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Newport City Council  
Civic Centre  
Newport  
NP20 4UR

**Attention:** Luke Embrey

## CERTIFICATE OF ANALYSIS

**Date of report Generation:** 20 April 2022  
**Customer:** Newport City Council  
**Sample Delivery Group (SDG):** 220311-59  
**Your Reference:** MAR GW 2022 P2  
**Location:** Newport landfill  
**Report No:** 642901  
**Order Number:** 700176637

**This report has been revised and directly supersedes 639249 in its entirety.**

We received 7 samples on Friday March 11, 2022 and 7 of these samples were scheduled for analysis which was completed on Thursday March 24, 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: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
25951261	GW06_13		0.00 - 0.00	09/03/2022
25951199	GW06_34		0.00 - 0.00	09/03/2022
25951219	GW06_36		0.00 - 0.00	09/03/2022
25951249	GW06_37		0.00 - 0.00	09/03/2022
25951238	GW09_35		0.00 - 0.00	09/03/2022
25951277	GW12_38		0.00 - 0.00	09/03/2022
25951294	GW06_14a		0.00 - 0.00	09/03/2022

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



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<b>Results Legend</b>  <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> <span>Test</span> </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; border: 1px solid black; margin-right: 5px;"></div> <span>No Determination Possible</span> </div> </div> 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)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																				
								25951261	25951199	25951219																
								GW06_13	GW06_34	GW06_36																
								0.00 - 0.00	0.00 - 0.00	0.00 - 0.00																
								Vial (ALE297)	Vial (ALE297)	Vial (ALE297)	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	H2SO4 (ALE244)	H2SO4 (ALE244)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Filtered (ALE204)	HNO3 Filtered (ALE204)	NaOH (ALE245)	NaOH (ALE245)	NaOH (ALE245)	
								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: 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												X	
BOD True Total	All	NDPs: 0 Tests: 7										X													X	
COD Unfiltered	All	NDPs: 0 Tests: 7										X													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													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		
Ionic Balance	All	NDPs: 0 Tests: 7											X												X	
Nitrite by Kone (w)	All	NDPs: 0 Tests: 7																						X		
pH Value	All	NDPs: 0 Tests: 7											X												X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 7											X												X	



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SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

<b>Results Legend</b> <span style="background-color: yellow; border: 1px solid black; padding: 2px;">X</span> Test <span style="background-color: red; color: white; border: 1px solid black; padding: 2px;">N</span> 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)	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)		
								GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	
	Sulphide	All			0.00 - 0.00		NDPs: 0 Tests: 7							X											
	Total EPH (aq)	All			0.00 - 0.00		NDPs: 0 Tests: 7	X													X				
	VOC MS (W)	All			0.00 - 0.00		NDPs: 0 Tests: 7								X										X

25951238	GW09_35	0.00 - 0.00	ZnAc (ALE246)	GW	X			X
			Vial (ALE297)	GW				
			NaOH (ALE245)	GW				
			HNO3 Filtered (ALE204)	GW				
			H2SO4 (ALE244)	GW				
			500ml Plastic (ALE208)	GW				
			250ml BOD (ALE212)	GW				
			0.5l glass bottle (ALE227)	GW				
			ZnAc (ALE246)	GW	X		X	
			Vial (ALE297)	GW				X
			NaOH (ALE245)	GW				
			HNO3 Filtered (ALE204)	GW				
			H2SO4 (ALE244)	GW				
			500ml Plastic (ALE208)	GW				
250ml BOD (ALE212)	GW							
0.5l glass bottle (ALE227)	GW							
ZnAc (ALE246)	GW		X					
Vial (ALE297)	GW							
NaOH (ALE245)	GW							
HNO3 Filtered (ALE204)	GW							
H2SO4 (ALE244)	GW							
500ml Plastic (ALE208)	GW							
250ml BOD (ALE212)	GW							
0.5l glass bottle (ALE227)	GW							
ZnAc (ALE246)	GW							
Vial (ALE297)	GW							
NaOH (ALE245)	GW							
25951219	GW06_36	0.00 - 0.00						X







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**Report Number:** 642901  
**Location:** Newport landfill

**Superseded Report:** 639249

Results Legend			Customer Sample Ref.	GW06_13	GW06_34	GW06_36	GW06_37	GW09_35	GW12_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 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022
M mCERTS accredited.				11/03/2022 220311-59 25951261	11/03/2022 220311-59 25951199	11/03/2022 220311-59 25951219	11/03/2022 220311-59 25951249	11/03/2022 220311-59 25951238	11/03/2022 220311-59 25951277
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									
1-4456@ Sample deviation (see appendix)									
Component	LOD/Units	Method							
Ionic balance	% Diff	Calulation	-4.03	-1.72	-5.72	-11.1	-7.92	-3.02	
Alkalinity, Total as CaCO3	<2 mg/l	TM043	890 #	582 #	1000 #	1080 #	557 #	550 #	
Alkalinity, Total as CaCO3 (diss.filt)	<2 mg/l	TM043	915	569	1010	1080	561	534	
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043	915	569	1010	1080	561	534	
BOD, unfiltered	<1 mg/l	TM045	<1 #	26.1 #	9.08 #	69.5 #	<1 #	<1 #	
Carbon, Organic (diss.filt)	<3 mg/l	TM090	12.3	13.4	11.5	32.1	9.57	14.8	
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	8.45 #	0.6 #	9.16 #	42.6 #	4.81 #	<0.2 #	
Sulphide	<0.01 mg/l	TM101	<0.01 #	0.197 #	3.38 #	7.81 #	<0.01 #	<0.01 #	
COD, unfiltered	<7 mg/l	TM107	298 #	397 #	96.1 #	562 #	79.2 #	69.9 #	
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.39 #	4.29 #	0.635 #	52.6 #	0.843 #	1.14 #	
Boron (diss.filt)	<10 µg/l	TM152	1380 #	450 #	1320 #	2650 #	796 #	518 #	
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	1.61 #	<0.3 #	<0.3 #	<0.3 #	<0.3 #	3.1 #	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	<0.2 #	
Manganese (diss.filt)	<3 µg/l	TM152	169 #	1280 #	211 #	364 #	105 #	172 #	
Nickel (diss.filt)	<0.4 µg/l	TM152	1.37 #	1.49 #	0.859 #	1.37 #	0.818 #	5.65 #	
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #	
Zinc (diss.filt)	<1 µg/l	TM152	10.4 #	4.09 #	1.05 #	3.07 #	9.03 #	8.22 #	
Sodium (Dis.Filt)	<0.076 mg/l	TM152	1380 #	41.3 #	1770 #	2270 #	1110 #	89.1 #	
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	211 #	39.4 #	233 #	247 #	182 #	48 #	
Potassium (Dis.Filt)	<0.2 mg/l	TM152	54.3 #	15 #	64.6 #	84.8 #	38.1 #	24.6 #	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	110 #	152 #	193 #	68.7 #	141 #	262 #	
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0574 #	0.686 #	0.0718 #	2.14 #	0.886 #	<0.019 #	
Hardness, Total as CaCO3	<0.65 mg/l	TM152	1140	543	1440	1190	1100	854	
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100 #	323 #	119 #	109 #	102 #	112 #	
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100	323	119	109	102	112	
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	1.67 #	2.14 #	11.7 #	6.54 #	6.33 #	<0.05 #	
Sulphate	<2 mg/l	TM184	125 #	48.6 #	118 #	45.4 #	80.6 #	420 #	
Chloride	<2 mg/l	TM184	2510 #	40.2 #	3500 #	4860 #	2510 #	122 #	
Nitrate as NO3	<0.3 mg/l	TM184	22.6	<0.3	<0.3	<0.3	<0.3	1.16	





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**SDG:** 220311-59  
**Client Ref.:** MAR GW 2022 P2

**Report Number:** 642901  
**Location:** Newport landfill

**Superseded Report:** 639249

#	Results Legend	Customer Sample Ref.	GW06_14a			
M	ISO17025 accredited.	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) 09/03/2022			
aq	mCERTS accredited.					
diss,filtr	Aqueous / settled sample.					
tot.unfiltr	Dissolved / filtered sample.					
*	Total / unfiltered sample.					
**	Subcontracted - refer to subcontractor report for accreditation status.					
(F)	% 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					
1-4456	Trigger breach confirmed					
	Sample deviation (see appendix)					
Component	LOD/Units	Method				
Ionic balance	% Diff	Calulation	-6.87			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	247	#		
Alkalinity, Total as CaCO3 (diss.filt)	<2 mg/l	TM043	239			
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043	239			
BOD, unfiltered	<1 mg/l	TM045	<1	#		
Carbon, Organic (diss.filt)	<3 mg/l	TM090	3.78			
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	78.1	#		
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.6	#		
Boron (diss.filt)	<10 µg/l	TM152	808	#		
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	#		
Lead (diss.filt)	<0.2 µg/l	TM152	0.235	#		
Manganese (diss.filt)	<3 µg/l	TM152	8.03	#		
Nickel (diss.filt)	<0.4 µg/l	TM152	2.29	#		
Selenium (diss.filt)	<1 µg/l	TM152	<1	#		
Zinc (diss.filt)	<1 µg/l	TM152	19.3	#		
Sodium (Dis.Filt)	<0.076 mg/l	TM152	1570	#		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	224	#		
Potassium (Dis.Filt)	<0.2 mg/l	TM152	71.1	#		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	177	#		
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	<100	#		
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100			
Nitrite as NO2	<0.05 mg/l	TM184	<0.05	#		
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	0.173	#		
Sulphate	<2 mg/l	TM184	604	#		
Chloride	<2 mg/l	TM184	3340	#		
Nitrate as NO3	<0.3 mg/l	TM184	0.746			









