From:	Colin Ryder
To:	historiclandfill applications
Cc:	Mike Melody
Subject:	H0188-01 - New Inn Historic Landfill - Environmental Monitoring 2023
Date:	Tuesday 28 May 2024 15:50:35
Attachments:	image001.png P23-074 New Inn Environmental Report 2023-B-P23-074 New Inn Envi.pdf

Ewa,

Please find attached for your information a report outlining Environmental Monitoring carried out in October 2023 by Fehily Timoney and Company on behalf of Galway County Council, at the New Inn Historic Landfill (H0188-01).

Do not hesitate to contact me if you have any related queries.

Regards

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HISTORIC LANDFILL AT NEW INN, CO. GALWAY

ENVIRONMENTAL REPORT 2023

Prepared for:

Galway County Council

Comhairle Chontae na Gaillimhe
Galway County Council

Date: **March 2024**

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HISTORIC LANDFILL AT NEW INN, CO. GALWAY

ENVIRONMENTAL REPORT 2023

REVISION CONTROL TABLE, CLIENT, KEYWORDS AND ABSTRACT

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0	Draft for Client Review	BF/NSC	DM	BG	15/01/2024
01	Final	EOC/EBD/KB	DM	BG	06/03/2024

Client: Galway County Council

Keywords: Environmental report, surface water, groundwater, leachate sampling, landfill gas

Abstract: This report represents the findings of environmental monitoring carried out at New Inn Historic Landfill, Co. Galway for 2023. The monitoring was undertaken to determine the extent of the potential environmental impact of historic landfilling at the site.

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1. INTRODUCTION

1.1 Background

New Inn Historic Landfill covers an area of c.1.5 ha and is located adjacent to the R348, Athenry to Ballinasloe Road, to the west of New Inn. The topography of the site is generally relatively flat, with a gentle slope towards the south-west. The surrounding area primarily comprises agricultural land with residential areas found to the south-east. Available evidence suggests the site was operated between 1970's to 1989. It was originally part of a quarry operated by GCC which was subsequently infilled.

Between 2020 and 2022, FT conducted groundwater, leachate, surface water and landfill gas monitoring at the New Inn Historic Landfill. The monitoring comprised sampling and analysis of groundwater at four groundwater wells and two surface water sampling locations along a tributary stream of Raford River located c.60m north of the site boundary.

In 2023, Galway County Council requested one round of monitoring be undertaken. For continuity, GCC requested that the monitoring locations and parameters remain the same as the monitoring carried out at New Inn Historic Landfill between 2020 and 2022.

1.2 Scope of Works

FT's scope of work was to undertake one round of groundwater, leachate, surface water and landfill gas. Sampling was undertaken at New Inn Landfill on the 4th October 2023.

Laboratory analysis of surface water, leachate and groundwater samples was conducted to assess and quantify any potential or ongoing environmental impacts. Laboratory analytical reports for all surface water, leachate and groundwater monitoring results are presented in Appendix 1.

This report presents the findings of the assessment.

2. ENVIRONMENTAL ASSESSMENT

The results of the environmental assessment at the New Inn Historic Landfill site between 2020 and 2023 are presented in the following sections.

The surface water, leachate and groundwater results were compared to relevant environmental quality standards to identify the potential and magnitude of any impacts on receiving surface water and groundwater.

2.1 Chemical Assessment Criteria

- European Communities, Environmental Objectives (Groundwater)(Amendment) Regulations, 2016 (S.I. No. 366 of 2016).
- Interim Guideline Values (IGV) set out in the EPAs Groundwater Towards Setting the Guideline Values for the Protection of Groundwater in Ireland.
- European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009), as amended 2012 (S.I. No. 327 of 2012), 2015 (S.I. No. 386 of 2015), 2019 (S.I. No. 77 of 2019)
- European Communities (Quality of Surface Water Intended for the Abstraction of Drinking Water) Regulations, 1989 (S.I. No. 294/1989).

2.2 Groundwater and Leachate Analysis

Five groundwater monitoring events have been undertaken since 2020; two rounds of monitoring were undertaken in 2020, on the 30th July and 25th August; additional monitoring was undertaken on 14th July 2021, 2nd June 2022 and 4th October 2023. The findings from the monitoring and an interpretation of the results are presented in the following sections.

2.2.1 Groundwater Quality Monitoring

The results of groundwater samples analysed from the 4 No. groundwater monitoring wells (BH01, BH04, GW01 and GW02) at the site have been assessed against the EPAs Interim Guideline Values (IGVs) and S.I No. 9 of the European Communities Environmental Objectives (Groundwater) Regulations 2010 (amended) threshold values. A summary of the results for the monitoring rounds is outlined in Table 2.1, while the laboratory reports for the 2023 monitoring are presented in Appendix 1.

The groundwater sampling locations are presented in Figure 2.1.

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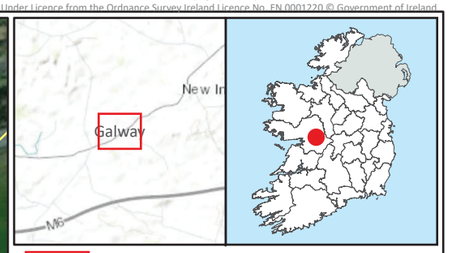

Site Boundary

Borehole Locations

1m Ground Elevation Contours

Indicative Groundwater Flow Direction

N
W E
S

0 50 100 200 Meters

TITLE:	Groundwater Flow Direction		
PROJECT:	New Inn Historic Landfill ERA		
FIGURE NO:	2.1		
CLIENT:	Galway County Council		
SCALE:	1:2,500	**REVISION:**	0
DATE:	06/10/2020	**PAGE SIZE:**	A3

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Table 2-1: Groundwater Sampling Results

Parameter	Units	S.I. No. 9 of 2010 Standards1	EPA IGV Standards2	Round 1 (30/07/2020)				Round 2 (25/08/2020)				Round 3 (14/07/2021)			
				BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02
				UG3	DG3	CG3	DG	UG	DG	CG	DG	UG	DG	CG	DG
Inorganics															
Conductivity @ 20 deg.C	mS/cm	0.8		0.623	0.794	0.748	1.27	0.643	0.798	0.727	1.45	0.646	0.826	0.711	2.9
Fluoride	mg/l	1	**1**	<0.5	<0.5	<0.5	0.908	0.786	0.79	<0.5	0.968	<0.5	<0.5	<0.5	**1.71**
Oxygen, dissolved	mg/l		**NAC**	9.68	8.64	10	9.5	-	8.34	-	9.51	5.46	2.58	4.86	5.54
pH	pH Units	6 – 9		7.97	7.33	7.22	7.85	7.3	7.12	7.01	7.46	7.26	7.26	7.07	7.74
Sulphate	mg/l	187.5	**200**	11.8	11.8	9.3	181	12.5	11.8	16.9	**235**	11.4	20.2	10.6	**492**
Chloride	mg/l	24	**30**	13.5	**73.6**	22.2	**46.4**	16.1	**66**	23.1	**55.6**	10.9	**69**	22	**94.9**
COD, unfiltered	mg/l			28.7	32.3	99.6	162	8.83	13.4	342	106	16.3	70.2	83.4	214
Ammoniacal Nitrogen as N (low level)	mg/l	0.065	**0.15**	0.0176	**0.186**	0.0283	**0.544**	0.0202	**0.558**	0.0438	**0.526**	0.122	**0.212**	0.0656	**0.321**
Cyanide, Total	mg/l	0.0375	**0.01**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Oxidised Nitrogen as N	mg/l		**NAC**	1.89	<0.1	1.75	0.216	0.573	0.282	1.98	<0.1	1.13	<0.1	1.87	0.291
Alkalinity, Total as HCO3	mg/l		**NAC**	451	482	1570	939	427	434	2280	1230	440	464	1420	1830
Filtered (Dissolved) Metals															
Mercury	µg/l	0.75	**1**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	µg/l	7.5	**10**	0.521	0.869	<0.5	0.607	<0.5	2.96	<0.5	0.541	<0.5	3.02	<0.5	0.804
Barium	µg/l		**100**	21.8	33.5	9.12	129	36.9	41.8	**1930**	**111**	22.4	38.8	7.87	**151**
Boron	µg/l	750	**1000**	23.7	43.5	<10	180	64.3	136	348	193	16.6	52.9	14.6	166
Cadmium	µg/l	3.75	**5**	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium	µg/l	37.5	**30**	<1	<1	<1	<1	<1	5.17	<1	<1	<1	<1	<1	<1
Copper	µg/l	1500	**30**	4.98	<0.3	0.828	1.97	7.55	0.618	1.15	1	11.9	<0.3	0.98	1.2
Lead	µg/l	7.5	**10**	<0.2	<0.2	<0.2	0.356	0.616	1.52	<0.2	<0.2	0.497	<0.2	<0.2	0.252
Manganese	µg/l		**50**	16	**115**	9.66	8.05	25.8	**105**	<3	14.9	7.96	**131**	<3	**117**

Parameter	Units	S.I. No. 9 of 2010 Standards1	EPA IGV Standards2	Round 1 (30/07/2020)				Round 2 (25/08/2020)				Round 3 (14/07/2021)			
				BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02
				UG3	DG3	CG3	DG	UG	DG	CG	DG	UG	DG	CG	DG
Nickel	µg/l	15	**20**	10.5	5.59	3.53	3.47	8.5	17.1	2.71	3.44	7.94	2.57	1.65	3.78
Phosphorus (diss.filt)	µg/l	35		<10	<10	<10	16.5	<10	30.7	<10	11.4	42.2	<10	<10	15.7
Zinc	µg/l	75	**100**	26.6	1.95	3.01	1.98	10	5.81	**862**	<1	29.7	3.2	9.58	8.15
Sodium	mg/l	150	**150**	6.42	45.8	8.43	**226**	10.6	46.5	19.3	**222**	7.95	43.6	10.8	**670**
Magnesium	mg/l		**50**	10.1	8.08	5.7	28.3	18.9	12.8	7.94	35.6	9.22	9.11	5.48	34.5
Potassium	mg/l		**5**	1.18	3.32	1.69	5.26	1.58	4.5	0.627	**5.49**	1.31	3.88	2.15	**6.98**
Calcium	mg/l		**200**	139	139	143	71.8	109	128	138	64.5	131	142	160	31.9
Iron	mg/l		**0.2**	<0.019	<0.019	<0.019	<0.019	0.0509	**3.75**	<0.019	0.0304	0.0802	**2.44**	<0.019	0.0509
Combined Pesticides / Herbicides															
Dieldrin	µg/l	0.075		<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01	0.175	<0.1	<0.05	<0.1
Simazine	µg/l	0.075		<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	0.0763	<0.02
Miscellaneous Organics															
MCPA	µg/l	0.075		<0.05	<0.05	<0.25	<0.25	<0.05	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25
Mecoprop	µg/l	0.075	**10**	<0.04	<0.04	<0.2	<0.2	<0.04	<0.08	<0.08	<0.08	<0.2	<0.2	<0.2	<0.2
Dichlorprop	µg/l		**100**	<0.1	<0.1	<0.5	<0.5	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxyacetic acid	µg/l	0.075		<0.05	<0.05	<0.25	<0.25	<0.05	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25
Bromoxynil	µg/l		**5**	<0.04	<0.04	<0.2	<0.2	<0.08	<0.08	<0.08	<0.08	<0.2	<0.2	<0.2	<0.2
Pentachlorophenol	µg/l		**2**	<0.04	<0.04	<0.2	<0.2	<0.08	<0.08	<0.08	<0.08	<0.2	<0.2	<0.2	<0.2

1 OTV-Overall threshold value, European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010) as amended in 2011, 2012, 2016.
2 IGV-Interim Guideline Values, from EPA, Towards Setting Guideline Values for the Protection of Groundwater in Ireland, 2003.
3 UG – upgradient / DG – downgradient / CG – cross gradient
* Items shaded in orange are above the threshold values of the Drinking Water Regulations
* Items shaded in bold are above the threshold values of the EPA IGV Standards

Parameter	Units	S.I. No. 9 of 2010 Standards1	EPA IGV Standards2	Round 4 (02/06/2022)				Round 5 (04/10/2023)			
				BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02
				UG	DG	CG	DG	UG	DG	CG	DG
Inorganics											
Conductivity @ 20 deg.C	mS/cm	0.8		0.599	0.823	0.746	2.64	0.637	0.848	0.711	3
Fluoride	mg/l	1	**1**	<0.5	<0.5	<0.5	**1.46**	<0.5	0.785	<0.5	**2.14**
Oxygen, dissolved	mg/l		**NAC**	9.8	9.58	12.2	11.5	11.6	10.1	11.9	10.3
pH	pH Units	6 – 9		7.34	7.17	7.11	7.67	7.34	7.74	7.26	8.23
Sulphate	mg/l	187.5	**200**	13.6	13.6	6.5	**442**	10.3	19.9	12.2	**425**
Chloride	mg/l	24	**30**	7.4	**71**	15.4	**90.1**	10.5	**68**	23.4	**87.7**
COD, unfiltered	mg/l			-	-	-	-	-	-	-	-
Ammoniacal Nitrogen as N (low level)	mg/l	0.065	**0.15**	0.013	0.139	0.034	**0.443**	0.025	**0.292**	0.032	**0.416**
Cyanide, Total	mg/l	0.0375	**0.01**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Oxidised Nitrogen as N	mg/l		**NAC**	0.88	<0.1	1.11	0.107	1.14	<0.1	2.82	0.364
Alkalinity, Total as HCO3	mg/l		**NAC**	432	459	3340	1460	452	460	707	3160
Filtered (Dissolved) Metals											
Mercury	µg/l	0.75	**1**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	µg/l	7.5	**10**	<0.5	6.21	<0.5	0.798	<0.5	1.35	<0.5	0.862
Barium	µg/l		**100**	19.1	41.5	7.92	**190**	14.7	34.8	8.57	**117**
Boron	µg/l	750	**1000**	21.4	41	15	181	<10	91.6	<10	113
Cadmium	µg/l	3.75	**5**	0.117	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium	µg/l	37.5	**30**	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/l	1500	**30**	24.9	<0.3	0.374	<0.3	12.7	<0.3	1.08	0.924
Lead	µg/l	7.5	**10**	**12.2**	1.75	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Manganese	µg/l		**50**	31.2	**136**	3.15	**146**	11.1	**111**	6.09	**213**
Nickel	µg/l	15	**20**	9.18	**64.2**	1.76	2.72	5.7	**57.3**	1.96	3.38

Parameter	Units	S.I. No. 9 of 2010 Standards1	EPA IGV Standards2	Round 4 (02/06/2022)				Round 5 (04/10/2023)			
				BH1	BH4	GW01	GW02	BH1	BH4	GW01	GW02
				UG	DG	CG	DG	UG	DG	CG	DG
Phosphorus (diss.filt)	µg/l	35		33.5	11.8	33.6	36.4	<10	<10	63.8	46.5
Zinc	µg/l	75	**100**	31.5	19.1	1.27	1.89	26	1.64	3.52	1.39
Sodium	mg/l	150	**150**	5.99	47.2	8.63	**486**	4.94	44.2	13.3	**735**
Magnesium	mg/l		**50**	8.55	8.48	5.99	41	7.14	12.4	5.25	30
Potassium	mg/l		**5**	1.42	4.06	1.64	**7.23**	0.836	3.63	2.75	**6.52**
Calcium	mg/l		**200**	140	152	170	53.8	127	123	137	26.3
Iron	mg/l		**0.2**	**0.407**	**5.95**	<0.019	0.0415	<0.019	**0.303**	<0.019	**0.0222**
Combined Pesticides / Herbicides											
Dieldrin	µg/l	0.075		<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.1	<0.1
Simazine	µg/l	0.075		<0.01	<0.02	0.073	<0.01	<0.01	<0.1	<0.1	<0.1
Miscellaneous Organics											
MCPA	µg/l	0.075		<0.05	<0.1	<0.1	<0.1	<0.05	<0.25	<0.25	<5
Mecoprop	µg/l	0.075	**10**	<0.04	<0.08	<0.08	<0.08	<0.04	<0.2	<0.2	<4
Dichlorprop	µg/l		**100**	<0.1	<0.2	<0.2	<0.2	<0.1	<0.5	<0.5	<10
2,4-Dichlorophenoxyacetic acid	µg/l	0.075		<0.05	<0.1	<0.1	<0.1	<0.05	<0.25	<0.25	<5
Bromoxynil	µg/l		**5**	<0.08	<0.08	<0.08	<0.08	<0.04	<0.2	<0.2	<4
Pentachlorophenol	µg/l		**2**	<0.08	<0.08	<0.08	<0.08	<0.04	<0.2	<0.2	<4

1 OTV-Overall threshold value, European Communities Environmental Objectives (Groundwater) Regulations, 2010 (S.I. No. 9 of 2010) as amended in 2011, 2012, 2016.
2 IGV-Interim Guideline Values, from EPA, Towards Setting Guideline Values for the Protection of Groundwater in Ireland, 2003.
3 UG – upgradient / DG – downgradient / CG – cross gradient
* Items shaded in orange are above the threshold values of the Drinking Water Regulations
* Items shaded in bold are above the threshold values of the EPA IGV Standards

2.2.2 Groundwater Analysis Discussion

The results of the groundwater monitoring from BH1, BH4, GW01 and GW02 have reported several values above the IGVs and groundwater regulations overall limit values. Results from 2023 are consistent with previous years.

In 2023, samples obtained from downgradient monitoring wells follow previous years trends, with ammoniacal nitrogen concentrations from 0.0656 mg/l to 0.558 mg/l at BH4 and GW02 which are above IGV and OTV limit values. The highest concentrations of ammoniacal nitrogen were detected at downgradient wells GW02 and BH4, indicating the site landfill may causing an increase in ammoniacal nitrogen downgradient of the site.

Results from monitoring events show elevated concentrations of chloride above the OTV and IGV continue to be detected in downgradient groundwater monitoring wells BH4 and GW02. Results show higher chloride concentrations at GW02 (46.4 – 94.9 mg/l) compared to BH4 (66 – 73.6 mg/l) which is likely due to the proximity to the landfill waste body.

Sulphate (235 – 492 mg/l) and fluoride (1.46 – 2.14 mg/l) concentrations at GW02 above the OTV / IGV limits and are another indicator of the presence of landfill leachate.

Landfill leachate has the potential to contain high concentrations of chloride, sulphate and fluoride ions and may be the source of the concentrations observed at these locations.

Electrical conductivity (EC) at GW02 was elevated above the OTV threshold value during each of the five monitoring events and ranged from 1.27 – 3.0 mS/cm. EC in groundwater at BH4 are also elevated above the threshold values from 2021 to 2023 (0.823 to 0.848 mS/cm). The EC levels are an indication of the presence of dissolved anions (e.g. chloride and sulphate) in the landfill leachate downgradient of the waste body.

Sodium (222 – 735 mg/l) and potassium (5.26 – 7.23 mg/l) concentrations at GW02 were above the respective OTV and IGV limits during each of the five monitoring events. The presence of sodium and potassium at these concentrations indicate the presence of leachate migration from the landfill.

Analysis of heavy metal compounds showed the presence of barium at GW02 (129 – 190 mg/l) and nickel detected at BH4 (17.1 - 64.2 mg/l) which were above the IGV limit. The detection of these heavy metal compounds are typical indicators of landfill leachate.

Since July 2020, iron concentrations of 0.303 – 5.95 mg/l and manganese concentrations of 105 – 136 µg/l were detected above the IGV limit at BH4. Since 2021 manganese concentrations at GW02 of 117 – 213 mg/l were elevated above the IGV threshold value. Since July 2020 results show iron and manganese concentrations were broadly below the IGV limit at the upgradient (BH1) and cross-gradient (GW01) wells during each monitoring event.

The results of groundwater monitoring when assessed against thresholds for List 1 and List 2 substances – SVOCs, VOCs, PCBs and organics shows all results are below the laboratory limit of detection in all assessments across all five sampling locations during all monitoring rounds. The 2021 monitoring event only reported detectable concentrations of the pesticide and herbicide compounds for dieldrin and simazine at upgradient well BH1 and cross-gradient well GW01, respectively. Dieldrin and simazine are commonly used herbicides, and their presence at these locations are not expected to be attributed to leachate migration from the landfill.

2.3 Leachate Monitoring

Since 2020 five leachate monitoring events have been undertaken. On the 30th July 2020 and 25th August 2020 two rounds of leachate monitoring were successfully undertaken at location BH02. On 14th July 2021 and 2nd June 2022 leachate monitoring could not be undertaken as the borehole was dry. On the 4th October 2023 the fifth monitoring round was undertaken.

A summary of the findings from the monitoring can be found in Table 2-2 and the laboratory reports can be found in Appendix 1.

Table 2-2: Leachate Sampling Results

Parameter	Units	BH02	BH02	BH2
		30/07/2020	25/08/2020	04/10/2023
Carbon				
Organic Carbon, Total	mg/l	12.7	12.6	11.8
Inorganics				
Conductivity @ 20 deg.C	mS/cm	5.88	3.03	3.62
Fluoride	mg/l	<0.5	<0.5	<0.5
Oxygen, dissolved	mg/l	6.16	3.95	5.6
pH	pH Units	6.88	6.74	6.93
Phosphate (Ortho as PO4)	mg/l	<0.05	<0.05	-
Sulphate	mg/l	29.4	23.9	19.9
Chloride	mg/l	1720	740	878
COD, unfiltered	mg/l	303	101	403
Ammoniacal Nitrogen as N (low level)	mg/l	22	10.8	16.9
BOD, unfiltered	mg/l	28.2	30.4	9.95
Total Oxidised Nitrogen as N	mg/l	<0.1	0.266	<0.1
Filtered (Dissolved) Metals				
Mercury (diss.filt)	µg/l	<0.01	<0.01	<0.01
Arsenic (diss.filt)	µg/l	2.73	3.55	1.77
Cadmium (diss.filt)	µg/l	<0.08	<0.08	<0.08

Parameter	Units	BH02	BH02	BH2
		30/07/2020	25/08/2020	04/10/2023
Chromium (diss.filt)	µg/l	<1	<1	<1
Copper (diss.filt)	µg/l	<0.3	0.622	<0.3
Lead (diss.filt)	µg/l	<0.2	<0.2	<0.2
Manganese (diss.filt)	µg/l	525	465	447
Nickel (diss.filt)	µg/l	55.2	52.7	9.58
Phosphorus (diss.filt)	µg/l	13.6	13.4	<10
Selenium (diss.filt)	µg/l	<1	<1	<1
Zinc (diss.filt)	µg/l	7.37	6.14	7.75
Sodium (Dis.Filt)	mg/l	1250	449	569
Magnesium (Dis.Filt)	mg/l	28.2	14.2	16.6
Potassium (Dis.Filt)	mg/l	25.7	14.7	16.5
Iron (Dis.Filt)	mg/l	3.87	3.79	9.24

2.3.1 Leachate Analysis Discussion

Results indicated the presence of some pollutants at concentrations typical of Municipal Solid Waste (MSW) leachate i.e., ammoniacal nitrogen, chloride, and chemical oxygen demand (COD).

2.4 Landfill Gas Monitoring

FT carried out monitoring of landfill gas (LFG) parameters at each monitoring borehole location BH01, BH02, BH4, GW01 and GW02 inclusive. Methane, carbon dioxide, oxygen and atmospheric pressure were analysed at the 4 No. groundwater monitoring wells located outside the waste body and 1 No. leachate monitoring well (GW02) located within the waste body using a Landfill Gas analyser.

2.4.1 Monitoring Results

The EPA Landfill Manuals - Landfill Monitoring 2nd Edition specifies trigger values for landfill gas monitoring at offsite monitoring locations. The trigger level for methane outside the waste body is 1% v/v and for carbon dioxide is 1.5% v/v. The monitoring results for methane, carbon dioxide and oxygen levels for the perimeter borehole are summarised in Table 2-3.

