	
EPH (DRO) (C10-C40) Aqueous (W)	23-Dec-2017	23-Dec-2017				
Ionic Balance	02-Jan-2018	02-Jan-2018				
Metals by iCap-OES Dissolved (W)	29-Dec-2017	27-Dec-2017				
Nitrite by Kone (w)	15-Dec-2017	15-Dec-2017				
pH Value	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017	22-Dec-2017
Sulphide	27-Dec-2017	27-Dec-2017				
Suspended Solids					22-Dec-2017	
VOC MS (W)	20-Dec-2017	20-Dec-2017				

CERTIFICATE OF ANALYSIS

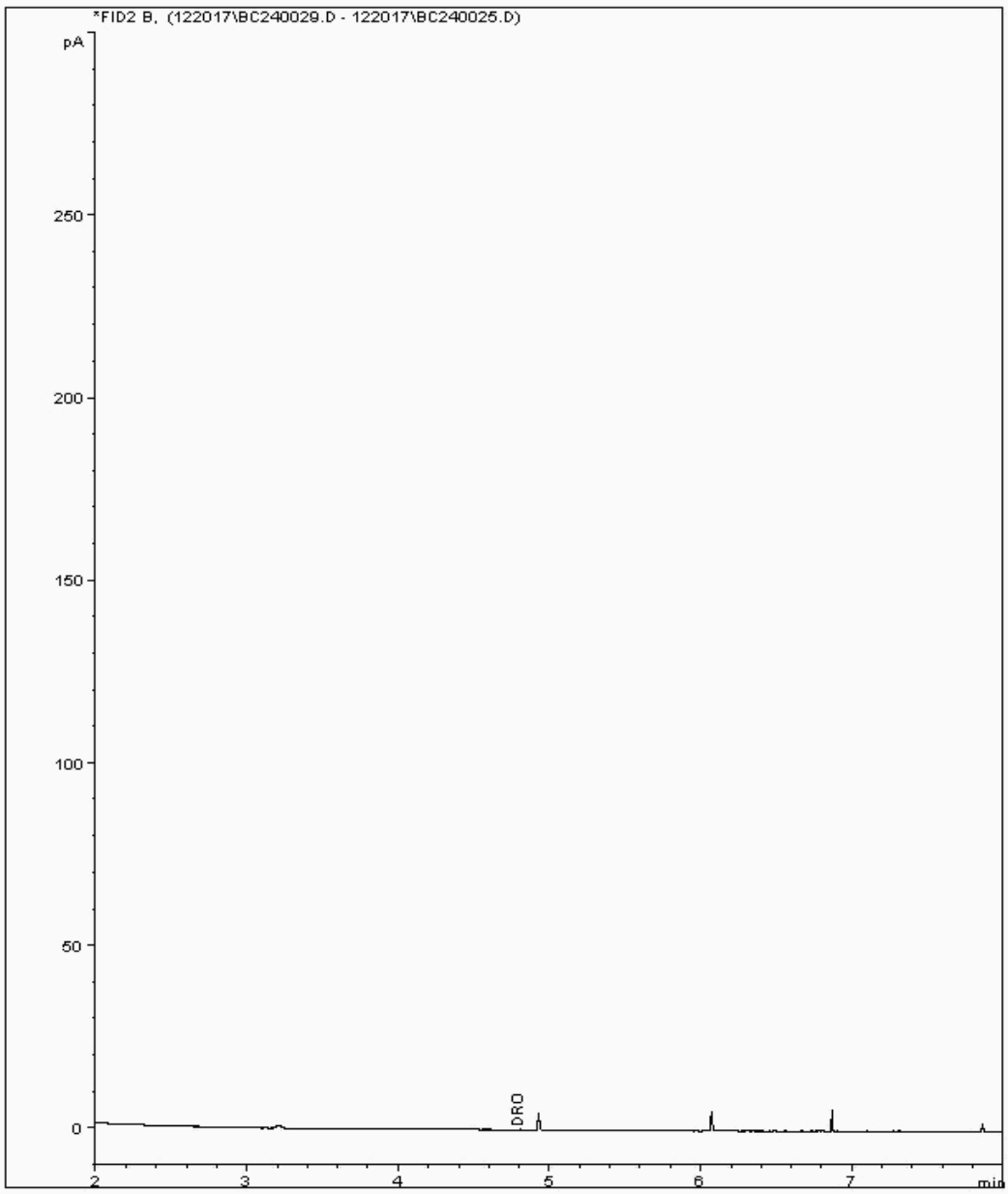
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755037 **Sample ID :** GW09_35 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712092-
Date Acquired : 21/12/2017 08:31:58 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

