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Newport City Council
Civic Centre
Newport
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Attention: Luke Embrey

CERTIFICATE OF ANALYSIS

Date of report Generation: 14 January 2022
Customer: Newport City Council
Sample Delivery Group (SDG): 211217-102
Your Reference: Dec GW 2021 Part 2
Location: Newport landfill
Report No: 629527
Order Number: 700172856

This report has been revised and directly supersedes 629157 in its entirety.

We received 7 samples on Friday December 17, 2021 and 7 of these samples were scheduled for analysis which was completed on Friday January 14, 2022. 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.

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

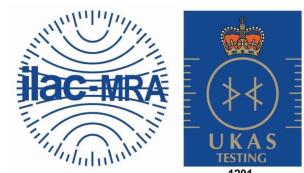
Incorrect sampling dates and/or sample information will affect the validity of results.

The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
25551929	GW 06_13		0.00 - 0.00	15/12/2021
25551862	GW 06_34		0.00 - 0.00	15/12/2021
25551897	GW 06_36		0.00 - 0.00	15/12/2021
25551915	GW 06_37		0.00 - 0.00	15/12/2021
25551877	GW 09_35		0.00 - 0.00	15/12/2021
25551951	GW 12_38		0.00 - 0.00	15/12/2021
25551978	GW 06_14A		0.00 - 0.00	15/12/2021

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



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Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> <p style="font-size: small;">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</p>	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																			
								HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)	ZnAc (ALE246)	Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)	ZnAc (ALE246)	Vial (ALE297)	NaOH (ALE245)		
		25551929	GW 06_13		0.00 - 0.00		GW																		
		25551862	GW 06_34		0.00 - 0.00		GW																		
		25551897	GW 06_36		0.00 - 0.00		GW																		
	Alkalinity as CaCO3	All	NDPs: 0 Tests: 7						X										X						
	Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7						X										X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7							X															X	
Anions by Kone (w)	All	NDPs: 0 Tests: 7						X																	
BOD True Total	All	NDPs: 0 Tests: 7							X										X						
COD Unfiltered	All	NDPs: 0 Tests: 7						X											X						
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7						X												X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7												X							X				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7													X									X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7						X												X					
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 7							X											X					
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7												X							X				
Ionic Balance	All	NDPs: 0 Tests: 7						X													X				
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7												X							X				
pH Value	All	NDPs: 0 Tests: 7						X													X			X	

25551877	GW_09_35	0.00 - 0.00	ZnAc (ALE246)	GW				X			
			Vial (ALE297)	GW						X	
			NaOH (ALE245)	GW							
			HNO3 Filtered (ALE204)	GW							
			H2SO4 (ALE244)	GW							
			500ml Plastic (ALE208)	GW		X					
			250ml BOD (ALE112)	GW							
			0.5l glass bottle (ALE217)	GW							
			ZnAc (ALE246)	GW				X			
			Vial (ALE297)	GW							X
			NaOH (ALE245)	GW							
			HNO3 Filtered (ALE204)	GW							
			25551915	GW_06_37	0.00 - 0.00	H2SO4 (ALE244)	GW				
500ml Plastic (ALE208)	GW					X					
250ml BOD (ALE112)	GW										
0.5l glass bottle (ALE217)	GW										
ZnAc (ALE246)	GW							X			
Vial (ALE297)	GW									X	
NaOH (ALE245)	GW										
25551897	GW_06_36	0.00 - 0.00	HNO3 Filtered (ALE204)	GW							
			H2SO4 (ALE244)	GW							
			500ml Plastic (ALE208)	GW							
			250ml BOD (ALE112)	GW							
			0.5l glass bottle (ALE217)	GW							
			ZnAc (ALE246)	GW				X			
			Vial (ALE297)	GW						X	



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Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

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Superseded Report: 629157

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		25551951	GW 06_14A		0.00 - 0.00	ZnAc (ALE246) Vial (ALE297) NaOH (ALE245) HNO3 Filtered (ALE204) H2SO4 (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227)	GW
	Alkalinity as CaCO3	All	NDPs: 0 Tests: 7				X
	Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 7				X
	Ammoniacal Nitrogen	All	NDPs: 0 Tests: 7				X
	Anions by Kone (w)	All	NDPs: 0 Tests: 7				X
	BOD True Total	All	NDPs: 0 Tests: 7				X
COD Unfiltered	All	NDPs: 0 Tests: 7				X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 7				X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 7				X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 7				X	
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 7				X	
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 7				X	
GRO by GC-FID (W)	All	NDPs: 0 Tests: 7				X	
Ionic Balance	All	NDPs: 0 Tests: 7				X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7				X	
pH Value	All	NDPs: 0 Tests: 7				X	



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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

Results Legend	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																	
							0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	
	25551951	GW 12_38		0.00 - 0.00	ZnAc (ALE246)	GW																	
	25551978	GW 06_14A		0.00 - 0.00	ZnAc (ALE246)	GW																	
Phosphate by Kone (w)	All																						
Sulphide	All																						
Total EPH (aq)	All																						
VOC MS (W)	All																						



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Results Legend		Customer Sample Ref.	GW 06_13	GW 06_34	GW 06_36	GW 06_37	GW 09_35	GW 12_38
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
aq	Aqueous / settled sample.		15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
diss.filt	Dissolved / filtered sample.		17/12/2021	17/12/2021	17/12/2021	17/12/2021	17/12/2021	17/12/2021
tot.unfilt	Total / unfiltered sample.		211217-102	211217-102	211217-102	211217-102	211217-102	211217-102
*	Subcontracted - refer to subcontractor report for accreditation status.		25551929	25551862	25551897	25551915	25551877	25551951
**	% 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							
1-4*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Ionic balance	% Diff	Calculation	-9.47	-2.83	-9.75	-10.4	-9.15	-1.72
Alkalinity, Total as CaCO3	<2 mg/l	TM043	876 #	531 #	945 #	880 #	521 #	549 #
Alkalinity, Total as CaCO3 (diss.filt)	<2 mg/l	TM043	874	562	942	878	520	522
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043	874	562	942	878	520	522
BOD, unfiltered	<1 mg/l	TM045	2.35 #	23.4 #	5.88 #	2.55 #	1.92 #	<1 #
Carbon, Organic (diss.filt)	<3 mg/l	TM090	11.2	12.4	11.8	13.1	9.52	17.4
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	8.42 #	1.19 #	7.74 #	8.51 #	3.3 #	<0.2 #
Sulphide	<0.01 mg/l	TM101	0.015 #	1.25 #	1.42 #	<0.01 #	<0.01 #	<0.01 #
COD, unfiltered	<7 mg/l	TM107	111 #	127 #	187 #	125 #	95.1 #	77.5 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	7.96 #	1.12 #	10.1 #	7.94 #	6.64 #	1.96 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	0.834 #	12 #	0.622 #	0.87 #	2.15 #	1.1 #
Boron (diss.filt)	<10 µg/l	TM152	1350 #	470 #	1230 #	1370 #	718 #	584 #
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 #	0.386 #	<0.3 #	9.03 #	8.69 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #	2.82 #	0.252 #
Manganese (diss.filt)	<3 µg/l	TM152	216 #	1630 #	253 #	217 #	176 #	136 #
Nickel (diss.filt)	<0.4 µg/l	TM152	1.1 #	1.53 #	1.49 #	1.06 #	3.59 #	5.71 #
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #	<1 #	1.26 #
Zinc (diss.filt)	<1 µg/l	TM152	7 #	1.82 #	12.2 #	6.29 #	54.6 #	11.1 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	1160 #	36 #	1470 #	1130 #	864 #	114 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	190 #	38.2 #	200 #	192 #	161 #	48.1 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	51.8 #	14.6 #	57.1 #	52.6 #	34 #	29.6 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	107 #	162 #	197 #	110 #	129 #	281 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0387 #	1.17 #	0.0964 #	0.0428 #	2.54 #	<0.019 #
Hardness, Total as CaCO3	<0.65 mg/l	TM152	1050 #	562 #	1320 #	1060 #	985 #	900 #
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	108 #	733 #	205 #	121 #	123 #	152 #
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	108	733	205	121	123	152
Nitrite as NO2	<0.05 mg/l	TM184	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05 #
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	2.61 #	2.41 #	9.56 #	2.65 #	5.69 #	0.077 #
Sulphate	<2 mg/l	TM184	131 #	87.3 #	164 #	131 #	72 #	477 #
Chloride	<2 mg/l	TM184	2420 #	33.8 #	3180 #	2430 #	2060 #	144 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Results Legend		Customer Sample Ref.	GW 06_14A			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Ground Water (GW) 15/12/2021 . 17/12/2021 211217-102 25551978			
Component	LOD/Units	Method				
Ionic balance		Calculation	-13.6			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	239	#		
Alkalinity, Total as CaCO3 (diss.filt)	<2 mg/l	TM043	226			
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043	226			
BOD, unfiltered	<1 mg/l	TM045	<1	◆ #		
Carbon, Organic (diss.filt)	<3 mg/l	TM090	3.44			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	#		
Sulphide	<0.01 mg/l	TM101	<0.01	#		
COD, unfiltered	<7 mg/l	TM107	235	◆ #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	12.1	#		
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.32	#		
Boron (diss.filt)	<10 µg/l	TM152	906	#		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	#		
Chromium (diss.filt)	<1 µg/l	TM152	<1	#		
Copper (diss.filt)	<0.3 µg/l	TM152	2.92	#		
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	#		
Manganese (diss.filt)	<3 µg/l	TM152	9.15	#		
Nickel (diss.filt)	<0.4 µg/l	TM152	1.7	#		
Selenium (diss.filt)	<1 µg/l	TM152	<1	#		
Zinc (diss.filt)	<1 µg/l	TM152	10.9	#		
Sodium (Dis.Filt)	<0.076 mg/l	TM152	1780	#		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	209	#		
Potassium (Dis.Filt)	<0.2 mg/l	TM152	88.7	#		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	198	#		
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	#		
Hardness, Total as CaCO3	<0.65 mg/l	TM152	1360			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	123	#		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	123			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	#		
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	0.179	#		
Sulphate	<2 mg/l	TM184	691	#		
Chloride	<2 mg/l	TM184	4300	#		