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## VOC MS (W)

Results Legend		Customer Sample Ref.	GW06_13	GW06_34	GW06_36	GW06_37	GW09_35	GW12_38
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss,fit 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 1-4456@ 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) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	102	106	115	107	110	114
Toluene-d8**	%	TM208	98.9	99.6	97.6	97.4	97.1	97.2
4-Bromofluorobenzene**	%	TM208	96.4	95	92.5	93	94.2	94
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 #



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Report Number: 642901  
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Superseded Report: 639249

## VOC MS (W)

Results Legend		Customer Sample Ref.	GW06_13	GW06_34	GW06_36	GW06_37	GW09_35	GW12_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 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022	0.00 - 0.00 Ground Water (GW) 09/03/2022
M	mCERTS accredited.		11/03/2022 220311-59 25951261	11/03/2022 220311-59 25951199	11/03/2022 220311-59 25951219	11/03/2022 220311-59 25951249	11/03/2022 220311-59 25951238	11/03/2022 220311-59 25951277
ag	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&@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
1,3-Dichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Bromobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Propylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Naphthalene	<1 µg/l	TM208	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## VOC MS (W)

#	Results Legend	Customer Sample Ref.	GW06_14a			
M	ISO17025 accredited.	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) 09/03/2022  11/03/2022 220311-59 25951294			
aq	mCERTS accredited.					
diss,filtr	Aqueous / settled sample.					
tot.unfiltr	Dissolved / filtered sample.					
*	Total / unfiltered sample.					
**	Subcontracted - refer to subcontractor report for accreditation status.					
(F)	% 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					
1.4.6	Trigger breach confirmed					
	Sample deviation (see appendix)					
Component	LOD/Units	Method				
Dibromofluoromethane**	%	TM208	112			
Toluene-d8**	%	TM208	96			
4-Bromofluorobenzene**	%	TM208	93.9			
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	#		



# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## VOC MS (W)

#	Results Legend	Customer Sample Ref.	GW06_14a			
#	ISO17025 accredited.					
M	mCERTS accredited.					
aq	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&@	Sample deviation (see appendix)					
		Depth (m)	0.00 - 0.00			
		Sample Type	Ground Water (GW)			
		Date Sampled	09/03/2022			
		Sampled Time	.			
		Date Received	11/03/2022			
		SDG Ref	220311-59			
		Lab Sample No.(s)	25951294			
		AGS Reference				
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	#		





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## 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
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).



# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## Test Completion Dates

Lab Sample No(s)	25951261	25951199	25951219	25951249	25951238	25951277	25951294
Customer Sample Ref.	GW06_13	GW06_34	GW06_36	GW06_37	GW09_35	GW12_38	GW06_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	18-Mar-2022	20-Mar-2022	20-Mar-2022	18-Mar-2022	20-Mar-2022	20-Mar-2022	20-Mar-2022
Alkalinity Filtered as CaCO3	18-Mar-2022	20-Mar-2022	20-Mar-2022	18-Mar-2022	20-Mar-2022	20-Mar-2022	20-Mar-2022
Ammoniacal Nitrogen	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022
Anions by Kone (w)	22-Mar-2022	17-Mar-2022	17-Mar-2022	22-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022
BOD True Total	17-Mar-2022	17-Mar-2022	16-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022
COD Unfiltered	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022
Cyanide Comp/Free/Total/Thiocyanate	15-Mar-2022	18-Mar-2022	15-Mar-2022	15-Mar-2022	15-Mar-2022	15-Mar-2022	15-Mar-2022
Dissolved Metals by ICP-MS	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022
Dissolved Organic/Inorganic Carbon	13-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	13-Mar-2022	17-Mar-2022
EPH (DRO) (C10-C40) Aqueous (W)	15-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	15-Mar-2022	17-Mar-2022
GRO by GC-FID (W)	18-Mar-2022	18-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022
Ionic Balance	24-Mar-2022	21-Mar-2022	21-Mar-2022	24-Mar-2022	21-Mar-2022	21-Mar-2022	21-Mar-2022
Nitrite by Kone (w)	12-Mar-2022	12-Mar-2022	12-Mar-2022	12-Mar-2022	12-Mar-2022	12-Mar-2022	12-Mar-2022
pH Value	16-Mar-2022	16-Mar-2022	16-Mar-2022	16-Mar-2022	16-Mar-2022	16-Mar-2022	16-Mar-2022
Phosphate by Kone (w)	12-Mar-2022	17-Mar-2022	17-Mar-2022	12-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022
Sulphide	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022	18-Mar-2022
Total EPH (aq)	18-Mar-2022	18-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022
VOC MS (W)	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022	17-Mar-2022



# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

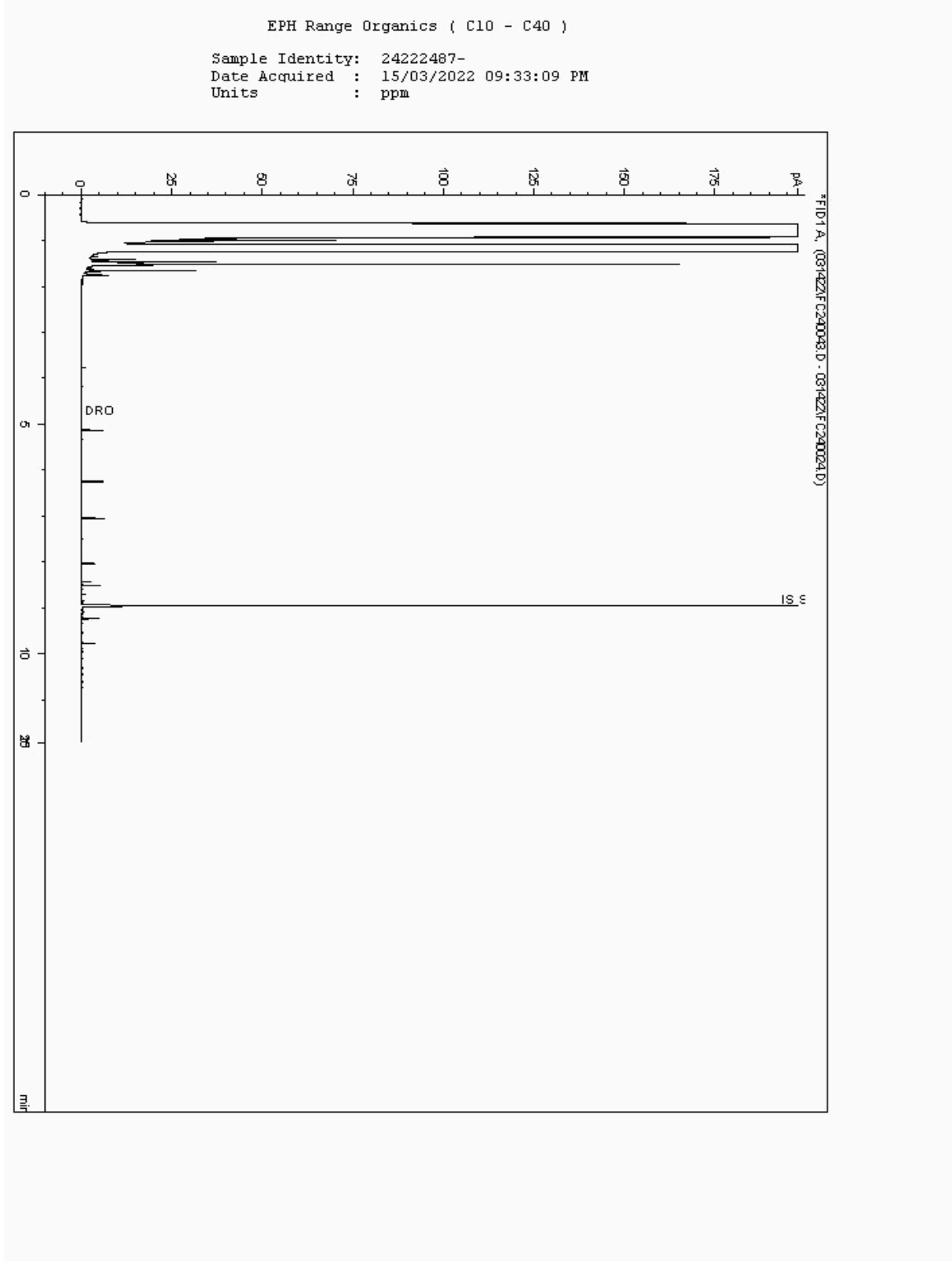
Superseded Report: 639249

## Chromatogram

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

Sample No : 25952959  
Sample ID : GW12\_38

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

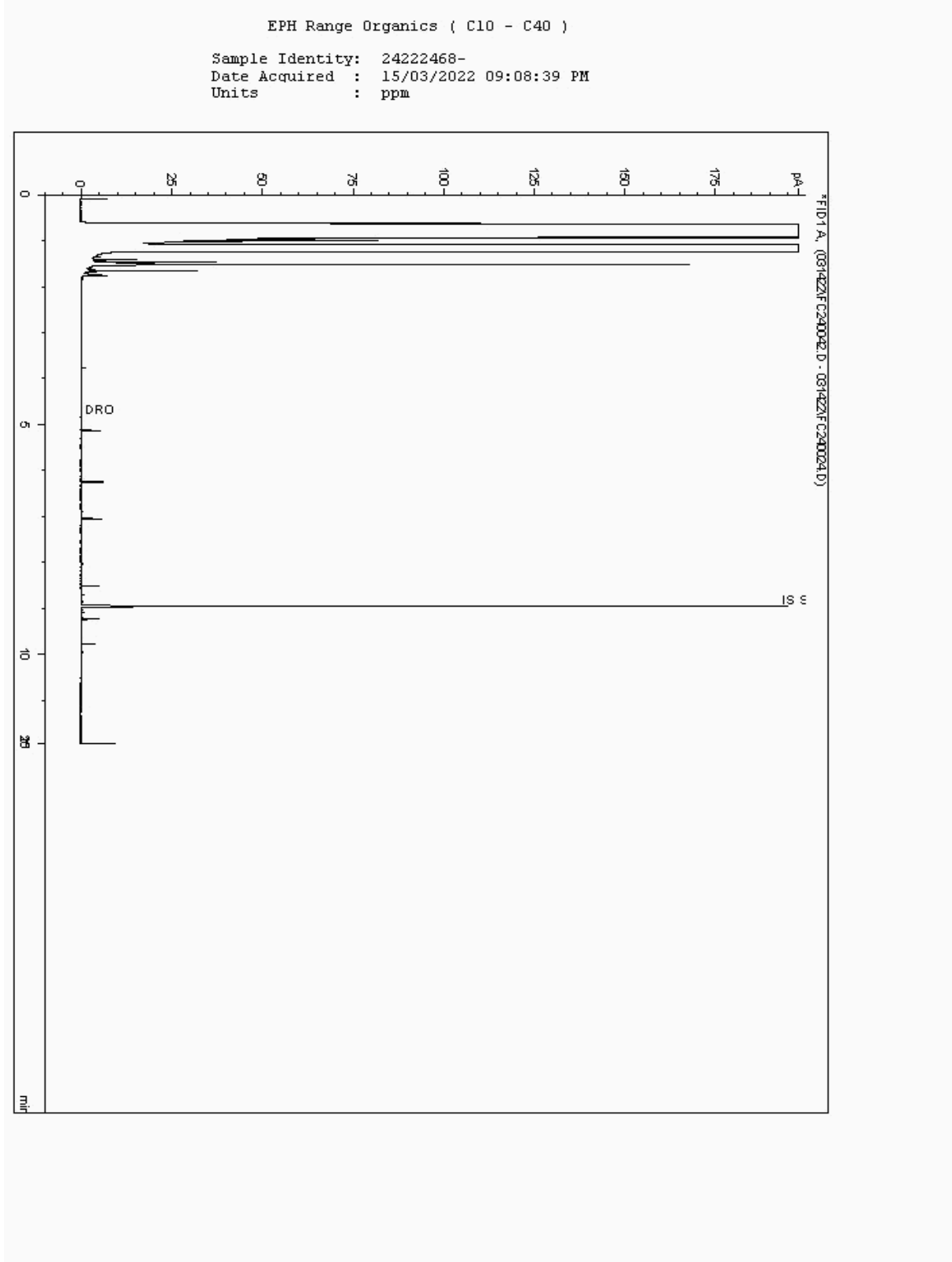
Superseded Report: 639249

## Chromatogram

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

Sample No : 25952987  
Sample ID : GW06\_13

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

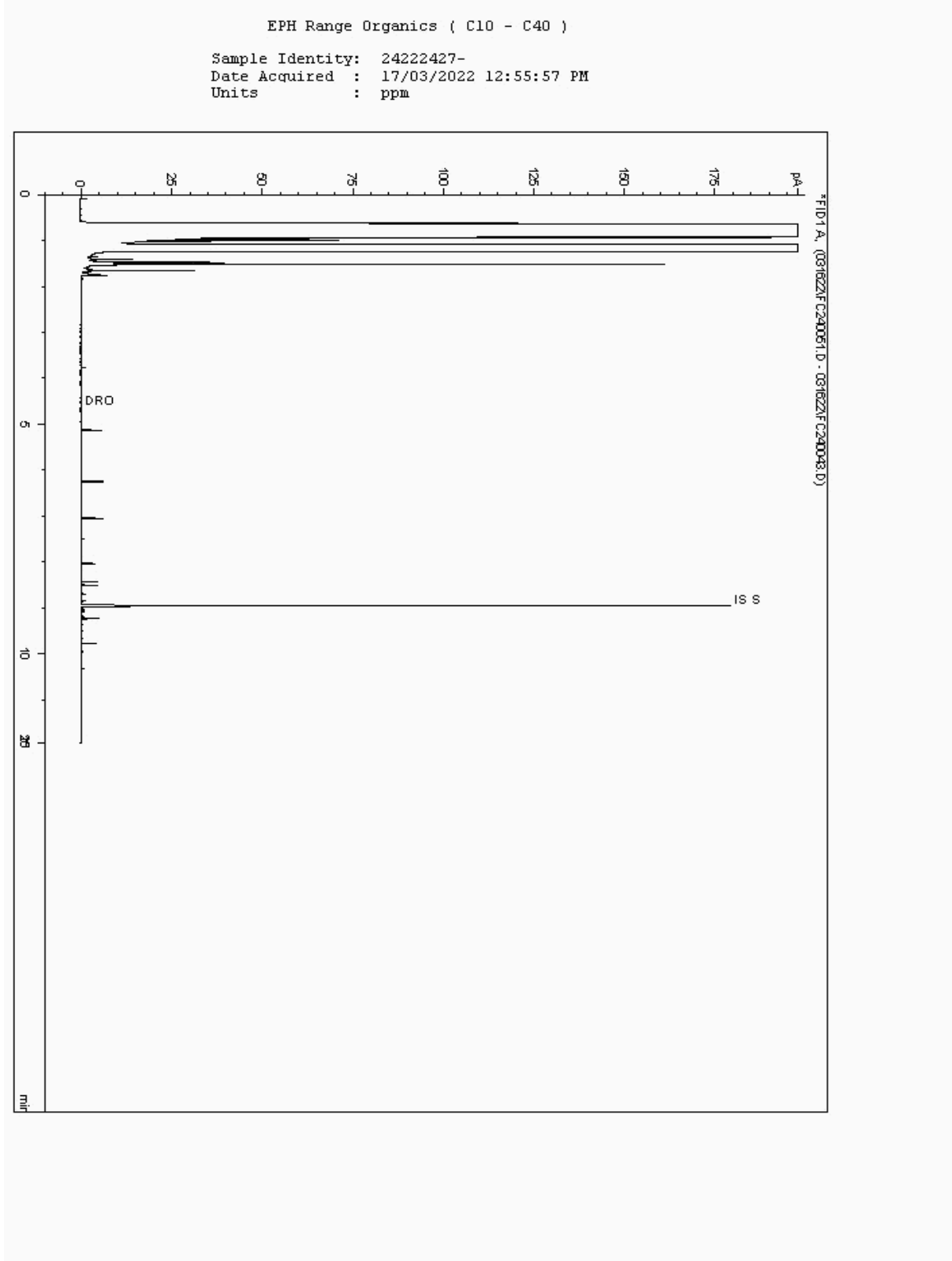
Superseded Report: 639249

## Chromatogram

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