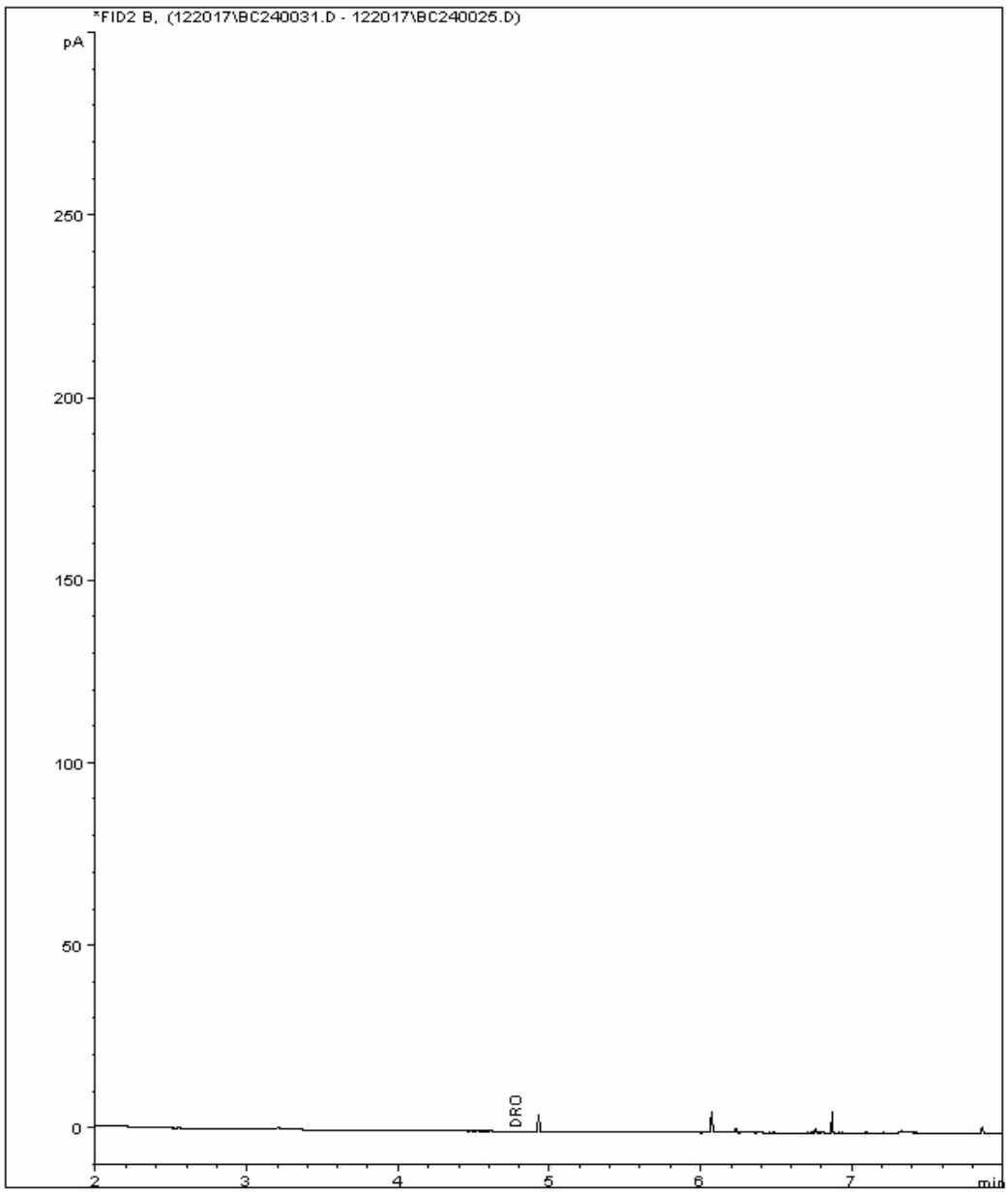
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755044 **Sample ID :** GW06_39 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712202-
Date Acquired : 21/12/2017 09:19:43 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

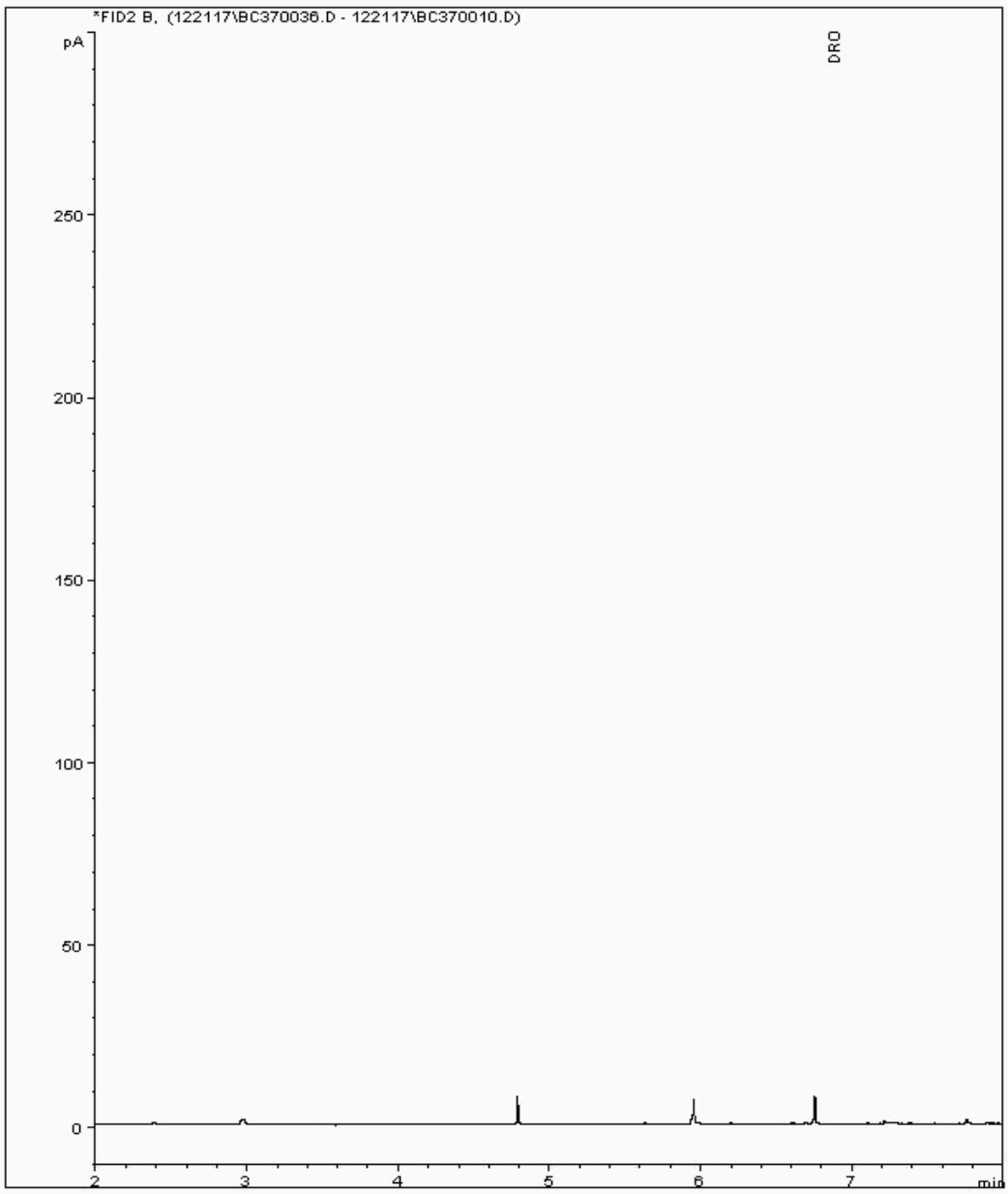
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755047 **Sample ID :** GW06_13 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712169-
Date Acquired : 22/12/2017 03:41:14 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

