

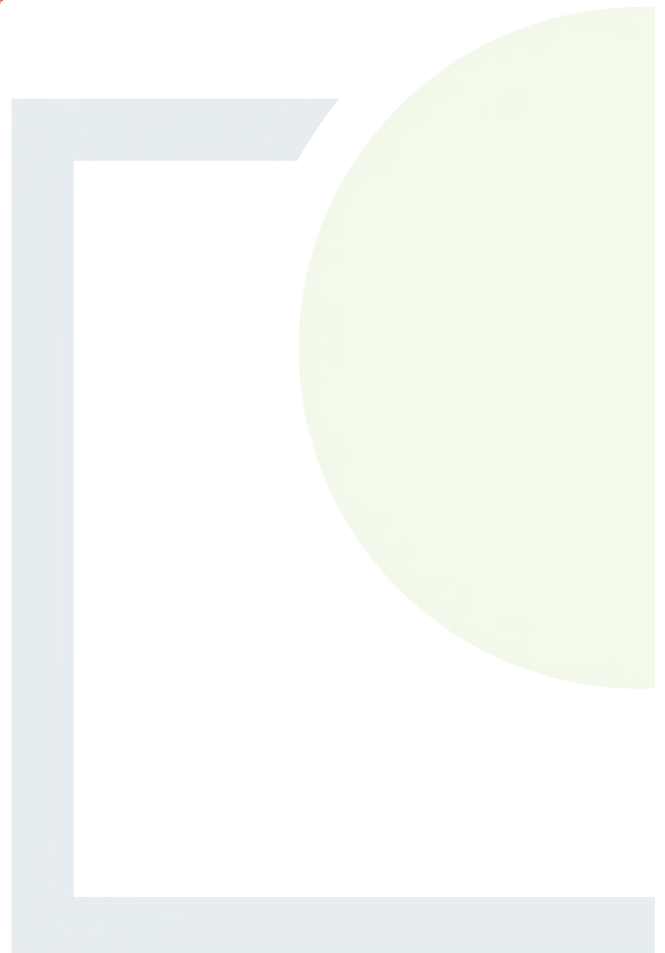


CONSULTANTS IN ENGINEERING,
ENVIRONMENTAL SCIENCE & PLANNING

APPENDIX 5

Groundwater, Leachate and Surface Water Sampling Analysis Results

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North Road
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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

Validated

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Location: New Inn Landfill	Order Number: Z2189	Superseded Report: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.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
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)	Vial (ALE297)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)
Sample Type	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW

Analyte	All	NDPs: 0 Tests: 2	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	0.5l glass bottle (ALE227)
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	

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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) H ₂ SO ₄ (ALE244) NaOH (ALE245)	Vial (ALE297) NaOH (ALE245) H ₂ SO ₄ (ALE244) 500ml Plastic (ALE208) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) Vial (ALE297)
	Sample Type	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

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Validated

SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)				
#	ISO17025 accredited.							
M	mCERTS accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00				
aq	Aqueous / settled sample.		Surface Water (SW)	Surface Water (SW)				
diss.filt	Dissolved / filtered sample.		30/07/2020	30/07/2020				
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					
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	<0.5				
			2 #	2 #				
Barium (diss.filt)	<0.2 µg/l	TM152	7.6	7.56				
			2 #	2 #				
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08				
			2 #	2 #				
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1				
			2 #	2 #				
Copper (diss.filt)	<0.3 µg/l	TM152	1.01	0.932				
			2 #	2 #				
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2				
			2 #	2 #				
Manganese (diss.filt)	<3 µg/l	TM152	9.09	13.9				
			2 #	2 #				
Nickel (diss.filt)	<0.4 µg/l	TM152	1.57	1.83				
			2 #	2 #				
Phosphorus (diss.filt)	<10 µg/l	TM152	14.2	<10				
			2 #	2 #				
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1				
			2 #	2 #				
Thallium (diss.filt)	<2 µg/l	TM152	<2	<2				
			2 #	2 #				
Zinc (diss.filt)	<1 µg/l	TM152	2.49	2.07				
			2 #	2 #				
Sodium (Dis.Filt)	<0.076 mg/l	TM152	16	15.7				
			2 #	2 #				
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	4.69	4.62				
			2 #	2 #				
Potassium (Dis.Filt)	<0.2 mg/l	TM152	1.67	1.62				
			2 #	2 #				
Calcium (Dis.Filt)	<0.2 mg/l	TM152	134	132				
			2 #	2 #				
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0501	0.0507				
			2 #	2 #				
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172	<100	<100				
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01				
			2	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				