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GRO by GC-FID (W)

Results Legend		Customer Sample Ref.	GW 06_14A				
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	0.00 - 0.00				
**	% 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	Sample Type	Ground Water (GW)				
(F)	Trigger breach confirmed	Date Sampled	15/12/2021				
1-4*\$@	Sample deviation (see appendix)	Sampled Time					
		Date Received	17/12/2021				
		SDG Ref	211217-102				
		Lab Sample No.(s)	25551978				
		AGS Reference					
Component	LOD/Units	Method					
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245	<3				
				3 ♦ #			
Benzene	<7 µg/l	TM245	<7				
				3 ♦ #			
Toluene	<4 µg/l	TM245	<4				
				3 ♦ #			
Ethylbenzene	<5 µg/l	TM245	<5				
				3 ♦ #			
m,p-Xylene	<8 µg/l	TM245	<8				
				3 ♦ #			
o-Xylene	<3 µg/l	TM245	<3				
				3 ♦ #			
Sum of detected BTEX	<28 µg/l	TM245	<28				
				3 ♦			
GRO >C5-C10	<10 µg/l	TM245	<10				
				3 ♦			
EPH (C6-C10)	<100 µg/l	TM245	<100				
				3 ♦			



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VOC MS (W)

Results Legend		Customer Sample Ref.	GW 06_13	GW 06_34	GW 06_36	GW 06_37	GW 09_35	GW 12_38
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
aq	Aqueous / settled sample.		15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
diss.fit	Dissolved / filtered sample.							
tot.unfit	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% 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		211217-102	211217-102	211217-102	211217-102	211217-102	211217-102
1-4*§@	Sample deviation (see appendix)		25551929	25551862	25551897	25551915	25551877	25551951
Component	LOD/Units		Method					
Dibromofluoromethane**	%	TM208	115	114	115	113	113	113
Toluene-d8**	%	TM208	102	107	99.9	99.3	97.4	97.3
4-Bromofluorobenzene**	%	TM208	101	111	97.4	99	93	97.6
Dichlorodifluoromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vinyl chloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichlorofluoromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbon disulphide	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dichloromethane	<3 µg/l	TM208	<3 #	<3 #	<3 #	<3 #	<3 #	<3 #
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2,2-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chloroform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Carbontetrachloride	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Benzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Trichloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromomethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromodichloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Toluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2-Trichloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

VOC MS (W)

Results Legend			Customer Sample Ref.	GW 06_13	GW 06_34	GW 06_36	GW 06_37	GW 09_35	GW 12_38	
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	
M	mCERTS accredited.			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
SH	Aqueous / settled sample.			15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% 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			17/12/2021	17/12/2021	17/12/2021	17/12/2021	17/12/2021	17/12/2021	17/12/2021
(F)	Trigger breach confirmed			211217-102	211217-102	211217-102	211217-102	211217-102	211217-102	211217-102
1-4#&@	Sample deviation (see appendix)			25551929	25551862	25551897	25551915	25551877	25551951	25551951
Component	LOD/Units	Method								
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Ethylbenzene	<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 #	
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
tert-Amyl methyl ether (TAME)	<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

Validated

SDG: 211217-102
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Location: Newport landfill

Superseded Report: 629157

VOC MS (W)

Table with columns for Results Legend, Customer Sample Ref., Depth (m), Sample Type, Date Sampled, Date Received, SDG Ref, Lab Sample No.(s), and AGS Reference. It includes data for 1,2,3-Trichlorobenzene and 1,3,5-Trichlorobenzene across various well identifiers (GW 06_13, GW 06_34, etc.).



CERTIFICATE OF ANALYSIS

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Report Number: 629527
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Superseded Report: 629157

VOC MS (W)

Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. tot.unfit Total / unfiltered sample. * Subcontracted - refer to subcontractor report for accreditation status. ** % 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 1-4-8@ Sample deviation (see appendix)		Customer Sample Ref. Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	GW 06_14A 0.00 - 0.00 Ground Water (GW) 15/12/2021 17/12/2021 211217-102 25551978				
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	111				
Toluene-d8**	%	TM208	99.9				
4-Bromofluorobenzene**	%	TM208	93.6				
Dichlorodifluoromethane	<1 µg/l	TM208	<1	#			
Chloromethane	<1 µg/l	TM208	<1	#			
Vinyl chloride	<1 µg/l	TM208	<1	#			
Bromomethane	<1 µg/l	TM208	<1	#			
Chloroethane	<1 µg/l	TM208	<1	#			
Trichlorofluoromethane	<1 µg/l	TM208	<1	#			
1,1-Dichloroethene	<1 µg/l	TM208	<1	#			
Carbon disulphide	<1 µg/l	TM208	<1	#			
Dichloromethane	<3 µg/l	TM208	<3	#			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<1	#			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
1,1-Dichloroethane	<1 µg/l	TM208	<1	#			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	#			
2,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Bromochloromethane	<1 µg/l	TM208	<1	#			
Chloroform	<1 µg/l	TM208	<1	#			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	#			
1,1-Dichloropropene	<1 µg/l	TM208	<1	#			
Carbontetrachloride	<1 µg/l	TM208	<1	#			
1,2-Dichloroethane	<1 µg/l	TM208	<1	#			
Benzene	<1 µg/l	TM208	<1	#			
Trichloroethene	<1 µg/l	TM208	<1	#			
1,2-Dichloropropane	<1 µg/l	TM208	<1	#			
Dibromomethane	<1 µg/l	TM208	<1	#			
Bromodichloromethane	<1 µg/l	TM208	<1	#			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
Toluene	<1 µg/l	TM208	<1	#			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	#			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	#			



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Superseded Report: 629157

VOC MS (W)

Results Legend		Customer Sample Ref.	GW 06_14A				
# ISO17025 accredited.							
M mCERTS accredited.							
sq Aqueous / settled sample.							
dis.filt Dissolved / filtered sample.							
tot.unfilt Total / unfiltered sample.							
* Subcontracted - refer to subcontractor report for accreditation status.							
** % 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							
1.4.4.6@ Sample deviation (see appendix)							
		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Ground Water (GW) 15/12/2021 17/12/2021 211217-102 25551978				
Component	LOD/Units	Method					
1,3-Dichloropropane	<1 µg/l	TM208	<1	#			
Tetrachloroethene	<1 µg/l	TM208	<1	#			
Dibromochloromethane	<1 µg/l	TM208	<1	#			
1,2-Dibromoethane	<1 µg/l	TM208	<1	#			
Chlorobenzene	<1 µg/l	TM208	<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
Ethylbenzene	<1 µg/l	TM208	<1	#			
m,p-Xylene	<1 µg/l	TM208	<1	#			
o-Xylene	<1 µg/l	TM208	<1	#			
Styrene	<1 µg/l	TM208	<1	#			
Bromoform	<1 µg/l	TM208	<1	#			
Isopropylbenzene	<1 µg/l	TM208	<1	#			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#			
Bromobenzene	<1 µg/l	TM208	<1	#			
Propylbenzene	<1 µg/l	TM208	<1	#			
2-Chlorotoluene	<1 µg/l	TM208	<1	#			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#			
4-Chlorotoluene	<1 µg/l	TM208	<1	#			
tert-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	#			
sec-Butylbenzene	<1 µg/l	TM208	<1	#			
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	#			
n-Butylbenzene	<1 µg/l	TM208	<1	#			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	#			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#			
Hexachlorobutadiene	<1 µg/l	TM208	<1	#			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#			
Naphthalene	<1 µg/l	TM208	<1	#			



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Table of Results - Appendix

Method No	Reference	Description
Calculation		
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
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	ISO 17294-2:2016 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS)	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
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4, Standard Methods for the examination of waters and wastewaters 20th Edition, PHA, Washington DC, USA. ISBN 0-87553-235-7 and The Determination of Alkalinity and Acidity in water HMSO, 1981, ISBN 0 11 751601 5.	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

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



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Test Completion Dates

Lab Sample No(s)	25551929	25551862	25551897	25551915	25551877	25551951	25551978
Customer Sample Ref.	GW 06_13	GW 06_34	GW 06_36	GW 06_37	GW 09_35	GW 12_38	GW 06_14A
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
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water