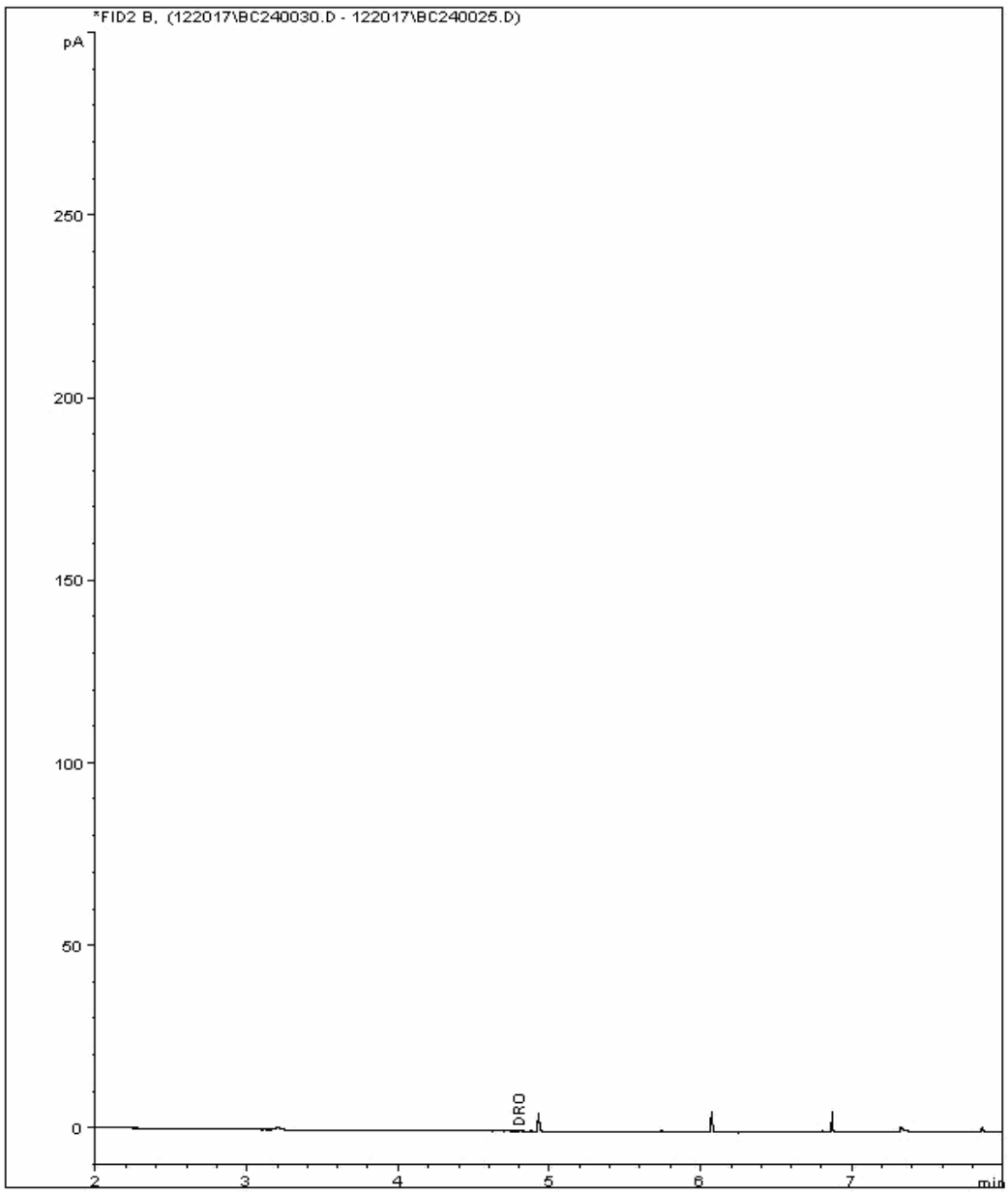
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755069 **Sample ID :** GW07_40 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712219-
Date Acquired : 21/12/2017 08:55:29 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