Table 2-3: Perimeter Well Monitoring Results

Date: 29/7/2020					
Sample Station	CH4	CO2	O2	Atmospheric Pressure	Weather
	(% v/v)	(% v/v)	(% v/v)	(mbar)	
Perimeter Monitoring Wells				1001	Overcast, Light Rain, Warm, 18-20°C
BH01	0.1	0.2	21.1		
BH04	0	0.3	20.6		
GW01	0.1	3.6	16.4		
GW02	0.1	0.3	20.7		
In-Waste Monitoring Wells					
BH02	16.8	15.9	5.3		
Date: 24/8/2020					
Sample Station	CH4	CO2	O2	Atmospheric Pressure	Weather
	(% v/v)	(% v/v)	(% v/v)	(mbar)	
Perimeter Monitoring Wells				1002	Overcast, Light Rain, Warm, 16-18°C
BH01	0	0.6	20.8		
BH04	0	0.2	21.2		
GW01	0	3.3	17.6		
GW02	0	0.3	20.9		
In-Waste Monitoring Wells					
BH02	20.8	18.7	2.5		
Date: 14/7/2021					
Sample Station	CH4	CO2	O2	Atmospheric Pressure	Weather
	(% v/v)	(% v/v)	(% v/v)	(mbar)	
Perimeter Monitoring Wells				1023	Sunny, Clear Warm, 16-18°C
BH01	0	0.8	20.3		
BH04	0	0.4	20.8		
GW01	0	2.8	18.2		
GW02	0	1.2	20.1		
In-Waste Monitoring Wells					
BH02	18.2	17.5	2.2		

Date: 4/10/2023					
Sample Station	**CH4 (% v/v)**	**CO2 (% v/v)**	**O2 (% v/v)**	**Atmospheric Pressure (mbar)**	**Weather**
Perimeter Monitoring Wells				1004	Warm, overcast with showers
BH01	0	0.1	21.2		
BH04	0.2	0.2	21		
GW01	0.1	0.4	20.4		
GW02	0	0.1	21.4		
In-Waste Monitoring Wells					
BH02	10.8	10.1	6.1		

As shown in Table 2.3, no methane or only trace quantities of methane are measured at offsite monitoring wells (GW01, GW02, BH01 and BH04). Carbon dioxide is only detected above the trigger value of 1.5% v/v at offsite monitoring well GW01 at concentrations of between 2.8% v/v and 3.6% v/v during the monitoring events in 2020 and 2021. These results indicate that a low level of lateral migration of landfill gas may be occurring, the close proximity of GW01 to the waste body is noted.

Monitoring at leachate monitoring borehole BH02 show concentrations for both carbon dioxide and methane indicate that the landfill may still be biologically active with landfill gas continuing to be produced.

2.5 Surface Water Monitoring

Five rounds of surface water monitoring were carried out on the 30th July and 25th August 2020, 14th July 2021, 2nd June 2022 and 4th October 2023.

The surface water monitoring locations were selected upstream and downstream of the landfill footprint. Monitoring location SW1 was selected as the upstream location on Raford river to the north/north-east of the landfill. Monitoring location SW2 is located on the Raford River to the north-west, and downstream of the site.

The surface water sampling locations at the site are presented in Figure 2.2.

2.5.1 Monitoring Parameters

The results of surface water sampling analysed from the 2 No. sampling locations (SW1 and SW2) have been assessed against the Maximum Admissible Concentration (MAC) and the Environmental Quality Standard (EQS) as per S.I. No. 77/2019 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 where applicable.

A summary of results from the monitoring rounds is outlined in Table 2.4, while the laboratory reports are presented in Appendix 1.

Path: R:\Map Production\2020\P2282\Workspace\P2282_Tier2_ERA_NewInn_A3.aprx

Site Boundary

Surface Water Monitoring Locations

N
W E
S

0 50 100 200 Meters

TITLE:	Surface Water Sampling Locations		
PROJECT:	New Inn Historic Landfill ERA		
FIGURE NO:	2.2		
CLIENT:	Galway County Council		
SCALE:	1:2,500	**REVISION:**	0
DATE:	06/10/2020	**PAGE SIZE:**	A3

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Table 2-4: Surface Water Sampling Results

Parameter	Units	EQS1	MAC2	US	DS	US	DS	US	DS	US	DS	US	DS
				SW01	SW02	SW01	SW02	SW01	SW02	SW01	SW02	SW01	SW02
				30/07/2020	30/07/2020	25/08/2020	25/08/2020	14/07/2021	14/07/2021	01/06/2022	01/06/2022	04/10/2023	04/10/2023
Inorganics													
Conductivity	mS/cm	1	**1**	0.642	0.64	0.352	0.367	0.629	0.651	0.713	0.709	0.677	0.613
Fluoride	mg/l	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Oxygen	mg/l			9.65	9.41	10	10.9	12.5	11.7	9.19	9.27	11.3	11.2
pH	pH Units	6.0<pH<9.0		7.81	7.73	7.44	7.41	7.75	7.8	7.96	7.99	7.64	7.98
Sulphate				11	11.7	<2	<2	6.4	6.6	9.4	8.9	4.2	<2
Chloride				27.5	28.1	15.5	15	31.3	31.5	43.1	43.1	25.6	19.4
COD, unfiltered				21.8	17.6	64	61.9	<7	8.46	<7	8.94	9.38	29.1
Ammoniacal Nitrogen as N (low level)		≤0.065	**0.14**	0.0237	0.0319	0.0716	0.0861	0.02	0.032	0.0399	0.049	0.062	0.033
Cyanide, Total		0.01		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BOD, unfiltered		2.6		<1	<1	2.67	2.97	<1	<1	<1	<1	<1	<1
Suspended solids, Total		25		5.9	8.25	3.75	3.6	<2	<2	-	-	<2	2.8
Filtered (Dissolved) Metals													
Mercury	µg/l		**0.07**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Arsenic	µg/l	25		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium	µg/l	0.15	**0.9**	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Chromium	µg/l	4.7	**32**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Copper	µg/l	30		1.11	0.699	0.92	1.14	18.9	12.7	0.531	0.418	1.09	0.913
Lead	µg/l	1.2	**14**	0.483	0.268	<0.2	0.442	0.891	0.251	<0.2	<0.2	<0.2	<0.2
Nickel	µg/l	4	**34**	1.24	0.795	1.09	1.03	0.709	0.801	0.581	0.538	1.69	2.7
Zinc	µg/l	100		6.61	8.97	1.7	2.81	21.4	41.5	4.56	2.03	2.41	1.9

Parameter	Units	EQS1	MAC2	US	DS	US	DS	US	DS	US	DS	US	DS
				SW01	SW02	SW01	SW02	SW01	SW02	SW01	SW02	SW01	SW02
				30/07/2020	30/07/2020	25/08/2020	25/08/2020	14/07/2021	14/07/2021	01/06/2022	01/06/2022	04/10/2023	04/10/2023
Semi-Volatile Organic Compounds (SVOCs)													
1,2,4-Trichlorobenzene	µg/l	0.4	**not applicable**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Anthracene	µg/l	0.1	**0.1**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
bis(2-Ethylhexyl) phthalate	µg/l	1.3	**not applicable**	<2	<2	<16	<20	<2	<2	<2	<2	<2	<4
Benzo(b)fluoranthene	µg/l		**0.017**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Benzo(k)fluoranthene	µg/l		**0.017**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Benzo(a)pyrene	µg/l	0.00017	**0.27**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Benzo(g,h,i)perylene	µg/l		**0.0082**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Diethyl phthalate	µg/l	1.3	**not applicable**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Fluoranthene	µg/l	0.0063	**0.12**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Hexachlorobenzene	µg/l		**0.05**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Hexachlorobutadiene	µg/l		**0.6**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Pentachlorophenol	µg/l	0.4	**1**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Phenol	µg/l	8	**46**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Naphthalene	µg/l	2	**130**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2
Indeno(1,2,3-cd) pyrene	µg/l		**not applicable**	<1	<1	<8	<10	<1	<1	<1	<1	<1	<2

Notes:
Environmental Quality Standard (EQS) as per European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I No. 272 of 2009). Refers to Annual-Average (AA) EQS for relevant parameters.
Maximum Admissible Concentration (MAC), as classified by European Communities Environmental Objectives (Surface Waters) Regulations 2009 (S.I No. 272 of 2009).
*** NAC – no abnormal change.
Results presented are those which have a relevant EQS / MAC limit value.

2.5.2 Surface Water Analysis Discussion

The results of the surface water laboratory analysis as presented in Table 2.4, when assessed against the MAC and EQS quality standards showed two results elevated above the EQS (Good Status) limit for ammoniacal nitrogen in August 2020 with concentrations of 0.0716 mg/l and 0.0861mg/l detected at SW1 and SW2 respectively. Sampling from 2021 to 2023 showed concentrations remained below the EQS.

Since monitoring commenced in July 2020 results show little variation in parameter concentrations between upstream and downstream sampling locations. These results indicate that the landfill is not having a deleterious effect on downstream water quality of Raford River north of the site.

3. CONCLUSION

In 2023, Galway County Council requested FT to undertake one round of environmental monitoring at New Inn Historic Landfill. The results of this sampling served as a continuation of the monitoring assessments carried out from 2020 to 2022.

In 2021 and 2023 analysis of groundwater samples recovered from monitoring wells BH1, BH4, GW01 and GW02 continue to report similar concentrations of ammoniacal nitrogen, sulphate, chloride, and some heavy metal compounds detected during the initial monitoring 2020 events. Results for downgradient wells GW02 and BH4 report similar pollutant parameters are being detected which indicates the presence of landfill leachate. Landfill leachate has the potential to contain high concentrations of ammoniacal N and chloride, fluoride and sulphate ions and may be the source of the concentrations observed in groundwater at the BH4 and GW02 well locations. Based on the presence of elevated ammoniacal N, sulphate, fluoride, and chloride typical of landfill leachate, the shallow soil cap may not be suitable at preventing rainfall infiltration into the waste body and consequently is contributing to leachate generation, subsequent migration of leachate to the underlying groundwater and migration downgradient.

In 2023 leachate monitoring was undertaken at location BH02and reported concentrations are consistent with those reported in 2020. Detected parameters indicate the presence of pollutants at elevated concentrations typical of MSW leachate. The monitoring location BH02 was dry in 2021 and 2022 monitoring events.

Landfill gas monitoring from monitoring wells BH01, BH04, GW01 and GW02 at the site indicates gas concentrations detected are below threshold levels set by the EPA Landfill Manuals - Landfill Monitoring. The carbon dioxide and methane levels recorded at in-waste well BH02 indicate the landfill may still be biologically active with landfill gas continuing to be produced.

Analysis results for surface water samples recovered from the Raford River located to the north of the site, at locations upstream and downstream of the historic landfill showed only two results elevated above the EQS limit values in August 2020 for ammoniacal nitrogen. Sampling in 2021, 2022 and 2023 showed concentrations remained below the EQS. Since July 2020 results show little variation in parameter concentrations between upstream and downstream sampling locations during each monitoring event. These results indicate that the landfill is not having a deleterious effect on downstream water quality of Raford River north of the site.

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CONSULTANTS IN ENGINEERING,
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APPENDIX 1

Groundwater, Leachate and Surface Water Sampling Analysis Results

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

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	09 August 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200731-90
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	562381

We received 2 samples on Friday July 31, 2020 and 2 of these samples were scheduled for analysis which was completed on Sunday August 09, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22583459	SW2 (DS)		0.00 - 0.00	30/07/2020
22583445	SW1 (US)		0.00 - 0.00	30/07/2020

Maximum Sample/Coolbox Temperature (°C) : **16.2**

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

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

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

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)								22583459						22583445
Customer Sample Reference								SW2 (DS)						SW1 (US)
AGS Reference														
Depth (m)								0.00 - 0.00						0.00 - 0.00
Container								0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)
Sample Type								SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2						X						X					
Ammonium Low	All	NDPs: 0 Tests: 2									X						X		
Anions by Kone (w)	All	NDPs: 0 Tests: 2								X						X			
BOD True Total	All	NDPs: 0 Tests: 2							X						X				
COD Unfiltered	All	NDPs: 0 Tests: 2							X						X				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2								X						X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2										X						X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2								X						X			
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2								X						X			
Fluoride	All	NDPs: 0 Tests: 2								X						X			
Mercury Dissolved	All	NDPs: 0 Tests: 2								X						X			
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2						X						X					
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2						X						X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2						X						X					
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2						X						X					

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)								22583459						22583445
Customer Sample Reference								SW2 (DS)						SW1 (US)
AGS Reference														
Depth (m)								0.00 - 0.00						0.00 - 0.00
Container								0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)
Sample Type								SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2						X						X					
pH Value	All	NDPs: 0 Tests: 2								X						X			
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2								X						X			
Suspended Solids	All	NDPs: 0 Tests: 2								X						X			
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2											X						X
VOC MS (W)	All	NDPs: 0 Tests: 2											X						X

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	30/07/2020	30/07/2020			
			Sample Time	.	.			
			Date Received	31/07/2020	31/07/2020			
			SDG Ref	200731-90	200731-90			
			Lab Sample No.(s)	22583459	22583445			
			AGS Reference					
Suspended solids, Total	<2 mg/l	TM022		8.25 #	5.9 #			
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #			
Oxygen, dissolved	<0.3 mg/l	TM046		9.41	9.65			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0319 #	0.0237 #			
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5			
COD, unfiltered	<7 mg/l	TM107		17.6 #	21.8 #			
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.64 #	0.642 #			
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 2 #	<0.5 2 #			
Barium (diss.filt)	<0.2 µg/l	TM152		7.6 2 #	7.56 2 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 2 #	<0.08 2 #			
Chromium (diss.filt)	<1 µg/l	TM152		<1 2 #	<1 2 #			
Copper (diss.filt)	<0.3 µg/l	TM152		1.01 2 #	0.932 2 #			
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 2 #	<0.2 2 #			
Manganese (diss.filt)	<3 µg/l	TM152		9.09 2 #	13.9 2 #			
Nickel (diss.filt)	<0.4 µg/l	TM152		1.57 2 #	1.83 2 #			
Phosphorus (diss.filt)	<10 µg/l	TM152		14.2 2 #	<10 2 #			
Selenium (diss.filt)	<1 µg/l	TM152		<1 2 #	<1 2 #			
Thallium (diss.filt)	<2 µg/l	TM152		<2 2 #	<2 2 #			
Zinc (diss.filt)	<1 µg/l	TM152		2.49 2 #	2.07 2 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152		16 2 #	15.7 2 #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		4.69 2 #	4.62 2 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.67 2 #	1.62 2 #			
Calcium (Dis.Filt)	<0.2 mg/l	TM152		134 2 #	132 2 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.0501 2 #	0.0507 2 #			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172		<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 2	<0.01 2			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184		0.052 #	0.053 #			
Sulphate	<2 mg/l	TM184		11.7 #	11 #			
Chloride	<2 mg/l	TM184		28.1 #	27.5 #			
Sulphate (soluble) as S	<1 mg/l	TM184		3.9 #	3.67 #			
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015			

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	30/07/2020	30/07/2020				
			Sample Time	.	.				
			Date Received	31/07/2020	31/07/2020				
			SDG Ref	200731-90	200731-90				
			Lab Sample No.(s)	22583459	22583445				
			AGS Reference						
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015				
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105				
Cyanide, Total	<0.05 mg/l	TM227		<0.05	<0.05				
pH	<1 pH Units	TM256		7.73 #	7.81 #				
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01				
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01				
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01				
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.01				
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01				
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01				
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01				
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.02				
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01				
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01				
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01				
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01				
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01				
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01				
Endrin	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.04				
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01				
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02				
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.07				
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.04				
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.07				
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.04				
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01				
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	30/07/2020	30/07/2020				
			Sample Time	.	.				
			Date Received	31/07/2020	31/07/2020				
			SDG Ref	200731-90	200731-90				
			Lab Sample No.(s)	22583459	22583445				
			AGS Reference						
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01				
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01				
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01				
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01				
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01				
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Phorate	<0.01 µg/l	TM344		<0.01	<0.01				
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01				
Triallate	<0.01 µg/l	TM344		<0.01	<0.01				
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01				
Simazine	<0.01 µg/l	TM344		<0.01	<0.01				
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01				
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01				
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01				
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01				
Malathion	<0.01 µg/l	TM344		<0.01	<0.01				
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01				
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01				
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01				
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01				
Parathion	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01				
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01				
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01				
Ethion	<0.01 µg/l	TM344		<0.01	<0.01				
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend	
#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	30/07/2020	30/07/2020				
			Sample Time	.	.				
			Date Received	31/07/2020	31/07/2020				
			SDG Ref	200731-90	200731-90				
			Lab Sample No.(s)	22583459	22583445				
			AGS Reference						
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01				
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01				
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.02				
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02				
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.02				
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01				
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01				
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01				
Propazine	<0.01 µg/l	TM345		<0.01	<0.01				
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01				
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01				
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01				
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01				
Chlorothalonil	<0.01 µg/l	TM345		<0.01	<0.03				
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01				
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01				
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01				
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.02				
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.02				
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.1				
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.04				
MCPA	<0.05 µg/l	TM411		<0.05	<0.05				
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.04				
Dicamba	<0.04 µg/l	TM411		<0.04	<0.04				
MCPB	<0.05 µg/l	TM411		<0.05	<0.05				
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.1				
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.05				
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.1				
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend	
#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	30/07/2020	30/07/2020				
			Sample Time	.	.				
			Date Received	31/07/2020	31/07/2020				
			SDG Ref	200731-90	200731-90				
			Lab Sample No.(s)	22583459	22583445				
			AGS Reference						
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.1				
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.04				
Benazolin	<0.04 µg/l	TM411		<0.04	<0.04				
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.05				
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.04				
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	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
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	30/07/2020	30/07/2020				
			Sample Time	.	.				
			Date Received	31/07/2020	31/07/2020				
			SDG Ref	200731-90	200731-90				
			Lab Sample No.(s)	22583459	22583445				
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<8 #	<10 #				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Chlorophenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Methylphenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Nitroaniline (aq)	<1 µg/l	TM176		<8 #	<10 #				
2-Nitrophenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
3-Nitroaniline (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Chloroaniline (aq)	<1 µg/l	TM176		<8	<10				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Methylphenol (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Nitroaniline (aq)	<1 µg/l	TM176		<8 #	<10 #				
4-Nitrophenol (aq)	<1 µg/l	TM176		<8	<10				
Azobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #				
Acenaphthylene (aq)	<1 µg/l	TM176		<8 #	<10 #				
Acenaphthene (aq)	<1 µg/l	TM176		<8 #	<10 #				
Anthracene (aq)	<1 µg/l	TM176		<8 #	<10 #				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<8 #	<10 #				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<8 #	<10 #				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<16 #	<20 #				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<8 #	<10 #				
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<8 #	<10 #				

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	30/07/2020	30/07/2020			
			Sample Time	.	.			
			Date Received	31/07/2020	31/07/2020			
			SDG Ref	200731-90	200731-90			
			Lab Sample No.(s)	22583459	22583445			
			AGS Reference					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Carbazole (aq)	<1 µg/l	TM176		<8 #	<10 #			
Chrysene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Dibenzofuran (aq)	<1 µg/l	TM176		<8 #	<10 #			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<8 #	<10 #			
Diethyl phthalate (aq)	<1 µg/l	TM176		<8 #	<10 #			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Dimethyl phthalate (aq)	<1 µg/l	TM176		<8 #	<10 #			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<40 #	<50 #			
Fluoranthene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Fluorene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Hexachlorobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Pentachlorophenol (aq)	<1 µg/l	TM176		<8	<10			
Phenol (aq)	<1 µg/l	TM176		<8	<10			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<8 #	<10 #			
Hexachloroethane (aq)	<1 µg/l	TM176		<8 #	<10 #			
Nitrobenzene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Naphthalene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Isophorone (aq)	<1 µg/l	TM176		<8 #	<10 #			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<8	<10			
Phenanthrene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<8 #	<10 #			
Pyrene (aq)	<1 µg/l	TM176		<8 #	<10 #			

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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
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1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	30/07/2020	30/07/2020			
			Sample Time	.	.			
			Date Received	31/07/2020	31/07/2020			
			SDG Ref	200731-90	200731-90			
			Lab Sample No.(s)	22583459	22583445			
			AGS Reference					
Dibromofluoromethane**	%	TM208		107	106			
Toluene-d8**	%	TM208		100	100			
4-Bromofluorobenzene**	%	TM208		99.8	99.8			
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #			
Chloromethane	<1 µg/l	TM208		<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #			
Bromomethane	<1 µg/l	TM208		<1 #	<1 #			
Chloroethane	<1 µg/l	TM208		<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1			
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #			
Chloroform	<1 µg/l	TM208		<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #			
Benzene	<1 µg/l	TM208		<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
Toluene	<1 µg/l	TM208		<1 #	<1 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #			

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)
			Date Sampled	30/07/2020	30/07/2020
			Sample Time	.	.
			Date Received	31/07/2020	31/07/2020
			SDG Ref	200731-90	200731-90
			Lab Sample No.(s)	22583459	22583445
			AGS Reference		
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #
o-Xylene	<1 µg/l	TM208		<1 #	<1 #
Styrene	<1 µg/l	TM208		<1 #	<1 #
Bromoform	<1 µg/l	TM208		<1 #	<1 #
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #
Naphthalene	<1 µg/l	TM208		<1 #	<1 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200731-90	**Client Reference:**	P2282	**Report Number:**	562381
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	22583459	22583445
Customer Sample Ref.	SW2 (DS)	SW1 (US)
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water
Acid Herbicides by GCMS	07-Aug-2020	07-Aug-2020
Ammonium Low	06-Aug-2020	06-Aug-2020
Anions by Kone (w)	03-Aug-2020	03-Aug-2020
BOD True Total	06-Aug-2020	06-Aug-2020
COD Unfiltered	01-Aug-2020	01-Aug-2020
Conductivity (at 20 deg.C)	05-Aug-2020	05-Aug-2020
Cyanide Comp/Free/Total/Thiocyanate	07-Aug-2020	06-Aug-2020
Dissolved Metals by ICP-MS	07-Aug-2020	07-Aug-2020
Dissolved Oxygen by Probe	02-Aug-2020	02-Aug-2020
Fluoride	04-Aug-2020	04-Aug-2020
Mercury Dissolved	05-Aug-2020	05-Aug-2020
Mineral Oil C10-40 Aqueous (W)	07-Aug-2020	07-Aug-2020
PCB Congeners - Aqueous (W)	07-Aug-2020	07-Aug-2020
Pesticides (Suite I) by GCMS	07-Aug-2020	06-Aug-2020
Pesticides (Suite II) by GCMS	07-Aug-2020	07-Aug-2020
Pesticides (Suite III) by GCMS	06-Aug-2020	05-Aug-2020
pH Value	04-Aug-2020	03-Aug-2020
Phosphate by Kone (w)	04-Aug-2020	04-Aug-2020
Suspended Solids	05-Aug-2020	05-Aug-2020
SVOC MS (W) - Aqueous	09-Aug-2020	09-Aug-2020
VOC MS (W)	04-Aug-2020	04-Aug-2020

Appendix

General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

Unit 7-8 Hawarden Business Park
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Deeside
CH5 3US
Tel: (01244) 528700
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Website: www.alsenvironmental.co.uk

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	03 September 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200826-98
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	565823

We received 2 samples on Wednesday August 26, 2020 and 2 of these samples were scheduled for analysis which was completed on Thursday September 03, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22723236	SW2 (DS)		0.00 - 0.00	25/08/2020
22723227	SW1 (US)		0.00 - 0.00	25/08/2020

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)										22723236								22723227
Customer Sample Reference										SW2 (DS)								SW1 (US)
AGS Reference																		
Depth (m)										0.00 - 0.00								0.00 - 0.00
Container										0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)
Sample Type										SW	SW	SW	SW	SW	SW	SW	SW	SW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2								X							X	
Ammonium Low	All	NDPs: 0 Tests: 2											X					
Anions by Kone (w)	All	NDPs: 0 Tests: 2										X						
BOD True Total	All	NDPs: 0 Tests: 2									X							X
COD Unfiltered	All	NDPs: 0 Tests: 2									X							X
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2										X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2																
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2																
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2										X						
Fluoride	All	NDPs: 0 Tests: 2										X						
Mercury Dissolved	All	NDPs: 0 Tests: 2																
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2								X							X	
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2								X							X	
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2								X							X	
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2								X							X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X **Test**