Alkalinity as CaCO3	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	24-Dec-2021
Alkalinity Filtered as CaCO3	24-Dec-2021	24-Dec-2021	24-Dec-2021	24-Dec-2021	24-Dec-2021	24-Dec-2021	24-Dec-2021
Ammoniacal Nitrogen	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021
Anions by Kone (w)	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021
BOD True Total	04-Jan-2022	04-Jan-2022	04-Jan-2022	04-Jan-2022	04-Jan-2022	05-Jan-2022	04-Jan-2022
COD Unfiltered	30-Dec-2021	30-Dec-2021	30-Dec-2021	30-Dec-2021	30-Dec-2021	30-Dec-2021	30-Dec-2021
Conductivity (at 20 deg.C)	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021
Cyanide Comp/Free/Total/Thiocyanate	23-Dec-2021	24-Dec-2021	23-Dec-2021	24-Dec-2021	24-Dec-2021	24-Dec-2021	23-Dec-2021
Dissolved Metals by ICP-MS	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021
Dissolved Organic/Inorganic Carbon	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022	14-Jan-2022
EPH (DRO) (C10-C40) Aqueous (W)	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021
GRO by GC-FID (W)	10-Jan-2022	10-Jan-2022	10-Jan-2022	10-Jan-2022	10-Jan-2022	07-Jan-2022	07-Jan-2022
Ionic Balance	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021	29-Dec-2021
Nitrite by Kone (w)	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021
pH Value	24-Dec-2021	23-Dec-2021	23-Dec-2021	24-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021
Phosphate by Kone (w)	22-Dec-2021	24-Dec-2021	24-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021	22-Dec-2021
Sulphide	22-Dec-2021	22-Dec-2021	23-Dec-2021	22-Dec-2021	23-Dec-2021	23-Dec-2021	23-Dec-2021
Total EPH (aq)	11-Jan-2022	11-Jan-2022	11-Jan-2022	11-Jan-2022	11-Jan-2022	07-Jan-2022	07-Jan-2022
VOC MS (W)	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021	31-Dec-2021



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SDG: 211217-102
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Chromatogram

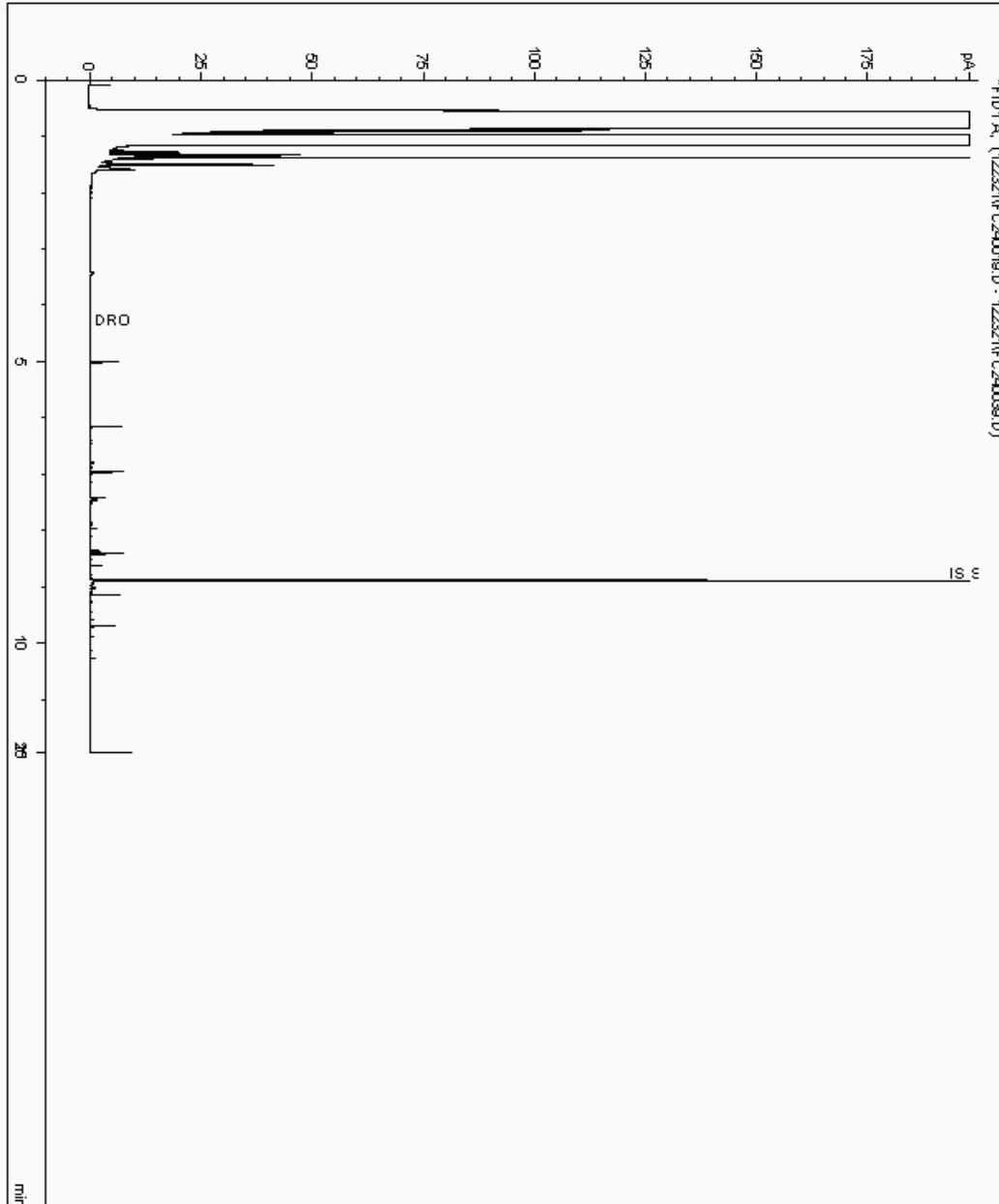
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577359
Sample ID : GW_09_35

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870653-
Date Acquired : 23/12/2021 23:52:07 PM
Units : ppm





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Chromatogram

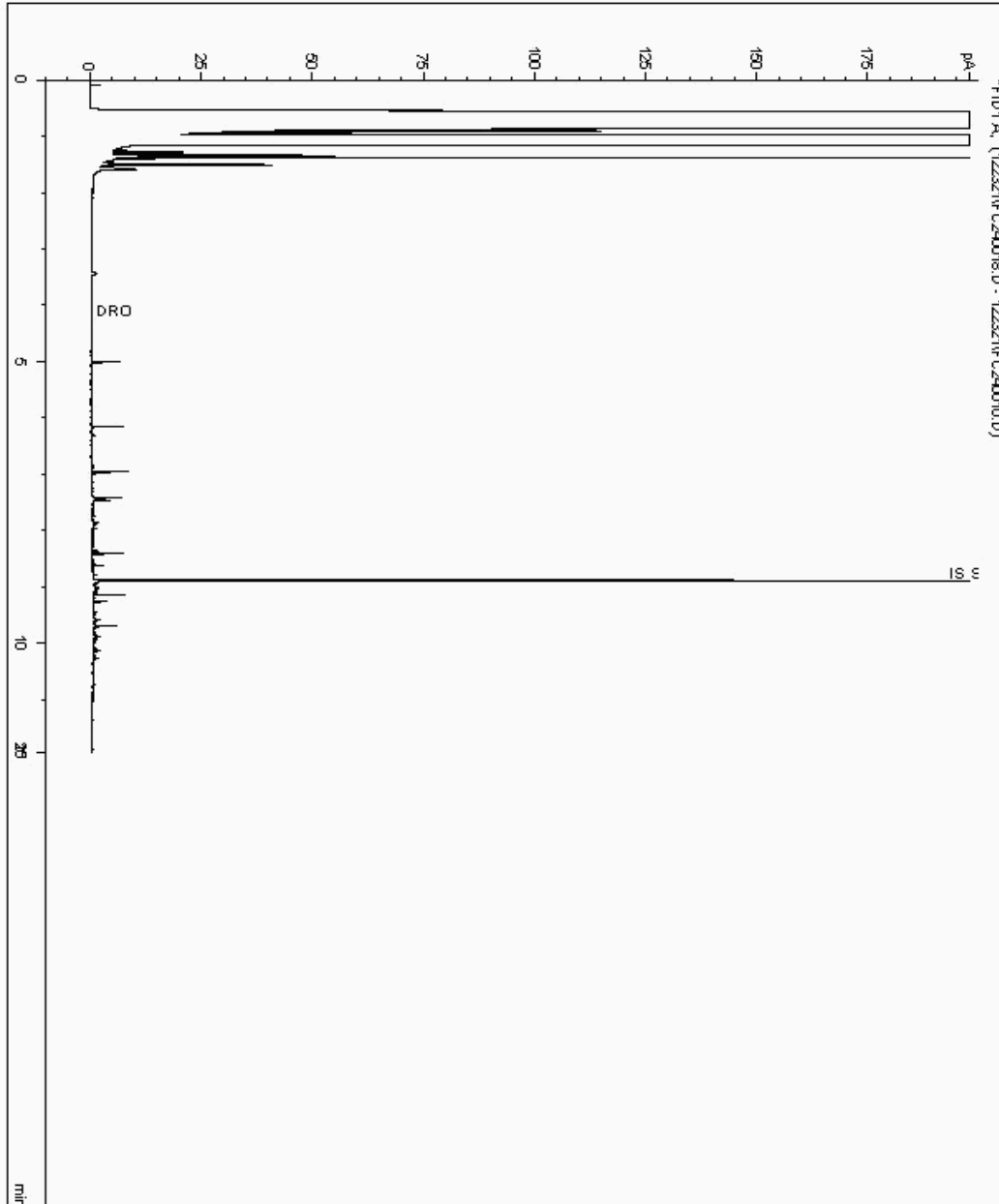
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577392
Sample ID : GW_06_36

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870676-
Date Acquired : 23/12/2021 23:28:11 PM
Units : ppm