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

#	ISO17025 accredited.	Customer Sample Ref.	SW2 (DS)	SW1 (US)		
M	mCERTS accredited.					
sq	Aqueous / settled sample.					
dis.filt	Dissolved / filtered sample.					
tot.unfilt	Total / unfiltered sample.					
*	Subcontracted - refer to subcontractor report for accreditation status.					
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery					
(F)	Trigger breach confirmed					
1-3*§@	Sample deviation (see appendix)					
		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				
Component	LOD/Units	Method				
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		

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SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

Results Legend			Customer Sample Ref.	SW2 (DS)	SW1 (US)					
#	ISO17025 accredited.									
M	mCERTS accredited.									
aq	Aqueous / settled sample.									
dis. filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	0.00 - 0.00	Surface Water (SW)	30/07/2020	30/07/2020	31/07/2020	200731-90	22583459	
Hexachlorobutadiene	<0.01 µg/l	TM344	0.00 - 0.00	Surface Water (SW)	30/07/2020	30/07/2020	31/07/2020	200731-90	22583445	
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	<0.01							
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	<0.01							
Dichlorvos	<0.01 µg/l	TM344	<0.01							
Dichlobenil	<0.01 µg/l	TM344	<0.01							
Mevinphos	<0.01 µg/l	TM344	<0.01							
Tecnazene	<0.01 µg/l	TM344	<0.01							
Hexachlorobenzene	<0.01 µg/l	TM344	<0.01							
Demeton-S-methyl	<0.01 µg/l	TM344	<0.01							
Phorate	<0.01 µg/l	TM344	<0.01							
Diazinon	<0.01 µg/l	TM344	<0.01							
Triallate	<0.01 µg/l	TM344	<0.01							
Atrazine	<0.01 µg/l	TM344	<0.01							
Simazine	<0.01 µg/l	TM344	<0.01							
Disulfoton	<0.01 µg/l	TM344	<0.01							
Propetamphos	<0.01 µg/l	TM344	<0.01							
Chlorpyrifos-methyl	<0.01 µg/l	TM344	<0.01							
Dimethoate	<0.01 µg/l	TM344	<0.01							
Pirimiphos-methyl	<0.01 µg/l	TM344	<0.01							
Chlorpyrifos	<0.01 µg/l	TM344	<0.01							
Methyl Parathion	<0.01 µg/l	TM344	<0.01							
Malathion	<0.01 µg/l	TM344	<0.01							
Fenthion	<0.01 µg/l	TM344	<0.01							
Fenitrothion	<0.01 µg/l	TM344	<0.01							
Triadimefon	<0.01 µg/l	TM344	<0.01							
Pendimethalin	<0.01 µg/l	TM344	<0.01							
Parathion	<0.01 µg/l	TM344	<0.01							
Chlorfenvinphos	<0.01 µg/l	TM344	<0.01							
trans-Chlordane	<0.01 µg/l	TM344	<0.01							
cis-Chlordane	<0.01 µg/l	TM344	<0.01							
Ethion	<0.01 µg/l	TM344	<0.01							
Carbophenothion	<0.01 µg/l	TM344	<0.01							

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

#	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
<div style="font-size: small;"> Results Legend # ISO17025 accredited. M mCERTS accredited. sq 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) </div>						
Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00 Surface Water (SW) 30/07/2020	0.00 - 0.00 Surface Water (SW) 30/07/2020	31/07/2020	200731-90	22583459
Component	LOD/Units	Method				
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		

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

Results Legend			Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.							
M	mCERTS accredited.							
sq	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery.							
(F)	Trigger breach confirmed							
1-3*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
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				

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CERTIFICATE OF ANALYSIS

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SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.		Surface Water (SW)	Surface Water (SW)			
aq	Aqueous / settled sample.		30/07/2020	30/07/2020			
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				
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	#	#	

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CERTIFICATE OF ANALYSIS

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SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
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 #			

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	0.00 - 0.00	0.00 - 0.00			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	Surface Water (SW)	Surface Water (SW)			
(F)	Trigger breach confirmed	Date Sampled	30/07/2020	30/07/2020			
1-3*#@	Sample deviation (see appendix)	Sample Time					
		Date Received	31/07/2020	31/07/2020			
		SDG Ref	200731-90	200731-90			
		Lab Sample No.(s)	22583459	22583445			
		AGS Reference					
Component	LOD/Units	Method					
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	#	#	

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SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562381
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
sq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
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	#	#	

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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).