N **No Determination Possible**

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

Lab Sample No(s)									22723236								22723227
Customer Sample Reference									SW2 (DS)								SW1 (US)
AGS Reference																	
Depth (m)									0.00 - 0.00								0.00 - 0.00
Container									0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)
Sample Type									SW	SW	SW	SW	SW	SW	SW	SW	SW
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2							X							X	
pH Value	All	NDPs: 0 Tests: 2									X						
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2									X						
Suspended Solids	All	NDPs: 0 Tests: 2									X						
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2									X						
VOC MS (W)	All	NDPs: 0 Tests: 2													X		

Lab Sample No(s)																	
Customer Sample Reference																	
AGS Reference																	
Depth (m)																	
Container	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)												
Sample Type	SW	SW	SW	SW	SW												
Pesticides (Suite III) by GCMS																	
pH Value	X																
Phosphate by Kone (w)	X																
Suspended Solids	X																
SVOC MS (W) - Aqueous	X																
VOC MS (W)					X												

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	25/08/2020	25/08/2020			
			Sample Time	.	.			
			Date Received	26/08/2020	26/08/2020			
			SDG Ref	200826-98	200826-98			
			Lab Sample No.(s)	22723236	22723227			
			AGS Reference					
Suspended solids, Total	<2 mg/l	TM022		3.6 #	3.75 #			
BOD, unfiltered	<1 mg/l	TM045		2.97 #	2.67 #			
Oxygen, dissolved	<0.3 mg/l	TM046		10.9	10			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0861 #	0.0716 #			
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5			
COD, unfiltered	<7 mg/l	TM107		61.9 #	64 #			
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.367 #	0.352 #			
Arsenic (diss.filt)	<0.5 µg/l	TM152		1.14 #	0.91 #			
Barium (diss.filt)	<0.2 µg/l	TM152		6.72 #	6.58 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #			
Chromium (diss.filt)	<1 µg/l	TM152		1.5 #	<1 #			
Copper (diss.filt)	<0.3 µg/l	TM152		2.93 #	3.15 #			
Lead (diss.filt)	<0.2 µg/l	TM152		0.43 #	0.352 #			
Manganese (diss.filt)	<3 µg/l	TM152		20 #	22.4 #			
Nickel (diss.filt)	<0.4 µg/l	TM152		3.33 #	4.47 #			
Phosphorus (diss.filt)	<10 µg/l	TM152		148 #	146 #			
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #			
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #			
Zinc (diss.filt)	<1 µg/l	TM152		10.4 #	8.82 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152		10.7 #	15.1 #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		3.02 #	3.31 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152		3.06 #	3.07 #			
Calcium (Dis.Filt)	<0.2 mg/l	TM152		73.2 #	78 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.603 #	0.545 #			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172		<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184		0.175 #	0.161 #			
Sulphate	<2 mg/l	TM184		<2 #	<2 #			
Chloride	<2 mg/l	TM184		15 #	15.5 #			
Sulphate (soluble) as S	<1 mg/l	TM184		<1 #	<1 #			
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015			

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	25/08/2020	25/08/2020				
			Sample Time	.	.				
			Date Received	26/08/2020	26/08/2020				
			SDG Ref	200826-98	200826-98				
			Lab Sample No.(s)	22723236	22723227				
			AGS Reference						
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015				
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015				
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105				
Cyanide, Total	<0.05 mg/l	TM227		<0.05	<0.05				
pH	<1 pH Units	TM256		7.41 #	7.44 #				
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01				
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01				
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01				
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.01				
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01				
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01				
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01				
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.01				
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01				
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01				
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01				
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01				
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01				
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01				
Endrin	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01				
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01				
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02				
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01				
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.01				
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.01				
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.02				
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01				
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)
			Date Sampled	25/08/2020	25/08/2020
			Sample Time	.	.
			Date Received	26/08/2020	26/08/2020
			SDG Ref	200826-98	200826-98
			Lab Sample No.(s)	22723236	22723227
			AGS Reference		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01
Phorate	<0.01 µg/l	TM344		<0.01	<0.01
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01
Triallate	<0.01 µg/l	TM344		<0.01	<0.01
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01
Simazine	<0.01 µg/l	TM344		<0.01	<0.01
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01
Malathion	<0.01 µg/l	TM344		<0.01	<0.01
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01
Parathion	<0.01 µg/l	TM344		<0.01	<0.01
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01
Ethion	<0.01 µg/l	TM344		<0.01	<0.01
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	25/08/2020	25/08/2020				
			Sample Time	.	.				
			Date Received	26/08/2020	26/08/2020				
			SDG Ref	200826-98	200826-98				
			Lab Sample No.(s)	22723236	22723227				
			AGS Reference						
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01				
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01				
Azinphos methyl	<0.02 µg/l	TM344		<0.04	<0.04				
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02				
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.01				
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01				
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01				
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01				
Propazine	<0.01 µg/l	TM345		<0.01	<0.01				
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01				
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01				
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01				
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01				
Chlorothalonil	<0.01 µg/l	TM345		<0.02	<0.02				
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01				
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01				
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01				
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01				
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.2				
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.08				
MCPA	<0.05 µg/l	TM411		<0.05	<0.1				
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.08				
Dicamba	<0.04 µg/l	TM411		<0.04	<0.08				
MCPB	<0.05 µg/l	TM411		<0.05	<0.1				
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.2				
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.1				
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.2				
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.1				

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	25/08/2020	25/08/2020				
			Sample Time	.	.				
			Date Received	26/08/2020	26/08/2020				
			SDG Ref	200826-98	200826-98				
			Lab Sample No.(s)	22723236	22723227				
			AGS Reference						
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.2				
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.1				
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.1	<0.1				
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.08				
Benazolin	<0.04 µg/l	TM411		<0.04	<0.08				
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.1				
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.08				
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.2				

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	25/08/2020	25/08/2020			
			Sample Time	.	.			
			Date Received	26/08/2020	26/08/2020			
			SDG Ref	200826-98	200826-98			
			Lab Sample No.(s)	22723236	22723227			
			AGS Reference					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<4 #	<4 #			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Chlorophenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Methylphenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Nitroaniline (aq)	<1 µg/l	TM176		<4 #	<4 #			
2-Nitrophenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
3-Nitroaniline (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Chloroaniline (aq)	<1 µg/l	TM176		<4	<4			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Methylphenol (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Nitroaniline (aq)	<1 µg/l	TM176		<4 #	<4 #			
4-Nitrophenol (aq)	<1 µg/l	TM176		<4	<4			
Azobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Acenaphthylene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Acenaphthene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Anthracene (aq)	<1 µg/l	TM176		<4 #	<4 #			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<4 #	<4 #			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<4 #	<4 #			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<8 #	<8 #			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<4 #	<4 #			
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<4 #	<4 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend	
#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	25/08/2020	25/08/2020			
			Sample Time	.	.			
			Date Received	26/08/2020	26/08/2020			
			SDG Ref	200826-98	200826-98			
			Lab Sample No.(s)	22723236	22723227			
			AGS Reference					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Carbazole (aq)	<1 µg/l	TM176		<4 #	<4 #			
Chrysene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Dibenzofuran (aq)	<1 µg/l	TM176		<4 #	<4 #			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<4 #	<4 #			
Diethyl phthalate (aq)	<1 µg/l	TM176		<4 #	<4 #			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Dimethyl phthalate (aq)	<1 µg/l	TM176		<4 #	<4 #			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<20 #	<20 #			
Fluoranthene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Fluorene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Hexachlorobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Pentachlorophenol (aq)	<1 µg/l	TM176		<4	<4			
Phenol (aq)	<1 µg/l	TM176		<4	<4			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<4 #	<4 #			
Hexachloroethane (aq)	<1 µg/l	TM176		<4 #	<4 #			
Nitrobenzene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Naphthalene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Isophorone (aq)	<1 µg/l	TM176		<4 #	<4 #			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<4	<4			
Phenanthrene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<4 #	<4 #			
Pyrene (aq)	<1 µg/l	TM176		<4 #	<4 #			

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	25/08/2020	25/08/2020				
			Sample Time	.	.				
			Date Received	26/08/2020	26/08/2020				
			SDG Ref	200826-98	200826-98				
			Lab Sample No.(s)	22723236	22723227				
			AGS Reference						
Dibromofluoromethane**	%	TM208		120	116				
Toluene-d8**	%	TM208		98.1	97.2				
4-Bromofluorobenzene**	%	TM208		98.4	97.3				
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloromethane	<1 µg/l	TM208		<1 #	<1 #				
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #				
Bromomethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroethane	<1 µg/l	TM208		<1 #	<1 #				
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #				
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #				
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #				
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1				
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroform	<1 µg/l	TM208		<1 #	<1 #				
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
Benzene	<1 µg/l	TM208		<1 #	<1 #				
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #				
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Toluene	<1 µg/l	TM208		<1 #	<1 #				
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	25/08/2020	25/08/2020			
			Sample Time	.	.			
			Date Received	26/08/2020	26/08/2020			
			SDG Ref	200826-98	200826-98			
			Lab Sample No.(s)	22723236	22723227			
			AGS Reference					
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #			
o-Xylene	<1 µg/l	TM208		<1 #	<1 #			
Styrene	<1 µg/l	TM208		<1 #	<1 #			
Bromoform	<1 µg/l	TM208		<1 #	<1 #			
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #			
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #			
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #			
Naphthalene	<1 µg/l	TM208		<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1			

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200826-98	**Client Reference:**	P2282	**Report Number:**	565823
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	22723236	22723227
Customer Sample Ref.	SW2 (DS)	SW1 (US)
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water
Acid Herbicides by GCMS	03-Sep-2020	28-Aug-2020
Ammonium Low	03-Sep-2020	03-Sep-2020
Anions by Kone (w)	27-Aug-2020	27-Aug-2020
BOD True Total	01-Sep-2020	01-Sep-2020
COD Unfiltered	30-Aug-2020	30-Aug-2020
Conductivity (at 20 deg.C)	27-Aug-2020	27-Aug-2020
Cyanide Comp/Free/Total/Thiocyanate	03-Sep-2020	03-Sep-2020
Dissolved Metals by ICP-MS	01-Sep-2020	01-Sep-2020
Dissolved Oxygen by Probe	28-Aug-2020	28-Aug-2020
Fluoride	01-Sep-2020	01-Sep-2020
Mercury Dissolved	03-Sep-2020	03-Sep-2020
Mineral Oil C10-40 Aqueous (W)	02-Sep-2020	02-Sep-2020
PCB Congeners - Aqueous (W)	03-Sep-2020	03-Sep-2020
Pesticides (Suite I) by GCMS	01-Sep-2020	01-Sep-2020
Pesticides (Suite II) by GCMS	01-Sep-2020	01-Sep-2020
Pesticides (Suite III) by GCMS	01-Sep-2020	01-Sep-2020
pH Value	27-Aug-2020	27-Aug-2020
Phosphate by Kone (w)	27-Aug-2020	27-Aug-2020
Suspended Solids	30-Aug-2020	30-Aug-2020
SVOC MS (W) - Aqueous	30-Aug-2020	30-Aug-2020
VOC MS (W)	03-Sep-2020	03-Sep-2020

Appendix General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 July 2021
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	210715-117
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	607013

We received 2 samples on Thursday July 15, 2021 and 2 of these samples were scheduled for analysis which was completed on Monday July 26, 2021. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24638818	SW1		0.00 - 0.00	14/07/2021
24638827	SW2		0.00 - 0.00	14/07/2021

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)																	24638818		24638827
Customer Sample Reference																	SW1		SW2
AGS Reference																			
Depth (m)																	0.00 - 0.00		0.00 - 0.00
Container																	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
Sample Type																	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2															X							X						
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2																	X							X				
Ammonium Low	All	NDPs: 0 Tests: 2																		X							X			
Anions by Kone (w)	All	NDPs: 0 Tests: 2																	X							X				
BOD True Total	All	NDPs: 0 Tests: 2																X								X				
COD Unfiltered	All	NDPs: 0 Tests: 2																X								X				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2																	X							X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2																				X							X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2																			X							X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2																	X							X				
Fluoride	All	NDPs: 0 Tests: 2																	X							X				
Mercury Dissolved	All	NDPs: 0 Tests: 2																			X							X		
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2															X							X						
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2															X							X						
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2															X							X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)									2463818								2463827
Customer Sample Reference									SW1								SW2
AGS Reference																	
Depth (m)									0.00 - 0.00								0.00 - 0.00
Container									0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
Sample Type									SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2							X							X						
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2							X							X						
pH Value	All	NDPs: 0 Tests: 2			X						X											
Suspended Solids	All	NDPs: 0 Tests: 2			X						X											
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2			X						X											
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2				X							X									
VOC MS (W)	All	NDPs: 0 Tests: 2							X						X							X

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	14/07/2021	14/07/2021			
			Sample Time	.	.			
			Date Received	15/07/2021	15/07/2021			
			SDG Ref	210715-117	210715-117			
			Lab Sample No.(s)	24638818	24638827			
			AGS Reference					
Suspended solids, Total	<2 mg/l	TM022		<2 #	<2 #			
Alkalinity, Total as HCO3	<2 mg/l	TM043		420	423			
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #			
Oxygen, dissolved	<0.3 mg/l	TM046		12.5	11.7			
Organic Carbon, Total	<3 mg/l	TM090		<3 ♦ #	<3 ♦ #			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.02 #	0.032 #			
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5			
COD, unfiltered	<7 mg/l	TM107		<7 #	8.46 #			
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.629 #	0.651 #			
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #			
Barium (diss.filt)	<0.2 µg/l	TM152		8.03 #	8.68 #			
Boron (diss.filt)	<10 µg/l	TM152		<10 #	11.7 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #			
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #			
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 #	1.22 #			
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	0.237 #			
Manganese (diss.filt)	<3 µg/l	TM152		11.3 #	11.2 #			
Nickel (diss.filt)	<0.4 µg/l	TM152		0.663 #	0.926 #			
Phosphorus (diss.filt)	<10 µg/l	TM152		<10 #	<10 #			
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #			
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #			
Zinc (diss.filt)	<1 µg/l	TM152		1.48 #	10 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152		18.1 #	18.5 #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		5.24 #	5.38 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152		2.1 #	2.26 #			
Calcium (Dis.Filt)	<0.2 mg/l	TM152		138 #	140 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.0735 #	0.07 #			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172		<100	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01			
Sulphate	<2 mg/l	TM184		6.4 #	6.6 #			
Chloride	<2 mg/l	TM184		31.3 #	31.5 #			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.564 #	0.553 #			
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015			

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	14/07/2021	14/07/2021			
			Sample Time	.	.			
			Date Received	15/07/2021	15/07/2021			
			SDG Ref	210715-117	210715-117			
			Lab Sample No.(s)	24638818	24638827			
			AGS Reference					
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015			
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105			
Cyanide, Total	<0.05 mg/l	TM227		<0.05	<0.05			
pH	<1 pH Units	TM256		7.75 #	7.8 #			
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01			
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01			
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01			
Heptachlor	<0.01 µg/l	TM343		<0.02	<0.01			
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01			
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01			
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01			
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.01			
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01			
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01			
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01			
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01			
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01			
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01			
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01			
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01			
Endrin	<0.01 µg/l	TM343		<0.02	<0.01			
o,p'-DDT	<0.01 µg/l	TM343		<0.05	<0.01			
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01			
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02			
p,p'-DDT	<0.01 µg/l	TM343		<0.08	<0.02			
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.04	<0.01			
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.08	<0.02			
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.04	<0.02			

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	14/07/2021	14/07/2021				
			Sample Time	.	.				
			Date Received	15/07/2021	15/07/2021				
			SDG Ref	210715-117	210715-117				
			Lab Sample No.(s)	24638818	24638827				
			AGS Reference						
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01				
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01				
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01				
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01				
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01				
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01				
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01				
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01				
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Phorate	<0.01 µg/l	TM344		<0.03	<0.03				
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01				
Triallate	<0.01 µg/l	TM344		<0.01	<0.01				
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01				
Simazine	<0.01 µg/l	TM344		<0.01	<0.01				
Disulfoton	<0.01 µg/l	TM344		<0.07	<0.07				
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01				
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01				
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01				
Malathion	<0.01 µg/l	TM344		<0.01	<0.01				
Fenthion	<0.01 µg/l	TM344		<0.02	<0.02				
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01				
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01				
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01				
Parathion	<0.01 µg/l	TM344		<0.01	<0.01				
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01				
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01				
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01				

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	14/07/2021	14/07/2021				
			Sample Time	.	.				
			Date Received	15/07/2021	15/07/2021				
			SDG Ref	210715-117	210715-117				
			Lab Sample No.(s)	24638818	24638827				
			AGS Reference						
Ethion	<0.01 µg/l	TM344		<0.01	<0.01				
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01				
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01				
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01				
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.02				
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02				
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.01				
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01				
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01				
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01				
Propazine	<0.01 µg/l	TM345		<0.01	<0.01				
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01				
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01				
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01				
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01				
Chlorothalonil	<0.01 µg/l	TM345		<0.01	<0.01				
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01				
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01				
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01				
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01				
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.1				
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.04				
MCPA	<0.05 µg/l	TM411		<0.05	<0.05				
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.04				
Dicamba	<0.04 µg/l	TM411		<0.04	<0.04				
MCPB	<0.05 µg/l	TM411		<0.05	<0.05				
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.1				
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.05				

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	14/07/2021	14/07/2021				
			Sample Time	.	.				
			Date Received	15/07/2021	15/07/2021				
			SDG Ref	210715-117	210715-117				
			Lab Sample No.(s)	24638818	24638827				
			AGS Reference						
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.1				
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.05				
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.1				
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.04				
Benazolin	<0.04 µg/l	TM411		<0.04	<0.04				
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.05				
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.04				
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	14/07/2021	14/07/2021				
			Sample Time	.	.				
			Date Received	15/07/2021	15/07/2021				
			SDG Ref	210715-117	210715-117				
			Lab Sample No.(s)	24638818	24638827				
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #				
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
3-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #				
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1				
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #				
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<1 #				
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<1 #				
Anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<1 #				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<1 #				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<2 #				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #				
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #				

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% 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	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	14/07/2021	14/07/2021			
			Sample Time	.	.			
			Date Received	15/07/2021	15/07/2021			
			SDG Ref	210715-117	210715-117			
			Lab Sample No.(s)	24638818	24638827			
			AGS Reference					
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Carbazole (aq)	<1 µg/l	TM176		<1 #	<1 #			
Chrysene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<1 #			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #			
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<5 #			
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Fluorene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1			
Phenol (aq)	<1 µg/l	TM176		<1	<1			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<1 #			
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<1 #			
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Isophorone (aq)	<1 µg/l	TM176		<1 #	<1 #			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1			
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #			
Pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #			

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	14/07/2021	14/07/2021			
			Sample Time	.	.			
			Date Received	15/07/2021	15/07/2021			
			SDG Ref	210715-117	210715-117			
			Lab Sample No.(s)	24638818	24638827			
			AGS Reference					
Dibromofluoromethane**	%	TM208		114	111			
Toluene-d8**	%	TM208		99.4	101			
4-Bromofluorobenzene**	%	TM208		96.1	100			
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #			
Chloromethane	<1 µg/l	TM208		<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #			
Bromomethane	<1 µg/l	TM208		<1 #	<1 #			
Chloroethane	<1 µg/l	TM208		<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #			
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1			
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #			
Chloroform	<1 µg/l	TM208		<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #			
Benzene	<1 µg/l	TM208		<1 #	<1 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
Toluene	<1 µg/l	TM208		<1 #	<1 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #			

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

VOC MS (W)

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	14/07/2021	14/07/2021			
			Sample Time	.	.			
			Date Received	15/07/2021	15/07/2021			
			SDG Ref	210715-117	210715-117			
			Lab Sample No.(s)	24638818	24638827			
			AGS Reference					
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #			
o-Xylene	<1 µg/l	TM208		<1 #	<1 #			
Styrene	<1 µg/l	TM208		<1 #	<1 #			
Bromoform	<1 µg/l	TM208		<1 #	<1 #			
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #			
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #			
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #			
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #			
Naphthalene	<1 µg/l	TM208		<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1			

Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	210715-117	**Client Reference:**	P2282	**Report Number:**	607013
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	24638818	24638827
Customer Sample Ref.	SW1	SW2
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water
Acid Herbicides by GCMS	22-Jul-2021	22-Jul-2021
Alkalinity as CaCO3	21-Jul-2021	21-Jul-2021
Ammonium Low	20-Jul-2021	20-Jul-2021
Anions by Kone (w)	21-Jul-2021	21-Jul-2021
BOD True Total	21-Jul-2021	21-Jul-2021
COD Unfiltered	17-Jul-2021	17-Jul-2021
Conductivity (at 20 deg.C)	21-Jul-2021	21-Jul-2021
Cyanide Comp/Free/Total/Thiocyanate	19-Jul-2021	19-Jul-2021
Dissolved Metals by ICP-MS	20-Jul-2021	20-Jul-2021
Dissolved Oxygen by Probe	16-Jul-2021	16-Jul-2021
Fluoride	16-Jul-2021	16-Jul-2021
Mercury Dissolved	19-Jul-2021	19-Jul-2021
Mineral Oil C10-40 Aqueous (W)	21-Jul-2021	21-Jul-2021
PCB Congeners - Aqueous (W)	20-Jul-2021	20-Jul-2021
Pesticides (Suite I) by GCMS	20-Jul-2021	22-Jul-2021
Pesticides (Suite II) by GCMS	22-Jul-2021	22-Jul-2021
Pesticides (Suite III) by GCMS	26-Jul-2021	26-Jul-2021
pH Value	19-Jul-2021	19-Jul-2021
Suspended Solids	19-Jul-2021	19-Jul-2021
SVOC MS (W) - Aqueous	19-Jul-2021	19-Jul-2021
Total Organic and Inorganic Carbon	23-Jul-2021	23-Jul-2021
VOC MS (W)	16-Jul-2021	18-Jul-2021

Appendix

General

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

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

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. **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.

18. **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**

19. **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, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	27 August 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200731-89
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	564886

This report has been revised and directly supersedes 562407 in its entirety.

We received 4 samples on Friday July 31, 2020 and 4 of these samples were scheduled for analysis which was completed on Monday August 10, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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.