Sample No : 25976100  
Sample ID : GW09\_35

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

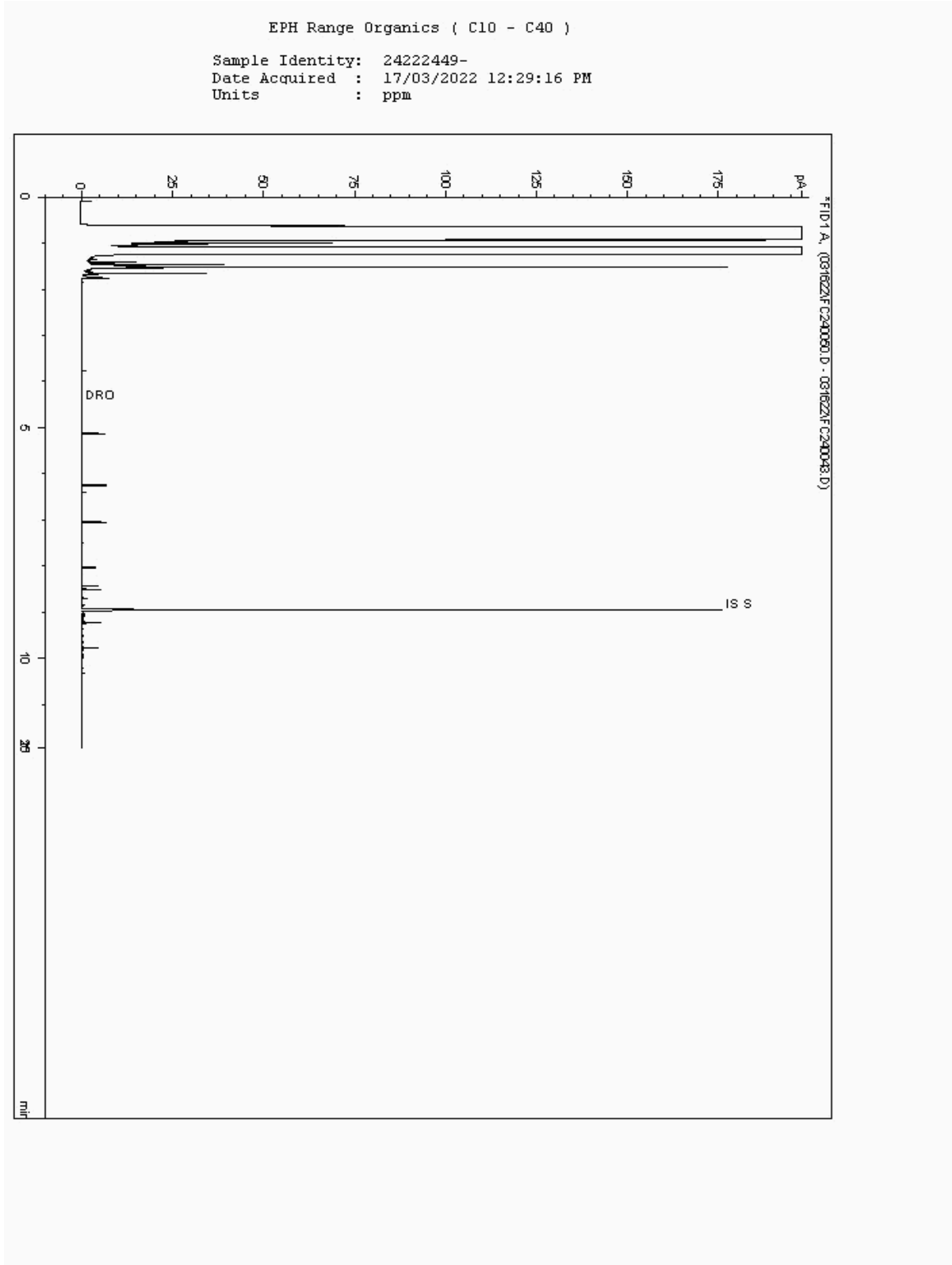
Superseded Report: 639249

## Chromatogram

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

Sample No : 25976125  
Sample ID : GW06\_37

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

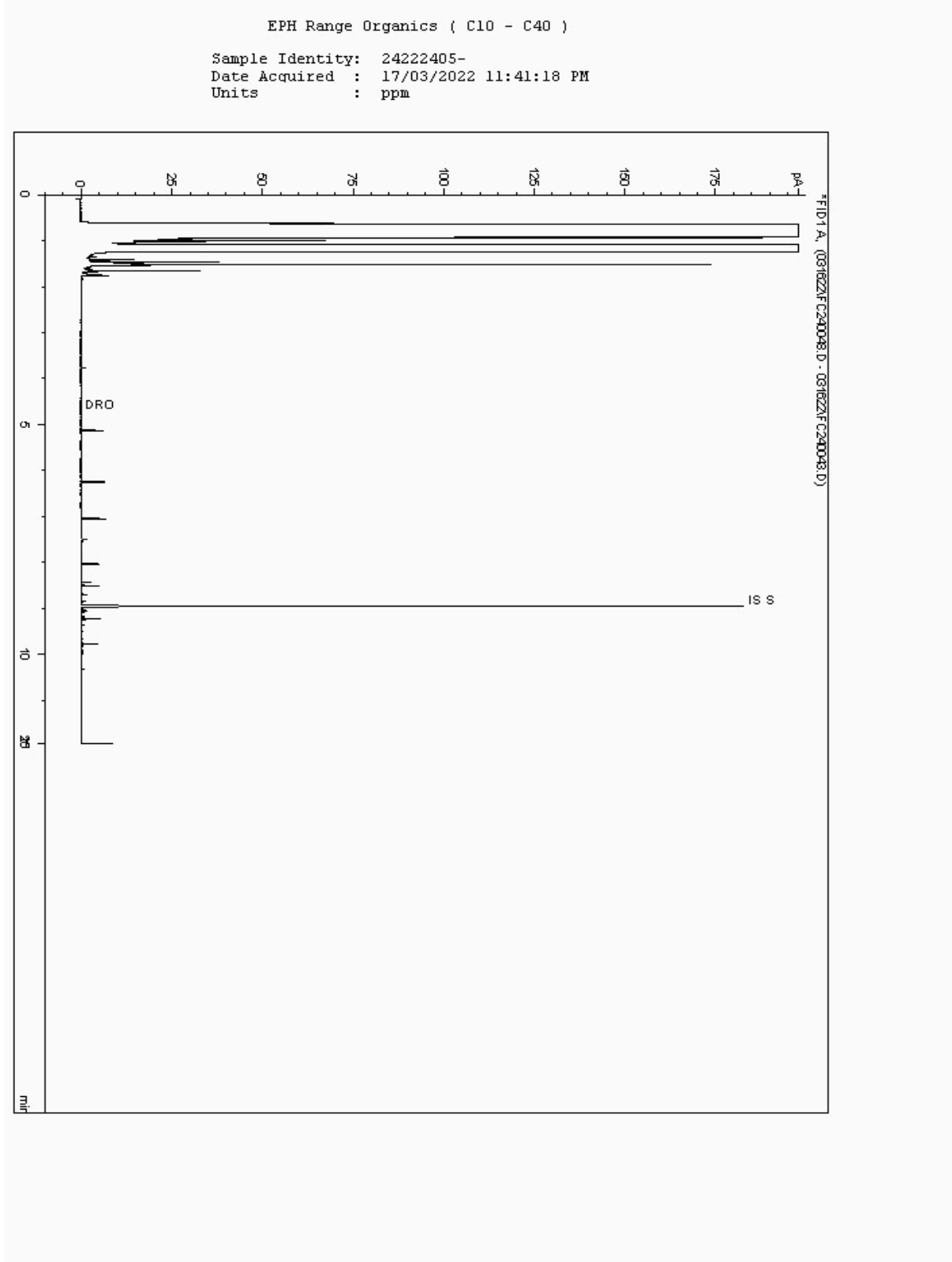
Superseded Report: 639249

## Chromatogram

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

Sample No : 25976159  
Sample ID : GW06\_36

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

Superseded Report: 639249

## Chromatogram

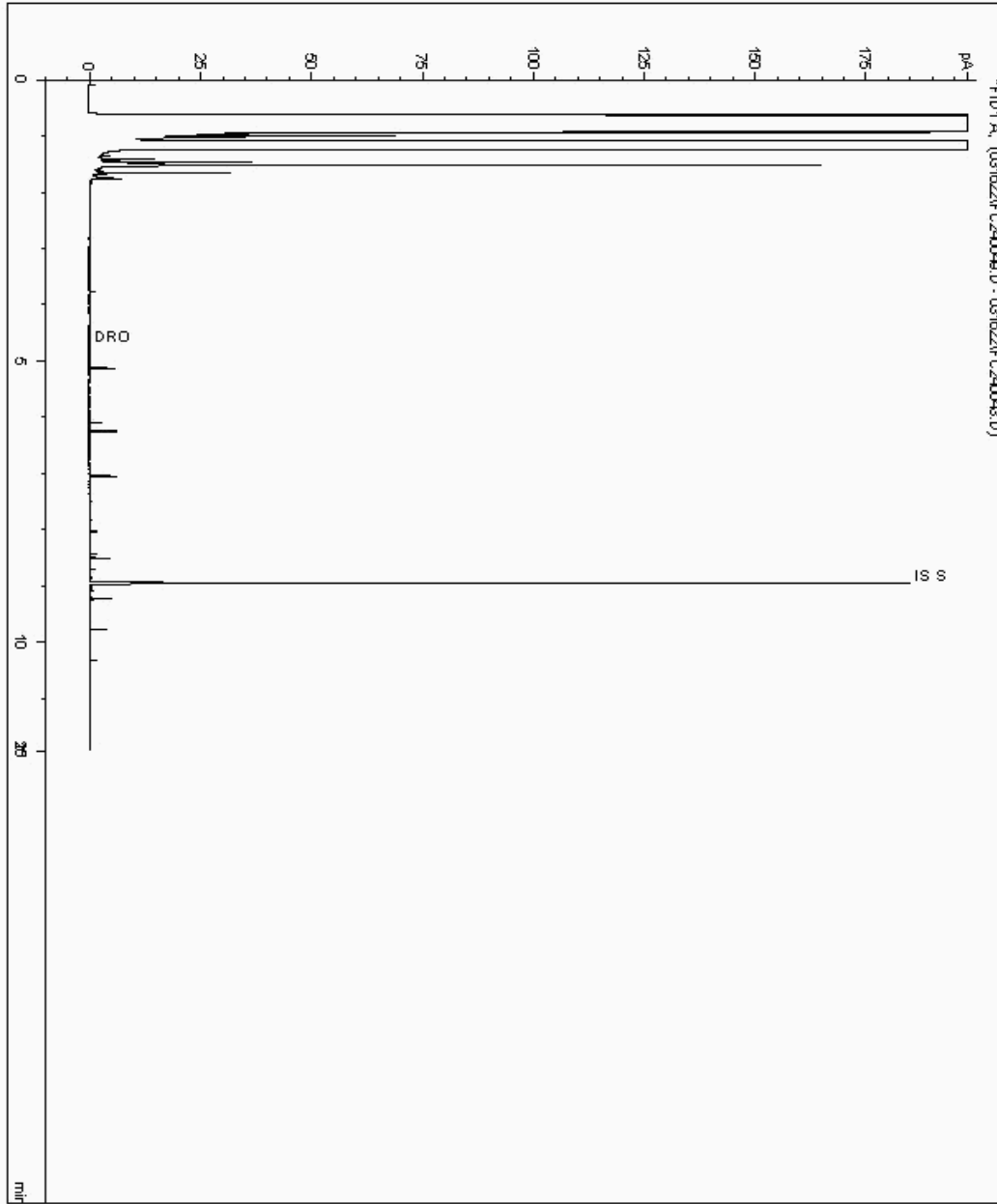