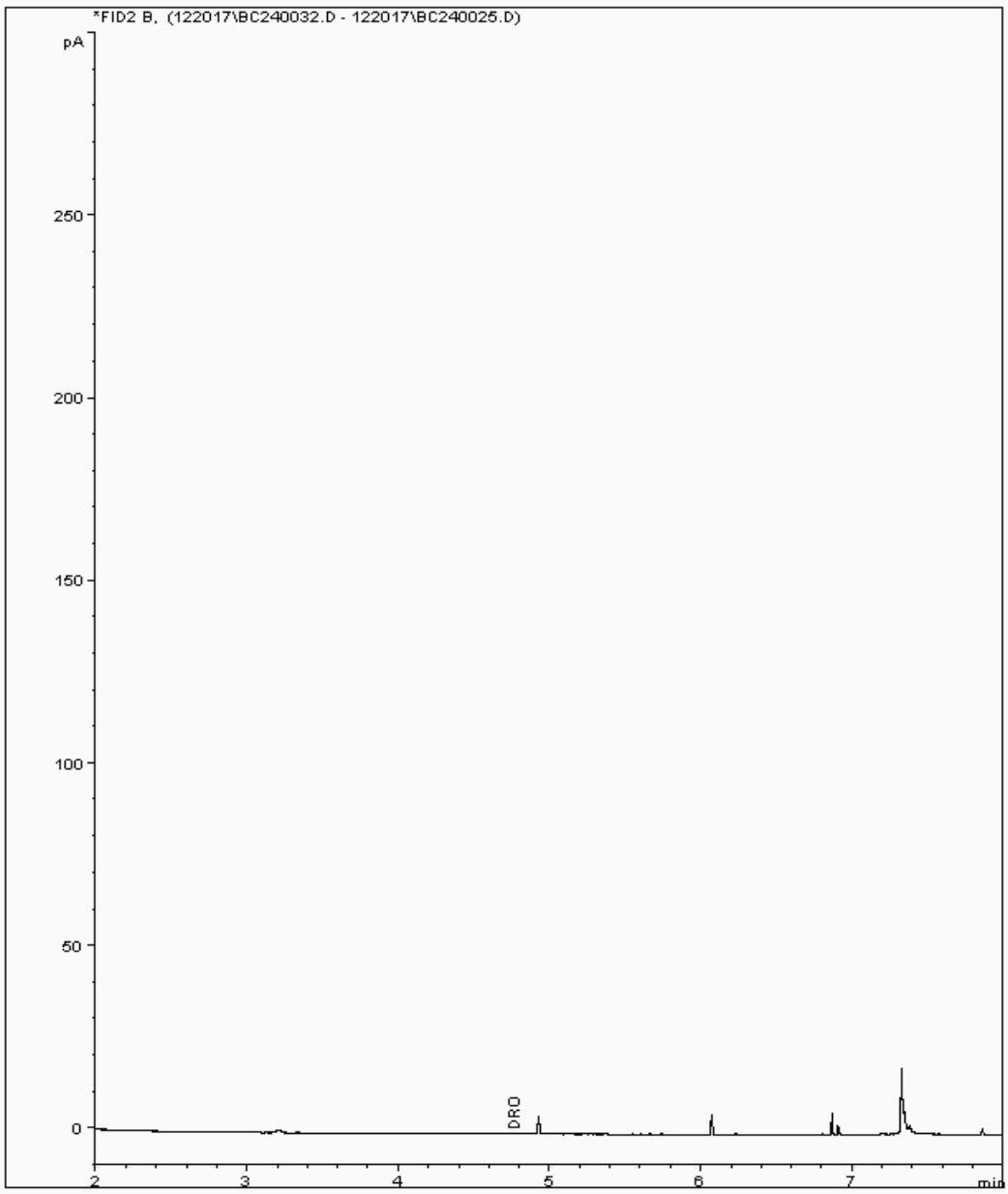
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755070 **Sample ID :** GW06_37 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712118-
Date Acquired : 21/12/2017 09:42:31 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

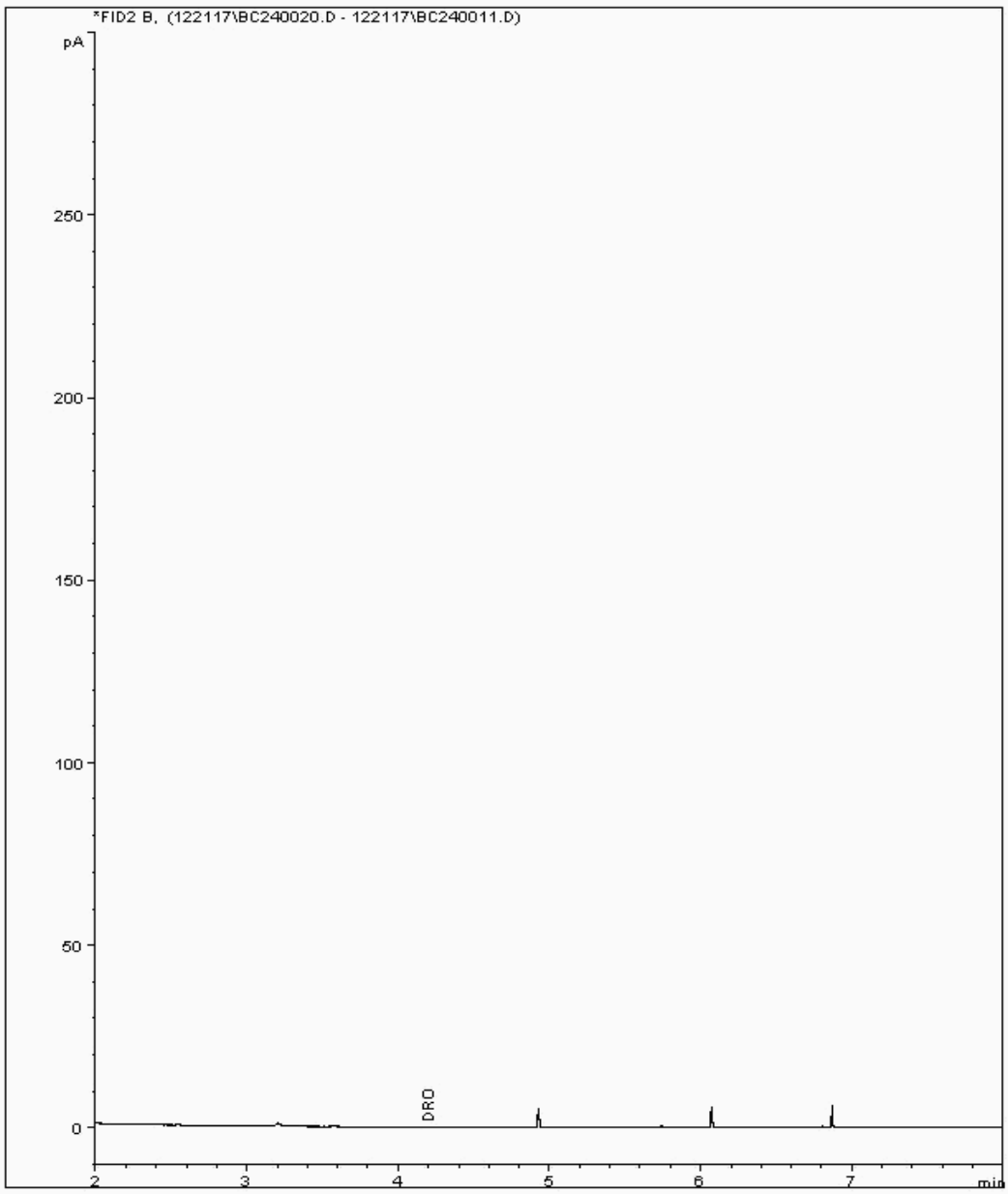
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755417 **Sample ID :** GW12_30 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712262-
Date Acquired : 21/12/2017 18:54:59 PM
Units : mg/l