Approved By:

Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22583409	BH1		0.00 - 0.00	30/07/2020
22583419	BH4		0.00 - 0.00	30/07/2020
22583387	GW01		0.00 - 0.00	30/07/2020
22583397	GW02		0.00 - 0.00	30/07/2020

Maximum Sample/Coolbox Temperature (°C) : **16.2**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			22583409					22583419					22583387					22583397			
Customer Sample Reference			BH1					BH4					GW01					GW02			
AGS Reference																					
Depth (m)			0.00 - 0.00					0.00 - 0.00					0.00 - 0.00					0.00 - 0.00			
Container			0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4	X					X					X					X			
Alkalinity as CaCO3	All	NDPs: 0 Tests: 4		X					X					X					X		
Ammonium Low	All	NDPs: 0 Tests: 4			X					X					X					X	
Anions by Kone (w)	All	NDPs: 0 Tests: 4		X					X					X					X		
BOD True Total	All	NDPs: 0 Tests: 4		X					X					X					X		
COD Unfiltered	All	NDPs: 0 Tests: 4		X					X					X					X		
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4		X					X					X					X		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4				X					X					X					X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4		X					X					X					X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 4		X					X					X					X		
Faecal Coliforms (W)*	All	NDPs: 0 Tests: 4		X					X					X					X		
Fluoride	All	NDPs: 0 Tests: 4		X					X					X					X		
Mercury Dissolved	All	NDPs: 0 Tests: 4		X					X								X		X		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 4	X					X					X					X			
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4	X					X					X					X			

22583397	GW02		0.00 - 0.00	Vial (ALE297)	GW

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)						22583409					22583419					22583387				22583397
Customer Sample Reference						BH1					BH4					GW01				GW02
AGS Reference																				
Depth (m)						0.00 - 0.00					0.00 - 0.00					0.00 - 0.00				0.00 - 0.00
Container						Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)
Sample Type						GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4																		
										X					X					X
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 4																		
										X					X					X
pH Value	All	NDPs: 0 Tests: 4																		
									X					X					X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4																		
						X					X					X				
Total Coliforms(W)*	All	NDPs: 0 Tests: 3																		
									X					X						
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4																		
					X			X					X						X	
VOC MS (W)	All	NDPs: 0 Tests: 4																		
						X					X					X				

22583397	GW02		0.00 - 0.00	Vial (ALE297)	GW
					X
					X

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
Faecal coliforms confirmed (M7M)*	0 CFU/100ml	SUB		0	0	1	180		
Total Coliform Presumptive (M16)*	CFU/100ml	SUB		2	7	2			
Total Coliform Confirmed (M14)*	CFU/100ml	SUB		2	7	2			
Alkalinity, Total as HCO3	<2 mg/l	TM043		451	482	1570	939		
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #	<1 #	<1 #		
Oxygen, dissolved	<0.3 mg/l	TM046		9.68	8.64	10	9.5		
Organic Carbon, Total	<3 mg/l	TM090		<3 #	3.47 #	<3 #	<3 #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0176 #	0.186 #	0.0283 #	0.544 #		
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #	<0.5 #	0.908 #		
COD, unfiltered	<7 mg/l	TM107		28.7 #	32.3 #	99.6 #	162 #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.623 #	0.794 #	0.748 #	1.27 #		
Arsenic (diss.filt)	<0.5 µg/l	TM152		0.521 2 #	0.869 2 #	<0.5 2 #	0.607 2 #		
Barium (diss.filt)	<0.2 µg/l	TM152		21.8 2 #	33.5 2 #	9.12 2 #	129 2 #		
Boron (diss.filt)	<10 µg/l	TM152		23.7 2 #	43.5 2 #	<10 2 #	180 2 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 2 #	<0.08 2 #	<0.08 2 #	<0.08 2 #		
Chromium (diss.filt)	<1 µg/l	TM152		<1 2 #	<1 2 #	<1 2 #	<1 2 #		
Copper (diss.filt)	<0.3 µg/l	TM152		4.98 2 #	<0.3 2 #	0.828 2 #	1.97 2 #		
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 2 #	<0.2 2 #	<0.2 2 #	0.356 2 #		
Manganese (diss.filt)	<3 µg/l	TM152		16 2 #	115 2 #	9.66 2 #	8.05 2 #		
Nickel (diss.filt)	<0.4 µg/l	TM152		10.5 2 #	5.59 2 #	3.53 2 #	3.47 2 #		
Phosphorus (diss.filt)	<10 µg/l	TM152		<10 2 #	<10 2 #	<10 2 #	16.5 2 #		
Selenium (diss.filt)	<1 µg/l	TM152		<1 2 #	<1 2 #	<1 2 #	33.5 2 #		
Thallium (diss.filt)	<2 µg/l	TM152		<2 2 #	<2 2 #	<2 2 #	<2 2 #		
Zinc (diss.filt)	<1 µg/l	TM152		26.6 2 #	1.95 2 #	3.01 2 #	1.98 2 #		
Sodium (Dis.Filt)	<0.076 mg/l	TM152		6.42 2 #	45.8 2 #	8.43 2 #	226 2 #		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		10.1 2 #	8.08 2 #	5.7 2 #	28.3 2 #		
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.18 2 #	3.32 2 #	1.69 2 #	5.26 2 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152		139 2 #	139 2 #	143 2 #	71.8 2 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152		<0.019 2 #	<0.019 2 #	<0.019 2 #	<0.019 2 #		
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 2 #	<0.01 2 #	<0.01 2 #	<0.01 2 #		
Sulphate	<2 mg/l	TM184		11.8 #	11.8 #	9.3 #	181 #		
Chloride	<2 mg/l	TM184		13.5 #	73.6 #	22.2 #	46.4 #		
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		1.89 #	<0.1 #	1.75 #	0.216 #		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105	<0.105	<0.105		
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #		
pH	<1 pH Units	TM256		7.97 #	7.33 #	7.22 #	7.85 #		
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.02	<0.02	<0.02		
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.04	<0.04	<0.04		
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02		
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.07	<0.07	<0.07		
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.04	<0.04	<0.04		
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.07	<0.07	<0.07		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

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**	% 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
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1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.04	<0.04	<0.04		
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phorate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triallate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Simazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Malathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

#	ISO17025 accredited.
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**	% 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
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1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Ethion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.02		
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.02		
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.02	<0.02	<0.02		
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Chlorothalonil	<0.01 µg/l	TM345		<0.01	<0.03	<0.03	<0.03		
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.02	<0.02	<0.02		
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.02	<0.02	<0.02		
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.1	<0.5	<0.5		
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
MCPA	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
Dicamba	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
MCPB	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.1	<0.5	<0.5		

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.1	<0.5	<0.5		
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.1	<0.5	<0.5		
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
Benazolin	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.05	<0.25	<0.25		
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.04	<0.2	<0.2		
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.1	<0.5	<0.5		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

SVOC MS (W) - Aqueous

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	BH1	BH4	GW01	GW02		
Customer Sample Ref.								
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Sample Type			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
Date Sampled			30/07/2020	30/07/2020	30/07/2020	30/07/2020		
Sample Time			.	.	.	.		
Date Received			31/07/2020	31/07/2020	31/07/2020	31/07/2020		
SDG Ref			200731-89	200731-89	200731-89	200731-89		
Lab Sample No.(s)			22583409	22583419	22583387	22583397		
AGS Reference								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Chlorophenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Methylphenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Nitroaniline (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
2-Nitrophenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
3-Nitroaniline (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Chloroaniline (aq)	<1 µg/l	TM176	<8	<8	<10	<10		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Methylphenol (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Nitroaniline (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
4-Nitrophenol (aq)	<1 µg/l	TM176	<8	<8	<10	<10		
Azobenzene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
Acenaphthylene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
Acenaphthene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
Anthracene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<16 #	<16 #	<20 #	<20 #		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<8 #	<8 #	<10 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

SVOC MS (W) - Aqueous

Results Legend	
#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Carbazole (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Chrysene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Dibenzofuran (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Diethyl phthalate (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Dimethyl phthalate (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<40 #	<40 #	<50 #	<50 #		
Fluoranthene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Fluorene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Hexachlorobenzene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Pentachlorophenol (aq)	<1 µg/l	TM176		<8	<8	<10	<10		
Phenol (aq)	<1 µg/l	TM176		<8	<8	<10	<10		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Hexachloroethane (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Nitrobenzene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Naphthalene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Isophorone (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<8	<8	<10	<10		
Phenanthrene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		
Pyrene (aq)	<1 µg/l	TM176		<8 #	<8 #	<10 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

VOC MS (W)

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
Dibromofluoromethane**	%	TM208		108	107	108	107		
Toluene-d8**	%	TM208		99.1	97.2	97.2	96.2		
4-Bromofluorobenzene**	%	TM208		99	99.9	99.9	101		
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	3.44 #		
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	1.16 #		
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% 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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
			Sample Time	.	.	.	.		
			Date Received	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
			SDG Ref	200731-89	200731-89	200731-89	200731-89		
			Lab Sample No.(s)	22583409	22583419	22583387	22583397		
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1		

Table of Results - Appendix

Method No	Reference	Description
SUB		Subcontracted Test
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200731-89	**Client Reference:**	P2282	**Report Number:**	564886
Location:	New Inn Landfill	**Order Number:**	P2282	**Superseded Report:**	562407

Test Completion Dates

Lab Sample No(s)	22583409	22583419	22583387	22583397
Customer Sample Ref.	BH1	BH4	GW01	GW02
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Acid Herbicides by GCMS	07-Aug-2020	07-Aug-2020	07-Aug-2020	07-Aug-2020
Alkalinity as CaCO3	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
Ammonium Low	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
Anions by Kone (w)	04-Aug-2020	04-Aug-2020	04-Aug-2020	04-Aug-2020
BOD True Total	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
COD Unfiltered	01-Aug-2020	01-Aug-2020	01-Aug-2020	04-Aug-2020
Conductivity (at 20 deg.C)	05-Aug-2020	05-Aug-2020	05-Aug-2020	05-Aug-2020
Cyanide Comp/Free/Total/Thiocyanate	07-Aug-2020	06-Aug-2020	07-Aug-2020	07-Aug-2020
Dissolved Metals by ICP-MS	07-Aug-2020	07-Aug-2020	07-Aug-2020	07-Aug-2020
Dissolved Oxygen by Probe	02-Aug-2020	02-Aug-2020	04-Aug-2020	02-Aug-2020
Faecal Coliforms (W)*	10-Aug-2020	10-Aug-2020	10-Aug-2020	10-Aug-2020
Fluoride	04-Aug-2020	04-Aug-2020	04-Aug-2020	04-Aug-2020
Mercury Dissolved	05-Aug-2020	05-Aug-2020	07-Aug-2020	05-Aug-2020
PCB Congeners - Aqueous (W)	10-Aug-2020	10-Aug-2020	10-Aug-2020	10-Aug-2020
Pesticides (Suite I) by GCMS	07-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
Pesticides (Suite II) by GCMS	07-Aug-2020	07-Aug-2020	07-Aug-2020	07-Aug-2020
Pesticides (Suite III) by GCMS	06-Aug-2020	05-Aug-2020	05-Aug-2020	05-Aug-2020
pH Value	03-Aug-2020	03-Aug-2020	04-Aug-2020	04-Aug-2020
SVOC MS (W) - Aqueous	09-Aug-2020	09-Aug-2020	09-Aug-2020	09-Aug-2020
Total Coliforms(W)*	10-Aug-2020	10-Aug-2020	10-Aug-2020	
Total Organic and Inorganic Carbon	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
VOC MS (W)	04-Aug-2020	05-Aug-2020	05-Aug-2020	05-Aug-2020

ALS Environmental Ltd
Torrington Avenue
Coventry
CV4 9GU

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F: +44 (0)24 7685 6575
www.alsenvironmental.co.uk

Subcon Results
ALS Life Sciences Limited
Torrington Avenue
Tile Hill CV4 9GU

08 August 2020

Test Report: COV/1904559/2020

Dear Subcon Results

Analysis of your sample(s) received on 01 August 2020 is now complete and we have pleasure in enclosing the appropriate test report(s).

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

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

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

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

Yours Sincerely,

Signed: 

Name: B. Paige

Title: Microbiology Team Leader

UKAS TESTING 1314

bsi ISO 14001 Environmental Management CERTIFIED EMS 675527 ISO 45001 Occupational Health and Safety Management CERTIFIED OHS 542058

mCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME

Report Summary

ANALYSED BY

Hawarden Subcon Results
ALS Life Sciences Limited
Torrington Avenue
Tile Hill
CV4 9GU

Date of Issue: **08 August 2020**

Report Number: **COV/1904559/2020** Issue **1**

This issue replaces all previous issues

Job Description: 2020 Analysis

Job Location: 200731-89

Number of Samples included in this report **7**

Job Received: **01 August 2020**

Number of Test Results included in this report **10**

Analysis Commenced: **01 August 2020**

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

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

Information on the methods of analysis and performance characteristics are available on request.
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.
This test report is not a statement of conformity to any specification or standard.

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545545**	Sample	**1** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584586 BH1**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**BH1**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	0	cfu/100ml	08/08/2020	N Cov	W57

Analyst Comments for 19545545: This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

ALS Environmental Ltd
Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545546**	Sample	**2** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584591 BH1**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**BH1**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presump	2	cfu/100ml	02/08/2020	Y Cov	W10
Total Coliforms confirmed	2	cfu/100ml	02/08/2020	Y Cov	W10

Analyst Comments for 19545546: This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Raoultella terrigena and Lelliottia amnigena.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY

UKAS TESTING 1314

ALS

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545547**	Sample	**3** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584606 BH4**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**BH4**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	0	cfu/100ml	08/08/2020	N Cov	W57

Analyst Comments for 19545547: This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545548**	Sample	**4** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584607 BH4**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**BH4**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presump	7	cfu/100ml	02/08/2020	Y Cov	W10
Total Coliforms confirmed	7	cfu/100ml	02/08/2020	Y Cov	W10

Analyst Comments for 19545548: This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Serratia fonticola, Lelliottia amnigena and Citrobacter gillenii.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY

UKAS TESTING 1314

ALS

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545549**	Sample	**5** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584572 GW01**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**GW01**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	1	cfu/100ml	08/08/2020	N Cov	W57

Analyst Comments for 19545549: This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545550**	Sample	**6** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584573 GW01**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**GW01**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presump	2	cfu/100ml	02/08/2020	Y Cov	W10
Total Coliforms confirmed	2	cfu/100ml	02/08/2020	Y Cov	W10

Analyst Comments for 19545550: This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Citrobacter gillenii.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1904559/2020**	Issue	**1**
Laboratory Number:	**19545551**	Sample	**7** of **7**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**22584574 GW02**		
Sample Matrix:	**Ground Water**		
Sample Date/Time:	**30 July 2020**		
Sample Received:	**01 August 2020**		
Analysis Complete:	**08 August 2020**		
SDG:	**200731-89**		
Sample Reference:	**GW02**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	180	cfu/100ml	08/08/2020	N Cov	W57

Analyst Comments for 19545551: This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues
Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

ALS Environmental Ltd
Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

ANALYST COMMENTS FOR REPORT COV/1904559/2020

Issue 1

This issue replaces all previous issues

Date of Issue: **08 August 2020**

Sample No	Analysis Comments
19545545	This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.
19545546	This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Raoultella terrigena and Lelliottia amnigena.
19545547	This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.
19545548	This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Serratia fonticola, Lelliottia amnigena and Citrobacter gillenii.
19545549	This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.
19545550	This sample has been analysed for Total Coliforms confirmed, Total Coliform presump outside recommended stability times. It is therefore possible that the results provided may be compromised. Total coliforms identified as Citrobacter gillenii.
19545551	This sample has been analysed for Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed: Bpaige

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1904559/2020

ISSUE 1

This issue replaces all previous issues

Date of Issue: 08 August 2020

Sample No	Description	Determinand	Comments
19545546	22584591 BH1	Total Coliforms confirmed	Total coliforms identified as Raoultella terrigena and Lelliottia amnigena.
19545548	22584607 BH4	Total Coliforms confirmed	Total coliforms identified as Serratia fonticola, Lelliottia amnigena and Citrobacter gillenii.
19545550	22584573 GW01	Total Coliforms confirmed	Total coliforms identified as Citrobacter gillenii.

Signed: 

Name: **B. Paige** Date: **08 August 2020**

Title: **Microbiology Team Leader**

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Appendix

General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	04 September 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200826-90
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	566041

This report has been revised and directly supersedes 565825 in its entirety.

We received 4 samples on Wednesday August 26, 2020 and 4 of these samples were scheduled for analysis which was completed on Friday September 04, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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.

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Version: 2.5 Version Issued: 04/09/2020

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22723005	BH1		0.00 - 0.00	25/08/2020
22723016	BH4		0.00 - 0.00	25/08/2020
22722980	GW01		0.00 - 0.00	25/08/2020
22722991	GW02		0.00 - 0.00	25/08/2020

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Results Legend

X Test

N No Determination Possible

Sample Types -

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

			Lab Sample No(s)	22723005					22723016						22722980						22722991		
			Customer Sample Reference	BH1					BH4						GW01						GW02		
			AGS Reference																				
			Depth (m)	0.00 - 0.00					0.00 - 0.00						0.00 - 0.00						0.00 - 0.00		
			Container	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)
			Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4		X					X						X						X		
Alkalinity as CaCO3	All	NDPs: 0 Tests: 4			X					X						X						X	
Ammonium Low	All	NDPs: 0 Tests: 4				X					X						X						X
Anions by Kone (w)	All	NDPs: 0 Tests: 4			X					X						X						X	
BOD True Total	All	NDPs: 0 Tests: 4			X					X						X						X	
COD Unfiltered	All	NDPs: 0 Tests: 4			X					X						X						X	
Coliforms (W)	All	NDPs: 0 Tests: 4			X					X						X						X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4			X					X						X						X	
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4					X						X					X					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4			X							X				X						X	
Dissolved Oxygen by Probe	All	NDPs: 2 Tests: 2						N											N				
										X												X	
Fluoride	All	NDPs: 0 Tests: 4			X					X						X						X	
Mercury Dissolved	All	NDPs: 0 Tests: 4			X							X				X						X	
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 4		X					X						X					X			
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4		X					X						X					X			

22722991	GW02		0.00 - 0.00	Vial (ALE297)	GW
				NaOH (ALE245)	GW
				X	

Validated

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Results Legend

X **Test**

N **No Determination Possible**

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Lab Sample No(s)						22723005						22723016						22722980						22722991			
Customer Sample Reference						BH1						BH4						GW01						GW02			
AGS Reference																											
Depth (m)						0.00 - 0.00						0.00 - 0.00						0.00 - 0.00						0.00 - 0.00			
Container						0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)		0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	NaOH (ALE245)	Vial (ALE297)		0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	
Sample Type						GW	GW	GW	GW	GW		GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW		GW	GW	GW	
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4				X						X						X						X			
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 4				X						X						X						X			
pH Value	All	NDPs: 0 Tests: 4					X						X						X						X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4					X						X						X						X		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4						X						X						X						X	
VOC MS (W)	All	NDPs: 0 Tests: 4								X							X						X				

22722991	GW02		0.00 - 0.00	Vial (ALE297)	GW
				NaOH (ALE245)	GW
				X	

Validated

CERTIFICATE OF ANALYSIS

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Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Coliforms, Total*	MPN/100ml	SUB		<1	<1	2	488		
Coliforms, Faecal*	CFU/100ml	SUB		<1	<1	<1	10		
Alkalinity, Total as HCO3	<2 mg/l	TM043		427	434	2280	1230		
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #	2.29 #	2.2 #		
Oxygen, dissolved	<0.3 mg/l	TM046			8.34		9.51		
Organic Carbon, Total	<3 mg/l	TM090		<3 #	3.63 #	3.46 ♦ #	3.83 #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.0202 #	0.558 #	0.0438 #	0.526 #		
Fluoride	<0.5 mg/l	TM104		0.786 #	0.79 #	<0.5 #	0.968 #		
COD, unfiltered	<7 mg/l	TM107		8.83 #	13.4 #	342 #	106 #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.643 #	0.798 #	0.727 #	1.45 #		
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 2 #	2.96 #	<0.5 2 #	0.541 2 #		
Barium (diss.filt)	<0.2 µg/l	TM152		36.9 2 #	41.8 #	1930 2 #	111 2 #		
Boron (diss.filt)	<10 µg/l	TM152		64.3 2 #	136 #	348 2 #	193 2 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 2 #	<0.08 #	<0.08 2 #	<0.08 2 #		
Chromium (diss.filt)	<1 µg/l	TM152		<1 2 #	5.17 #	<1 2 #	<1 2 #		
Copper (diss.filt)	<0.3 µg/l	TM152		7.55 2 #	0.618 #	1.15 2 #	1 2 #		
Lead (diss.filt)	<0.2 µg/l	TM152		0.616 2 #	1.52 #	<0.2 2 #	<0.2 2 #		
Manganese (diss.filt)	<3 µg/l	TM152		25.8 2 #	105 #	<3 2 #	14.9 2 #		
Nickel (diss.filt)	<0.4 µg/l	TM152		8.5 2 #	17.1 #	2.71 2 #	3.44 2 #		
Phosphorus (diss.filt)	<10 µg/l	TM152		<10 2 #	30.7 #	<10 2 #	11.4 2 #		
Selenium (diss.filt)	<1 µg/l	TM152		<1 2 #	<1 #	<1 2 #	2.77 2 #		
Thallium (diss.filt)	<2 µg/l	TM152		<2 2 #	<2 #	<2 2 #	<2 2 #		
Zinc (diss.filt)	<1 µg/l	TM152		10 2 #	5.81 #	862 2 #	<1 2 #		
Sodium (Dis.Filt)	<0.076 mg/l	TM152		10.6 2 #	46.5 #	19.3 2 #	222 2 #		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		18.9 2 #	12.8 #	7.94 2 #	35.6 2 #		
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.58 2 #	4.5 #	0.627 2 #	5.49 2 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152		109 2 #	128 #	138 2 #	64.5 2 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.0509 2 #	3.75 #	<0.019 2 #	0.0304 2 #		
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 2 #	<0.01 #	<0.01 2 #	<0.01 2 #		
Sulphate	<2 mg/l	TM184		12.5 #	11.8 #	16.9 #	235 #		
Chloride	<2 mg/l	TM184		16.1 #	66 #	23.1 #	55.6 #		
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.573 #	0.282 #	1.98 #	<0.1 #		
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		

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Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015		
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105	<0.105	<0.105		
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #		
pH	<1 pH Units	TM256		7.3 #	7.12 #	7.01 #	7.46 #		
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02		
p,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02		

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1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phorate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triallate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Simazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Malathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		

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			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Ethion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Triazophos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Phosalone	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.01		
Azinphos methyl	<0.02 µg/l	TM344		<0.04	<0.04	<0.04	<0.04		
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.02		
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Chlorothalonil	<0.01 µg/l	TM345		<0.02	<0.02	<0.02	<0.02		
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01	<0.01	<0.01		
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.2		
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.08		
MCPA	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.1		
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.08		
Dicamba	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.08		
MCPB	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.1		
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.2		
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.1		

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.2		
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.1		
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.2		
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.1		
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.1	<0.1	<0.1	<0.1		
Bromoxynil	<0.04 µg/l	TM411		<0.08	<0.08	<0.08	<0.08		
Benazolin	<0.04 µg/l	TM411		<0.08	<0.08	<0.08	<0.08		
Ioxynil	<0.05 µg/l	TM411		<0.1	<0.1	<0.1	<0.1		
Pentachlorophenol	<0.04 µg/l	TM411		<0.08	<0.08	<0.08	<0.08		
Fluoroxypyr	<0.1 µg/l	TM411		<0.2	<0.2	<0.2	<0.2		

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

SVOC MS (W) - Aqueous

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
3-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<20	<10		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<20	<10		
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<2 #	<40 #	<20 #		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

SVOC MS (W) - Aqueous

Results Legend	
#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Carbazole (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Chrysene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<5 #	<100 #	<50 #		
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Fluorene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1	<20	<10		
Phenol (aq)	<1 µg/l	TM176		<1	<1	<20	<10		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Isophorone (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1	<20	<10		
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		
Pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<20 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

VOC MS (W)

Results Legend

#	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
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Dibromofluoromethane**	%	TM208		120	119	120	118		
Toluene-d8**	%	TM208		99.3	99.4	98.8	98.9		
4-Bromofluorobenzene**	%	TM208		96	98.3	97.7	96.4		
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	2.24 #		
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% 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
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1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
			Sample Time	.	.	.	.		
			Date Received	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
			SDG Ref	200826-90	200826-90	200826-90	200826-90		
			Lab Sample No.(s)	22723005	22723016	22722980	22722991		
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1		

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Notification of NDPs (No determination possible)

Date Received : 26/08/2020 12:34:28

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
22722980	GW01	0.00 - 0.00	Dissolved Oxygen by Probe	Insufficient Sample
22723005	BH1	0.00 - 0.00	Dissolved Oxygen by Probe	Insufficient Sample

Table of Results - Appendix

Method No	Reference	Description
SUB		Subcontracted Test
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Test Completion Dates

Lab Sample No(s)	22723005	22723016	22722980	22722991
Customer Sample Ref.	BH1	BH4	GW01	GW02
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Acid Herbicides by GCMS	03-Sep-2020	03-Sep-2020	03-Sep-2020	03-Sep-2020
Alkalinity as CaCO3	29-Aug-2020	29-Aug-2020	29-Aug-2020	29-Aug-2020
Ammonium Low	03-Sep-2020	02-Sep-2020	03-Sep-2020	02-Sep-2020
Anions by Kone (w)	31-Aug-2020	31-Aug-2020	31-Aug-2020	31-Aug-2020
BOD True Total	01-Sep-2020	01-Sep-2020	01-Sep-2020	01-Sep-2020
COD Unfiltered	30-Aug-2020	28-Aug-2020	30-Aug-2020	28-Aug-2020
Coliforms (W)	04-Sep-2020	04-Sep-2020	04-Sep-2020	04-Sep-2020
Conductivity (at 20 deg.C)	27-Aug-2020	27-Aug-2020	27-Aug-2020	27-Aug-2020
Cyanide Comp/Free/Total/Thiocyanate	03-Sep-2020	03-Sep-2020	03-Sep-2020	03-Sep-2020
Dissolved Metals by ICP-MS	02-Sep-2020	01-Sep-2020	02-Sep-2020	01-Sep-2020
Dissolved Oxygen by Probe		28-Aug-2020		28-Aug-2020
Fluoride	01-Sep-2020	01-Sep-2020	01-Sep-2020	01-Sep-2020
Mercury Dissolved	02-Sep-2020	03-Sep-2020	02-Sep-2020	03-Sep-2020
PCB Congeners - Aqueous (W)	03-Sep-2020	03-Sep-2020	03-Sep-2020	03-Sep-2020
Pesticides (Suite I) by GCMS	01-Sep-2020	01-Sep-2020	01-Sep-2020	01-Sep-2020
Pesticides (Suite II) by GCMS	01-Sep-2020	01-Sep-2020	01-Sep-2020	01-Sep-2020
Pesticides (Suite III) by GCMS	01-Sep-2020	01-Sep-2020	01-Sep-2020	01-Sep-2020
pH Value	27-Aug-2020	27-Aug-2020	27-Aug-2020	27-Aug-2020
SVOC MS (W) - Aqueous	30-Aug-2020	30-Aug-2020	30-Aug-2020	30-Aug-2020
Total Organic and Inorganic Carbon	29-Aug-2020	29-Aug-2020	02-Sep-2020	29-Aug-2020
VOC MS (W)	03-Sep-2020	03-Sep-2020	03-Sep-2020	03-Sep-2020

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Customer

Customer Services

ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK
CH5 3US

Certificate Of Analysis

Job Number: 20-82835
Issue Number: 2
Report Date: 4 September 2020

Reason for re-issuing report: Final Report

Site: Fehily Timoney
PO Number: ALS GLOBAL
Date Samples Received: 27/08/2020

Please find attached the results for the samples received at our laboratory on 27/08/2020.