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CERTIFICATE OF ANALYSIS

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SDG: 200731-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

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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

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CERTIFICATE OF ANALYSIS

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

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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

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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: 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

Validated

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.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
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	Via (ALE297)	Via (ALE297)
Sample Type	SW	SW

Parameter	All	NDPs: 0 Tests: 2	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)	
Acid Herbicides by GCMS			X														X
Ammonium Low						X											X
Anions by Kone (w)					X												X
BOD True Total				X													X
COD Unfiltered				X													X
Conductivity (at 20 deg.C)					X												X
Cyanide Comp/Free/Total/Thiocyanate										X							X
Dissolved Metals by ICP-MS										X							X
Dissolved Oxygen by Probe					X												X
Fluoride					X												X
Mercury Dissolved										X							X
Mineral Oil C10-40 Aqueous (W)				X													X
PCB Congeners - Aqueous (W)				X													X
Pesticides (Suite I) by GCMS				X													X
Pesticides (Suite II) by GCMS				X													X

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SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
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										Sample Type	
				Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)		0.5l glass bottle (ALE227)
22723236	SW2 (DS)		0.00 - 0.00	Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	SW
22723227	SW1 (US)		0.00 - 0.00	Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	SW
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2										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	

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SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	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)						
		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					
Component	LOD/Units	Method					
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			

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CERTIFICATE OF ANALYSIS

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SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
sq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
		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					
Component	LOD/Units	Method					
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			

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

#	Customer Sample Ref.	SW2 (DS)	SW1 (US)			
<div style="font-size: small;"> Results Legend # ISO17025 accredited. M mCERTS accredited. sq 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) </div>						
		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				
Component	LOD/Units	Method				
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		
Chlorpyrifos-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		
Chlorpyrifos	<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		

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

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
sq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
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			

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Location: New Inn Landfill

Client Reference: P2282
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Report Number: 565823
Superseded Report:

Table with columns: Results Legend, Customer Sample Ref., SW2 (DS), SW1 (US), Component, LOD/Units, Method. Rows include Fenoprop (Silvex), 2,4-Dichlorophenoxyacetic acid, 2,4,5-Trichlorophenoxyacetic acid, Bromoxynil, Benazolin, Ioxynil, Pentachlorophenol, Fluoroxypyr.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00			
M	mCERTS accredited.		Surface Water (SW)	Surface Water (SW)			
aq	Aqueous / settled sample.		25/08/2020	25/08/2020			
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*5@	Sample deviation (see appendix)						
Component	LOD/Units		Method				
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	#	#	

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CERTIFICATE OF ANALYSIS

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SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
aq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
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 #			

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

VOC MS (W)

Table with columns: Component, LOD/Units, Method, SW2 (DS), SW1 (US). Rows include various VOCs like Dibromofluoromethane, Toluene-d8, 4-Bromofluorobenzene, etc.

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
Superseded Report:

VOC MS (W)

Results Legend		Customer Sample Ref.	SW2 (DS)	SW1 (US)			
#	ISO17025 accredited.						
M	mCERTS accredited.						
sq	Aqueous / settled sample.						
dis.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted - refer to subcontractor report for accreditation status.						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery						
(F)	Trigger breach confirmed						
1-3*§@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
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	#	#	

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SDG: 200826-98	Client Reference: P2282	Report Number: 565823
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).

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CERTIFICATE OF ANALYSIS

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SDG: 200826-98
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 565823
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

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CERTIFICATE OF ANALYSIS

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

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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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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: 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

Validated

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.

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CERTIFICATE OF ANALYSIS

Validated

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)	22583371		
Customer Sample Reference	BH2		
AGS Reference			
Depth (m)	0.00 - 0.00		
Container	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type	LE	LE	LE

Parameter	All	NDPs: 0 Tests: 1	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)
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

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SDG: 200731-88
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562221
Superseded Report:

Results Legend		Customer Sample Ref.							
# 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)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
Component	LOD/Units	Method							
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						
				#					

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CERTIFICATE OF ANALYSIS

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SDG: 200731-88
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562221
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).

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CERTIFICATE OF ANALYSIS

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SDG: 200731-88
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 562221
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

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CERTIFICATE OF ANALYSIS

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 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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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Hawarden

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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.

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

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 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.