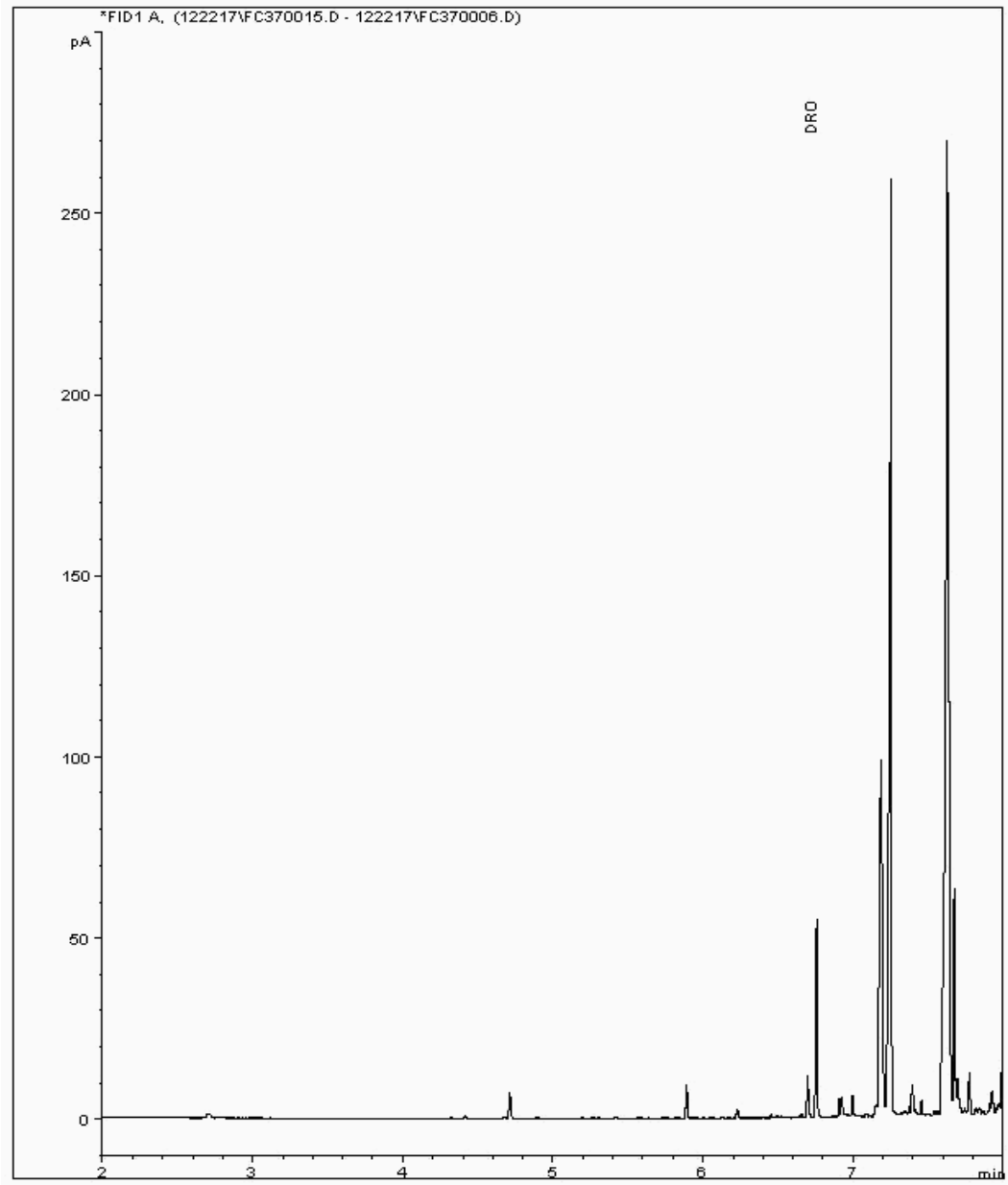


CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16755857 **Sample ID :** GW06_34 **Depth :** 0.00 - 0.00