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 25976186  
Sample ID : GW06\_14a

Depth : 0.00 - 0.00

EPH Range Organics ( C10 - C40 )

Sample Identity: 24222509-  
Date Acquired : 17/03/2022 12:05:18 PM  
Units : ppm





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

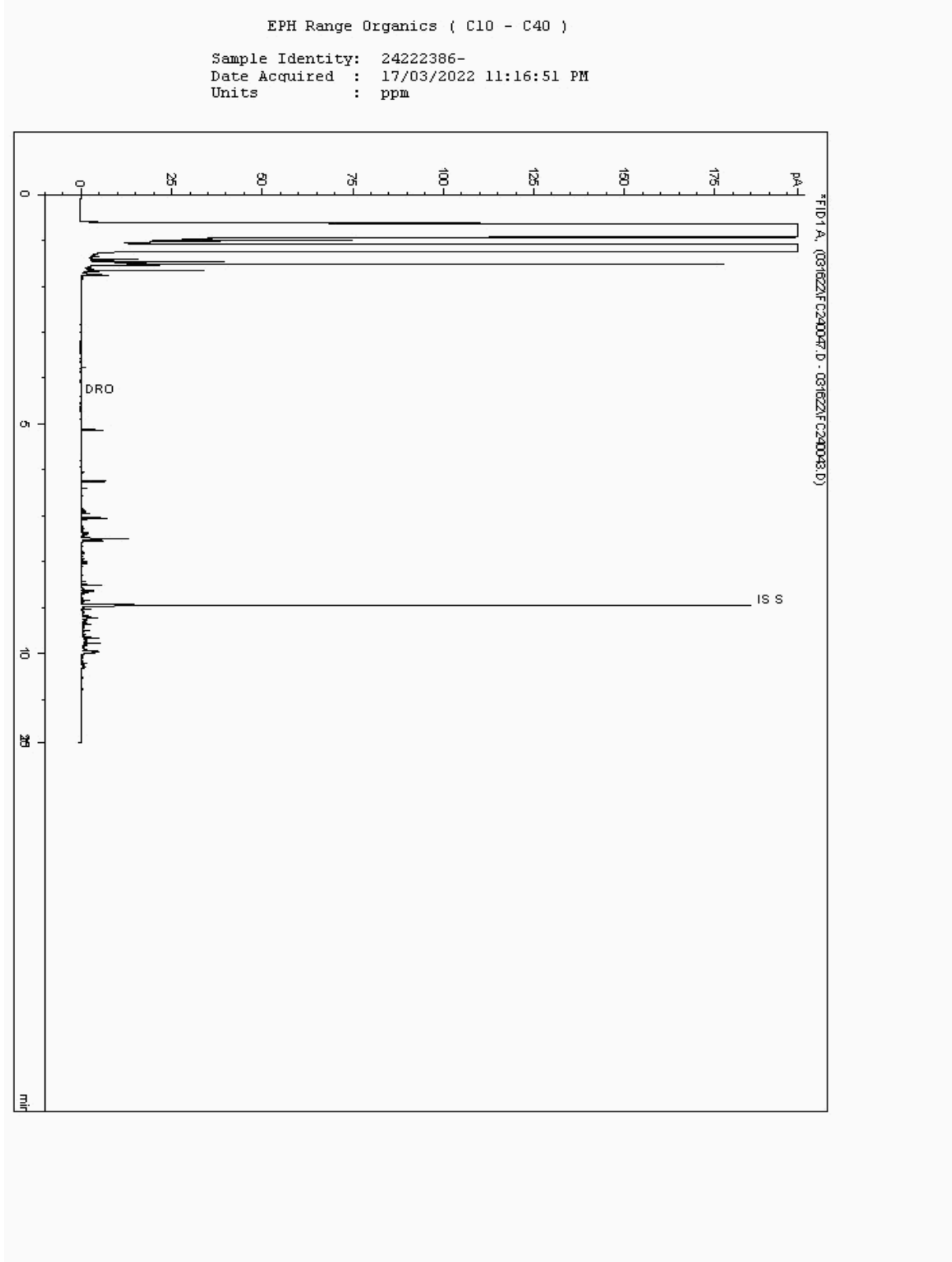
Superseded Report: 639249

## Chromatogram

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

Sample No : 25976208  
Sample ID : GW06\_34

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

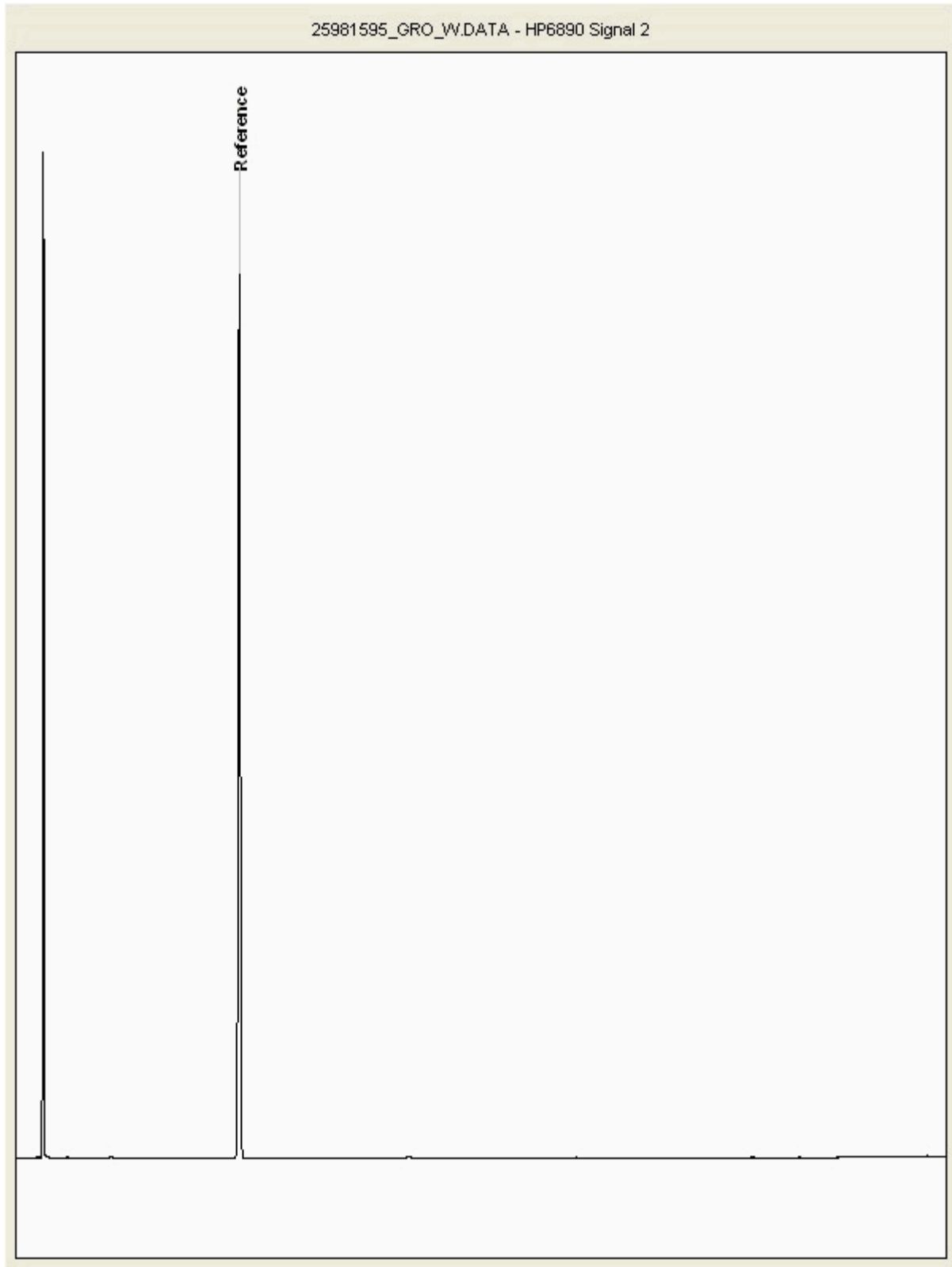
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25981595  
Sample ID : GW06\_14a