CERTIFICATE OF ANALYSIS

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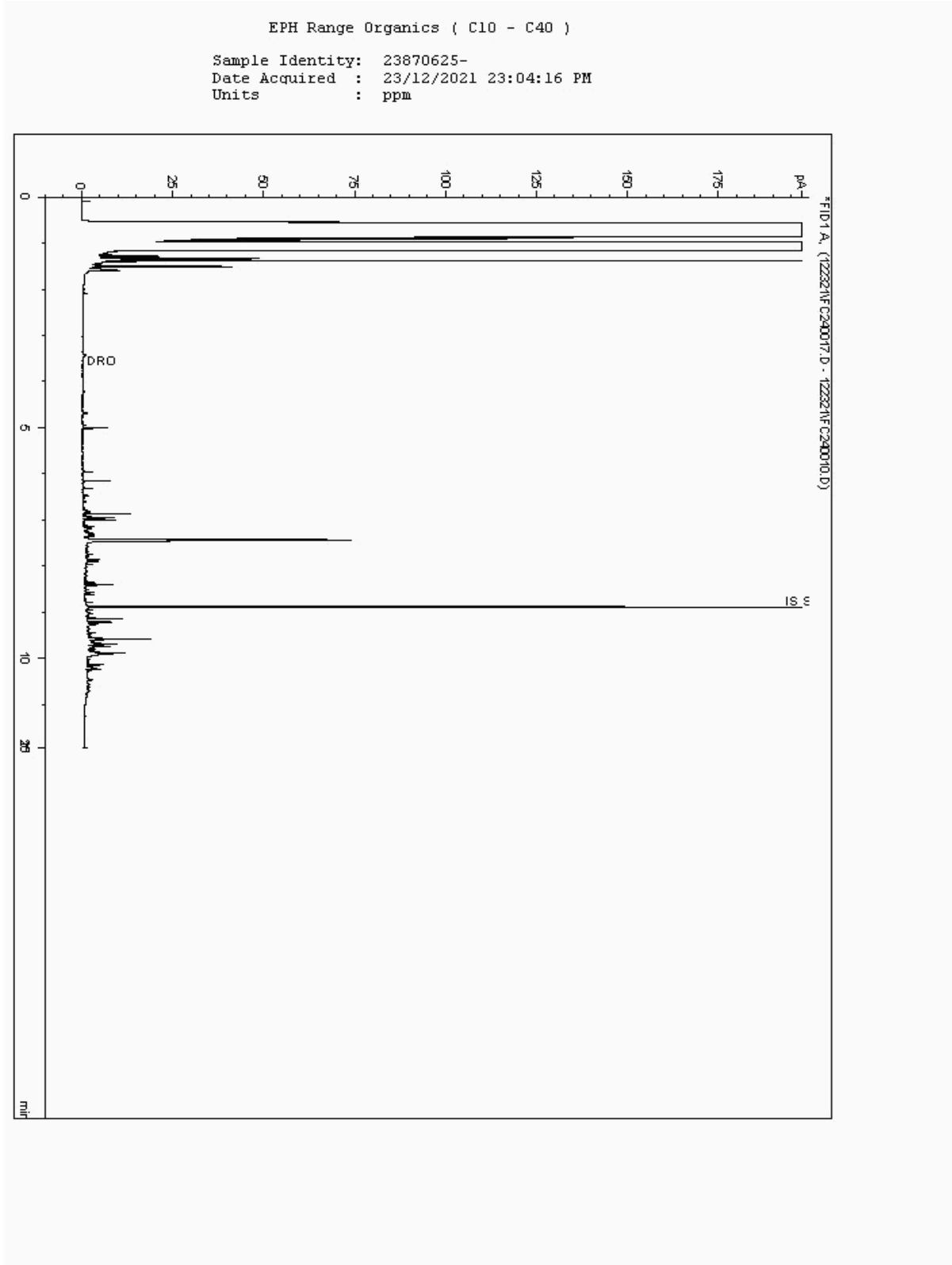
Superseded Report: 629157

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577403
Sample ID : GW_06_34

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

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Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Chromatogram

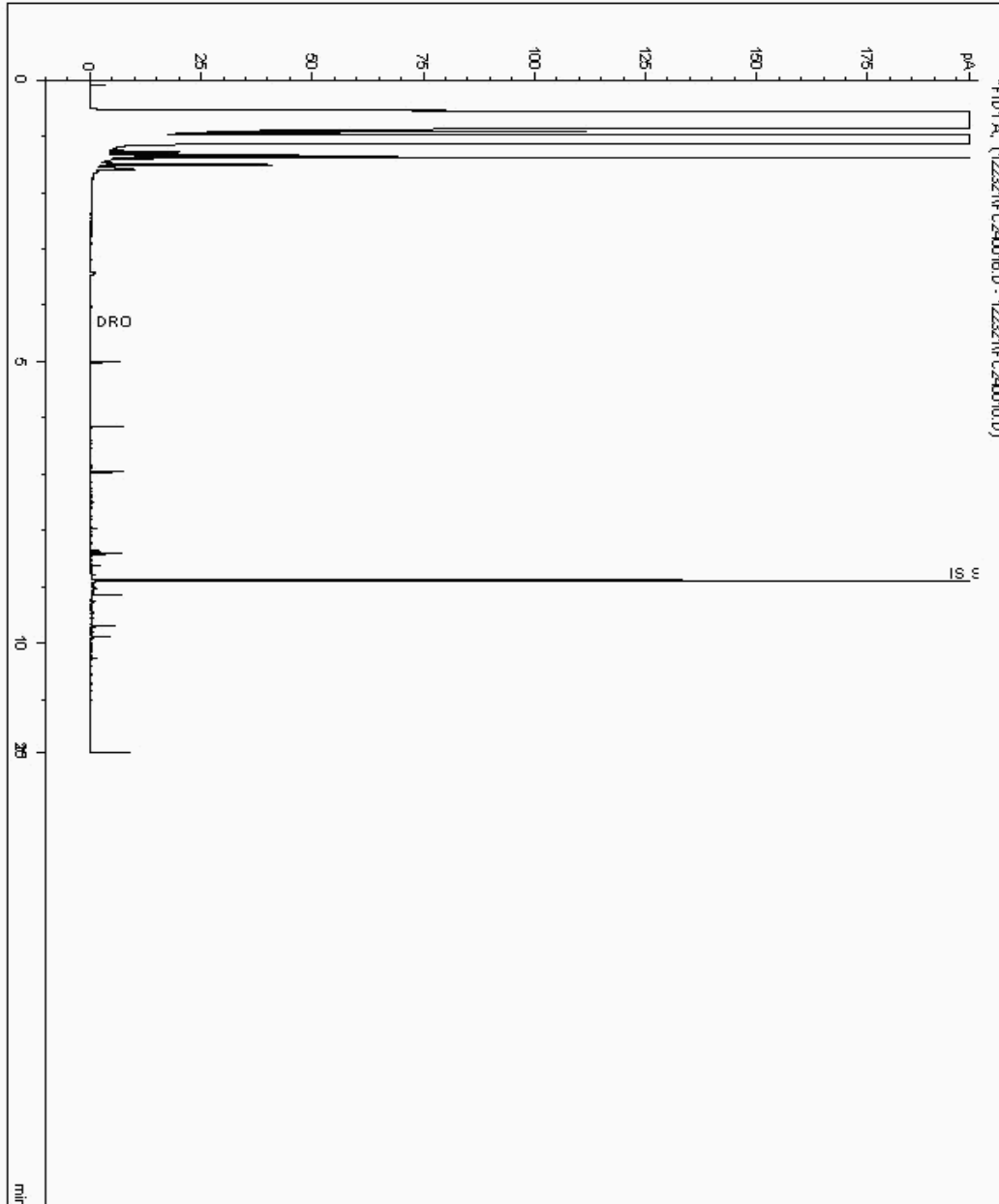
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577562
Sample ID : GW_06_13

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870717-
Date Acquired : 23/12/2021 22:40:12 PM
Units : ppm