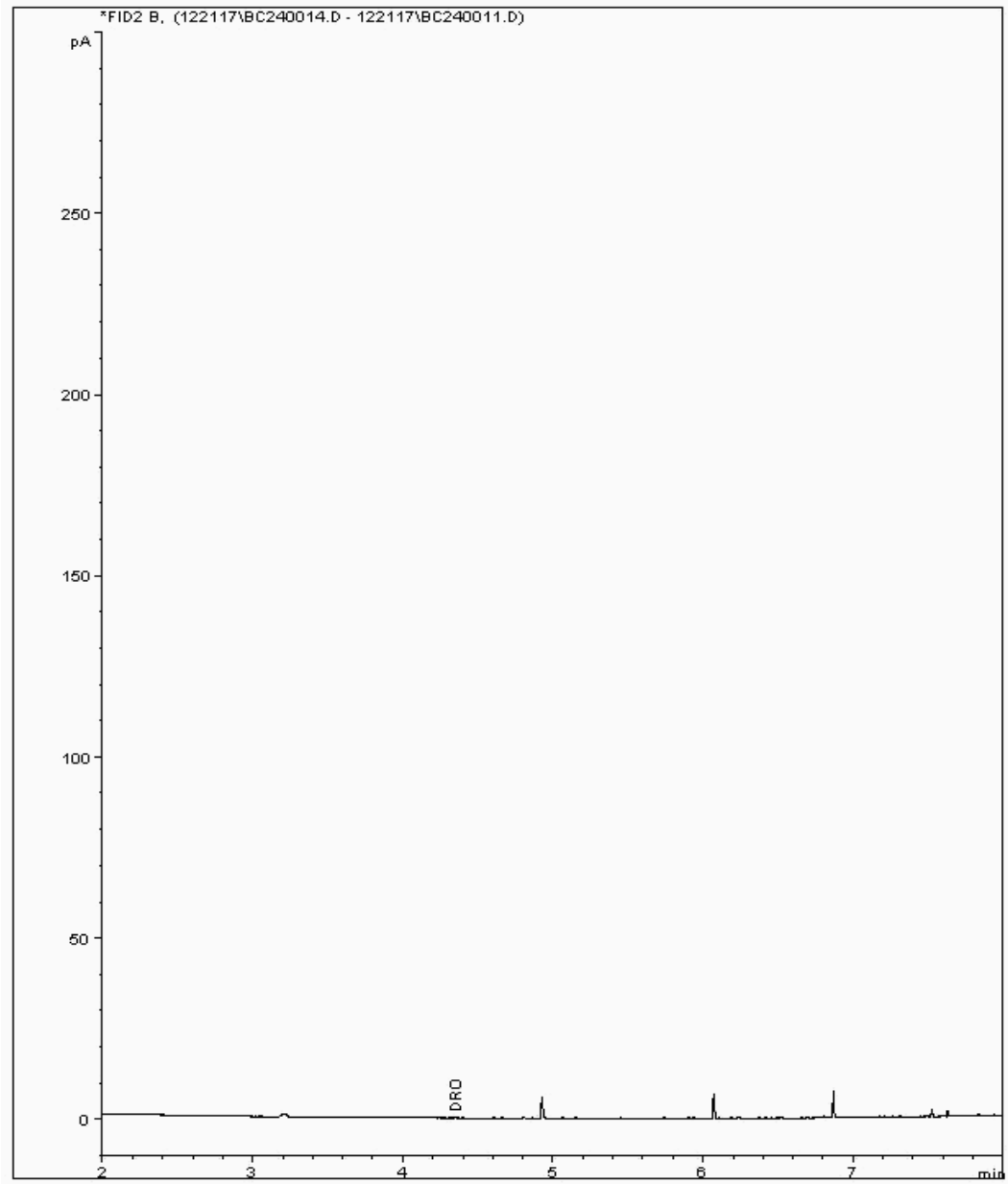


CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16756197 **Sample ID :** GW12_38 **Depth :** 0.00 - 0.00



CERTIFICATE OF ANALYSIS

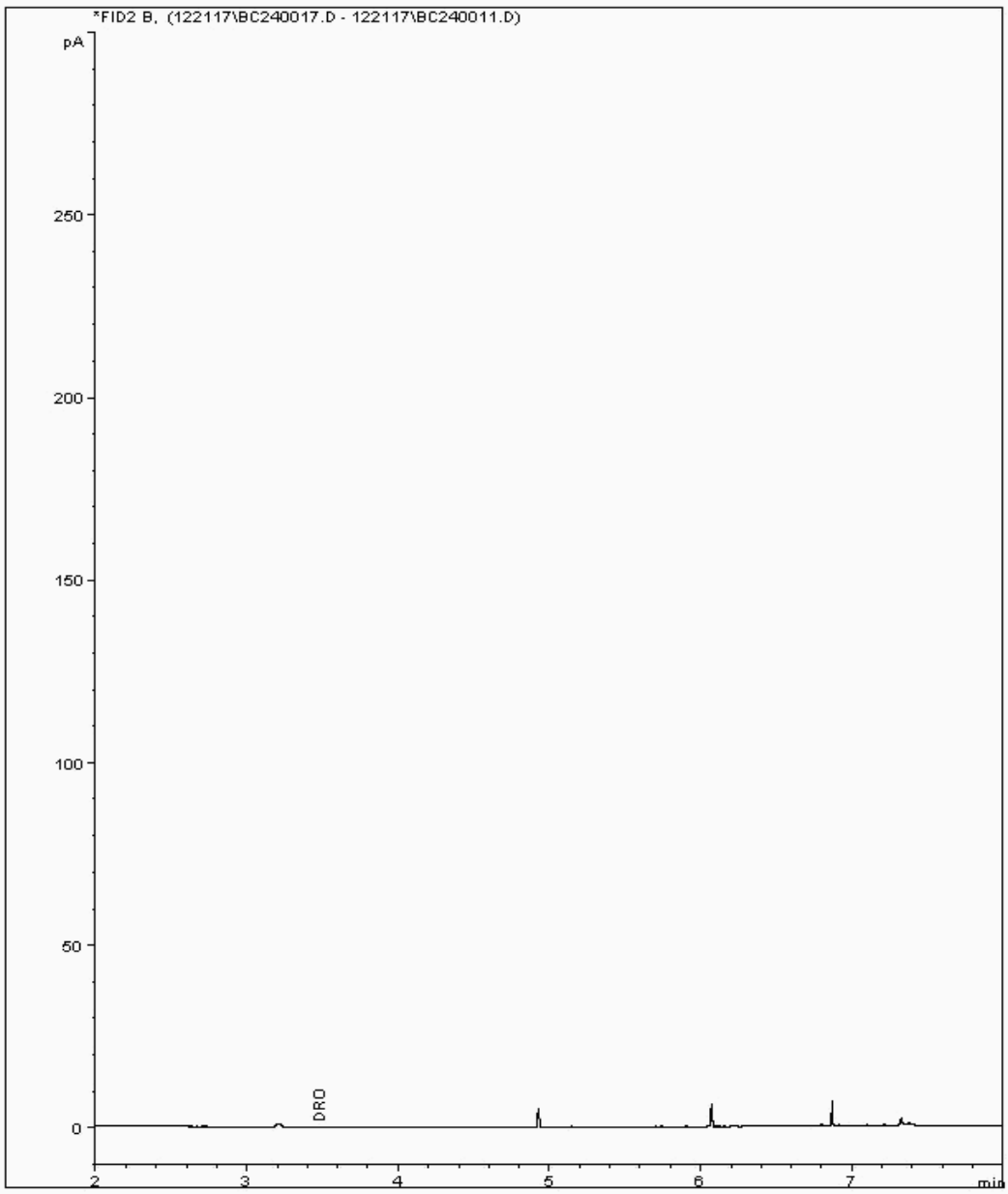
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16777838 **Sample ID :** GW09_32 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712289-
Date Acquired : 21/12/2017 17:42:58 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