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

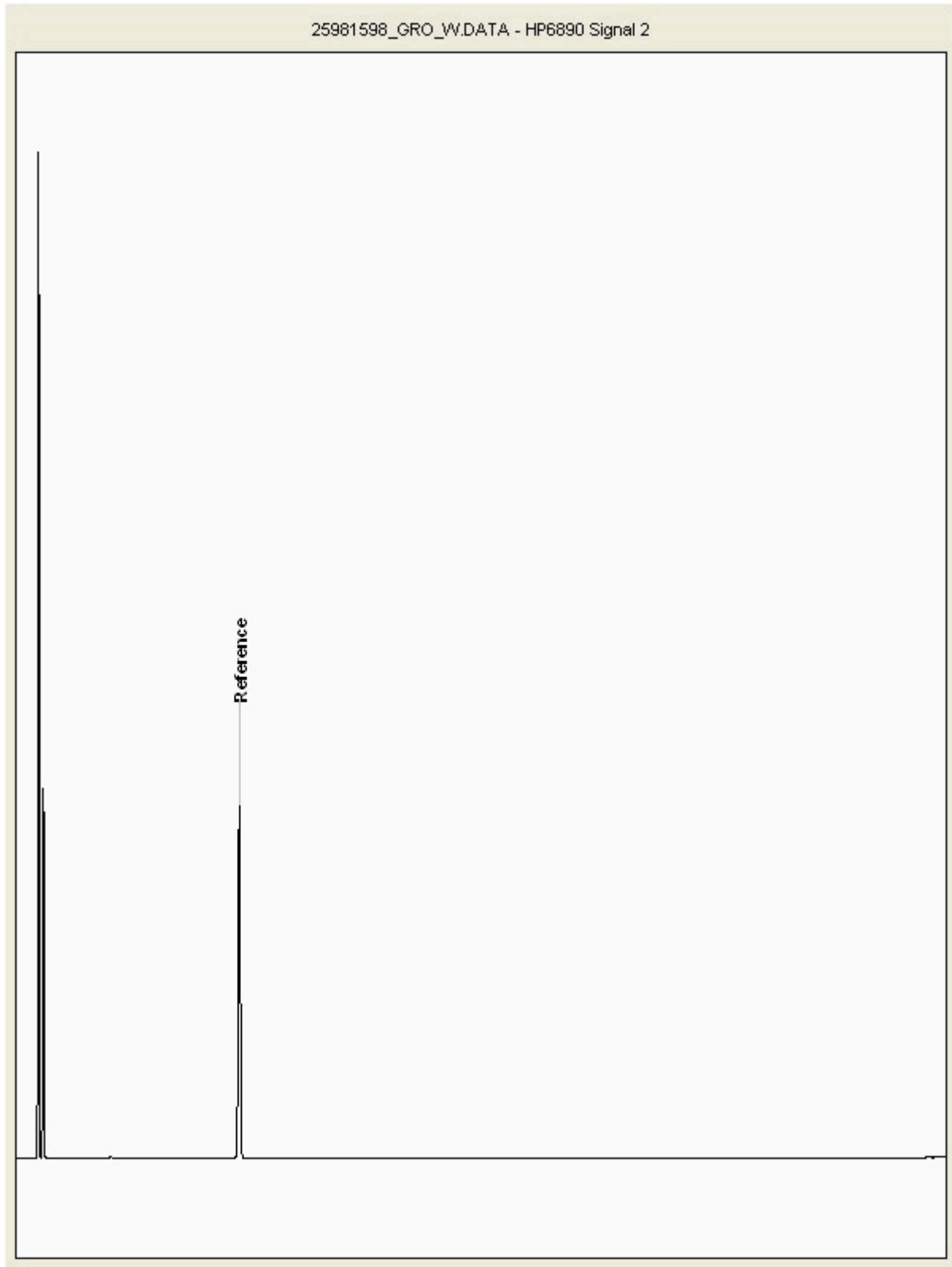
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25981598  
Sample ID : GW06\_36

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

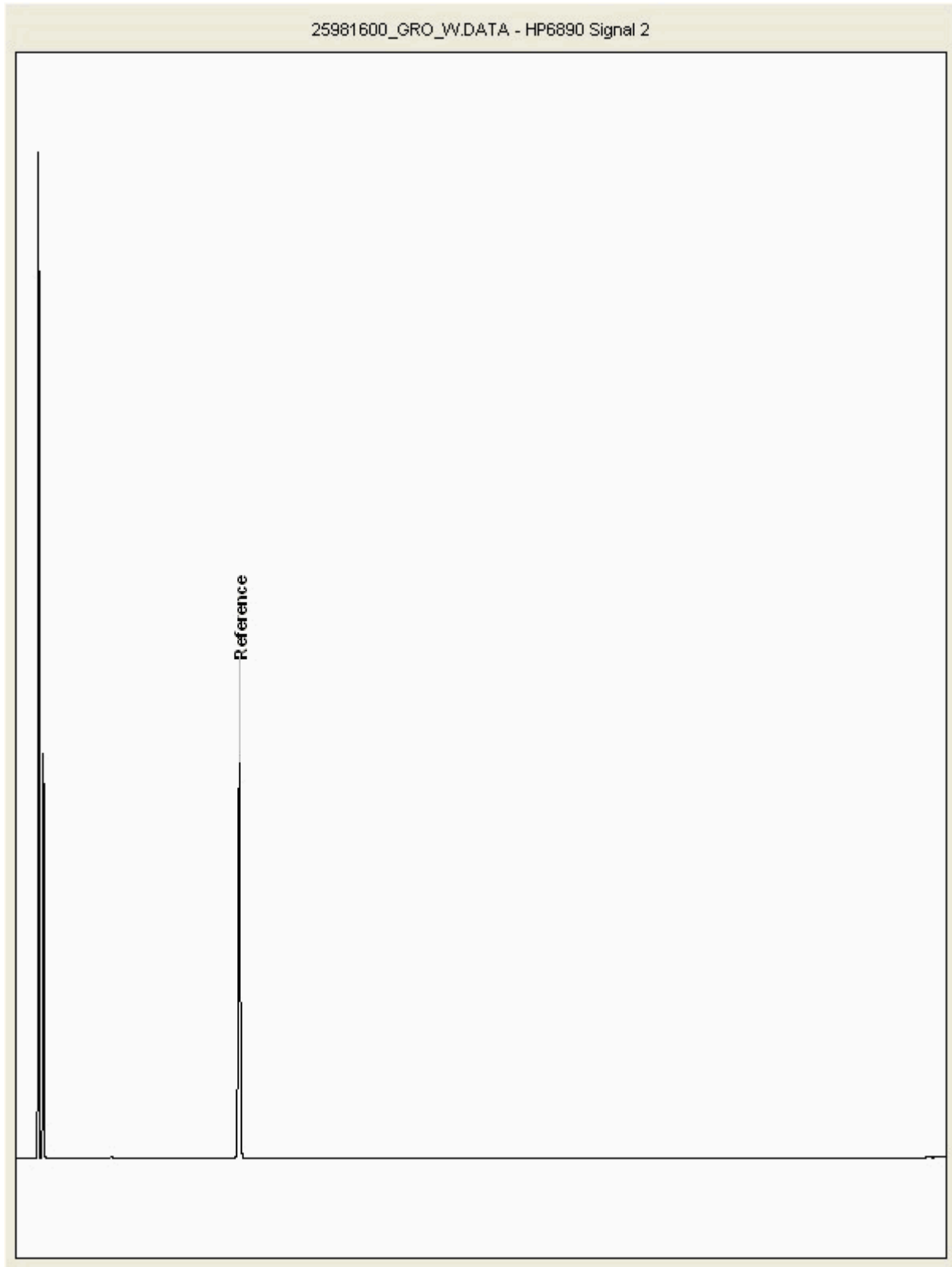
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25981600  
Sample ID : GW06\_37