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Chromatogram

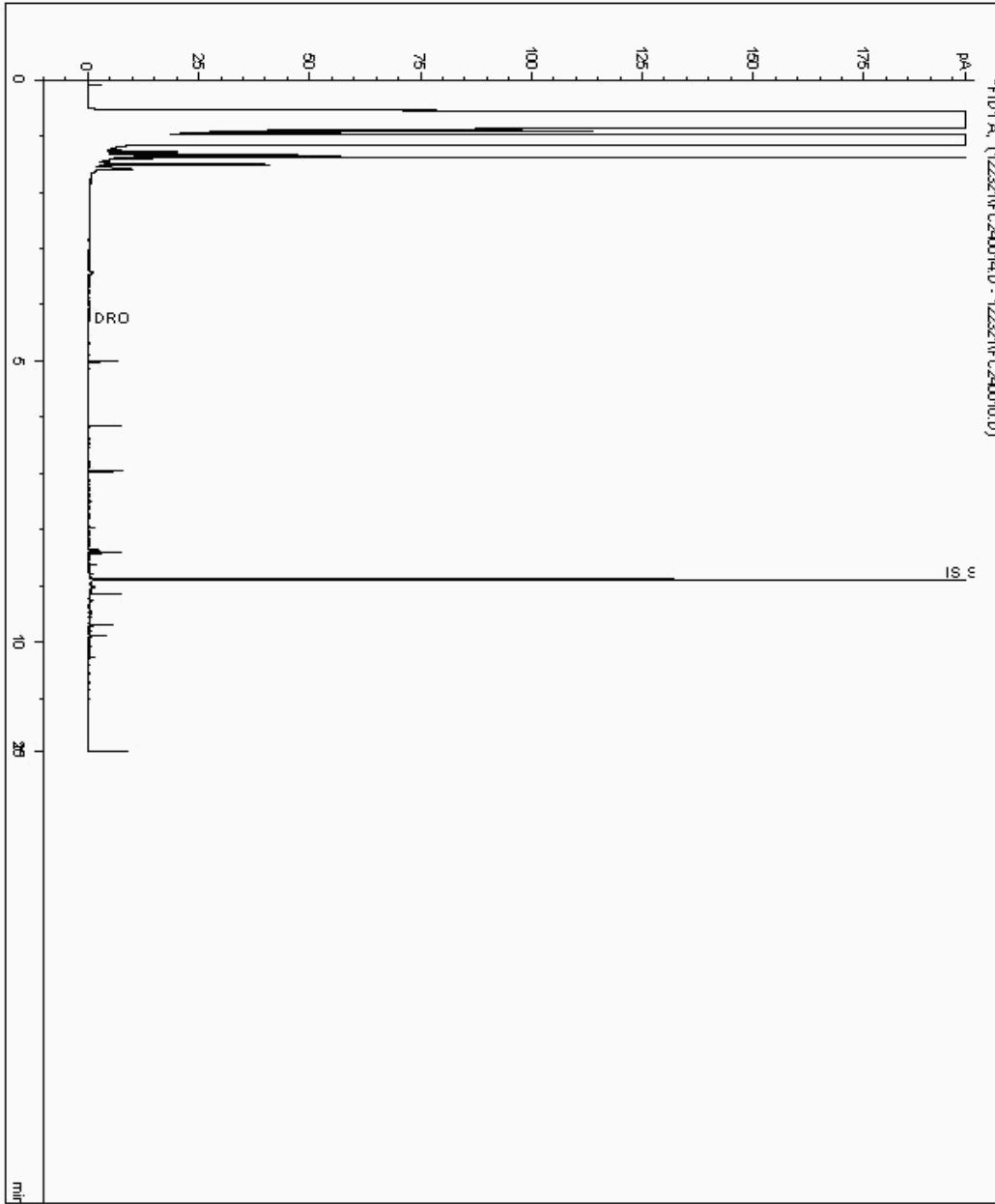
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577573
Sample ID : GW_06_37

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870696-
Date Acquired : 23/12/2021 21:52:44 PM
Units : ppm





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Chromatogram

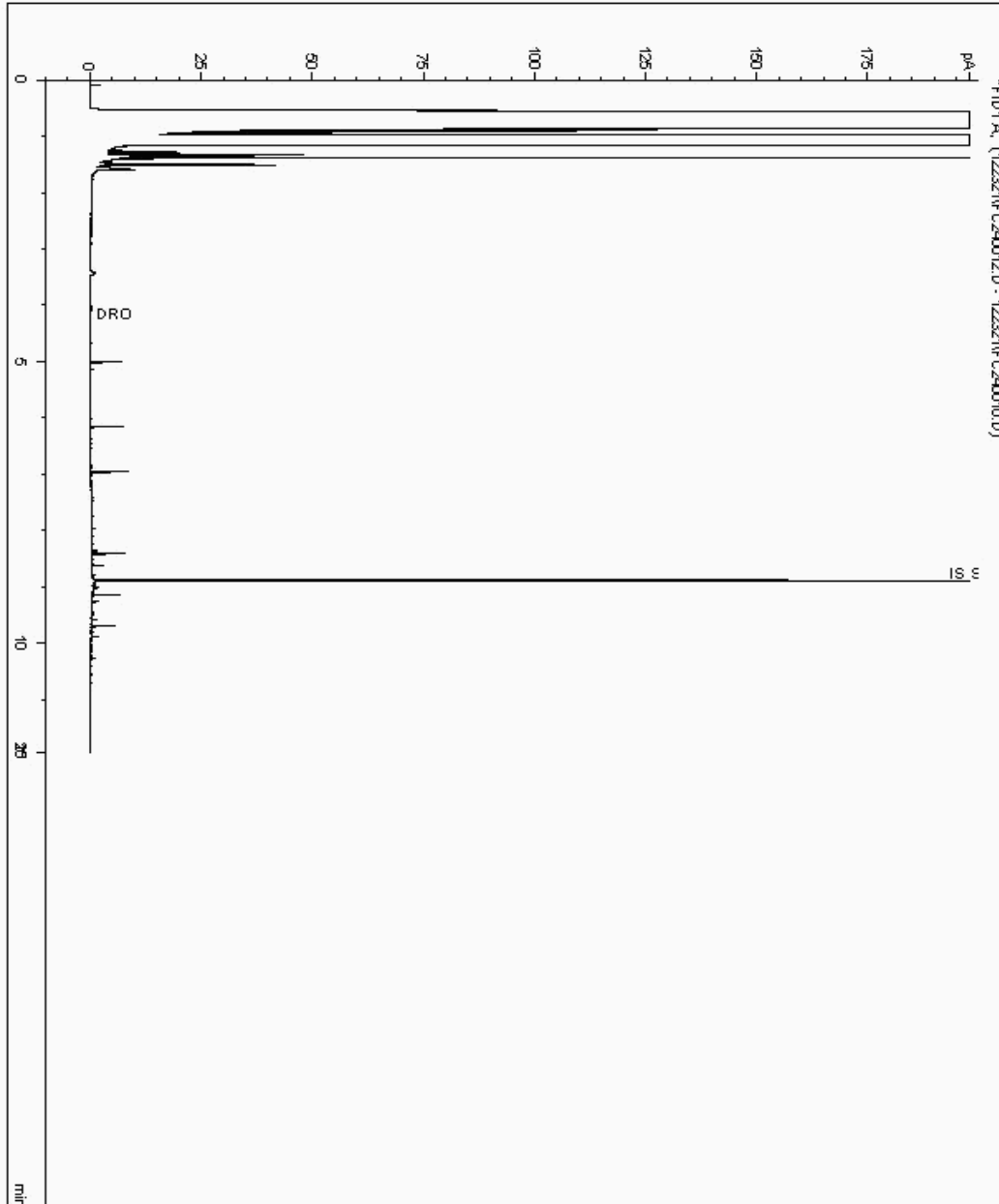
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577582
Sample ID : GW 12_38

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870739-
Date Acquired : 23/12/2021 21:04:51 PM
Units : ppm





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

Superseded Report: 629157

Chromatogram

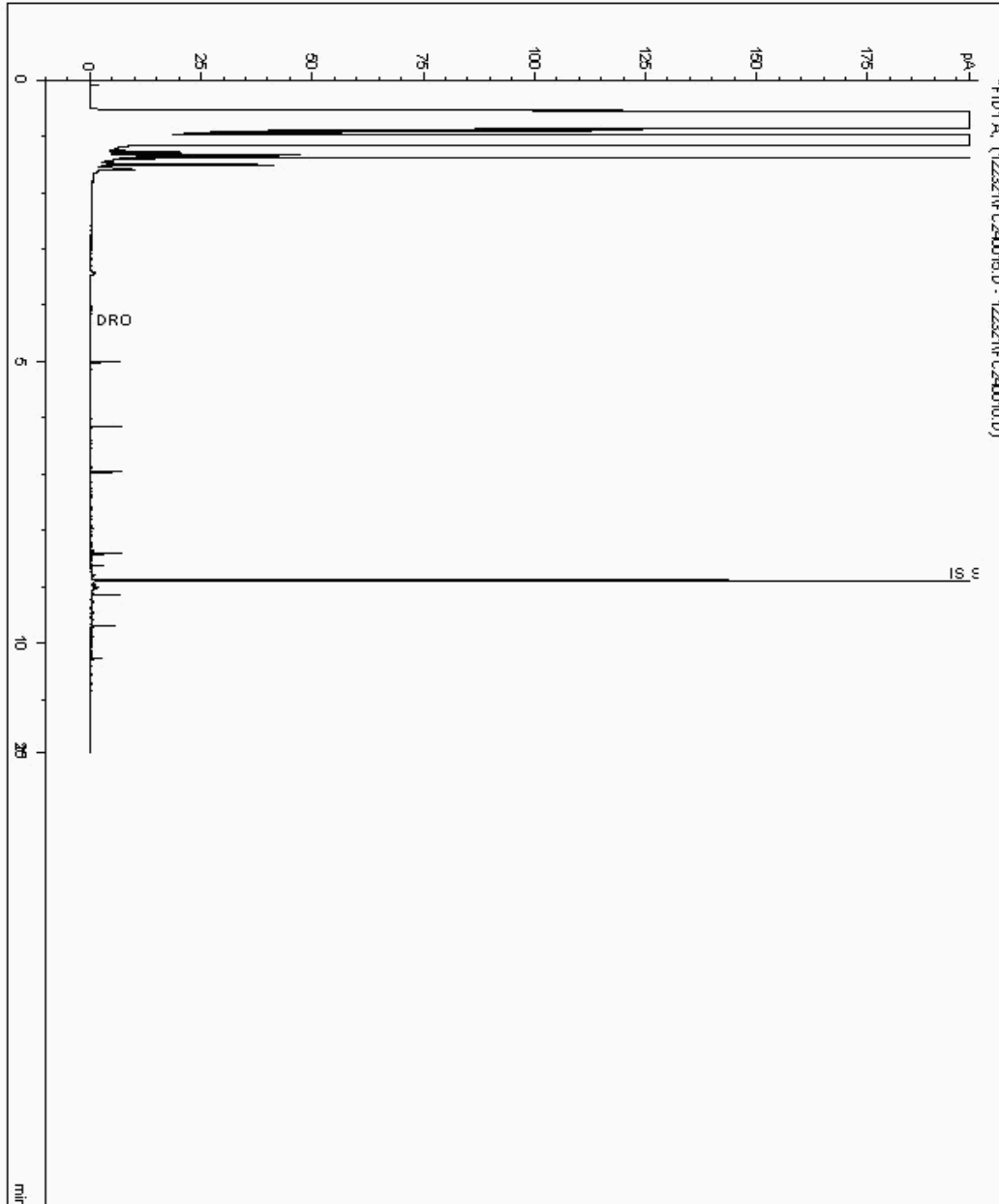
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25577590
Sample ID : GW_06_14A