Should you have any queries regarding the report or require any further services, we would be happy to discuss your requirements. For additional information about the company please log-on to our website at the above address.

Thank you for choosing City Analysts Limited. We look forward to assisting you again.

Authorised By: Louise Morrow **Authorised Date:** 1 September 2020

Louise Morrow

Notes are not INAB accredited

Results relate only to the items tested.
Information on methods of analysis and uncertainty of measurement is available on request.
Any opinions or interpretations indicated are outside the scope of our INAB accreditation.

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Certificate Of Analysis

Customer

Customer Services

ALS Life Sciences
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Hawarden, Deeside
UK
CH5 3US

Report Reference: 20-82835

Report Version: 2

Site: Fehily Timoney

Sample Description: GW01 -NEW INN

Sample Type: Ground

Lab Reference Number: 529044

Date of Sampling: 26/08/2020

Date Sample Received: 27/08/2020

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D1201#	27/08/2020	Coliforms	2.0	MPN/100ml	-
D/D3221#	27/08/2020	Faecal Coliforms	< 1	cfu/100ml	-

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.
NAC & ATC - No abnormal change and acceptable to customers.
TVC - Total viable count
Site D = Analysed at City Analysts Dublin. Site S = Analysed at City Analysts Shannon

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Certificate Of Analysis

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Hawarden, Deeside
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CH5 3US

Report Reference: 20-82835

Report Version: 2

Site: Fehily Timoney

Sample Description: GW02 - NEW INN

Sample Type: Ground

Lab Reference Number: 529045

Date of Sampling: 26/08/2020

Date Sample Received: 27/08/2020

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D1201#	27/08/2020	Coliforms	488.4	MPN/100ml	-
D/D3221#	27/08/2020	Faecal Coliforms	10	cfu/100ml	-

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
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Report Reference: 20-82835

Report Version: 2

Site: Fehily Timoney

Sample Description: BH1 - NEW INN

Sample Type: Ground

Lab Reference Number: 529046

Date of Sampling: 26/08/2020

Date Sample Received: 27/08/2020

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D1201#	27/08/2020	Coliforms	< 1.0	MPN/100ml	-
D/D3221#	27/08/2020	Faecal Coliforms	< 1	cfu/100ml	-

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.
NAC & ATC - No abnormal change and acceptable to customers.
TVC - Total viable count
Site D = Analysed at City Analysts Dublin. Site S = Analysed at City Analysts Shannon

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CH5 3US

Report Reference: 20-82835

Report Version: 2

Site: Fehily Timoney

Sample Description: BH4 -NEW INN

Sample Type: Ground

Lab Reference Number: 529047

Date of Sampling: 26/08/2020

Date Sample Received: 27/08/2020

Site / Method Ref.	Analysis Start Date	Parameter	Result	Units	PV Value (Drinking Water Only)
D/D1201#	27/08/2020	Coliforms	< 1.0	MPN/100ml	-
D/D3221#	27/08/2020	Faecal Coliforms	< 1	cfu/100ml	-

= INAB Accredited, U = UKAS Accredited, * = Subcontracted

Note:
PV Value is the parametric value, taken from European Communities, (Drinking Water) Regulations, 2014. S.I. No. 122 of 2014 and relates only to drinking water samples.
For queries on results, please contact us within two weeks of the report date to ensure that we can accommodate your query as samples cannot be stored indefinitely.
NAC & ATC - No abnormal change and acceptable to customers.
TVC - Total viable count
Site D = Analysed at City Analysts Dublin. Site S = Analysed at City Analysts Shannon

SDG:	200826-90	**Client Reference:**	P2282	**Report Number:**	566041
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	565825

Appendix

General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 July 2021
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	210715-116
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	607026

This report has been revised and directly supersedes 607012 in its entirety.

We received 4 samples on Thursday July 15, 2021 and 4 of these samples were scheduled for analysis which was completed on Monday July 26, 2021. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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.

Approved By:

Sonia McWhan

Operations Manager

ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

Version: 2.8 Version Issued: 26/07/2021

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
24638803	BH1		0.00 - 0.00	14/07/2021
24638810	BH4		0.00 - 0.00	14/07/2021
24638784	GW01		0.00 - 0.00	14/07/2021
24638794	GW02		0.00 - 0.00	14/07/2021

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend

X Test

N No Determination Possible

Sample Types -

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			24638803	BH1		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			24638810	BH4		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			24638784	GW01		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			24638794	GW02		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4	X				X	
							X	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 4		X				X
								X
Ammonium Low	All	NDPs: 0 Tests: 4			X			X
								X
Anions by Kone (w)	All	NDPs: 0 Tests: 4		X				X
								X
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4		X				X
								X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4				X		
								X
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4			X			
								X
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 4		X				X
								X
Fluoride	All	NDPs: 0 Tests: 4		X				X
								X
Mercury Dissolved	All	NDPs: 0 Tests: 4			X			
								X
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 4	X				X	
							X	
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4	X				X	
							X	
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4	X				X	
							X	
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 4	X				X	
							X	
pH Value	All	NDPs: 0 Tests: 4		X				X
								X

					24638794
				GW02	
			0.00 - 0.00		
Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	500ml Plastic (ALE208)	
GW	GW	GW	GW	GW	
				X	
			X		
				X	
				X	
				X	
		X			
				X	
				X	
		X			
				X	

Validated

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend

X **Test**

N **No Determination Possible**

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

Lab Sample No(s)			24638803						24638810						24638784						24638794		
Customer Sample Reference			BH1						BH4						GW01						GW02		
AGS Reference																							
Depth (m)			0.00 - 0.00						0.00 - 0.00						0.00 - 0.00						0.00 - 0.00		
Container			0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)		
Sample Type			GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4		X						X						X							
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4			X						X						X						
VOC MS (W)	All	NDPs: 0 Tests: 4						X						X						X			

								24638794
								GW02
								0.00 - 0.00
500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)				
GW	GW	GW	GW	GW				
X								
	X							
				X				

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Alkalinity, Total as HCO3	<2 mg/l	TM043		432	459	3340	1460		
Oxygen, dissolved	<0.3 mg/l	TM046		9.8	9.58	12.2	11.5		
Organic Carbon, Total	<3 mg/l	TM090		<3 ♦ #	3.66 ♦ #	3.75 ♦ #	3.26 ♦ #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.013 #	0.139 #	0.034 #	0.443 #		
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #	<0.5 #	1.46 #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		0.599 #	0.823 #	0.746 #	2.64 #		
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 #	6.21 #	<0.5 #	0.798 #		
Barium (diss.filt)	<0.2 µg/l	TM152		19.1 #	41.5 #	7.92 #	190 #		
Boron (diss.filt)	<10 µg/l	TM152		21.4 #	41 #	15 #	181 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152		0.117 #	<0.08 #	<0.08 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152		24.9 #	<0.3 #	0.374 #	<0.3 #		
Lead (diss.filt)	<0.2 µg/l	TM152		12.2 #	1.75 #	<0.2 #	<0.2 #		
Manganese (diss.filt)	<3 µg/l	TM152		31.2 #	136 #	3.15 #	146 #		
Nickel (diss.filt)	<0.4 µg/l	TM152		9.18 #	64.2 #	1.76 #	2.72 #		
Phosphorus (diss.filt)	<10 µg/l	TM152		42.2 #	<10 #	<10 #	15.7 #		
Selenium (diss.filt)	<1 µg/l	TM152		1.28 #	<1 #	<1 #	<1 #		
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #	<2 #	<2 #		
Zinc (diss.filt)	<1 µg/l	TM152		31.5 #	19.1 #	1.27 #	1.89 #		
Sodium (Dis.Filt)	<0.076 mg/l	TM152		5.99 #	47.2 #	8.63 #	486 #		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		8.55 #	8.48 #	5.99 #	41 #		
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.42 #	4.06 #	1.64 #	7.23 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152		140 #	152 #	170 #	53.8 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.407 #	5.95 #	<0.019 #	0.0415 #		
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172		<100	<100	<100	<100		
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #		
Sulphate	<2 mg/l	TM184		13.6 #	13.6 #	6.5 #	442 #		
Chloride	<2 mg/l	TM184		7.4 #	71 #	15.4 #	90.1 #		
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.88 #	<0.1 #	1.11 #	0.107 #		
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #		
pH	<1 pH Units	TM256		7.34 #	7.17 #	7.11 #	7.67 #		
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend	
#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
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**	% 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	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.02	<0.02		
Aldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Isodrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endrin	<0.01 µg/l	TM343		<0.01	<0.01	<0.02	<0.02		
o,p'-DDT	<0.01 µg/l	TM343		<0.01	<0.01	<0.05	<0.05		
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.02	<0.02	<0.02		
p,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.02	<0.08	<0.08		
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.01	<0.01	<0.04	<0.04		
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.02	<0.08	<0.08		
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.02	<0.04	<0.04		
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.01	<0.01	<0.01		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend

#	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
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1-4+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Phorate	<0.01 µg/l	TM344		<0.03	<0.02	<0.05	<0.03		
Diazinon	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Triallate	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Atrazine	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Simazine	<0.01 µg/l	TM344		<0.01	<0.02	0.0763	<0.01		
Disulfoton	<0.01 µg/l	TM344		<0.07	<0.04	<0.1	<0.07		
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Malathion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Fenthion	<0.01 µg/l	TM344		<0.02	<0.02	<0.05	<0.02		
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Parathion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Ethion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Triazophos	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Phosalone	<0.01 µg/l	TM344		<0.01	<0.02	<0.05	<0.01		
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.04	<0.1	<0.02		
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.04	<0.1	<0.02		
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Results Legend

#	ISO17025 accredited.
M	mCERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
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**	% 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	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Propazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Chlorothalonil	<0.01 µg/l	TM345		<0.01	<0.02	<0.2	<0.02		
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.01		
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.1		
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
MCPA	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
Dicamba	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
MCPB	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.1		
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.1		
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.1		
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
Benazolin	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.1	<0.1	<0.05		
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.08	<0.08	<0.04		
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.2	<0.2	<0.1		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

SVOC MS (W) - Aqueous

Results Legend

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**	% 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	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
3-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<8	<4		
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<8	<4		
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<2 #	<16 #	<8 #		
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

SVOC MS (W) - Aqueous

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Carbazole (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Chrysene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<5 #	<40 #	<20 #		
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Fluorene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1	<8	<4		
Phenol (aq)	<1 µg/l	TM176		<1	<1	<8	<4		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Isophorone (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1	<8	<4		
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		
Pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<8 #	<4 #		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

VOC MS (W)

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Dibromofluoromethane**	%	TM208		111	109	109	114		
Toluene-d8**	%	TM208		101	100	99.1	99.8		
4-Bromofluorobenzene**	%	TM208		98.7	101	95.4	96.8		
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

VOC MS (W)

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	14/07/2021	14/07/2021	14/07/2021	14/07/2021		
			Sample Time	.	.	.	.		
			Date Received	15/07/2021	15/07/2021	15/07/2021	15/07/2021		
			SDG Ref	210715-116	210715-116	210715-116	210715-116		
			Lab Sample No.(s)	24638803	24638810	24638784	24638794		
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1		

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Table of Results - Appendix

Method No	Reference	Description
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
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
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	210715-116	**Client Reference:**	P2282	**Report Number:**	607026
Location:	New Inn Landfill	**Order Number:**	Z2798	**Superseded Report:**	607012

Test Completion Dates

Lab Sample No(s)	24638803	24638810	24638784	24638794
Customer Sample Ref.	BH1	BH4	GW01	GW02
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Acid Herbicides by GCMS	22-Jul-2021	22-Jul-2021	22-Jul-2021	22-Jul-2021
Alkalinity as CaCO3	20-Jul-2021	20-Jul-2021	20-Jul-2021	21-Jul-2021
Ammonium Low	20-Jul-2021	20-Jul-2021	20-Jul-2021	20-Jul-2021
Anions by Kone (w)	21-Jul-2021	21-Jul-2021	21-Jul-2021	21-Jul-2021
Conductivity (at 20 deg.C)	21-Jul-2021	21-Jul-2021	20-Jul-2021	21-Jul-2021
Cyanide Comp/Free/Total/Thiocyanate	19-Jul-2021	19-Jul-2021	19-Jul-2021	19-Jul-2021
Dissolved Metals by ICP-MS	20-Jul-2021	20-Jul-2021	20-Jul-2021	20-Jul-2021
Dissolved Oxygen by Probe	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
Fluoride	16-Jul-2021	16-Jul-2021	16-Jul-2021	16-Jul-2021
Mercury Dissolved	19-Jul-2021	19-Jul-2021	19-Jul-2021	19-Jul-2021
Mineral Oil C10-40 Aqueous (W)	20-Jul-2021	20-Jul-2021	20-Jul-2021	21-Jul-2021
Pesticides (Suite I) by GCMS	22-Jul-2021	22-Jul-2021	20-Jul-2021	20-Jul-2021
Pesticides (Suite II) by GCMS	22-Jul-2021	22-Jul-2021	22-Jul-2021	22-Jul-2021
Pesticides (Suite III) by GCMS	26-Jul-2021	26-Jul-2021	26-Jul-2021	26-Jul-2021
pH Value	19-Jul-2021	19-Jul-2021	19-Jul-2021	19-Jul-2021
SVOC MS (W) - Aqueous	18-Jul-2021	18-Jul-2021	19-Jul-2021	19-Jul-2021
Total Organic and Inorganic Carbon	24-Jul-2021	24-Jul-2021	26-Jul-2021	24-Jul-2021
VOC MS (W)	18-Jul-2021	18-Jul-2021	16-Jul-2021	16-Jul-2021

Appendix General

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

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

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. **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.

18. **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**

19. **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, based on HSG 248 (2005).

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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Fehily Timoney
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Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	07 August 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200731-88
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	562221

We received 1 sample on Friday July 31, 2020 and 1 of these samples were scheduled for analysis which was completed on Friday August 07, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22583371	BH2		0.00 - 0.00	30/07/2020

Maximum Sample/Coolbox Temperature (°C) : **16.2**

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

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

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Container	Container	Sample Type	Sample Type	Sample Type
			2258371	BH2		0.00 - 0.00	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	LE	LE	LE
Ammonium Low	All	NDPs: 0 Tests: 1							X			X
Anions by Kone (w)	All	NDPs: 0 Tests: 1						X			X	
BOD True Total	All	NDPs: 0 Tests: 1					X			X		
COD Unfiltered	All	NDPs: 0 Tests: 1						X			X	
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1						X			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1						X			X	
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 1						X			X	
Fluoride	All	NDPs: 0 Tests: 1						X			X	
Mercury Dissolved	All	NDPs: 0 Tests: 1						X			X	
pH Value	All	NDPs: 0 Tests: 1						X			X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 1						X			X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1							X			X

Validated

CERTIFICATE OF ANALYSIS

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

#	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
1-3+$@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	BH2
			Depth (m)	0.00 - 0.00
			Sample Type	Land Leachate (LE)
			Date Sampled	30/07/2020
			Sample Time	.
			Date Received	31/07/2020
			SDG Ref	200731-88
			Lab Sample No.(s)	22583371
			AGS Reference	
BOD, unfiltered	<1 mg/l	TM045		28.2 #
Oxygen, dissolved	<0.3 mg/l	TM046		6.16
Organic Carbon, Total	<3 mg/l	TM090		12.7
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		22
Fluoride	<0.5 mg/l	TM104		<0.5
COD, unfiltered	<7 mg/l	TM107		303 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120		5.88 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		2.73 2 #
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 2 #
Chromium (diss.filt)	<1 µg/l	TM152		<1 2 #
Copper (diss.filt)	<0.3 µg/l	TM152		<0.3 2 #
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 2 #
Manganese (diss.filt)	<3 µg/l	TM152		525 2 #
Nickel (diss.filt)	<0.4 µg/l	TM152		55.2 2 #
Phosphorus (diss.filt)	<10 µg/l	TM152		13.6 2 #
Selenium (diss.filt)	<1 µg/l	TM152		<1 2 #
Zinc (diss.filt)	<1 µg/l	TM152		7.37 2 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		1250 2 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		28.2 2 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		25.7 2 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		3.87 2 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 2 #
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184		<0.05
Sulphate	<2 mg/l	TM184		29.4
Chloride	<2 mg/l	TM184		1720
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1
pH	<1 pH Units	TM256		6.88 #

CERTIFICATE OF ANALYSIS

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	22583371
Customer Sample Ref.	BH2
AGS Ref.	
Depth	0.00 - 0.00
Type	Land Leachate
Ammonium Low	06-Aug-2020
Anions by Kone (w)	04-Aug-2020
BOD True Total	06-Aug-2020
COD Unfiltered	04-Aug-2020
Conductivity (at 20 deg.C)	05-Aug-2020
Dissolved Metals by ICP-MS	07-Aug-2020
Dissolved Oxygen by Probe	04-Aug-2020
Fluoride	04-Aug-2020
Mercury Dissolved	05-Aug-2020
pH Value	04-Aug-2020
Phosphate by Kone (w)	04-Aug-2020
Total Organic and Inorganic Carbon	06-Aug-2020

SDG:	200731-88	**Client Reference:**	P2282	**Report Number:**	562221
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Appendix General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

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Fehily Timoney
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Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	03 September 2020
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	200826-96
Your Reference:	P2282
Location:	New Inn Landfill
Report No:	565743

We received 1 sample on Wednesday August 26, 2020 and 1 of these samples were scheduled for analysis which was completed on Thursday September 03, 2020. 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 Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

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

SDG:	200826-96	**Client Reference:**	P2282	**Report Number:**	565743
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
22723184	BH2		0.00 - 0.00	25/08/2020

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

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-96	**Client Reference:**	P2282	**Report Number:**	565743
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend

X Test

N No Determination Possible

Sample Types -

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

Lab Sample No(s)			22723184		
Customer Sample Reference			BH2		
AGS Reference					
Depth (m)			0.00 - 0.00		
Container			250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type			LE	LE	LE
Ammonium Low	All	NDPs: 0 Tests: 1			X
Anions by Kone (w)	All	NDPs: 0 Tests: 1		X	
BOD True Total	All	NDPs: 0 Tests: 1	X		
COD Unfiltered	All	NDPs: 0 Tests: 1	X		
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 1		X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1		X	
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 1		X	
Fluoride	All	NDPs: 0 Tests: 1		X	
Mercury Dissolved	All	NDPs: 0 Tests: 1		X	
pH Value	All	NDPs: 0 Tests: 1		X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 1		X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1			X

Validated

CERTIFICATE OF ANALYSIS

SDG:	200826-96	**Client Reference:**	P2282	**Report Number:**	565743
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Results Legend	
#	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
1-3+$@	Sample deviation (see appendix)

	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
	BH2	0.00 - 0.00	Land Leachate (LE)	25/08/2020	.	26/08/2020	200826-96	22723184	

Component	LOD/Units	Method	
BOD, unfiltered	<1 mg/l	TM045	30.4 #
Oxygen, dissolved	<0.3 mg/l	TM046	3.95
Organic Carbon, Total	<3 mg/l	TM090	12.6
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	10.8
Fluoride	<0.5 mg/l	TM104	<0.5
COD, unfiltered	<7 mg/l	TM107	101 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM120	3.03 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	3.55 2 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 2 #
Chromium (diss.filt)	<1 µg/l	TM152	<1 2 #
Copper (diss.filt)	<0.3 µg/l	TM152	0.622 2 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 2 #
Manganese (diss.filt)	<3 µg/l	TM152	465 2 #
Nickel (diss.filt)	<0.4 µg/l	TM152	52.7 2 #
Phosphorus (diss.filt)	<10 µg/l	TM152	13.4 2 #
Selenium (diss.filt)	<1 µg/l	TM152	<1 2 #
Zinc (diss.filt)	<1 µg/l	TM152	6.14 2 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	449 2 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	14.2 2 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	14.7 2 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	3.79 2 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 2 #
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	<0.05
Sulphate	<2 mg/l	TM184	23.9
Chloride	<2 mg/l	TM184	740
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	0.266
pH	<1 pH Units	TM256	6.74 #

CERTIFICATE OF ANALYSIS

SDG:	200826-96	**Client Reference:**	P2282	**Report Number:**	565743
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Table of Results - Appendix

Method No	Reference	Description
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	200826-96	**Client Reference:**	P2282	**Report Number:**	565743
Location:	New Inn Landfill	**Order Number:**	Z2189	**Superseded Report:**	

Test Completion Dates

Lab Sample No(s)	22723184
Customer Sample Ref.	BH2
AGS Ref.	
Depth	0.00 - 0.00
Type	Land Leachate
Ammonium Low	02-Sep-2020
Anions by Kone (w)	31-Aug-2020
BOD True Total	01-Sep-2020
COD Unfiltered	28-Aug-2020
Conductivity (at 20 deg.C)	27-Aug-2020
Dissolved Metals by ICP-MS	01-Sep-2020
Dissolved Oxygen by Probe	28-Aug-2020
Fluoride	01-Sep-2020
Mercury Dissolved	03-Sep-2020
pH Value	27-Aug-2020
Phosphate by Kone (w)	27-Aug-2020
Total Organic and Inorganic Carbon	30-Aug-2020

Appendix General

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

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

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. **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.