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

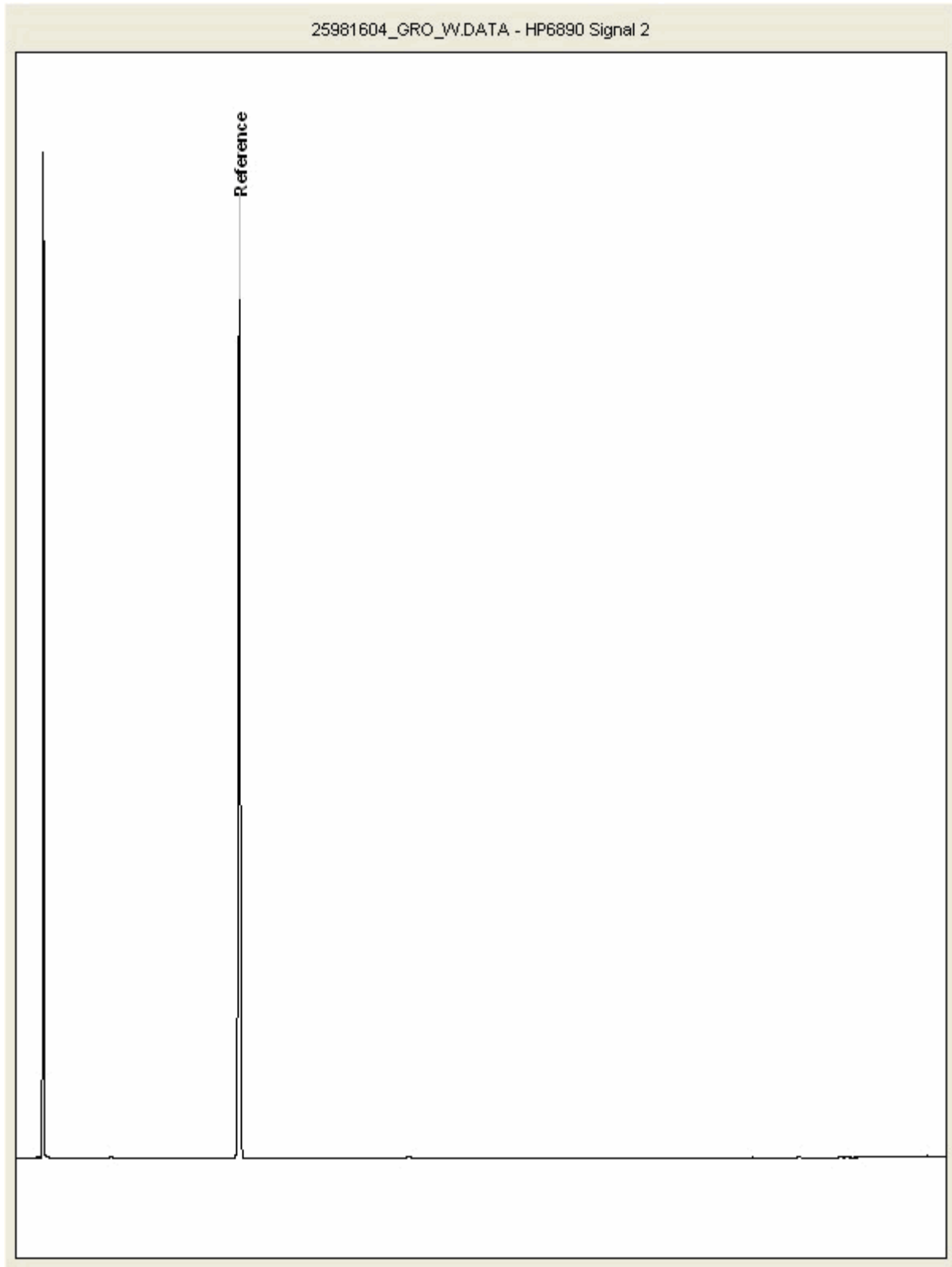
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25981604  
Sample ID : GW12\_38

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

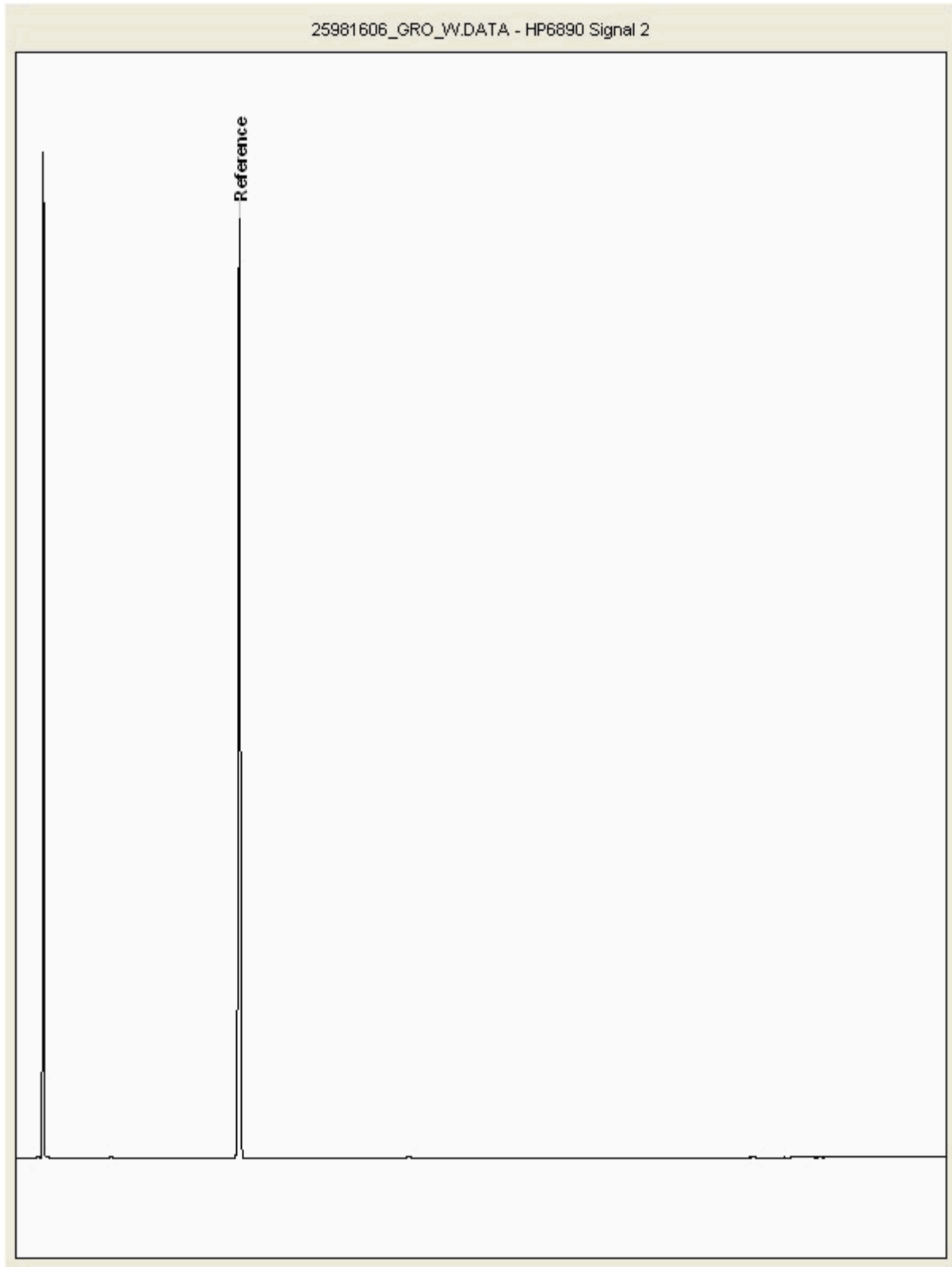
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25981606  
Sample ID : GW09\_35