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 23870760-
Date Acquired : 23/12/2021 22:16:24 PM
Units : ppm





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

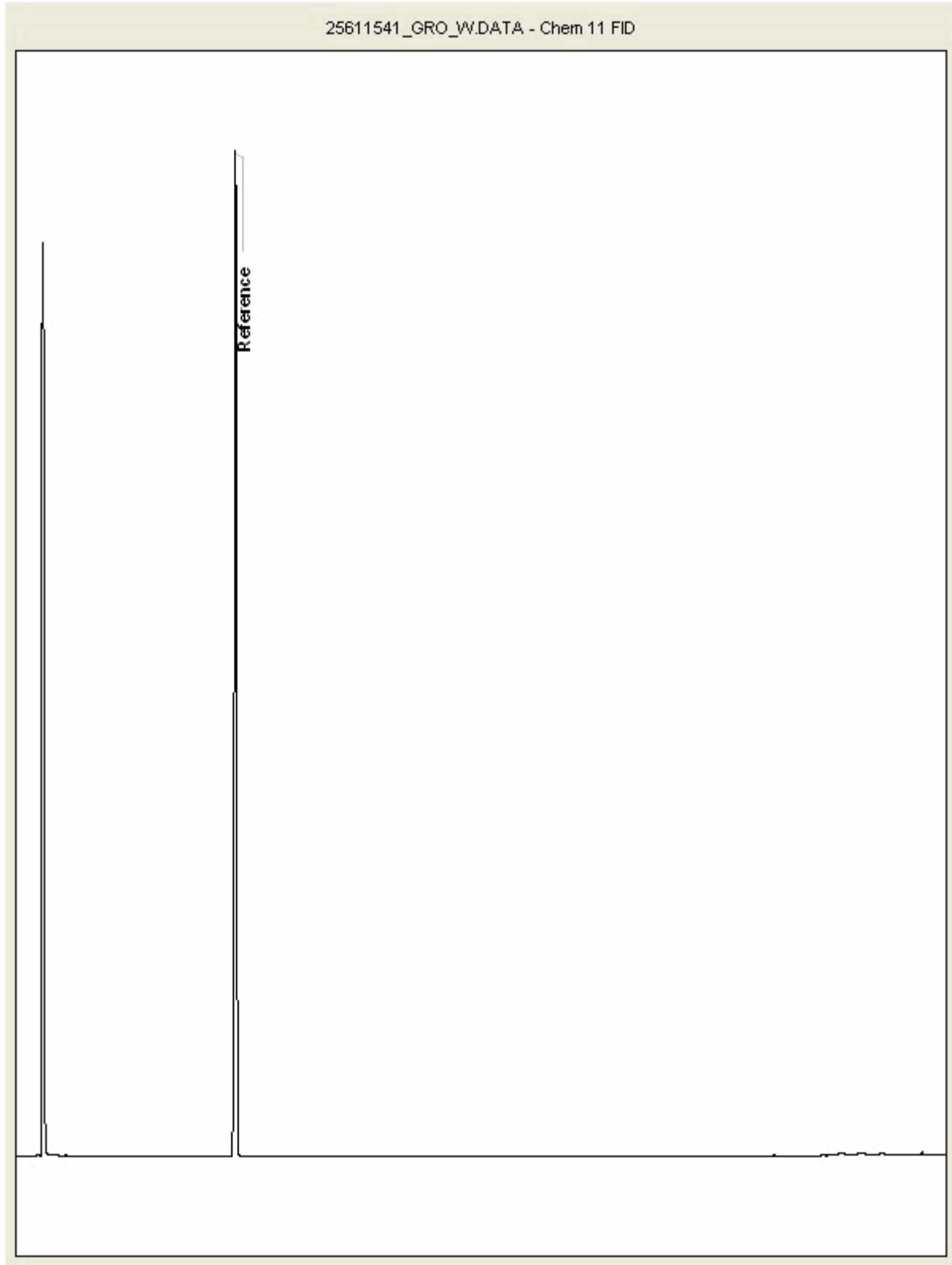
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25611541
Sample ID : GW 12_38

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

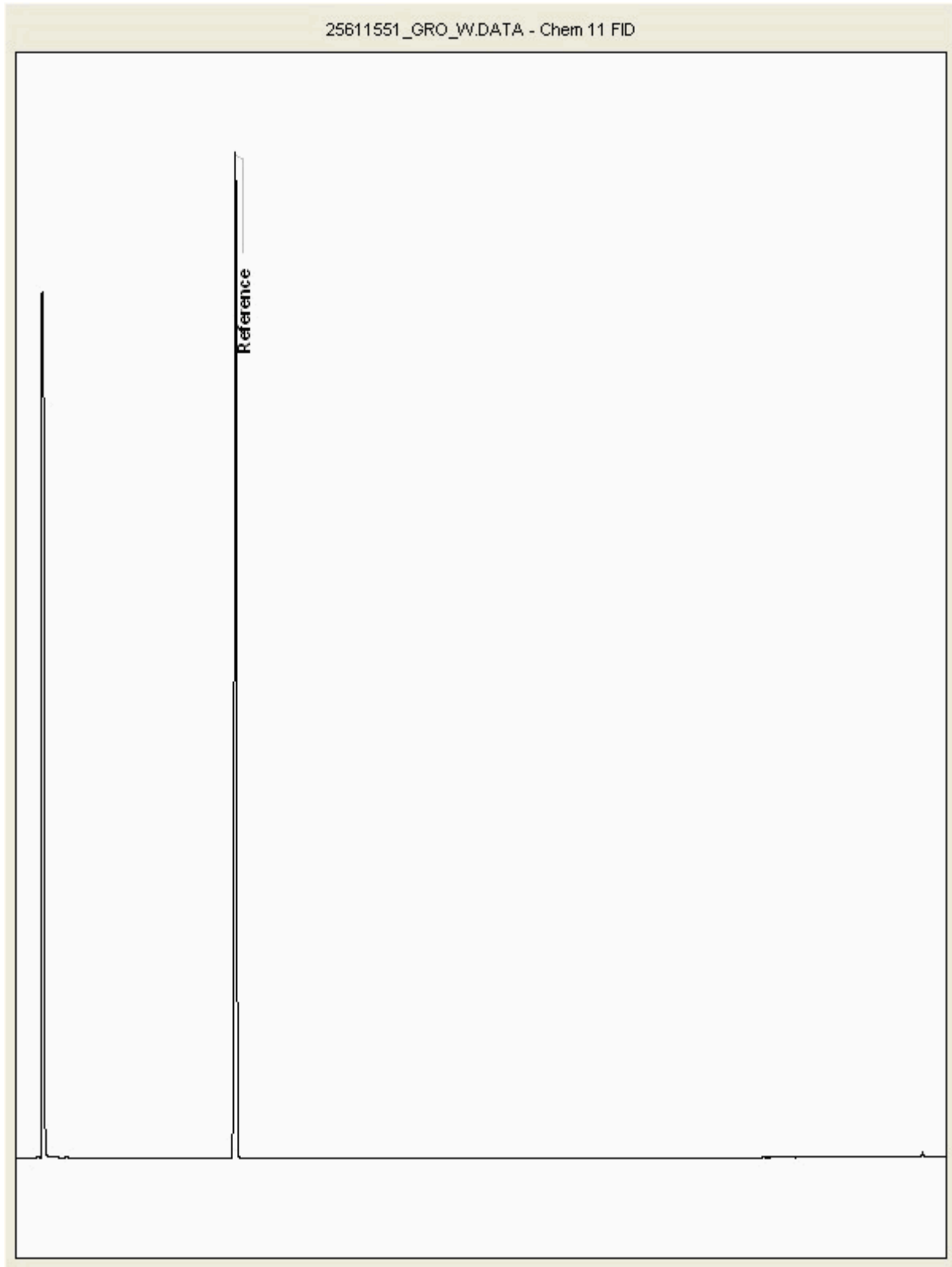
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25611551
Sample ID : GW 06_14A

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

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SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