18. **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**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **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

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

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.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2017).*

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.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Daniel Hayden

CERTIFICATE OF ANALYSIS

Date of report Generation:	17 June 2022
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	220606-24
Your Reference:	Galway Historic Landfills P22-040
Location:	New Inn Landfill
Report No:	651144
Order Number:	Z3385

We received 6 samples on Monday June 06, 2022 and 6 of these samples were scheduled for analysis which was completed on Friday June 17, 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 Life Sciences Ltd 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

1291

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
26388789	BH01		0.00 - 0.00	02/06/2022
26388800	BH04		0.00 - 0.00	02/06/2022
26388770	GW01		0.00 - 0.00	02/06/2022
26388781	GW02		0.00 - 0.00	02/06/2022
26388814	SW01		0.00 - 0.00	02/06/2022
26388824	SW02		0.00 - 0.00	02/06/2022

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	26388789						26388800						26388770						26388781
			Customer Sample Reference	BH01						BH04						GW01						GW02
			AGS Reference																			
			Depth (m)	0.00 - 0.00						0.00 - 0.00						0.00 - 0.00						0.00 - 0.00
			Container	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)
			Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 6		X						X						X						X
Alkalinity as CaCO3	All	NDPs: 0 Tests: 6			X						X						X					
Ammonium Low	All	NDPs: 0 Tests: 6				X						X						X				
Anions by Kone (w)	All	NDPs: 0 Tests: 6		X						X						X						X
BOD True Total	All	NDPs: 0 Tests: 6			X						X						X					
COD Unfiltered	All	NDPs: 0 Tests: 6		X						X						X						X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6						X						X						X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 6					X						X						X			
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 6			X						X						X					
Fluoride	All	NDPs: 0 Tests: 6			X						X						X					
Mercury Dissolved	All	NDPs: 0 Tests: 6					X						X						X			
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 6			X						X						X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 6		X						X						X						X
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 6		X						X						X						X
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 6		X						X						X						X

26388824	SW02		0.00 - 0.00	Vial (ALE297)	SW																	
				NaOH (ALE245)	SW							X										
				HNO3 Filtered (ALE204)	SW								X			X						
				H2SO4 (ALE244)	SW			X														
				500ml Plastic (ALE208)	SW				X					X	X		X					
				250ml BOD (ALE212)	SW					X	X											
				0.5l glass bottle (ALE227)	SW	X	X												X	X	X	
26388814	SW01		0.00 - 0.00	Vial (ALE297)	SW																	
				NaOH (ALE245)	SW							X										
				HNO3 Filtered (ALE204)	SW								X			X						
				H2SO4 (ALE244)	SW			X														
				500ml Plastic (ALE208)	SW				X					X	X		X					
				250ml BOD (ALE212)	SW					X	X											
				0.5l glass bottle (ALE227)	SW	X	X												X	X	X	
26388781	GW02		0.00 - 0.00	Vial (ALE297)	GW																	
				NaOH (ALE245)	GW							X										
				HNO3 Filtered (ALE204)	GW								X			X						
				H2SO4 (ALE244)	GW			X														
				500ml Plastic (ALE208)	GW		X			X				X	X		X					

Validated

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
			26388789	BH01		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			26388800	BH04		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			26388770	GW01		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
							500ml Plastic (ALE208)	GW
							H2SO4 (ALE244)	GW
							HNO3 Filtered (ALE204)	GW
							NaOH (ALE245)	GW
							Vial (ALE297)	GW
			26388781	GW02		0.00 - 0.00	0.5l glass bottle (ALE227)	GW
pH Value	All	NDPs: 0 Tests: 6						
			X				X	
			X				X	
			X				X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 6						
			X				X	
			X				X	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 6						
					X			
					X			
VOC MS (W)	All	NDPs: 0 Tests: 6						
						X		
						X		

26388824	SW02		0.00 - 0.00	Vial (ALE297)	SW					X
				NaOH (ALE245)	SW					
				HNO3 Filtered (ALE204)	SW					
				H2SO4 (ALE244)	SW				X	
				500ml Plastic (ALE208)	SW	X				
				250ml BOD (ALE212)	SW					
				0.5l glass bottle (ALE227)	SW			X		
26388814	SW01		0.00 - 0.00	Vial (ALE297)	SW					X
				NaOH (ALE245)	SW					
				HNO3 Filtered (ALE204)	SW					
				H2SO4 (ALE244)	SW				X	
				500ml Plastic (ALE208)	SW	X				
				250ml BOD (ALE212)	SW					
				0.5l glass bottle (ALE227)	SW			X		
26388781	GW02		0.00 - 0.00	Vial (ALE297)	GW					X
				NaOH (ALE245)	GW					
				HNO3 Filtered (ALE204)	GW					
				H2SO4 (ALE244)	GW				X	
				500ml Plastic (ALE208)	GW					

Validated

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	-	-	-	-	-	-
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
Alkalinity, Total as HCO3	<2 mg/l	TM043		440	464	1420	1830	442	439
BOD, unfiltered	<1 mg/l	TM045		<1 @ #	<3 @ #	<1 @ #	<1 @ #	<1 @ #	<1 @ #
Oxygen, dissolved	<0.3 mg/l	TM046		5.46	2.58	4.86	5.54	9.19	9.27
Organic Carbon, Total	<3 mg/l	TM090		<3 #	4.36 #	3.4 #	3.19 #	<3 #	<3 #
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.122 #	0.212 #	0.0656 #	0.321 #	0.0399 #	0.049 #
Fluoride	<0.5 mg/l	TM104		<0.5 #	<0.5 #	<0.5 #	1.71 #	<0.5	<0.5
COD, unfiltered	<7 mg/l	TM107		16.3 #	70.2 #	83.4 #	214 #	<7 #	8.94 #
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 #	3.02 #	<0.5 #	0.804 #	<0.5 #	<0.5 #
Barium (diss.filt)	<0.2 µg/l	TM152		22.4 #	38.8 #	7.87 #	151 #	9.54 #	9.4 #
Boron (diss.filt)	<10 µg/l	TM152		16.6 #	52.9 #	14.6 #	166 #	10.8 #	<10 #
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		11.9 #	<0.3 #	0.98 #	1.2 #	0.481 #	0.538 #
Lead (diss.filt)	<0.2 µg/l	TM152		0.497 #	<0.2 #	<0.2 #	0.252 #	<0.2 #	<0.2 #
Manganese (diss.filt)	<3 µg/l	TM152		7.96 #	131 #	<3 #	117 #	<3 #	3.6 #
Nickel (diss.filt)	<0.4 µg/l	TM152		7.94 #	2.57 #	1.65 #	3.78 #	0.917 #	0.927 #
Phosphorus (diss.filt)	<10 µg/l	TM152		33.5 #	11.8 #	33.6 #	36.4 #	<10 #	<10 #
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #	<2 #	<2 #	<2 #	<2 #
Zinc (diss.filt)	<1 µg/l	TM152		29.7 #	3.2 #	9.58 #	8.15 #	2 #	6.26 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		7.95 #	43.6 #	10.8 #	670 #	24 #	24.2 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		9.22 #	9.11 #	5.48 #	34.5 #	5.73 #	5.7 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.31 #	3.88 #	2.15 #	6.98 #	2.07 #	2.09 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152		131 #	142 #	160 #	31.9 #	141 #	141 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.0802 #	2.44 #	<0.019 #	0.0509 #	<0.019 #	<0.019 #
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01	<0.01
Sulphate	<2 mg/l	TM184		11.4 #	20.2 #	10.6 #	492 #	9.4 #	8.9 #
Chloride	<2 mg/l	TM184		10.9 #	69 #	22 #	94.9 #	43.1 #	43.1 #
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		1.13 #	<0.1 #	1.87 #	0.291 #	0.618 #	0.649 #
PCB congener 28	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 52	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 101	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 118	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	.	.	.	.	.	.
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
PCB congener 138	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 153	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
PCB congener 180	<0.015 µg/l	TM197		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.105	<0.105	<0.105	<0.105	<0.105	<0.105
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	<0.05 #	<0.05	<0.05
pH	<1 pH Units	TM256		7.26 #	7.26 #	7.07 #	7.74 #	7.96 #	7.99 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256		0.646 #	0.826 #	0.711 #	2.9 #	0.713 #	0.709 #
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.04	<0.11	<0.05	<0.1	<0.03	<0.02
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.2	<0.1	<0.2	<0.01	<0.01
Aldrin	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
Isodrin	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
Heptachlor epoxide	<0.01 µg/l	TM343		<0.02	<0.1	<0.05	<0.1	<0.02	<0.02
o,p'-DDE	<0.01 µg/l	TM343		<0.02	<0.1	<0.05	<0.1	<0.02	<0.02
Endosulphan I	<0.01 µg/l	TM343		<0.02	<0.1	<0.05	<0.1	<0.02	<0.02
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
p,p'-DDE	<0.01 µg/l	TM343		<0.02	<0.1	<0.05	<0.1	<0.02	<0.02
Dieldrin	<0.01 µg/l	TM343		0.175	<0.1	<0.05	<0.1	<0.01	0.0146
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
Endrin	<0.01 µg/l	TM343		<0.02	<0.5	<0.25	<0.5	<0.02	<0.02
o,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.4	<0.2	<0.4	<0.02	<0.02
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.02	<0.2	<0.1	<0.2	<0.02	<0.02
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.2	<0.1	<0.2	<0.02	<0.02
p,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.6	<0.3	<0.6	<0.02	<0.02
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.5	<0.25	<0.5	<0.02	<0.02
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.8	<0.4	<0.8	<0.02	<0.02
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.02	<0.8	<0.4	<0.8	<0.02	<0.02
Permethrin I	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01
Permethrin II	<0.01 µg/l	TM343		<0.01	<0.1	<0.05	<0.1	<0.01	<0.01

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	.	.	.	.	.	.
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.02	<0.02
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Dichlorvos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Dichlobenil	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Mevinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Phorate	<0.01 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.02	<0.02
Diazinon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Triallate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Atrazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Simazine	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Malathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Fenthion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Parathion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Ethion	<0.01 µg/l	TM344		<0.01	<0.01	<0.01	<0.02	<0.01	<0.01
Carbophenothion	<0.01 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.02	<0.02

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend			Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
tot.unfilt	Total / unfiltered sample.		Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
*	Subcontracted - refer to subcontractor report for accreditation status.		Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
**	% 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 Time	.	.	.	.	.	.
(F)	Trigger breach confirmed		Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
1-4+§@	Sample deviation (see appendix)		SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
Component	**LOD/Units**	**Method**							
Triazophos	<0.01 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.01	<0.02
Phosalone	<0.01 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.01	<0.02
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.02	<0.02
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.02	<0.02	<0.04	<0.02	<0.02
Etridiazole	<0.01 µg/l	TM345		<0.02	<0.02	<0.1	<0.2	<0.02	<0.02
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Omethoate	<0.01 µg/l	TM345		<0.02	<0.02	<0.1	<0.2	<0.02	<0.02
Propazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Chlorothalonil	<0.01 µg/l	TM345		<0.01	<0.01	<0.1	<0.2	<0.01	<0.01
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Phosphamidon I	<0.01 µg/l	TM345		<0.02	<0.02	<0.1	<0.2	<0.02	<0.02
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01	<0.05	<0.1	<0.01	<0.01
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.5	<0.5	<0.5	<0.1	<0.1
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
MCPA	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
Dicamba	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
MCPB	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.5	<0.5	<0.5	<0.1	<0.1
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.5	<0.5	<0.5	<0.1	<0.1
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05

Validated

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**

Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	.	.	.	.	.	.
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.5	<0.5	<0.5	<0.1	<0.1
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
Benazolin	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.25	<0.25	<0.25	<0.05	<0.05
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.2	<0.2	<0.2	<0.04	<0.04
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.5	<0.5	<0.5	<0.1	<0.1

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

SVOC MS (W) - Aqueous

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	-	-	-	-	-	-
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<2 #	<8 #	<16 #	<2 #	<2 #
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

SVOC MS (W) - Aqueous

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	.	.	.	.	.	.
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Carbazole (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Chrysene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Dibenzofuran (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Diethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Dimethyl phthalate (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<5 #	<5 #	<20 #	<40 #	<5 #	<5 #
Fluoranthene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Fluorene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Hexachlorobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Pentachlorophenol (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
Phenol (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Hexachloroethane (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Nitrobenzene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Naphthalene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Isophorone (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<1	<1	<4	<8	<1	<1
Phenanthrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #
Pyrene (aq)	<1 µg/l	TM176		<1 #	<1 #	<4 #	<8 #	<1 #	<1 #

Validated

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

VOC MS (W)

Results Legend

#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	-	-	-	-	-	-
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
Dibromofluoromethane**	%	TM208		98.2	100	97.4	99.5	99.8	117
Toluene-d8**	%	TM208		103	102	103	102	102	103
4-Bromofluorobenzene**	%	TM208		105	106	104	102	102	105
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		<4 #	<4 #	<4 #	<4 #	<4 #	<4 #
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 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022	02/06/2022
			Sample Time	.	.	.	.	.	.
			Date Received	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022	06/06/2022
			SDG Ref	220606-24	220606-24	220606-24	220606-24	220606-24	220606-24
			Lab Sample No.(s)	26388789	26388800	26388770	26388781	26388814	26388824
			AGS Reference						
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 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1

Table of Results - Appendix

Method No	Reference	Description
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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride 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
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
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
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
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Acid Herbs in Water by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden.

CERTIFICATE OF ANALYSIS

SDG: 220606-24 **Report Number:** 651144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P22-040 **Location:** New Inn Landfill

Test Completion Dates

Lab Sample No(s)	26388789	26388800	26388770	26388781	26388814	26388824
Customer Sample Ref.	BH01	BH04	GW01	GW02	SW01	SW02
AGS Ref.						
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water
Acid Herbicides by GCMS	13-Jun-2022	13-Jun-2022	13-Jun-2022	15-Jun-2022	17-Jun-2022	13-Jun-2022
Alkalinity as CaCO3	09-Jun-2022	09-Jun-2022	13-Jun-2022	13-Jun-2022	09-Jun-2022	09-Jun-2022
Ammonium Low	10-Jun-2022	09-Jun-2022	10-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022
Anions by Kone (w)	09-Jun-2022	09-Jun-2022	09-Jun-2022	10-Jun-2022	09-Jun-2022	09-Jun-2022
BOD True Total	12-Jun-2022	12-Jun-2022	12-Jun-2022	12-Jun-2022	11-Jun-2022	11-Jun-2022
COD Unfiltered	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022
Cyanide Comp/Free/Total/Thiocyanate	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022
Dissolved Metals by ICP-MS	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022
Dissolved Oxygen by Probe	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022
Fluoride	09-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	09-Jun-2022
Mercury Dissolved	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022
PCB Congeners - Aqueous (W)	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022	13-Jun-2022
Pesticides (Suite I) by GCMS	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022
Pesticides (Suite II) by GCMS	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022
Pesticides (Suite III) by GCMS	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022	10-Jun-2022
pH Value	08-Jun-2022	08-Jun-2022	08-Jun-2022	08-Jun-2022	08-Jun-2022	08-Jun-2022
SVOC MS (W) - Aqueous	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022	09-Jun-2022
Total Organic and Inorganic Carbon	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022	07-Jun-2022
VOC MS (W)	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022	14-Jun-2022

Appendix

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

2. 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.

General

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 (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 andd 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 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.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Sean Foley

CERTIFICATE OF ANALYSIS

Date of report Generation:	20 October 2023
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	231006-103
Your Reference:	Galway Historic Landfills P23-074
Location:	New Inn
Report No:	708144
Order Number:	Z4096

We received 2 samples on Friday October 06, 2023 and 2 of these samples were scheduled for analysis which was completed on Friday October 20, 2023. 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 Laboratories (UK) Limited 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.

Approved By:

Sonia McWhan
Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28741694	SW1		0.00 - 0.00	04/10/2023
28741705	SW2		0.00 - 0.00	04/10/2023

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend

X Test

N No Determination Possible

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

			Lab Sample No(s)														
			28741694							28741705							
			Customer Sample Reference														
			SW1							SW2							
			AGS Reference														
			Depth (m)														
			0.00 - 0.00							0.00 - 0.00							
			Container	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
			Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2	X							X							
Ammonium Low	All	NDPs: 0 Tests: 2				X							X				
Anions by Kone (w)	All	NDPs: 0 Tests: 2			X							X					
BOD True Total	All	NDPs: 0 Tests: 2		X							X						
COD Unfiltered	All	NDPs: 0 Tests: 2		X							X						
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2						X								X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2					X								X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2			X							X					
Fluoride	All	NDPs: 0 Tests: 2			X							X					
Mercury Dissolved	All	NDPs: 0 Tests: 2					X								X		
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2			X							X					
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2			X							X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2	X							X							
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2	X							X							
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2	X							X							

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2: **Location:** New Inn

Results Legend

- X Test
- N No Determination Possible

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

Lab Sample No(s)			28741694							28741705						
Customer Sample Reference			SW1							SW2						
AGS Reference																
Depth (m)			0.00 - 0.00							0.00 - 0.00						
Container			0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
Sample Type			SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW
pH Value	All	NDPs: 0 Tests: 2			X							X				
Suspended Solids	All	NDPs: 0 Tests: 2			X							X				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	X							X						
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2				X							X			
VOC MS (W)	All	NDPs: 0 Tests: 2							X							X

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Surface Water (SW)	Surface Water (SW)			
			Date Sampled	04/10/2023	04/10/2023			
			Sample Time	.	.			
			Date Received	06/10/2023	06/10/2023			
			SDG Ref	231006-103	231006-103			
			Lab Sample No.(s)	28741694	28741705			
			AGS Reference					
Suspended solids, Total	<2 mg/l	TM022		<2 #	2.8 #			
BOD, unfiltered	<1 mg/l	TM045		<1 #	<1 #			
Oxygen, dissolved	<0.3 mg/l	TM046		11.3	11.2			
Organic Carbon, Total	<3 mg/l	TM090		11.3 ♦ #	5.93 ♦ #			
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099		0.062 #	0.033 #			
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5			
COD, unfiltered	<7 mg/l	TM107		9.38 #	29.1 #			
Arsenic (diss.filt)	<0.5 µg/l	TM152		<0.5 #	<0.5 #			
Barium (diss.filt)	<0.2 µg/l	TM152		7.69 #	7.26 #			
Boron (diss.filt)	<10 µg/l	TM152		<10 #	<10 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #			
Chromium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #			
Copper (diss.filt)	<0.3 µg/l	TM152		1.09 #	0.913 #			
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #			
Manganese (diss.filt)	<3 µg/l	TM152		24.8 #	33.7 #			
Nickel (diss.filt)	<0.4 µg/l	TM152		1.69 #	2.7 #			
Phosphorus (diss.filt)	<10 µg/l	TM152		27 #	33 #			
Selenium (diss.filt)	<1 µg/l	TM152		<1 #	<1 #			
Thallium (diss.filt)	<2 µg/l	TM152		<2 #	<2 #			
Zinc (diss.filt)	<1 µg/l	TM152		2.41 #	1.9 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152		14.7 #	10.6 #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		4.29 #	3.89 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152		1.82 #	2 #			
Calcium (Dis.Filt)	<0.2 mg/l	TM152		130 #	119 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.0999 #	0.268 #			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172		<200	<100			
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01	<0.01			
Sulphate	<2 mg/l	TM184		4.2 #	<2 #			
Chloride	<2 mg/l	TM184		25.6 #	19.4 #			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		0.798 #	0.704 #			
PCB congener 28	<0.015 µg/l	TM197		<0.03	<0.015			
PCB congener 52	<0.015 µg/l	TM197		<0.03	<0.015			
PCB congener 101	<0.015 µg/l	TM197		<0.03	<0.015			

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
PCB congener 118	<0.015 µg/l	TM197		<0.03	<0.015				
PCB congener 138	<0.015 µg/l	TM197		<0.03	<0.015				
PCB congener 153	<0.015 µg/l	TM197		<0.03	<0.015				
PCB congener 180	<0.015 µg/l	TM197		<0.03	<0.015				
Sum of detected EC7 PCB's	<0.105 µg/l	TM197		<0.21	<0.105				
Cyanide, Total	<0.05 mg/l	TM227		<0.05	<0.05				
pH	<1 pH Units	TM256		7.64 #	7.98 #				
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256		0.677 #	0.613 #				
Alkalinity, Total as HCO3	<3 mg/l	TM256		448	412				
Trifluralin	<0.01 µg/l	TM343		<0.01	<0.02				
alpha-HCH	<0.01 µg/l	TM343		<0.01	<0.02				
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.01	<0.02				
Heptachlor	<0.01 µg/l	TM343		<0.01	<0.02				
Aldrin	<0.01 µg/l	TM343		<0.01	<0.02				
beta-HCH	<0.01 µg/l	TM343		<0.01	<0.02				
Isodrin	<0.01 µg/l	TM343		<0.01	<0.02				
delta-HCH	<0.01 µg/l	TM343		<0.01	<0.02				
Heptachlor epoxide	<0.01 µg/l	TM343		<0.01	<0.02				
o,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.02				
Endosulphan I	<0.01 µg/l	TM343		<0.01	<0.02				
trans-Chlordane	<0.01 µg/l	TM343		<0.01	<0.02				
cis-Chlordane	<0.01 µg/l	TM343		<0.01	<0.02				
p,p'-DDE	<0.01 µg/l	TM343		<0.01	<0.02				
Dieldrin	<0.01 µg/l	TM343		<0.01	<0.02				
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.02				
Endrin	<0.01 µg/l	TM343		<0.01	<0.02				
o,p'-DDT	<0.01 µg/l	TM343		<0.04	<0.02				
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.01	<0.02				
Endosulphan II	<0.02 µg/l	TM343		<0.02	<0.04				
p,p'-DDT	<0.01 µg/l	TM343		<0.1	<0.02				
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.03	<0.02				
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.04	<0.02				
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.06	<0.08				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	Customer Sample Ref.	SW1	SW2				
# 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)	0.00 - 0.00	0.00 - 0.00				
	Sample Type	Surface Water (SW)	Surface Water (SW)				
	Date Sampled	04/10/2023	04/10/2023				
	Sample Time	.	.				
	Date Received	06/10/2023	06/10/2023				
	SDG Ref	231006-103	231006-103				
	Lab Sample No.(s)	28741694	28741705				
	AGS Reference						