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

Results Legend <div style="margin-top: 5px;"> Test No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		22583409	BH1		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583419	BH4		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583387	GW01		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583397	GW02		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW

Parameter	All	NDPs: 0 Tests: 4	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	0.5l glass bottle (ALE227)
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4	X			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		
BOD True Total	All	NDPs: 0 Tests: 4	X					X				X		
COD Unfiltered	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		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		
Faecal Coliforms (W)*	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	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		

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22583397
GW02
0.00 - 0.00
Via1 (ALE297)
GW

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

Results Legend <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></div> Test </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: red; color: white; border: 1px solid black; margin-right: 5px;"></div> No Determination Possible </div> </div> 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	
		22583409	BH1		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583419	BH4		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583387	GW01		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22583397	GW02		0.00 - 0.00	NaOH (ALE245) H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
	Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 4				
	Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 4				
pH Value	All	NDPs: 0 Tests: 4					
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 4					
Total Coliforms(W)*	All	NDPs: 0 Tests: 3					
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 4					
VOC MS (W)	All	NDPs: 0 Tests: 4					

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22583397
GM02
0.00 - 0.00
VIA1 (ALE297)
GW
X
X

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Validated

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

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
(F)	Trigger breach confirmed	Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
1-3*5@	Sample deviation (see appendix)	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						
Component	LOD/Units	Method						
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	0.869	<0.5	0.607	2 #	2 #
Barium (diss.filt)	<0.2 µg/l	TM152	21.8	33.5	9.12	129	2 #	2 #
Boron (diss.filt)	<10 µg/l	TM152	23.7	43.5	<10	180	2 #	2 #
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	2 #	2 #
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	2 #	2 #
Copper (diss.filt)	<0.3 µg/l	TM152	4.98	<0.3	0.828	1.97	2 #	2 #
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	0.356	2 #	2 #
Manganese (diss.filt)	<3 µg/l	TM152	16	115	9.66	8.05	2 #	2 #
Nickel (diss.filt)	<0.4 µg/l	TM152	10.5	5.59	3.53	3.47	2 #	2 #
Phosphorus (diss.filt)	<10 µg/l	TM152	<10	<10	<10	16.5	2 #	2 #
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	33.5	2 #	2 #
Thallium (diss.filt)	<2 µg/l	TM152	<2	<2	<2	<2	2 #	2 #
Zinc (diss.filt)	<1 µg/l	TM152	26.6	1.95	3.01	1.98	2 #	2 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152	6.42	45.8	8.43	226	2 #	2 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	10.1	8.08	5.7	28.3	2 #	2 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152	1.18	3.32	1.69	5.26	2 #	2 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152	139	139	143	71.8	2 #	2 #
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	<0.019	<0.019	<0.019	2 #	2 #
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01	2 #	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

Validated

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

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
sq	Aqueous / settled sample.							
dis. filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-3*§@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
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

Validated

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

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
# ISO17025 accredited.									
M mCERTS accredited.									
sq 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)									
AGS Reference									
Component	LOD/Units	Method	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Endosulphan Sulphate	<0.02 µg/l	TM343	Ground Water (GW)	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
Permethrin I	<0.01 µg/l	TM343	Ground Water (GW)	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
Permethrin II	<0.01 µg/l	TM343	Ground Water (GW)	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)	31/07/2020	31/07/2020	31/07/2020	31/07/2020		
Hexachlorobutadiene	<0.01 µg/l	TM344	Ground Water (GW)	200731-89	200731-89	200731-89	200731-89		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)	22583409	22583419	22583387	22583397		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)						
Dichlorvos	<0.01 µg/l	TM344	Ground Water (GW)						
Dichlobenil	<0.01 µg/l	TM344	Ground Water (GW)						
Mevinphos	<0.01 µg/l	TM344	Ground Water (GW)						
Tecnazene	<0.01 µg/l	TM344	Ground Water (GW)						
Hexachlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)						
Demeton-S-methyl	<0.01 µg/l	TM344	Ground Water (GW)						
Phorate	<0.01 µg/l	TM344	Ground Water (GW)						
Diazinon	<0.01 µg/l	TM344	Ground Water (GW)						
Triallate	<0.01 µg/l	TM344	Ground Water (GW)						
Atrazine	<0.01 µg/l	TM344	Ground Water (GW)						
Simazine	<0.01 µg/l	TM344	Ground Water (GW)						
Disulfoton	<0.01 µg/l	TM344	Ground Water (GW)						
Propetamphos	<0.01 µg/l	TM344	Ground Water (GW)						
Chlorpyrifos-methyl	<0.01 µg/l	TM344	Ground Water (GW)						
Dimethoate	<0.01 µg/l	TM344	Ground Water (GW)						
Pirimiphos-methyl	<0.01 µg/l	TM344	Ground Water (GW)						
Chlorpyrifos	<0.01 µg/l	TM344	Ground Water (GW)						
Methyl Parathion	<0.01 µg/l	TM344	Ground Water (GW)						
Malathion	<0.01 µg/l	TM344	Ground Water (GW)						
Fenthion	<0.01 µg/l	TM344	Ground Water (GW)						
Fenitrothion	<0.01 µg/l	TM344	Ground Water (GW)						
Triadimefon	<0.01 µg/l	TM344	Ground Water (GW)						
Pendimethalin	<0.01 µg/l	TM344	Ground Water (GW)						
Parathion	<0.01 µg/l	TM344	Ground Water (GW)						
Chlorfenvinphos	<0.01 µg/l	TM344	Ground Water (GW)						
trans-Chlordane	<0.01 µg/l	TM344	Ground Water (GW)						