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

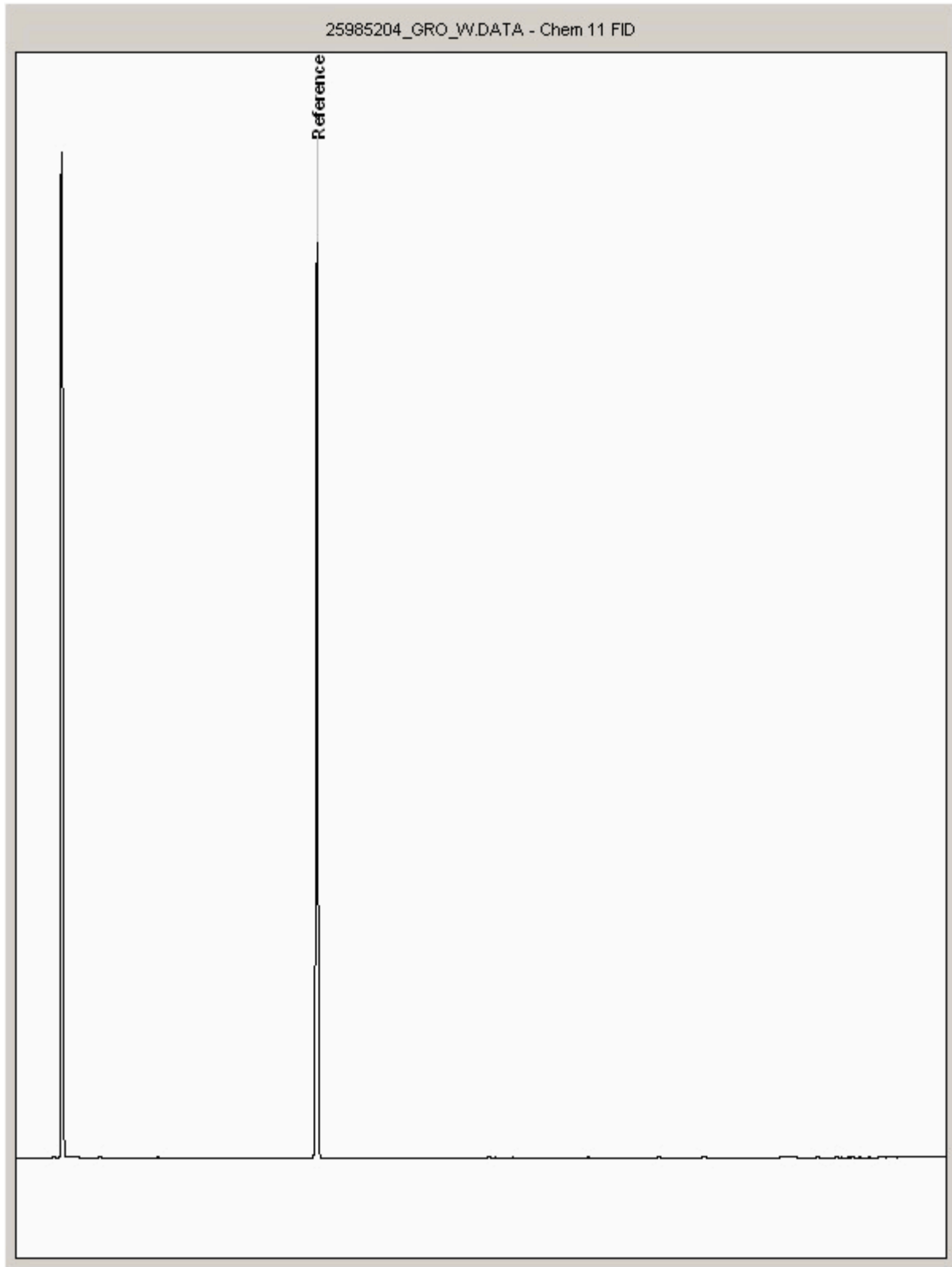
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25985204  
Sample ID : GW06\_13

Depth : 0.00 - 0.00





# CERTIFICATE OF ANALYSIS

Validated

SDG: 220311-59  
Client Ref.: MAR GW 2022 P2

Report Number: 642901  
Location: Newport landfill

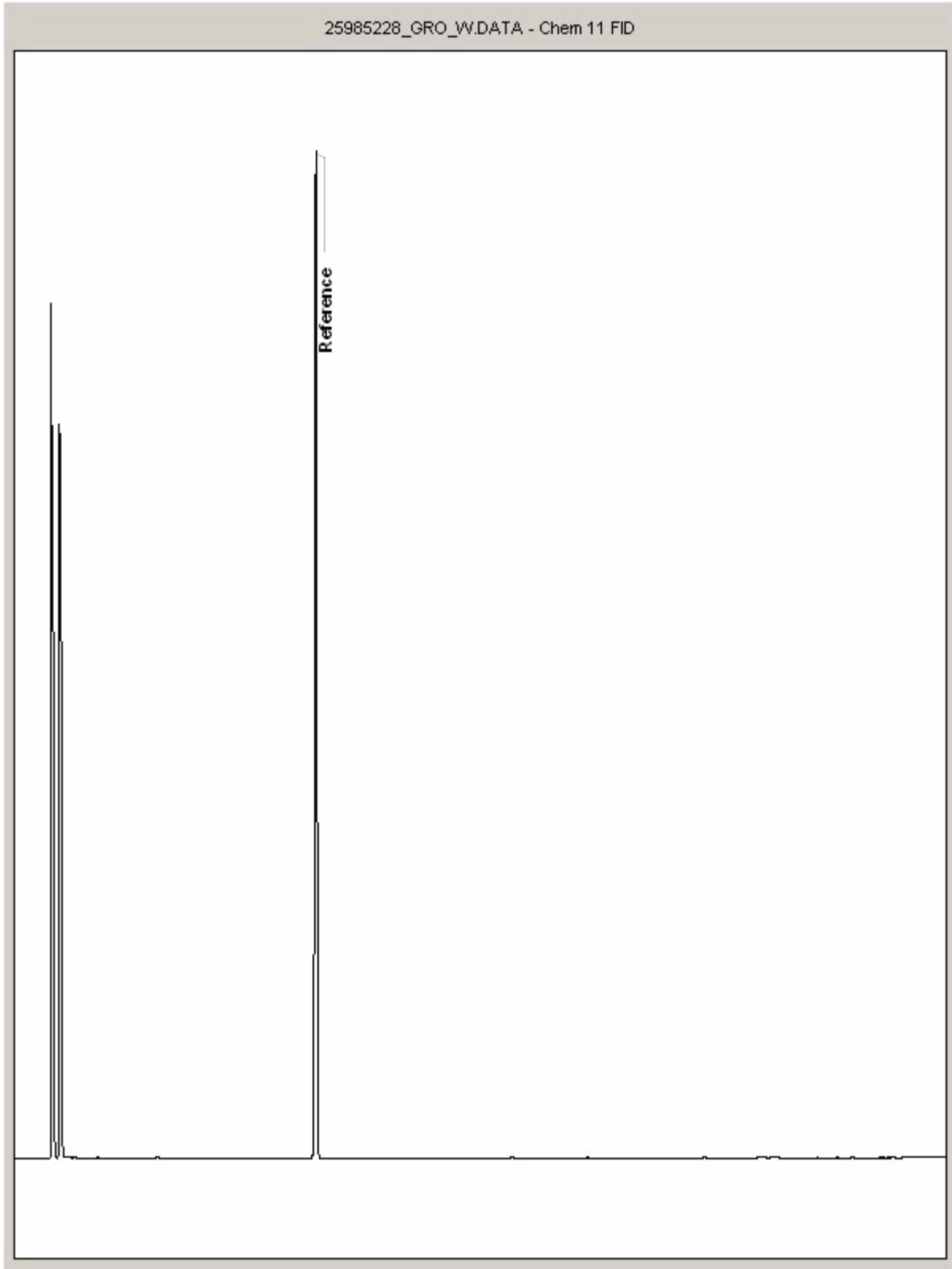
Superseded Report: 639249

## Chromatogram

Analysis: GRO by GC-FID (W)

Sample No : 25985228  
Sample ID : GW06\_34

Depth : 0.00 - 0.00



<b>ALS Environmental, Land</b>	<b>Issue No. 4</b>
	<b>Date: 03/03/2020</b>
<b>QF.7.5.1 Data Amendments Form</b>	<b>Issued and Authorised by Quality Manager</b>

SDG	Sample Event	Sample ID	Date Amended	Amendment Reason	Analysis/Component	Authorised (Lab Manager)	Previous Value	New Value	Units	Supersedes Report
220311-59	25951261	GW 06_13	12/04/2022	Analytical/Quality Issue	KONE_W Sulphate	C Birtwistle	18.9	125	mg/l	639249
220311-59	25951261	GW 06_13	12/04/2022	Analytical/Quality Issue	KONE_W Chloride	C Birtwistle	5330	2510	mg/l	639249
220311-59	25951261	GW 06_13	12/04/2022	Analytical/Quality Issue	KONE_W Nitrate as NO3	C Birtwistle	<0.3	22.6	mg/l	639249
220311-59	25951249	GW 06_37	12/04/2022	Analytical/Quality Issue	KONE_W Sulphate	C Birtwistle	221	45.4	mg/l	639249
220311-59	25951249	GW 06_37	12/04/2022	Analytical/Quality Issue	KONE_W Chloride	C Birtwistle	138	4860	mg/l	639249
220311-59	25951249	GW 06_37	12/04/2022	Analytical/Quality Issue	KONE_W Nitrate as NO3	C Birtwistle	22.6	<0.3	mg/l	639249



# CERTIFICATE OF ANALYSIS

SDG: 220311-59 Report Number: 642901 Superseded Report: 639249  
 Client Ref: MAR GW 2022 P2 Location: Newport landfill

## 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 subject 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 (2021), 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 and soils are obtained from supplied bulk materials and soils 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 (2021).

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

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

#### Visual Estimation Of Fibre Content

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

#### 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.**