Component	LOD/Units	Method						
Permethrin I	<0.01 µg/l	TM343	<0.01	<0.02				
Permethrin II	<0.01 µg/l	TM343	<0.01	<0.02				
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.02				
Hexachlorobutadiene	<0.01 µg/l	TM344	<0.01	<0.02				
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.02				
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.02				
Dichlorvos	<0.01 µg/l	TM344	<0.01	<0.02				
Dichlobenil	<0.01 µg/l	TM344	<0.01	<0.02				
Mevinphos	<0.01 µg/l	TM344	<0.01	<0.02				
Tecnazene	<0.01 µg/l	TM344	<0.01	<0.02				
Hexachlorobenzene	<0.01 µg/l	TM344	<0.01	<0.02				
Demeton-S-methyl	<0.01 µg/l	TM344	<0.01	<0.02				
Phorate	<0.01 µg/l	TM344	<0.01	<0.02				
Diazinon	<0.01 µg/l	TM344	<0.01	<0.02				
Triallate	<0.01 µg/l	TM344	<0.01	<0.02				
Atrazine	<0.01 µg/l	TM344	<0.01	<0.02				
Simazine	<0.01 µg/l	TM344	<0.01	<0.02				
Disulfoton	<0.01 µg/l	TM344	<0.01	<0.02				
Propetamphos	<0.01 µg/l	TM344	<0.01	<0.02				
Chlorpyriphos-methyl	<0.01 µg/l	TM344	<0.01	<0.02				
Dimethoate	<0.01 µg/l	TM344	<0.01	<0.02				
Pirimiphos-methyl	<0.01 µg/l	TM344	<0.01	<0.02				
Fenchlorophos	<0.01 µg/l	TM344	<0.01	<0.02				
Chlorpyriphos	<0.01 µg/l	TM344	<0.01	<0.02				
Methyl Parathion	<0.01 µg/l	TM344	<0.01	<0.02				
Malathion	<0.01 µg/l	TM344	<0.01	<0.02				
Fenthion	<0.01 µg/l	TM344	<0.01	<0.02				
Fenitrothion	<0.01 µg/l	TM344	<0.01	<0.02				
Triadimefon	<0.01 µg/l	TM344	<0.01	<0.02				
Pendimethalin	<0.01 µg/l	TM344	<0.01	<0.02				
Parathion	<0.01 µg/l	TM344	<0.01	<0.02				
Chlorfenvinphos	<0.01 µg/l	TM344	<0.01	<0.02				
trans-Chlordane	<0.01 µg/l	TM344	<0.01	<0.02				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.02				
Ethion	<0.01 µg/l	TM344		<0.01	<0.02				
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.02				
Triazophos	<0.01 µg/l	TM344		<0.01	<0.02				
Phosalone	<0.01 µg/l	TM344		<0.01	<0.02				
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.08				
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.04				
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.01				
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.01				
Propachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.01	<0.01				
Omethoate	<0.01 µg/l	TM345		<0.01	<0.01				
Propazine	<0.01 µg/l	TM345		<0.01	<0.01				
Propyzamide	<0.01 µg/l	TM345		<0.01	<0.01				
Alachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Prometryn	<0.01 µg/l	TM345		<0.01	<0.01				
Telodrin	<0.01 µg/l	TM345		<0.01	<0.01				
Terbutryn	<0.01 µg/l	TM345		<0.01	<0.01				
Chlorothalonil	<0.01 µg/l	TM345		<0.02	<0.02				
Etrimphos	<0.01 µg/l	TM345		<0.01	<0.01				
Metazachlor	<0.01 µg/l	TM345		<0.01	<0.01				
Cyanazine	<0.01 µg/l	TM345		<0.01	<0.01				
Trietazine	<0.01 µg/l	TM345		<0.01	<0.01				
Coumaphos	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon I	<0.01 µg/l	TM345		<0.01	<0.01				
Phosphamidon II	<0.01 µg/l	TM345		<0.01	<0.01				
Dinitro-o-cresol	<0.1 µg/l	TM411		<0.1	<0.1				
Clopyralid	<0.04 µg/l	TM411		<0.04	<0.04				
MCPA	<0.05 µg/l	TM411		<0.05	<0.05				
Mecoprop	<0.04 µg/l	TM411		<0.04	<0.04				
Dicamba	<0.04 µg/l	TM411		<0.04	<0.04				
MCPB	<0.05 µg/l	TM411		<0.05	<0.05				
2,4-DB	<0.1 µg/l	TM411		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411		<0.05	<0.05				
Dichlorprop	<0.1 µg/l	TM411		<0.1	<0.1				
Triclopyr	<0.05 µg/l	TM411		<0.05	<0.05				
Fenoprop (Silvex)	<0.1 µg/l	TM411		<0.1	<0.1				
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411		<0.05	<0.05				
Bromoxynil	<0.04 µg/l	TM411		<0.04	<0.04				
Benazolin	<0.04 µg/l	TM411		<0.04	<0.04				
Ioxynil	<0.05 µg/l	TM411		<0.05	<0.05				
Pentachlorophenol	<0.04 µg/l	TM411		<0.04	<0.04				
Fluoroxypyr	<0.1 µg/l	TM411		<0.1	<0.1				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

SVOC MS (W) - Aqueous

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<2 #				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<2 #				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<2 #				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<2 #				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Chlorophenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<2 #				
2-Nitrophenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<2				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<2 #				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<2				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1 #	<2 #				
4-Methylphenol (aq)	<1 µg/l	TM176		<1 #	<2 #				
4-Nitroaniline (aq)	<1 µg/l	TM176		<1 #	<2 #				
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<2				
Azobenzene (aq)	<1 µg/l	TM176		<1 #	<2 #				
Acenaphthylene (aq)	<1 µg/l	TM176		<1 #	<2 #				
Acenaphthene (aq)	<1 µg/l	TM176		<1 #	<2 #				
Anthracene (aq)	<1 µg/l	TM176		<1 #	<2 #				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1 #	<2 #				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1 #	<2 #				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2 #	<4 #				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1 #	<2 #				
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<1 #	<2 #				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

SVOC MS (W) - Aqueous

Results Legend	Customer Sample Ref.	SW1	SW2				
# ISO17025 accredited.							
M mCERTS accredited.							
aq Aqueous / settled sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00				
diss.filt Dissolved / filtered sample.	Sample Type	Surface Water (SW)	Surface Water (SW)				
tot.unfilt Total / unfiltered sample.	Date Sampled	04/10/2023	04/10/2023				
* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	.	.				
** % 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	Date Received	06/10/2023	06/10/2023				
(F) Trigger breach confirmed	SDG Ref	231006-103	231006-103				
1-4+§@ Sample deviation (see appendix)	Lab Sample No.(s)	28741694	28741705				
	AGS Reference						

Component	LOD/Units	Method						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Carbazole (aq)	<1 µg/l	TM176	<1 #	<2 #				
Chrysene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Dibenzofuran (aq)	<1 µg/l	TM176	<1 #	<2 #				
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1 #	<2 #				
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<2 #				
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1 #	<2 #				
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5 #	<10 #				
Fluoranthene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Fluorene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Pentachlorophenol (aq)	<1 µg/l	TM176	<1	<2				
Phenol (aq)	<1 µg/l	TM176	<1	<2				
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1 #	<2 #				
Hexachloroethane (aq)	<1 µg/l	TM176	<1 #	<2 #				
Nitrobenzene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Naphthalene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Isophorone (aq)	<1 µg/l	TM176	<1 #	<2 #				
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<1	<2				
Phenanthrene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1 #	<2 #				
Pyrene (aq)	<1 µg/l	TM176	<1 #	<2 #				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
Dibromofluoromethane**	%	TM208		98.6	101				
Toluene-d8**	%	TM208		102	101				
4-Bromofluorobenzene**	%	TM208		98.8	98.2				
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloromethane	<1 µg/l	TM208		<1 #	<1 #				
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #				
Bromomethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroethane	<1 µg/l	TM208		<1 #	<1 #				
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #				
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #				
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #				
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #				
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1				
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
Chloroform	<1 µg/l	TM208		<1 #	<1 #				
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #				
Benzene	<1 µg/l	TM208		<1 #	<1 #				
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #				
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #				
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
Toluene	<1 µg/l	TM208		<1 #	<1 #				
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #				

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	SW1	SW2				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Surface Water (SW)	Surface Water (SW)				
			Date Sampled	04/10/2023	04/10/2023				
			Sample Time	.	.				
			Date Received	06/10/2023	06/10/2023				
			SDG Ref	231006-103	231006-103				
			Lab Sample No.(s)	28741694	28741705				
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #				
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #				
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #				
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #				
o-Xylene	<1 µg/l	TM208		<1 #	<1 #				
Styrene	<1 µg/l	TM208		<1 #	<1 #				
Bromoform	<1 µg/l	TM208		<1 #	<1 #				
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #				
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #				
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #				
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #				
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #				
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #				
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #				
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1				
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #				
Naphthalene	<1 µg/l	TM208		<1 #	<1 #				
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #				
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1				

Table of Results - Appendix

Method No	Description
TM152	Analysis of Aqueous Samples by ICP-MS
TM172	EPH in Waters
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM046	Measurement of Dissolved Oxygen by Oxygen Meter
TM104	Determination of Fluoride using the Kone Analyser
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM344	Determination of selected pesticides (Suite II) by GCMS
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM197	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM345	Determination of selected pesticides (Suite III) by GCMS
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM411	Acid Herbs in Water by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 231006-103 **Report Number:** 708144 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Test Completion Dates

Lab Sample No(s)	28741694	28741705
Customer Sample Ref.	SW1	SW2
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Surface Water
Acid Herbicides by GCMS	13-Oct-2023	13-Oct-2023
Ammonium Low	10-Oct-2023	10-Oct-2023
Anions by Kone (w)	10-Oct-2023	10-Oct-2023
BOD True Total	12-Oct-2023	12-Oct-2023
COD Unfiltered	13-Oct-2023	12-Oct-2023
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2023	10-Oct-2023
Dissolved Metals by ICP-MS	11-Oct-2023	11-Oct-2023
Dissolved Oxygen by Probe	09-Oct-2023	09-Oct-2023
Fluoride	13-Oct-2023	13-Oct-2023
Mercury Dissolved	10-Oct-2023	10-Oct-2023
Mineral Oil C10-40 Aqueous (W)	14-Oct-2023	14-Oct-2023
PCB Congeners - Aqueous (W)	16-Oct-2023	16-Oct-2023
Pesticides (Suite I) by GCMS	19-Oct-2023	20-Oct-2023
Pesticides (Suite II) by GCMS	13-Oct-2023	13-Oct-2023
Pesticides (Suite III) by GCMS	13-Oct-2023	13-Oct-2023
pH Value	11-Oct-2023	11-Oct-2023
Suspended Solids	12-Oct-2023	12-Oct-2023
SVOC MS (W) - Aqueous	13-Oct-2023	11-Oct-2023
Total Organic and Inorganic Carbon	14-Oct-2023	14-Oct-2023
VOC MS (W)	11-Oct-2023	11-Oct-2023

Appendix General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 15 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 15 days 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 (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 andd 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 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.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Sean Foley

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 October 2023
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	231006-104
Your Reference:	Galway Historic Landfills P23-074
Location:	New Inn
Report No:	708822
Order Number:	Z4096

This report has been revised and directly supersedes 706863 in its entirety.

We received 4 samples on Friday October 06, 2023 and 4 of these samples were scheduled for analysis which was completed on Thursday October 26, 2023. 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 Laboratories (UK) Limited 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.

Approved By:

Sonia McWhan
Operations Manager

1291

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28741792	BH1		0.00 - 0.00	04/10/2023
28741801	BH4		0.00 - 0.00	04/10/2023
28741773	GW01		0.00 - 0.00	04/10/2023
28741782	GW02		0.00 - 0.00	04/10/2023

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend
X Test
N No Determination Possible

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

			Lab Sample No(s)	28741792						28741801						28741773						28741782
			Customer Sample Reference	BH1						BH4						GW01						GW02
			AGS Reference																			
			Depth (m)	0.00 - 0.00						0.00 - 0.00						0.00 - 0.00						0.00 - 0.00
			Container	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)
			Sample Type	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4		X						X						X						X
Ammonium Low	All	NDPs: 0 Tests: 4				X						X						X				
Anions by Kone (w)	All	NDPs: 0 Tests: 4			X						X						X					
Coliforms (W)	All	NDPs: 0 Tests: 4			X						X						X					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4						X						X						X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4					X						X						X			
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 4			X						X						X					
Fluoride	All	NDPs: 0 Tests: 4			X						X						X					
Mercury Dissolved	All	NDPs: 0 Tests: 4					X						X						X			
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 4			X						X						X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4		X						X						X						X
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4		X						X						X						X
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 4		X						X						X						X
pH Value	All	NDPs: 0 Tests: 6			X						X						X				X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4		X						X						X						X

					28741782
					GW02
					0.00 - 0.00
500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	
GW	GW	GW	GW	GW	
	X				
X					
X					
			X		
		X			
X					
X					
		X			
X					
X				X	

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)								28741792							28741801							28741773		28741782
Customer Sample Reference								BH1							BH4							GW01		GW02
AGS Reference																								
Depth (m)								0.00 - 0.00							0.00 - 0.00							0.00 - 0.00		0.00 - 0.00
Container								0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)
Sample Type								GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4								X							X						X		
VOC MS (W)	All	NDPs: 0 Tests: 4						X											X						X	

				28741782
				GW02
				0.00 - 0.00
Vial (ALE297)	GW			
NaOH (ALE245)	GW			X
HNO3 Filtered (ALE204)	GW			
H2SO4 (ALE244)	GW	X		
500ml Plastic (ALE208)	GW			

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863

Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend

#	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)

Component	LOD/Units	Method	BH1	BH4	GW01	GW02		
Customer Sample Ref.								
Depth (m)			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Sample Type			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
Date Sampled			04/10/2023	04/10/2023	04/10/2023	04/10/2023		
Sample Time			.	.	.	.		
Date Received			06/10/2023	06/10/2023	06/10/2023	06/10/2023		
SDG Ref			231006-104	231006-104	231006-104	231006-104		
Lab Sample No.(s)			28741792	28741801	28741773	28741782		
AGS Reference								
Coliforms, Total*		SUB	See Attached	See Attached	See Attached	See Attached		
Coliforms, Faecal*		SUB	See Attached	See Attached	See Attached	See Attached		
Oxygen, dissolved	<0.3 mg/l	TM046	11.6	10.1	11.9	10.3		
Organic Carbon, Total	<3 mg/l	TM090	<3 ♦ #	<3 ♦ #	4.61 ♦ #	4.19 ♦ #		
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	0.025 #	0.292 #	0.032 #	0.416 #		
Fluoride	<0.5 mg/l	TM104	<0.5 #	0.785 #	<0.5 #	2.14 #		
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5 #	1.35 #	<0.5 #	0.862 #		
Barium (diss.filt)	<0.2 µg/l	TM152	14.7 #	34.8 #	8.57 #	117 #		
Boron (diss.filt)	<10 µg/l	TM152	<10 #	91.6 #	<10 #	113 #		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08 #	<0.08 #	<0.08 #	<0.08 #		
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152	12.7 #	<0.3 #	1.08 #	0.924 #		
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #	<0.2 #	<0.2 #	<0.2 #		
Manganese (diss.filt)	<3 µg/l	TM152	11.1 #	111 #	6.09 #	213 #		
Nickel (diss.filt)	<0.4 µg/l	TM152	5.7 #	57.3 #	1.96 #	3.38 #		
Phosphorus (diss.filt)	<10 µg/l	TM152	<10 #	<10 #	63.8 #	46.5 #		
Selenium (diss.filt)	<1 µg/l	TM152	1.06 #	<1 #	<1 #	<1 #		
Thallium (diss.filt)	<2 µg/l	TM152	<2 #	<2 #	<2 #	<2 #		
Zinc (diss.filt)	<1 µg/l	TM152	26 #	1.64 #	3.52 #	1.39 #		
Sodium (Dis.Filt)	<0.076 mg/l	TM152	4.94 #	44.2 #	13.3 #	735 #		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	7.14 #	12.4 #	5.25 #	30 #		
Potassium (Dis.Filt)	<0.2 mg/l	TM152	0.836 #	3.63 #	2.75 #	6.52 #		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	127 #	123 #	137 #	26.3 #		
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019 #	0.303 #	<0.019 #	0.0222 #		
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172	<100	<100	120	531		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #		
Sulphate	<2 mg/l	TM184	10.3 #	19.9 #	12.2 #	425 #		
Chloride	<2 mg/l	TM184	10.5 #	68 #	23.4 #	87.7 #		
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	1.14 #	<0.1 #	2.82 #	0.364 #		
Cyanide, Total	<0.05 mg/l	TM227	<0.05 #	<0.05 #	<0.05 #	<0.05 #		
pH	<1 pH Units	TM256	7.34 #	7.74 #	7.26 #	8.23 #		
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256	0.637 #	0.848 #	0.711 #	3 #		
Alkalinity, Total as HCO3	<3 mg/l	TM256	452	460	707	3160		

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	Customer Sample Ref.	BH1	BH4	GW01	GW02		
# ISO17025 accredited.							
M mCERTS accredited.							
aq Aqueous / settled sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
diss.filt Dissolved / filtered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
tot.unfilt Total / unfiltered sample.	Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	.	.	.	.		
** % 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	Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
(F) Trigger breach confirmed	SDG Ref	231006-104	231006-104	231006-104	231006-104		
1-4+§@ Sample deviation (see appendix)	Lab Sample No.(s)	28741792	28741801	28741773	28741782		
	AGS Reference						

Component	LOD/Units	Method					
Trifluralin	<0.01 µg/l	TM343	<0.01	<0.3	<0.3	<0.3	
alpha-HCH	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Heptachlor	<0.01 µg/l	TM343	<0.01	<0.4	<0.4	<0.4	
Aldrin	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
beta-HCH	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Isodrin	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
delta-HCH	<0.01 µg/l	TM343	<0.02	<0.1	<0.1	<0.1	
Heptachlor epoxide	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
o,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Endosulphan I	<0.01 µg/l	TM343	<0.01	<0.2	<0.2	<0.1	
trans-Chlordane	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
cis-Chlordane	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
p,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Dieldrin	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
o,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Endrin	<0.01 µg/l	TM343	<0.02	<0.1	<0.1	<0.1	
o,p'-DDT	<0.01 µg/l	TM343	<0.04	<0.4	<0.4	<0.4	
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Endosulphan II	<0.02 µg/l	TM343	<0.02	<0.2	<0.2	<0.2	
p,p'-DDT	<0.01 µg/l	TM343	<0.1	<0.4	<0.4	<0.4	
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.04	<0.1	<0.1	<0.1	
p,p'-Methoxychlor	<0.01 µg/l	TM343	<0.1	<1	<1	<1	
Endosulphan Sulphate	<0.02 µg/l	TM343	<0.2	<0.4	<0.4	<0.4	
Permethrin I	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
Permethrin II	<0.01 µg/l	TM343	<0.01	<0.1	<0.1	<0.1	
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
Hexachlorobutadiene	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
Dichlorvos	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
Dichlobenil	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	
Mevinphos	<0.01 µg/l	TM344	<0.01	<0.1	<0.1	<0.1	

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
			Sample Time	.	.	.	.		
			Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
			SDG Ref	231006-104	231006-104	231006-104	231006-104		
			Lab Sample No.(s)	28741792	28741801	28741773	28741782		
			AGS Reference						
Tecnazene	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Hexachlorobenzene	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Demeton-S-methyl	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Phorate	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Diazinon	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Triallate	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Atrazine	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Simazine	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Disulfoton	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Propetamphos	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Dimethoate	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Fenchlorophos	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Chlorpyriphos	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Methyl Parathion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Malathion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Fenthion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Fenitrothion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Triadimefon	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Pendimethalin	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Parathion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Chlorfenvinphos	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
trans-Chlordane	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
cis-Chlordane	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Ethion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Carbophenothion	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Triazophos	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Phosalone	<0.01 µg/l	TM344		<0.01	<0.1	<0.1	<0.1		
Azinphos methyl	<0.02 µg/l	TM344		<0.02	<0.4	<0.4	<0.4		
Azinphos ethyl	<0.02 µg/l	TM344		<0.02	<0.2	<0.2	<0.2		
Etridiazole	<0.01 µg/l	TM345		<0.01	<0.1	<0.1	<0.1		
Pentachlorobenzene	<0.01 µg/l	TM345		<0.01	<0.05	<0.1	<0.1		

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	Customer Sample Ref.	BH1	BH4	GW01	GW02		
# ISO17025 accredited.							
M mCERTS accredited.							
aq Aqueous / settled sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
diss.filt Dissolved / filtered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
tot.unfilt Total / unfiltered sample.	Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
* Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	.	.	.	.		
** % 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	Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
(F) Trigger breach confirmed	SDG Ref	231006-104	231006-104	231006-104	231006-104		
1-4+§@ Sample deviation (see appendix)	Lab Sample No.(s)	28741792	28741801	28741773	28741782		
	AGS Reference						

Component	LOD/Units	Method					
Propachlor	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Quintozene (PCNB)	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Omethoate	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Propazine	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Propyzamide	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Alachlor	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Prometryn	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Telodrin	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Terbutryn	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Chlorothalonil	<0.01 µg/l	TM345	<0.02	<1	<0.2	<0.2	
Etrimphos	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Metazachlor	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Cyanazine	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Trietazine	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Coumaphos	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Phosphamidon I	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Phosphamidon II	<0.01 µg/l	TM345	<0.01	<0.05	<0.1	<0.1	
Dinitro-o-cresol	<0.1 µg/l	TM411	<0.1	<0.5	<0.5	<10	
Clopyralid	<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
MCPA	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
Mecoprop	<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
Dicamba	<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
MCPB	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.5	<0.5	<10	
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
Dichlorprop	<0.1 µg/l	TM411	<0.1	<0.5	<0.5	<10	
Triclopyr	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
Fenoprop (Silvex)	<0.1 µg/l	TM411	<0.1	<0.5	<0.5	<10	
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	
Bromoxynil	<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
Benazolin	<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
Ioxynil	<0.05 µg/l	TM411	<0.05	<0.25	<0.25	<5	

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend								
#	ISO17025 accredited.	Customer Sample Ref.	BH1	BH4	GW01	GW02		
M	mCERTS accredited.							
aq	Aqueous / settled sample.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
diss.filt	Dissolved / filtered sample.	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
tot.unfilt	Total / unfiltered sample.	Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
*	Subcontracted - refer to subcontractor report for accreditation status.	Sample Time	.	.	.	.		
**	% 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	Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
		SDG Ref	231006-104	231006-104	231006-104	231006-104		
(F)	Trigger breach confirmed	Lab Sample No.(s)	28741792	28741801	28741773	28741782		
1-4+§@	Sample deviation (see appendix)	AGS Reference						
Component		**LOD/Units**	**Method**					
Pentachlorophenol		<0.04 µg/l	TM411	<0.04	<0.2	<0.2	<4	
Fluoroxypyr		<0.1 µg/l	TM411	<0.1	<0.5	<0.5	<10	

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

SVOC MS (W) - Aqueous

Results Legend
- # 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)

Customer Sample Ref.	BH1	BH4	GW01	GW02		
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
Sample Time	.	.	.	.		
Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
SDG Ref	231006-104	231006-104	231006-104	231006-104		
Lab Sample No.(s)	28741792	28741801	28741773	28741782		
AGS Reference						

Component	LOD/Units	Method											
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Chlorophenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Methylphenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Nitroaniline (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
2-Nitrophenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
3-Nitroaniline (aq)	<1 µg/l	TM176	<2		<8		<2		<10				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<2		<8		<2		<10				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
4-Methylphenol (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
4-Nitrophenol (aq)	<1 µg/l	TM176	<2		<8		<2		<10				
Azobenzene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
Acenaphthylene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
Acenaphthene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
Anthracene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<4	#	<16	#	<4	#	<20	#			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<2	#	<8	#	<2	#	<10	#			

SVOC MS (W) - Aqueous

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
			Sample Time	.	.	.	.		
			Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
			SDG Ref	231006-104	231006-104	231006-104	231006-104		
			Lab Sample No.(s)	28741792	28741801	28741773	28741782		
			AGS Reference						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Carbazole (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Chrysene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Dibenzofuran (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Diethyl phthalate (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Dimethyl phthalate (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<10 #	<40 #	<10 #	<50 #		
Fluoranthene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Fluorene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Hexachlorobenzene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Pentachlorophenol (aq)	<1 µg/l	TM176		<2	<8	<2	<10		
Phenol (aq)	<1 µg/l	TM176		<2	<8	<2	<10		
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Hexachloroethane (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Nitrobenzene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Naphthalene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Isophorone (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<2	<8	<2	<10		
Phenanthrene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		
Pyrene (aq)	<1 µg/l	TM176		<2 #	<8 #	<2 #	<10 #		

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
			Sample Time	.	.	.	.		
			Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
			SDG Ref	231006-104	231006-104	231006-104	231006-104		
			Lab Sample No.(s)	28741792	28741801	28741773	28741782		
			AGS Reference						
Dibromofluoromethane**	%	TM208		107	108	106	104		
Toluene-d8**	%	TM208		101	99.9	101	101		
4-Bromofluorobenzene**	%	TM208		98	97.3	97.1	98.5		
Dichlorodifluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #	<3 #		
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chloroform	<1 µg/l	TM208		<1 #	<1 #	2.66 #	<1 #		
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Benzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	1.21 #	<1 #		
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Toluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	BH1	BH4	GW01	GW02		
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
			Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
			Date Sampled	04/10/2023	04/10/2023	04/10/2023	04/10/2023		
			Sample Time	.	.	.	.		
			Date Received	06/10/2023	06/10/2023	06/10/2023	06/10/2023		
			SDG Ref	231006-104	231006-104	231006-104	231006-104		
			Lab Sample No.(s)	28741792	28741801	28741773	28741782		
			AGS Reference						
Tetrachloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Dibromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromoethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Chlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Ethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
m,p-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
o-Xylene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Styrene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromoform	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Isopropylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Bromobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Propylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
2-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-Chlorotoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,4-Trimethylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
sec-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
4-iso-Propyltoluene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,4-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
n-Butylbenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208		<1	<1	<1	<1		
1,2,4-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Hexachlorobutadiene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
Naphthalene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #	<1 #		
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1	<1		

Table of Results - Appendix

Method No	Description
TM411	Acid Herbs in Water by GCMS
TM046	Measurement of Dissolved Oxygen by Oxygen Meter
TM104	Determination of Fluoride using the Kone Analyser
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM344	Determination of selected pesticides (Suite II) by GCMS
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM172	EPH in Waters
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM345	Determination of selected pesticides (Suite III) by GCMS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 231006-104 **Report Number:** 708822 **Superseded Report:** 706863
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Test Completion Dates

Lab Sample No(s)	28741792	28741801	28741773	28741782
Customer Sample Ref.	BH1	BH4	GW01	GW02
AGS Ref.				
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Ground Water	Ground Water	Ground Water	Ground Water
Acid Herbicides by GCMS	13-Oct-2023	13-Oct-2023	13-Oct-2023	17-Oct-2023
Ammonium Low	10-Oct-2023	10-Oct-2023	10-Oct-2023	10-Oct-2023
Anions by Kone (w)	10-Oct-2023	10-Oct-2023	10-Oct-2023	10-Oct-2023
Coliforms (W)	10-Oct-2023	10-Oct-2023	10-Oct-2023	10-Oct-2023
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2023	10-Oct-2023	10-Oct-2023	10-Oct-2023
Dissolved Metals by ICP-MS	11-Oct-2023	11-Oct-2023	11-Oct-2023	11-Oct-2023
Dissolved Oxygen by Probe	09-Oct-2023	09-Oct-2023	09-Oct-2023	09-Oct-2023
Fluoride	09-Oct-2023	09-Oct-2023	13-Oct-2023	09-Oct-2023
Mercury Dissolved	10-Oct-2023	10-Oct-2023	10-Oct-2023	10-Oct-2023
Mineral Oil C10-40 Aqueous (W)	14-Oct-2023	14-Oct-2023	14-Oct-2023	14-Oct-2023
Pesticides (Suite I) by GCMS	26-Oct-2023	20-Oct-2023	20-Oct-2023	20-Oct-2023
Pesticides (Suite II) by GCMS	13-Oct-2023	13-Oct-2023	13-Oct-2023	13-Oct-2023
Pesticides (Suite III) by GCMS	13-Oct-2023	17-Oct-2023	13-Oct-2023	13-Oct-2023
pH Value	11-Oct-2023	11-Oct-2023	12-Oct-2023	12-Oct-2023
SVOC MS (W) - Aqueous	11-Oct-2023	13-Oct-2023	11-Oct-2023	11-Oct-2023
Total Organic and Inorganic Carbon	15-Oct-2023	15-Oct-2023	15-Oct-2023	15-Oct-2023
VOC MS (W)	11-Oct-2023	11-Oct-2023	11-Oct-2023	11-Oct-2023

ALS Life Sciences Ltd trading as ALS
Carrigeen Business Park, Clonmel, Co. Tipperary
Telephone: +353 (0) 52 617 8100

Report No: ALSH-608051023

Document No: EF0011

CERTIFICATE OF ANALYSIS

Client **ALS Hawarden**
Units 7-8 Hawarden Business Park
Manor Lane
Hawarden
CH5 3US

Date Submitted 05/10/2023
Date Reported 06/10/2023
Order Number N/A

For the Attention of: ALS Hawarden

Sample Reception 4 sample(s) received in good condition.