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CERTIFICATE OF ANALYSIS

Validated

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

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
# ISO17025 accredited. M mCERTS accredited. sq 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)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Ground Water (GW) 30/07/2020	0.00 - 0.00 Ground Water (GW) 30/07/2020	0.00 - 0.00 Ground Water (GW) 30/07/2020	0.00 - 0.00 Ground Water (GW) 30/07/2020		
Component	LOD/Units	Method							
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		

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-89
Location: New Inn Landfill

Client Reference: P2282
Order Number: P2282

Report Number: 564886
Superseded Report: 562407

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
-	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
(F)	Trigger breach confirmed	Date Sampled	30/07/2020	30/07/2020	30/07/2020	30/07/2020		
1-3*5@	Sample deviation (see appendix)	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						
Component	LOD/Units	Method						
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	#	#

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-89
Location: New Inn Landfill

Client Reference: P2282
Order Number: P2282

Report Number: 564886
Superseded Report: 562407

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-3*§@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
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 #		

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-89
Location: New Inn Landfill

Client Reference: P2282
Order Number: P2282

Report Number: 564886
Superseded Report: 562407

VOC MS (W)

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
M	mCERTS accredited.			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
aq	Aqueous / settled sample.			30/07/2020	30/07/2020	30/07/2020	30/07/2020		
diss.filt	Dissolved / filtered sample.			31/07/2020	31/07/2020	31/07/2020	31/07/2020		
tot.unfilt	Total / unfiltered sample.			200731-89	200731-89	200731-89	200731-89		
*	Subcontracted - refer to subcontractor report for accreditation status.			22583409	22583419	22583387	22583397		
**	% 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							
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			

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-89
Location: New Inn Landfill

Client Reference: P2282
Order Number: P2282

Report Number: 564886
Superseded Report: 562407

VOC MS (W)

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.								
M	mCERTS accredited.								
sq	Aqueous / settled sample.								
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*§@	Sample deviation (see appendix)								
Component	LOD/Units	Method	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	#	#

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CERTIFICATE OF ANALYSIS

Validated

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

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).

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200731-89
Location: New Inn Landfill

Client Reference: P2282
Order Number: P2282

Report Number: 564886
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

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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



This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

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



ANALYSED BY



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:

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.

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Certificate of Analysis

ANALYSED BY



Report Number: **COV/1904559/2020**
Laboratory Number: **19545545**
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**

Issue **1**
Sample **1** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	0	cfu/100m	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.

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Signed: *B. Paige*

Name: **B. Paige**

Date: **08 August 2020**

Title: **Microbiology Team Leader**

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Certificate of Analysis

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Report Number: **COV/1904559/2020**
Laboratory Number: **19545546**
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**

Issue **1**
Sample **2** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presumpt	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 presumpt 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:  Name: **B. Paige** Date: **08 August 2020**
Title: **Microbiology Team Leader**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
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Certificate of Analysis

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Report Number: **COV/1904559/2020**
Laboratory Number: **19545547**
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**

Issue **1**
Sample **3** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	0	cfu/100m	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.

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Signed: *B. Paige* Name: **B. Paige** Date: **08 August 2020**
Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY



Report Number: **COV/1904559/2020**
 Laboratory Number: **19545548**
 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**

Issue **1**
 Sample **4** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presumpt	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 presumpt 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: *B. Paige* Name: **B. Paige** Date: **08 August 2020**
 Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY



Report Number: **COV/1904559/2020**
Laboratory Number: **19545549**
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**

Issue **1**
Sample **5** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	1	cfu/100m	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.

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Signed:  Name: **B. Paige** Date: **08 August 2020**
Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY



Report Number: **COV/1904559/2020**
Laboratory Number: **19545550**
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**

Issue **1**
Sample **6** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Total Coliform presumpt	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 presumpt 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:  Name: **B. Paige** Date: **08 August 2020**
Title: **Microbiology Team Leader**

Certificate of Analysis

ANALYSED BY



Report Number: **COV/1904559/2020**
 Laboratory Number: **19545551**
 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**

Issue **1**
 Sample **7** of **7**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms confirmed	180	cfu/100m	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.