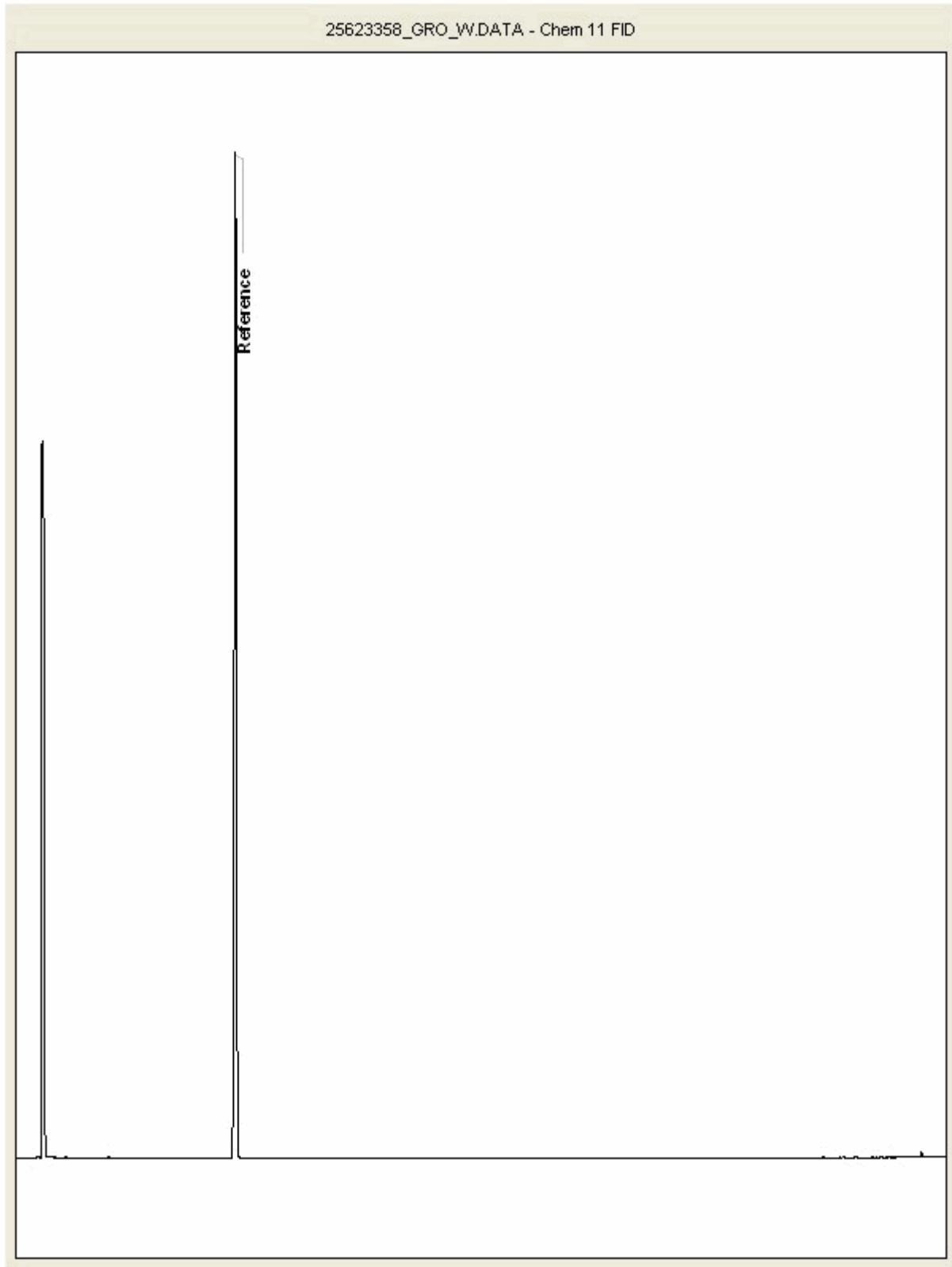
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25623358
Sample ID : GW_06_13

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

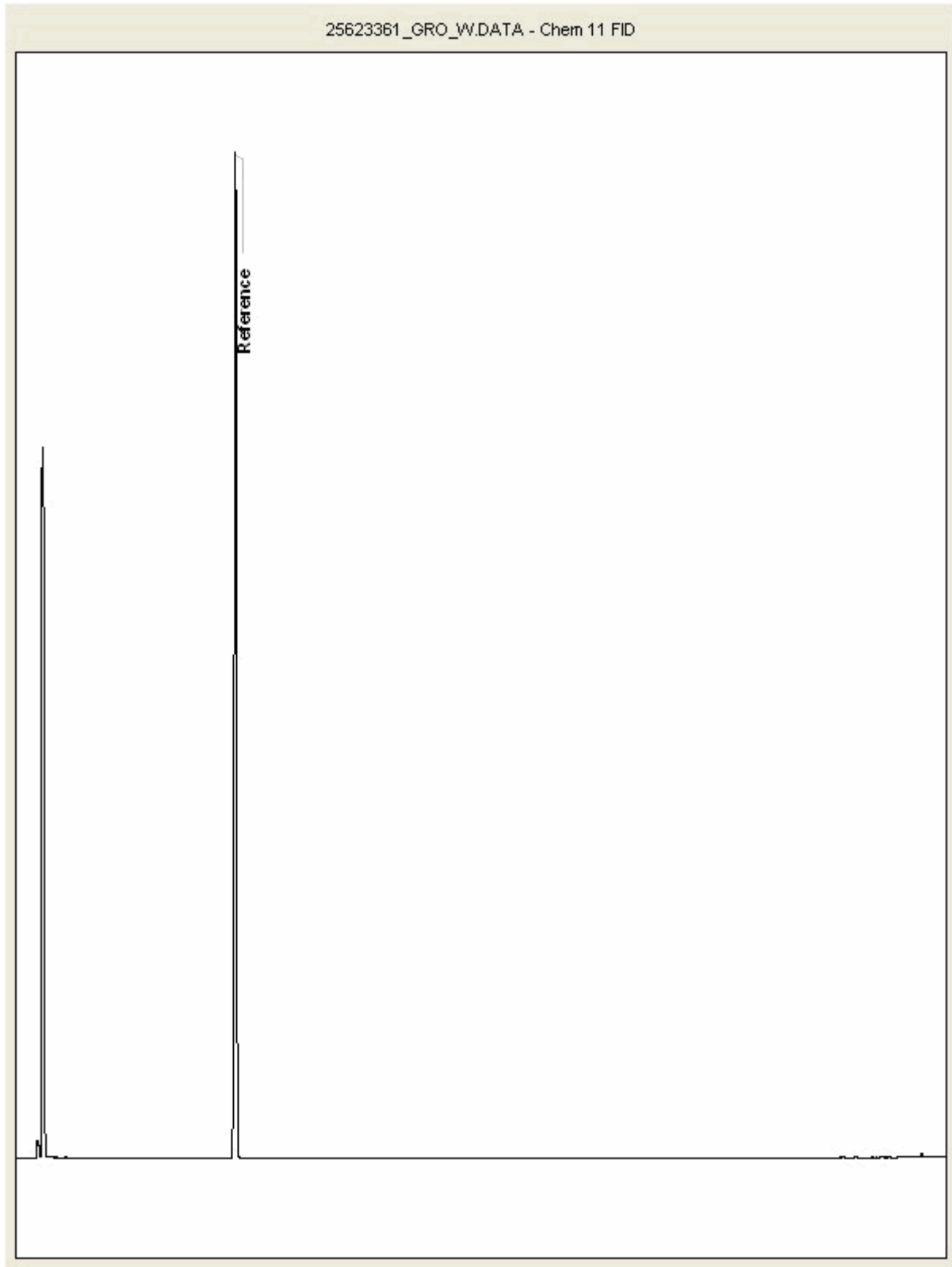
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25623361
Sample ID : GW_06_36

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

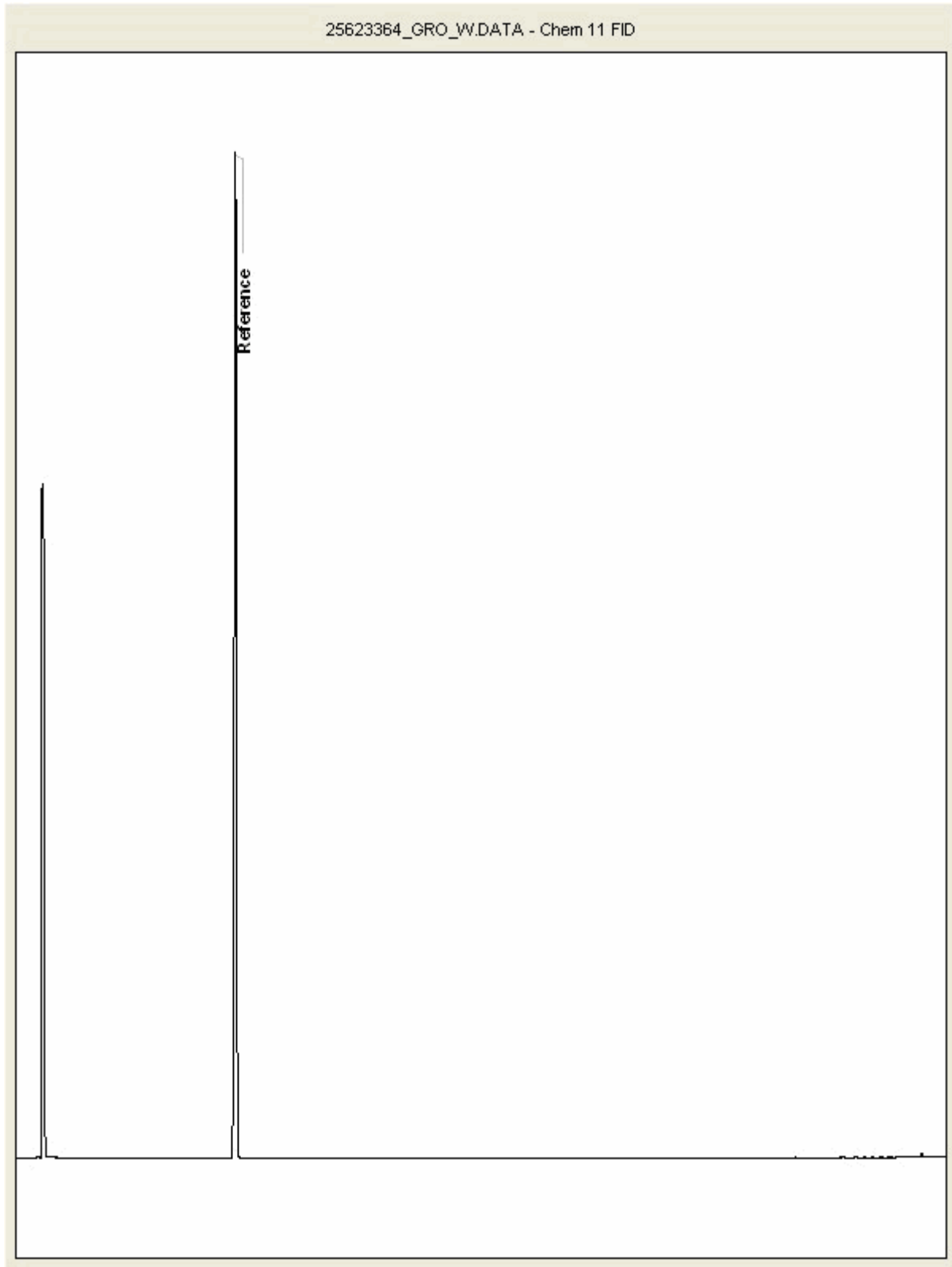
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25623364
Sample ID : GW_06_34