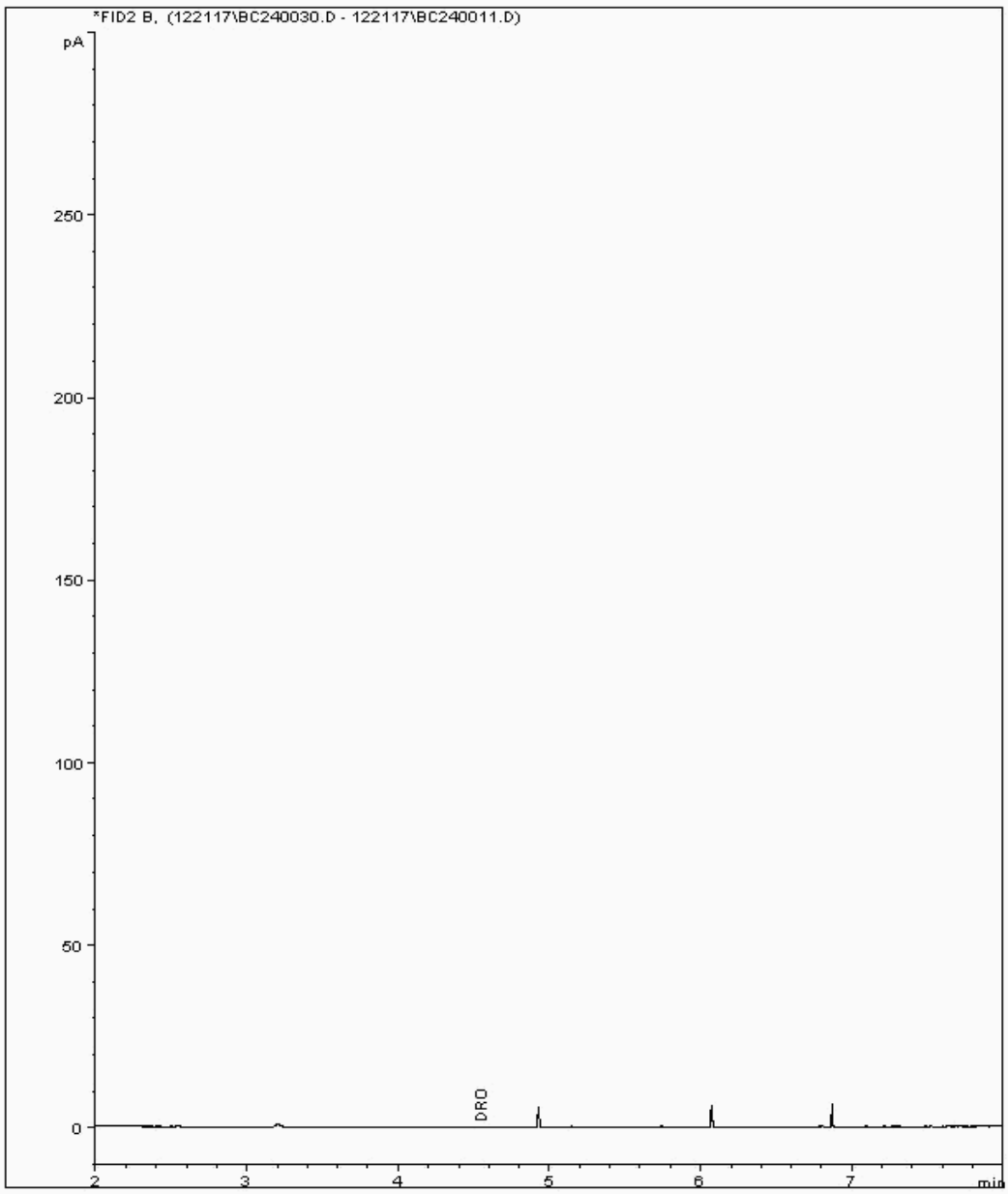
SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16777869 **Sample ID :** GW03_09 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 15712307-
Date Acquired : 21/12/2017 22:57:06 PM
Units : mg/l