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Signed: *B. Paige* Name: **B. Paige** Date: **08 August 2020**
 Title: **Microbiology Team Leader**



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 presumpt 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 presumpt 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 presumpt 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:

Name: **B. Paige**

Date: **08 August 2020**

Title: **Microbiology Team Leader**

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DETERMINAND COMMENTS FOR REPORT COV/1904559/2020

ISSUE 1

Date of Issue: 08 August 2020

This issue replaces all previous issues

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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CERTIFICATE OF ANALYSIS

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

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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: 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.

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

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 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.

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CERTIFICATE OF ANALYSIS

Validated

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

Results Legend <div style="margin-top: 5px;"> X Test N No Determination Possible </div> Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	
		22723005	BH1		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22723016	BH4		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22722980	GW01		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
		22722991	GW02		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
						NaOH (ALE245) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
						NaOH (ALE245) 500ml Plastic (ALE208) 0.5l glass bottle (ALE227)	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 4					
Alkalinity as CaCO3	All	NDPs: 0 Tests: 4					
Ammonium Low	All	NDPs: 0 Tests: 4					
Anions by Kone (w)	All	NDPs: 0 Tests: 4					
BOD True Total	All	NDPs: 0 Tests: 4					
COD Unfiltered	All	NDPs: 0 Tests: 4					
Coliforms (W)	All	NDPs: 0 Tests: 4					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 4					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 4					
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 4					
Dissolved Oxygen by Probe	All	NDPs: 2 Tests: 2					
Fluoride	All	NDPs: 0 Tests: 4					
Mercury Dissolved	All	NDPs: 0 Tests: 4					
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 4					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 4					

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CERTIFICATE OF ANALYSIS

Validated

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

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

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2272291	GW02		0.00 - 0.00	Via1 (ALE297)	GW																X
				NaOH (ALE245)	GW																

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
-	Subcontracted - refer to subcontractor report for accreditation status.	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
--	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
(F)	Trigger breach confirmed	Date Sampled	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
1-3*5@	Sample deviation (see appendix)	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						
Component	LOD/Units	Method						
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	#	#	#	#		
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	2.96	<0.5	0.541		
Barium (diss.filt)	<0.2 µg/l	TM152	36.9	41.8	1930	111		
Boron (diss.filt)	<10 µg/l	TM152	64.3	136	348	193		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08		
Chromium (diss.filt)	<1 µg/l	TM152	<1	0.17	<1	<1		
Copper (diss.filt)	<0.3 µg/l	TM152	7.55	0.618	1.15	1		
Lead (diss.filt)	<0.2 µg/l	TM152	0.616	1.52	<0.2	<0.2		
Manganese (diss.filt)	<3 µg/l	TM152	25.8	105	<3	14.9		
Nickel (diss.filt)	<0.4 µg/l	TM152	8.5	17.1	2.71	3.44		
Phosphorus (diss.filt)	<10 µg/l	TM152	<10	30.7	<10	11.4		
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	2.77		
Thallium (diss.filt)	<2 µg/l	TM152	<2	<2	<2	<2		
Zinc (diss.filt)	<1 µg/l	TM152	10	5.81	862	<1		
Sodium (Dis.Filt)	<0.076 mg/l	TM152	10.6	46.5	19.3	222		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	18.9	12.8	7.94	35.6		
Potassium (Dis.Filt)	<0.2 mg/l	TM152	1.58	4.5	0.627	5.49		
Calcium (Dis.Filt)	<0.2 mg/l	TM152	109	128	138	64.5		
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0509	3.75	<0.019	0.0304		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01	<0.01	<0.01		
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		



CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02				
#	ISO17025 accredited.									
M	mCERTS accredited.									
sq	Aqueous / settled sample.									
dis.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - refer to subcontractor report for accreditation status.									
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery									
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method	Depth (m)	Sample Type	Date Sampled	Sample Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
PCB congener 52	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020		22723005	
PCB congener 101	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020		22723016	
PCB congener 118	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020		22722980	
PCB congener 138	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020		22722991	
PCB congener 153	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020			
PCB congener 180	<0.015 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	0.00 - 0.00	Ground Water (GW)	25/08/2020		25/08/2020			
Cyanide, Total	<0.05 mg/l	TM227								
pH	<1 pH Units	TM256								
Trifluralin	<0.01 µg/l	TM343								
alpha-HCH	<0.01 µg/l	TM343								
gamma-HCH (Lindane)	<0.01 µg/l	TM343								
Heptachlor	<0.01 µg/l	TM343								
Aldrin	<0.01 µg/l	TM343								
beta-HCH	<0.01 µg/l	TM343								
Isodrin	<0.01 µg/l	TM343								
delta-HCH	<0.01 µg/l	TM343								
Heptachlor epoxide	<0.01 µg/l	TM343								
o,p'-DDE	<0.01 µg/l	TM343								
Endosulphan I	<0.01 µg/l	TM343								
trans-Chlordane	<0.01 µg/l	TM343								
cis-Chlordane	<0.01 µg/l	TM343								
p,p'-DDE	<0.01 µg/l	TM343								
Dieldrin	<0.01 µg/l	TM343								
o,p'-DDD (TDE)	<0.01 µg/l	TM343								
Endrin	<0.01 µg/l	TM343								
o,p'-DDT	<0.01 µg/l	TM343								
p,p'-DDD (TDE)	<0.01 µg/l	TM343								
Endosulphan II	<0.02 µg/l	TM343								
p,p'-DDT	<0.01 µg/l	TM343								
o,p'-Methoxychlor	<0.01 µg/l	TM343								
p,p'-Methoxychlor	<0.01 µg/l	TM343								
Endosulphan Sulphate	<0.02 µg/l	TM343								

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CERTIFICATE OF ANALYSIS

Validated

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

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
# 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)									
AGS Reference									
Component	LOD/Units	Method	Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
Permethrin I	<0.01 µg/l	TM343	Ground Water (GW)	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
Permethrin II	<0.01 µg/l	TM343	Ground Water (GW)	25/08/2020	25/08/2020	25/08/2020	25/08/2020		
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)	26/08/2020	26/08/2020	26/08/2020	26/08/2020		
Hexachlorobutadiene	<0.01 µg/l	TM344	Ground Water (GW)	200826-90	200826-90	200826-90	200826-90		
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	Ground Water (GW)	22723005	22723016	22722980	22722991		
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344							
Dichlorvos	<0.01 µg/l	TM344							
Dichlobenil	<0.01 µg/l	TM344							
Mevinphos	<0.01 µg/l	TM344							
Tecnazene	<0.01 µg/l	TM344							
Hexachlorobenzene	<0.01 µg/l	TM344							
Demeton-S-methyl	<0.01 µg/l	TM344							
Phorate	<0.01 µg/l	TM344							
Diazinon	<0.01 µg/l	TM344							
Triallate	<0.01 µg/l	TM344							
Atrazine	<0.01 µg/l	TM344							
Simazine	<0.01 µg/l	TM344							
Disulfoton	<0.01 µg/l	TM344							
Propetamphos	<0.01 µg/l	TM344							
Chlorpyrifos-methyl	<0.01 µg/l	TM344							
Dimethoate	<0.01 µg/l	TM344							
Pirimiphos-methyl	<0.01 µg/l	TM344							
Chlorpyrifos	<0.01 µg/l	TM344							
Methyl Parathion	<0.01 µg/l	TM344							
Malathion	<0.01 µg/l	TM344							
Fenthion	<0.01 µg/l	TM344							
Fenitrothion	<0.01 µg/l	TM344							
Triadimefon	<0.01 µg/l	TM344							
Pendimethalin	<0.01 µg/l	TM344							
Parathion	<0.01 µg/l	TM344							
Chlorfenvinphos	<0.01 µg/l	TM344							
trans-Chlordane	<0.01 µg/l	TM344							
cis-Chlordane	<0.01 µg/l	TM344							