Comments N/A

Report Authorised by:

Denver Burke
Microbiology Manager

Conditions:
1. Results in this report relate only to the items tested
2. Reports may not be reproduced except in full without the approval of ALS Life Sciences Ltd
3. All queries regarding this report should be addressed to the Technical Manager at the above address
*4. A * next to a method reference signifies that ALS Life Sciences Ltd is NOT INAB accredited for this method*
5. Results reported as CFU/cm² are calculated based on information supplied by customer regarding area swabbed
6. SUBCON indicates analysis subcontracted to approved subcontractors who do not hold accreditation for this test*
7. SUBCON^ indicates analysis subcontracted to approved subcontractors who hold accreditation for this test
8. Where sampling is undertaken by ALS personnel, sampling activities are outside the scope of INAB accreditation
9. Dil next to a method reference indicates that a dilution of the water sample was undertaken during testing
10. Statement of conformity made against the result does not take into account the uncertainty of measurement associated with the method

ALS Life Sciences Ltd trading as ALS
Carrigeen Business Park, Clonmel, Co. Tipperary
Telephone: +353 (0) 52 617 8100

Report No: ALSH-608051023

Document No: EF0011

CERTIFICATE OF ANALYSIS

Date Submitted 05/10/2023
Date Reported 06/10/2023
Order Number N/A

Sample Type Water
Client ID New Inn GW01
04/10/2023 12:45
Date Tested 05/10/2023
ALS ID 5787567

Test	Result	Unit	Method
Coliforms	31	MPN/100ml	SP 196 Based on ISO 9308-2 (2012) - Dil
Faecal coliforms	<10	MPN/100ml	SP 200 based on the IDEXX Colilert 18 test kit. - Dil

Sample Type Water
Client ID New Inn GW02
04/10/2023 13:15
Date Tested 05/10/2023
ALS ID 5787569

Test	Result	Unit	Method
Coliforms	839	MPN/100ml	SP 196 Based on ISO 9308-2 (2012) - Dil
Faecal coliforms	<10	MPN/100ml	SP 200 based on the IDEXX Colilert 18 test kit. - Dil

Sample Type Water
Client ID New Inn BH01
04/10/2023 13:35
Date Tested 05/10/2023
ALS ID 5787570

Test	Result	Unit	Method
Coliforms	<10	MPN/100ml	SP 196 Based on ISO 9308-2 (2012) - Dil
Faecal coliforms	<10	MPN/100ml	SP 200 based on the IDEXX Colilert 18 test kit. - Dil

Sample Type Water
Client ID New Inn BH04
04/10/2023 14:05
Date Tested 05/10/2023
ALS ID 5787572

Test	Result	Unit	Method
Coliforms	10	MPN/100ml	SP 196 Based on ISO 9308-2 (2012) - Dil
Faecal coliforms	<10	MPN/100ml	SP 200 based on the IDEXX Colilert 18 test kit. - Dil

Report Authorised by:

Denver Burke
Microbiology Manager

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 15 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 15 days 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 (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 andd 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 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.

Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

Fehily Timoney
3rd Floor
North Park Offices
North Park Business Park
North Road
Dublin
Dublin 11

Attention: Sean Foley

CERTIFICATE OF ANALYSIS

Date of report Generation:	19 October 2023
Customer:	Fehily Timoney
Sample Delivery Group (SDG):	231006-105
Your Reference:	Galway Historic Landfills P23-074
Location:	New Inn
Report No:	708005
Order Number:	Z4096

We received 1 sample on Friday October 06, 2023 and 1 of these samples were scheduled for analysis which was completed on Thursday October 19, 2023. 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 Laboratories (UK) Limited 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.

Approved By:

Sonia McWhan
Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28741846	BH2		0.00 - 0.00	04/10/2023

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

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			28741846							
Customer Sample Reference			BH2							
AGS Reference										
Depth (m)			0.00 - 0.00							
Container			0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
Sample Type			LE	LE	LE	LE	LE	LE	LE
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 1	X						
Ammonium Low	All	NDPs: 0 Tests: 1				X			
Anions by Kone (w)	All	NDPs: 0 Tests: 1			X				
BOD True Filtered	All	NDPs: 0 Tests: 1		X					
BOD True Total	All	NDPs: 0 Tests: 1		X					
COD Unfiltered	All	NDPs: 0 Tests: 1			X				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1						X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1					X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 1			X				
Fluoride	All	NDPs: 0 Tests: 1			X				
Mercury Dissolved	All	NDPs: 0 Tests: 1					X		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 1			X				
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 1	X						
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 1	X						
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 1	X						

Validated

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend

X Test

N No Determination Possible

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

Lab Sample No(s)			28741846						
Customer Sample Reference			BH2						
AGS Reference									
Depth (m)			0.00 - 0.00						
Container			0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
Sample Type			LE	LE	LE	LE	LE	LE	LE
pH Value	All	NDPs: 0 Tests: 2	X						X
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1	X						
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1				X			
VOC MS (W)	All	NDPs: 0 Tests: 1							X

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref. BH2
			Depth (m) 0.00 - 0.00
			Sample Type Land Leachate (LE)
			Date Sampled 04/10/2023
			Sample Time .
			Date Received 06/10/2023
			SDG Ref 231006-105
			Lab Sample No.(s) 28741846
			AGS Reference
BOD, filtered	<1 mg/l	TM045	<1
BOD, unfiltered	<1 mg/l	TM045	9.95 #
Oxygen, dissolved	<0.3 mg/l	TM046	5.6
Organic Carbon, Total	<3 mg/l	TM090	11.8 ♦
Ammoniacal Nitrogen as N (low level)	<0.01 mg/l	TM099	16.9
Fluoride	<0.5 mg/l	TM104	<0.5
COD, unfiltered	<7 mg/l	TM107	403 #
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.77 #
Barium (diss.filt)	<0.2 µg/l	TM152	115 #
Boron (diss.filt)	<10 µg/l	TM152	104 #
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	<0.3 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2 #
Manganese (diss.filt)	<3 µg/l	TM152	447 #
Nickel (diss.filt)	<0.4 µg/l	TM152	9.58 #
Phosphorus (diss.filt)	<10 µg/l	TM152	<10 #
Selenium (diss.filt)	<1 µg/l	TM152	<1 #
Thallium (diss.filt)	<2 µg/l	TM152	<2 #
Zinc (diss.filt)	<1 µg/l	TM152	7.75 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	569 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	16.6 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	16.5 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	175 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	9.24 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01 #
Sulphate	<2 mg/l	TM184	19.9
Chloride	<2 mg/l	TM184	878
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	<0.1
PCB congener 28	<0.015 µg/l	TM197	<0.03
PCB congener 52	<0.015 µg/l	TM197	<0.03
PCB congener 101	<0.015 µg/l	TM197	<0.03
PCB congener 118	<0.015 µg/l	TM197	<0.03

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Customer Sample Ref.	BH2
Depth (m)	0.00 - 0.00
Sample Type	Land Leachate (LE)
Date Sampled	04/10/2023
Sample Time	.
Date Received	06/10/2023
SDG Ref	231006-105
Lab Sample No.(s)	28741846
AGS Reference	

Component	LOD/Units	Method	
PCB congener 138	<0.015 µg/l	TM197	<0.03
PCB congener 153	<0.015 µg/l	TM197	<0.03
PCB congener 180	<0.015 µg/l	TM197	<0.03
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.21
Cyanide, Total	<0.05 mg/l	TM227	<0.05 #
pH	<1 pH Units	TM256	6.93 #
Conductivity @ 20 deg.C	<0.02 mS/cm	TM256	3.62 #
Alkalinity, Total as HCO3	<3 mg/l	TM256	1320
Trifluralin	<0.01 µg/l	TM343	<0.3
alpha-HCH	<0.01 µg/l	TM343	<0.1
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.1
Heptachlor	<0.01 µg/l	TM343	<0.3
Aldrin	<0.01 µg/l	TM343	<0.1
beta-HCH	<0.01 µg/l	TM343	<0.1
Isodrin	<0.01 µg/l	TM343	<0.1
delta-HCH	<0.01 µg/l	TM343	<0.1
Heptachlor epoxide	<0.01 µg/l	TM343	<0.1
o,p'-DDE	<0.01 µg/l	TM343	<0.1
Endosulphan I	<0.01 µg/l	TM343	<0.1
trans-Chlordane	<0.01 µg/l	TM343	<0.1
cis-Chlordane	<0.01 µg/l	TM343	<0.1
p,p'-DDE	<0.01 µg/l	TM343	<0.1
Dieldrin	<0.01 µg/l	TM343	<0.1
o,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.1
Endrin	<0.01 µg/l	TM343	<0.1
o,p'-DDT	<0.01 µg/l	TM343	<0.4
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.1
Endosulphan II	<0.02 µg/l	TM343	<0.2
p,p'-DDT	<0.01 µg/l	TM343	<1
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.4
p,p'-Methoxychlor	<0.01 µg/l	TM343	<1
Endosulphan Sulphate	<0.02 µg/l	TM343	<0.8
Permethrin I	<0.01 µg/l	TM343	<0.1

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Customer Sample Ref.	BH2
Depth (m)	0.00 - 0.00
Sample Type	Land Leachate (LE)
Date Sampled	04/10/2023
Sample Time	.
Date Received	06/10/2023
SDG Ref	231006-105
Lab Sample No.(s)	28741846
AGS Reference	

Component	LOD/Units	Method	
Permethrin II	<0.01 µg/l	TM343	<0.1
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	<0.1
Hexachlorobutadiene	<0.01 µg/l	TM344	<0.1
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	<0.1
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	<0.1
Dichlorvos	<0.01 µg/l	TM344	<0.1
Dichlobenil	<0.01 µg/l	TM344	<0.1
Mevinphos	<0.01 µg/l	TM344	<0.1
Tecnazene	<0.01 µg/l	TM344	<0.1
Hexachlorobenzene	<0.01 µg/l	TM344	<0.1
Demeton-S-methyl	<0.01 µg/l	TM344	<0.1
Phorate	<0.01 µg/l	TM344	<0.1
Diazinon	<0.01 µg/l	TM344	<0.1
Triallate	<0.01 µg/l	TM344	<0.1
Atrazine	<0.01 µg/l	TM344	<0.1
Simazine	<0.01 µg/l	TM344	<0.1
Disulfoton	<0.01 µg/l	TM344	<0.1
Propetamphos	<0.01 µg/l	TM344	<0.1
Chlorpyriphos-methyl	<0.01 µg/l	TM344	<0.1
Dimethoate	<0.01 µg/l	TM344	<0.1
Pirimiphos-methyl	<0.01 µg/l	TM344	<0.1
Fenchlorophos	<0.01 µg/l	TM344	<0.1
Chlorpyriphos	<0.01 µg/l	TM344	<0.1
Methyl Parathion	<0.01 µg/l	TM344	<0.1
Malathion	<0.01 µg/l	TM344	<0.1
Fenthion	<0.01 µg/l	TM344	<0.1
Fenitrothion	<0.01 µg/l	TM344	<0.1
Triadimefon	<0.01 µg/l	TM344	<0.1
Pendimethalin	<0.01 µg/l	TM344	<0.1
Parathion	<0.01 µg/l	TM344	<0.1
Chlorfenvinphos	<0.01 µg/l	TM344	<0.1
trans-Chlordane	<0.01 µg/l	TM344	<0.1
cis-Chlordane	<0.01 µg/l	TM344	<0.1

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend		Customer Sample Ref.	BH2
#	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)	0.00 - 0.00
		Sample Type	Land Leachate (LE)
		Date Sampled	04/10/2023
		Sample Time	.
		Date Received	06/10/2023
		SDG Ref	231006-105
		Lab Sample No.(s)	28741846
		AGS Reference	

Component	LOD/Units	Method	
Ethion	<0.01 µg/l	TM344	<0.1
Carbophenothion	<0.01 µg/l	TM344	<0.1
Triazophos	<0.01 µg/l	TM344	<0.1
Phosalone	<0.01 µg/l	TM344	<0.1
Azinphos methyl	<0.02 µg/l	TM344	<0.4
Azinphos ethyl	<0.02 µg/l	TM344	<0.2
Etridiazole	<0.01 µg/l	TM345	<0.1
Pentachlorobenzene	<0.01 µg/l	TM345	<0.1
Propachlor	<0.01 µg/l	TM345	<0.1
Quintozene (PCNB)	<0.01 µg/l	TM345	<0.1
Omethoate	<0.01 µg/l	TM345	<0.1
Propazine	<0.01 µg/l	TM345	<0.1
Propyzamide	<0.01 µg/l	TM345	<0.1
Alachlor	<0.01 µg/l	TM345	<0.1
Prometryn	<0.01 µg/l	TM345	<0.1
Telodrin	<0.01 µg/l	TM345	<0.1
Terbutryn	<0.01 µg/l	TM345	<0.1
Chlorothalonil	<0.01 µg/l	TM345	<0.2
Etrimphos	<0.01 µg/l	TM345	<0.1
Metazachlor	<0.01 µg/l	TM345	<0.1
Cyanazine	<0.01 µg/l	TM345	<0.1
Trietazine	<0.01 µg/l	TM345	<0.1
Coumaphos	<0.01 µg/l	TM345	<0.1
Phosphamidon I	<0.01 µg/l	TM345	<0.1
Phosphamidon II	<0.01 µg/l	TM345	<0.1
Dinitro-o-cresol	<0.1 µg/l	TM411	<10
Clopyralid	<0.04 µg/l	TM411	<4
MCPA	<0.05 µg/l	TM411	<5
Mecoprop	<0.04 µg/l	TM411	<4
Dicamba	<0.04 µg/l	TM411	<4
MCPB	<0.05 µg/l	TM411	<5
2,4-DB	<0.1 µg/l	TM411	<10
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<5

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Results Legend	
#	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)

Customer Sample Ref.			BH2
Depth (m)			0.00 - 0.00
Sample Type			Land Leachate (LE)
Date Sampled			04/10/2023
Sample Time			.
Date Received			06/10/2023
SDG Ref			231006-105
Lab Sample No.(s)			28741846
AGS Reference			
Component	**LOD/Units**	**Method**	
Dichlorprop	<0.1 µg/l	TM411	<10
Triclopyr	<0.05 µg/l	TM411	<5
Fenoprop (Silvex)	<0.1 µg/l	TM411	<10
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411	<5
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411	<5
Bromoxynil	<0.04 µg/l	TM411	<4
Benazolin	<0.04 µg/l	TM411	<4
Ioxynil	<0.05 µg/l	TM411	<5
Pentachlorophenol	<0.04 µg/l	TM411	<4
Fluoroxypyr	<0.1 µg/l	TM411	<10

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

SVOC MS (W) - Aqueous

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.					
			BH2					
Depth (m)			0.00 - 0.00					
Sample Type			Land Leachate (LE)					
Date Sampled			04/10/2023					
Sample Time			.					
Date Received			06/10/2023					
SDG Ref			231006-105					
Lab Sample No.(s)			28741846					
AGS Reference								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<20					
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<20					
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<20					
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<20					
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<20					
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<20					
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<20					
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<20					
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<20					
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<20					
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<20					
2-Chlorophenol (aq)	<1 µg/l	TM176	<20					
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<20					
2-Methylphenol (aq)	<1 µg/l	TM176	<20					
2-Nitroaniline (aq)	<1 µg/l	TM176	<20					
2-Nitrophenol (aq)	<1 µg/l	TM176	<20					
3-Nitroaniline (aq)	<1 µg/l	TM176	<20					
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<20					
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<20					
4-Chloroaniline (aq)	<1 µg/l	TM176	<20					
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<20					
4-Methylphenol (aq)	<1 µg/l	TM176	<20					
4-Nitroaniline (aq)	<1 µg/l	TM176	<20					
4-Nitrophenol (aq)	<1 µg/l	TM176	<20					
Azobenzene (aq)	<1 µg/l	TM176	<20					
Acenaphthylene (aq)	<1 µg/l	TM176	<20					
Acenaphthene (aq)	<1 µg/l	TM176	<20					
Anthracene (aq)	<1 µg/l	TM176	<20					
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<20					
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<20					
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<40					
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<20					
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<20					

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH2					
#	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	Depth (m)	0.00 - 0.00					
(F)	Trigger breach confirmed	Sample Type	Land Leachate (LE)					
1-4+§@	Sample deviation (see appendix)	Date Sampled	04/10/2023					
		Sample Time	.					
		Date Received	06/10/2023					
		SDG Ref	231006-105					
		Lab Sample No.(s)	28741846					
		AGS Reference						

Component	LOD/Units	Method						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<20					
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<20					
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<20					
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<20					
Carbazole (aq)	<1 µg/l	TM176	<20					
Chrysene (aq)	<1 µg/l	TM176	<20					
Dibenzofuran (aq)	<1 µg/l	TM176	<20					
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<20					
Diethyl phthalate (aq)	<1 µg/l	TM176	<20					
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<20					
Dimethyl phthalate (aq)	<1 µg/l	TM176	<20					
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<100					
Fluoranthene (aq)	<1 µg/l	TM176	<20					
Fluorene (aq)	<1 µg/l	TM176	<20					
Hexachlorobenzene (aq)	<1 µg/l	TM176	<20					
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<20					
Pentachlorophenol (aq)	<1 µg/l	TM176	<20					
Phenol (aq)	<1 µg/l	TM176	<20					
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<20					
Hexachloroethane (aq)	<1 µg/l	TM176	<20					
Nitrobenzene (aq)	<1 µg/l	TM176	<20					
Naphthalene (aq)	<1 µg/l	TM176	<20					
Isophorone (aq)	<1 µg/l	TM176	<20					
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<20					
Phenanthrene (aq)	<1 µg/l	TM176	<20					
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<20					
Pyrene (aq)	<1 µg/l	TM176	<20					

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend
- # 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)

Component	LOD/Units	Method	Customer Sample Ref.	
			Depth (m)	0.00 - 0.00
			Sample Type	Land Leachate (LE)
			Date Sampled	04/10/2023
			Sample Time	.
			Date Received	06/10/2023
			SDG Ref	231006-105
			Lab Sample No.(s)	28741846
			AGS Reference	BH2
Dibromofluoromethane**	%	TM208		98.4
Toluene-d8**	%	TM208		101
4-Bromofluorobenzene**	%	TM208		97.4
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 #
1,3-Dichloropropane	<1 µg/l	TM208		<1 #

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

VOC MS (W)

Results Legend	
#	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)

Component	LOD/Units	Method	Customer Sample Ref.	BH2
			Depth (m)	0.00 - 0.00
			Sample Type	Land Leachate (LE)
			Date Sampled	04/10/2023
			Sample Time	.
			Date Received	06/10/2023
			SDG Ref	231006-105
			Lab Sample No.(s)	28741846
			AGS Reference	
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 #
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1

Table of Results - Appendix

Method No	Description
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM197	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM345	Determination of selected pesticides (Suite III) by GCMS
TM046	Measurement of Dissolved Oxygen by Oxygen Meter
TM104	Determination of Fluoride using the Kone Analyser
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM344	Determination of selected pesticides (Suite II) by GCMS
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM411	Acid Herbs in Water by GCMS
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).

CERTIFICATE OF ANALYSIS

SDG: 231006-105 **Report Number:** 708005 **Superseded Report:**
Client Ref.: Galway Historic Landfills P2 **Location:** New Inn

Test Completion Dates

Lab Sample No(s)	28741846
Customer Sample Ref.	BH2
AGS Ref.	
Depth	0.00 - 0.00
Type	Land
Acid Herbicides by GCMS	13-Oct-2023
Ammonium Low	10-Oct-2023
Anions by Kone (w)	10-Oct-2023
BOD True Filtered	12-Oct-2023
BOD True Total	12-Oct-2023
COD Unfiltered	12-Oct-2023
Cyanide Comp/Free/Total/Thiocyanate	10-Oct-2023
Dissolved Metals by ICP-MS	11-Oct-2023
Dissolved Oxygen by Probe	09-Oct-2023
Fluoride	09-Oct-2023
Mercury Dissolved	10-Oct-2023
PCB Congeners - Aqueous (W)	16-Oct-2023
Pesticides (Suite I) by GCMS	19-Oct-2023
Pesticides (Suite II) by GCMS	13-Oct-2023
Pesticides (Suite III) by GCMS	13-Oct-2023
pH Value	13-Oct-2023
SVOC MS (W) - Aqueous	11-Oct-2023
Total Organic and Inorganic Carbon	15-Oct-2023
VOC MS (W)	11-Oct-2023

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 15 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 15 days 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 (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 andd 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 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.

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