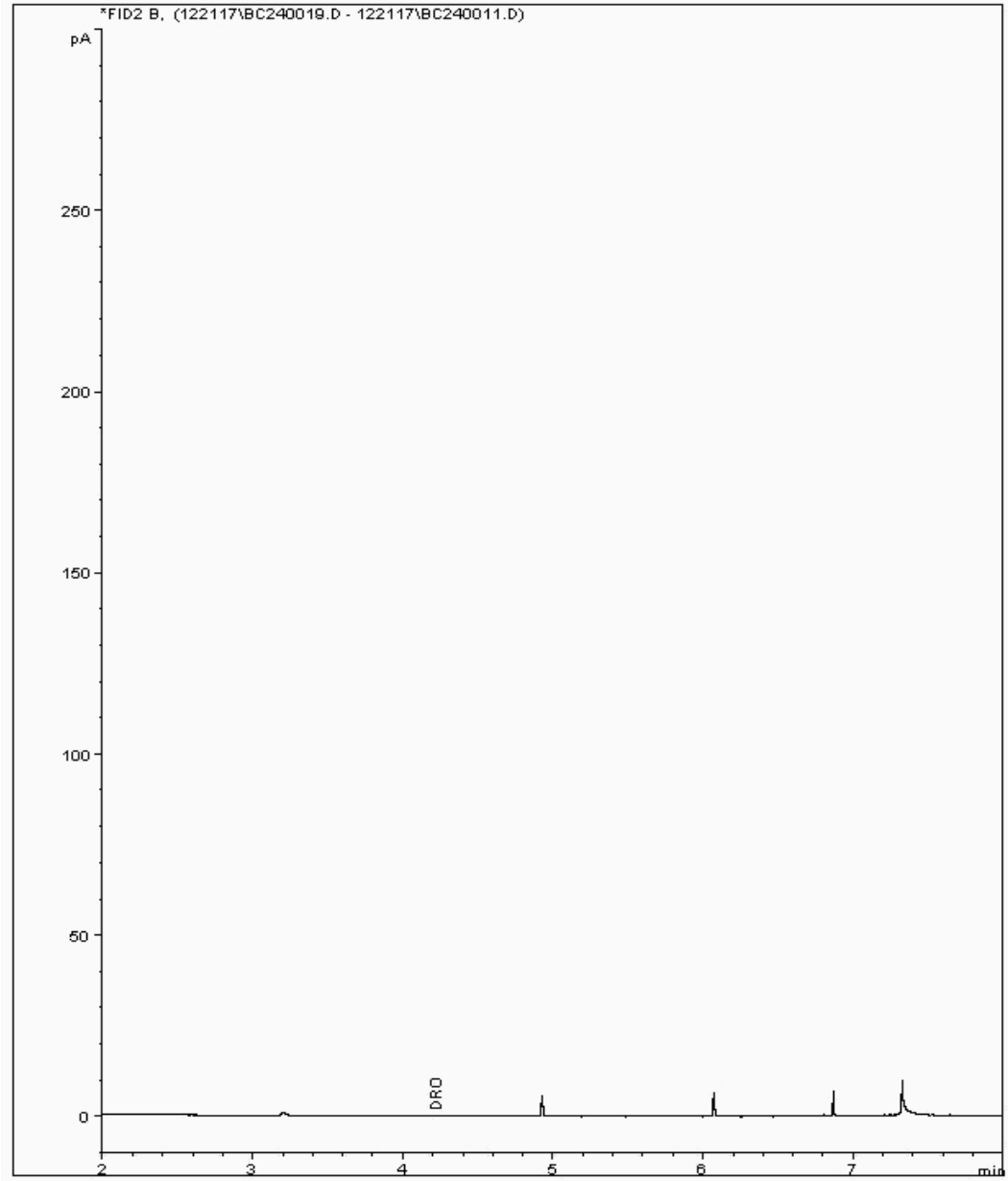


CERTIFICATE OF ANALYSIS

SDG:	171214-18	**Client Reference:**		**Report Number:**	439856
Location:	Docksway Landfill Site	**Order Number:**	700111791	**Superseded Report:**	

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 16777873 **Sample ID :** GW12_33 **Depth :** 0.00 - 0.00



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www.alsenvironmental.co.uk

Ms Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside CH5 3US

02 January 2018

Test Report: COV/1485089/2017

Dear Ms Foster

Analysis of your sample(s) submitted on 21 December 2017 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name: D. Rosamond

Title: Inorganic Team Leader

Report Summary

ANALYSED BY

Ms Carrie Foster
ALS Life Sciences Limited
Units 7 & 8 Hawarden Business Park
Manor Road
Hawarden
Deeside
CH5 3US

Date of Issue: **02 January 2018**

Report Number: **COV/1485089/2017** Issue **1**

This issue replaces all previous issues

Job Description: 2016 Analysis

Job Location: Units 7 - 8 Hawarden Business Park

Number of Samples included in this report **1**

Job Received: **21 December 2017**

Number of Test Results included in this report **2**

Analysis Commenced: **28 December 2017**

Signed: D.Rosamond

Name: **D. Rosamond** Date: **02 January 2018**

Title: **Inorganic Team Leader**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1485089/2017**	Issue	**1**
Laboratory Number:	**16706309**	Sample	**1** of **1**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**16793813 C3_Asb**		
Sample Matrix:	**Surface Water**		
Sample Date/Time:	**13 December 2017**		
Sample Received:	**21 December 2017**		
Analysis Complete:	**28 December 2017**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	28/12/2017	N Cov	70
Asbestos Identification	Analyst Com	Text	28/12/2017	N Cov	70

Analyst Comments for 16706309: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Water

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH4 9EP), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: D Rosamond .

Name: **D. Rosamond** Date: **02 January 2018**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1485089/2017

Issue 1 This issue replaces all previous issues

Date of Issue: **02 January 2018**

Sample No	Analysis Comments
16706309	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Water

Signed: 

Name: **D. Rosamond** Date: **02 January 2018**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1485089/2017

ISSUE 1

This issue replaces all previous issues

Date of Issue: 02 January 2018

Sample No	Description	Determinand	Comments
16706309	16793813 C3_Asb	Asbestos Identification	{/*}Non Detected{*/}
16706309	16793813 C3_Asb	Description of Sample	{/*}Water{*/}

Signed: 

Name: **D. Rosamond** Date: **02 January 2018**

Title: **Inorganic Team Leader**

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.