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CERTIFICATE OF ANALYSIS

Validated

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

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
# ISO17025 accredited.									
M mCERTS accredited.									
sq 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)									
			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						
Component	LOD/Units	Method							
Ethion	<0.01 µg/l	TM344	<0.01	<0.01	<0.01	<0.01	<0.01		
Carbophenothion	<0.01 µg/l	TM344	<0.01	<0.01	<0.01	<0.01	<0.01		
Triazophos	<0.01 µg/l	TM344	<0.01	<0.01	<0.01	<0.01	<0.01		
Phosalone	<0.01 µg/l	TM344	<0.01	<0.01	<0.01	<0.01	<0.01		
Azinphos methyl	<0.02 µg/l	TM344	<0.04	<0.04	<0.04	<0.04	<0.04		
Azinphos ethyl	<0.02 µg/l	TM344	<0.02	<0.02	<0.02	<0.02	<0.02		
Etridiazole	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Pentachlorobenzene	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Propachlor	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Quintozene (PCNB)	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Omethoate	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Propazine	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Propyzamide	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Alachlor	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Prometryn	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Telodrin	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Terbutryn	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Chlorothalonil	<0.01 µg/l	TM345	<0.02	<0.02	<0.02	<0.02	<0.02		
Etrimphos	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Metazachlor	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Cyanazine	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Trietazine	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Coumaphos	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Phosphamidon I	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Phosphamidon II	<0.01 µg/l	TM345	<0.01	<0.01	<0.01	<0.01	<0.01		
Dinitro-o-cresol	<0.1 µg/l	TM411	<0.1	<0.2	<0.2	<0.2	<0.2		
Clopyralid	<0.04 µg/l	TM411	<0.04	<0.08	<0.08	<0.08	<0.08		
MCPA	<0.05 µg/l	TM411	<0.05	<0.1	<0.1	<0.1	<0.1		
Mecoprop	<0.04 µg/l	TM411	<0.04	<0.08	<0.08	<0.08	<0.08		
Dicamba	<0.04 µg/l	TM411	<0.04	<0.08	<0.08	<0.08	<0.08		
MCPB	<0.05 µg/l	TM411	<0.05	<0.1	<0.1	<0.1	<0.1		
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.2	<0.2	<0.2	<0.2		
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<0.05	<0.1	<0.1	<0.1	<0.1		

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
sq	Aqueous / settled sample.		Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
dis.filt	Dissolved / filtered sample.		25/08/2020	25/08/2020	25/08/2020	25/08/2020		
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.		26/08/2020	26/08/2020	26/08/2020	26/08/2020		
**	% 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		200826-90	200826-90	200826-90	200826-90		
(F)	Trigger breach confirmed		22723005	22723016	22722980	22722991		
1-3*§@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Dichloroprop	<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		
loxynil	<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		

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.			
#	ISO17025 accredited.		BH1	BH4	GW01	GW02
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*5@	Sample deviation (see appendix)					
		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				
Component	LOD/Units	Method				
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

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
dis.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted - refer to subcontractor report for accreditation status.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-3*§@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
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 #		

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

VOC MS (W)

Results Legend			Customer Sample Ref.			
# 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)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH1	BH4	GW01	GW02	
		0.00 - 0.00 Ground Water (GW) 25/08/2020	0.00 - 0.00 Ground Water (GW) 25/08/2020	0.00 - 0.00 Ground Water (GW) 25/08/2020	0.00 - 0.00 Ground Water (GW) 25/08/2020	
		26/08/2020 200826-90 22723005	26/08/2020 200826-90 22723016	26/08/2020 200826-90 22722980	26/08/2020 200826-90 22722991	
Component	LOD/Units	Method				
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 #

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

VOC MS (W)

Results Legend			Customer Sample Ref.	BH1	BH4	GW01	GW02		
#	ISO17025 accredited.								
M	mCERTS accredited.								
sq	Aqueous / settled sample.								
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - refer to subcontractor report for accreditation status.								
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery								
(F)	Trigger breach confirmed								
1-3*§@	Sample deviation (see appendix)								
Component	LOD/Units	Method	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	#	#

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CERTIFICATE OF ANALYSIS

Validated

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

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
Superseded Report: 565825

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).

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CERTIFICATE OF ANALYSIS

Validated

SDG: 200826-90
Location: New Inn Landfill

Client Reference: P2282
Order Number: Z2189

Report Number: 566041
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

	22723005	22723016	22722980	22722991
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

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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

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.
This test report shall not be reproduced except in full or with written approval of City Analysts Limited.

Certificate Of Analysis

Customer

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
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	-

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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

Certificate Of Analysis

Customer

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK
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	-

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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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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

Certificate Of Analysis

Customer

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

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	-

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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

Certificate Of Analysis

Customer

Customer Services
ALS Life Sciences
Hawarden Business Park
Manor Lane
Hawarden, Deeside
UK
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	-

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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



CERTIFICATE OF ANALYSIS

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 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH₄ by the BRE method, VOC TICs and SVOC TICs.

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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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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





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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.

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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 (ALE12)	500ml Plastic (ALE208)	H2SO4 (ALE244)
Sample Type	LE	LE	LE

Parameter	All	NDPs: 0 Tests: 1	500ml Plastic (ALE208)	250ml BOD (ALE12)	H2SO4 (ALE244)
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

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Order Number: Z2189

Report Number: 565743
Superseded Report:

Results Legend		Customer Sample Ref.							
# 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)		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						
				#					

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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.

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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

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

Appendix

General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.

3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

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

7. Results relate only to the items tested.

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

9. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

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

11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

12. 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.