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

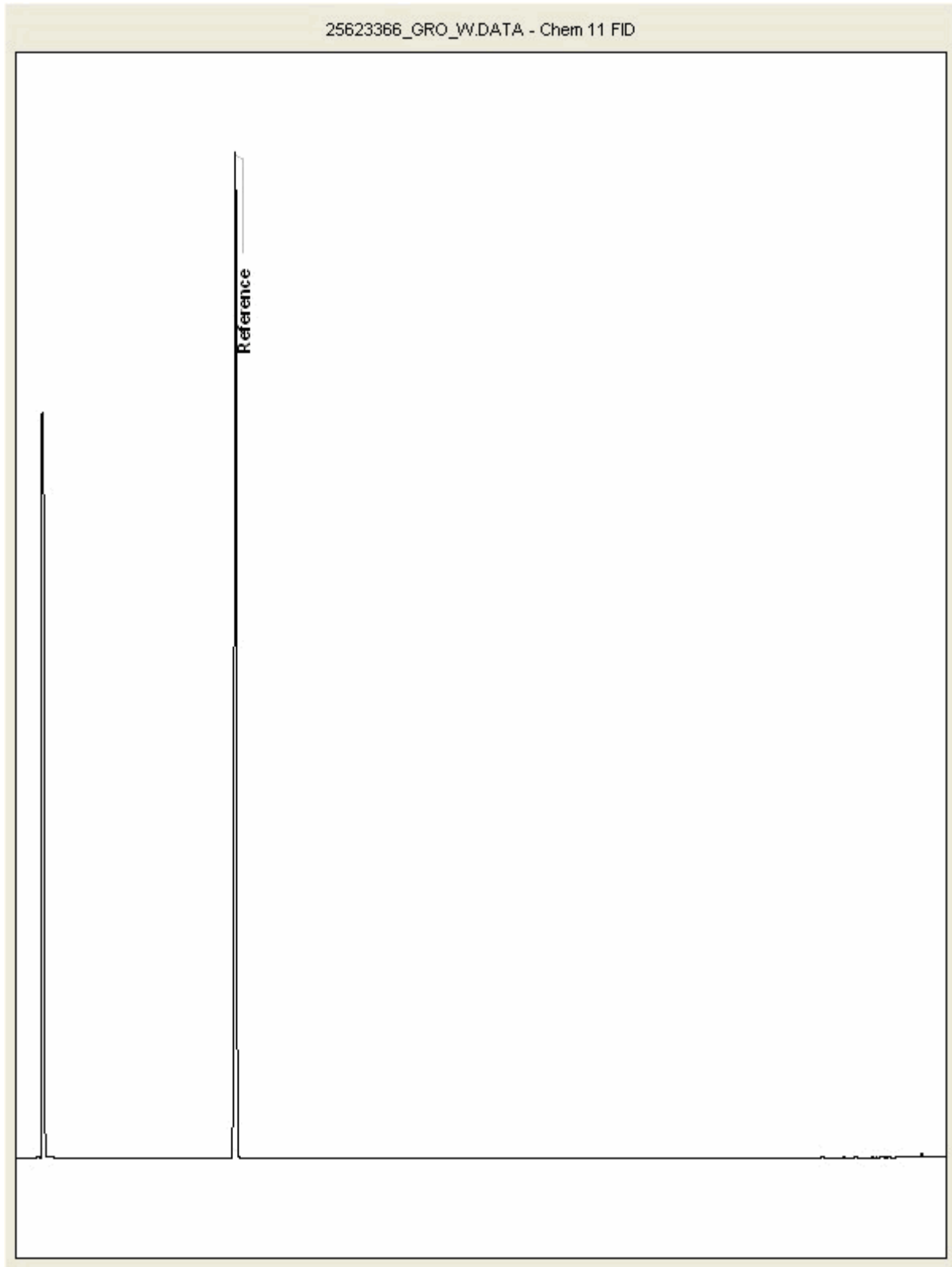
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25623366
Sample ID : GW 09_35

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

Validated

SDG: 211217-102
Client Ref.: Dec GW 2021 Part 2

Report Number: 629527
Location: Newport landfill

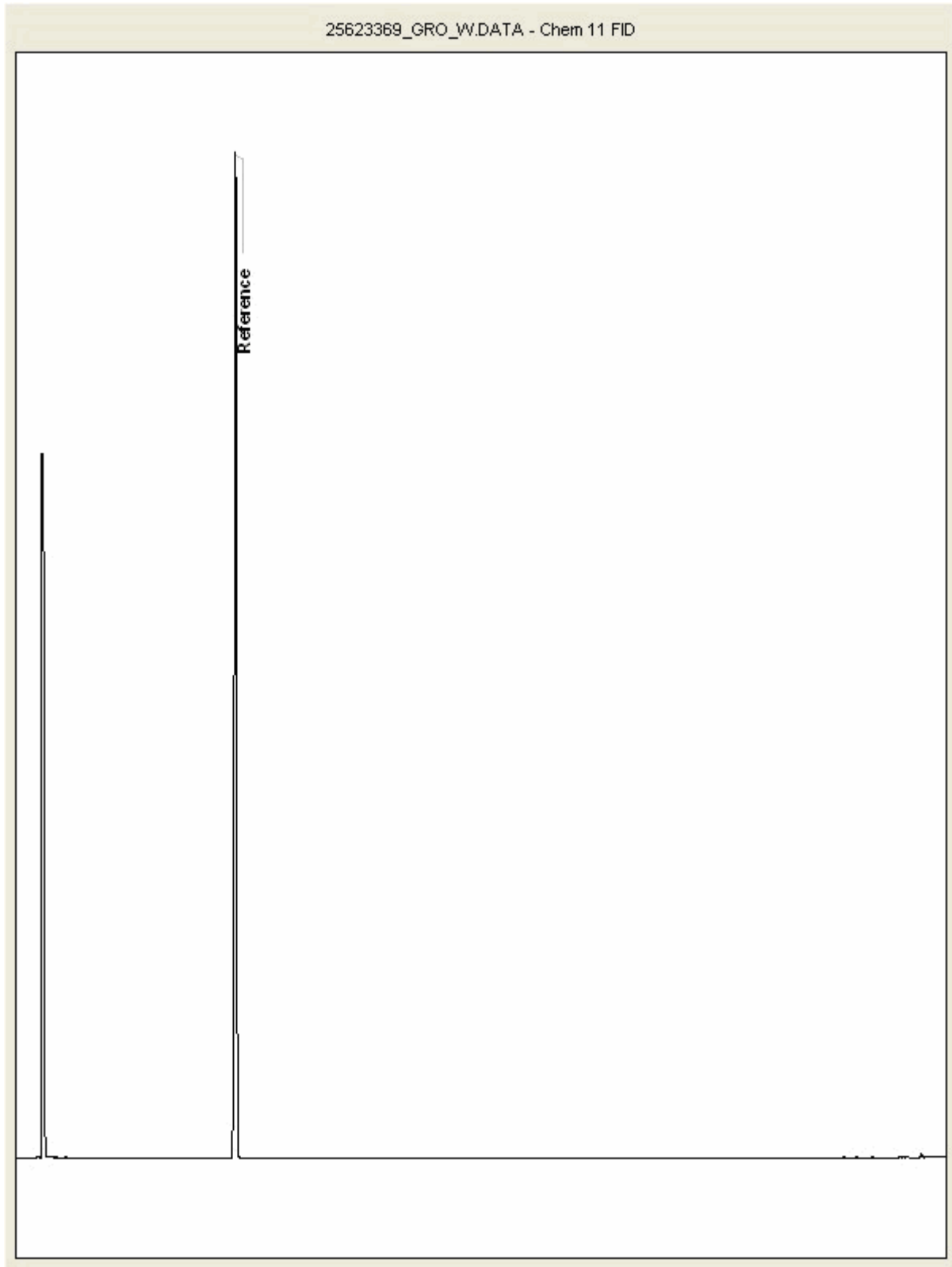
Superseded Report: 629157

Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25623369
Sample ID : GW_06_37

Depth : 0.00 - 0.00





CERTIFICATE OF ANALYSIS

SDG:	211217-102	Client Reference:	Dec GW 2021 Part 2	Report Number:	629527
Location:	Newport landfill	Order Number:	700172856	Superseded Report:	629157

Appendix

General

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

2. 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.

3. 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.

4. 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.

5. 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.

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

7. Results relate only to the items tested.

8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

9. **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%. 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.

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

11. 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.

12. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

14. 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.

15. 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.

16. 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.

17 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

18. **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.

19. 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	Matrix interference
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. Asbestos

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.

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.

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.

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

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.