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Manor Road (off Manor Lane)
Hawarden
Deeside
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Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Robert Hester

CERTIFICATE OF ANALYSIS

Date of report Generation:	18 October 2019
Customer:	Newport City Council
Sample Delivery Group (SDG):	190926-94
Your Reference:	Leachate Sept Part 2
Location:	Docks Way
Report No:	525949

This report has been revised and directly supersedes 525926 in its entirety.

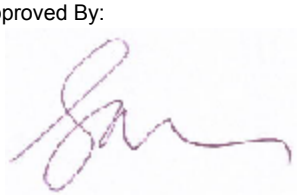
We received 5 samples on Thursday September 26, 2019 and 5 of these samples were scheduled for analysis which was completed on Wednesday October 16, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.
Incorrect sampling dates and/or sample information will affect the validity of results.

Approved By:



Sonia McWhan

Operations Manager

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20810180	C4		0.00 - 0.00	25/09/2019
20810164	LF08_07		0.00 - 0.00	25/09/2019
20810195	LF11_02		0.00 - 0.00	25/09/2019
20810222	LF11_04		0.00 - 0.00	25/09/2019
20810209	LF11_07		0.00 - 0.00	25/09/2019

Maximum Sample/Coolbox Temperature (°C) : 10.2

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

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

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

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

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)									20810180							20810164							20810195				20810222
Customer Sample Reference									C4							LF08_07							LF11_02				LF11_04
AGS Reference																											
Depth (m)									0.00 - 0.00							0.00 - 0.00							0.00 - 0.00				0.00 - 0.00
Container									0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)
Sample Type									LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2									X							X										
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 2									X							X										
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 5										X							X						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: 5												X								X					X	
Dissolved Metals by ICP-MS	All	NDPs: 2 Tests: 5											N							N						X		
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 5									X							X						X				X
Ionic Balance	All	NDPs: 1 Tests: 1									N							X										
Mercury Dissolved	All	NDPs: 0 Tests: 5																										
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2												X								X						
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 2	X													X												
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 5	X													X								X				X

20810209	LF11_07		0.00 - 0.00	Vial (ALE297)	LE																														
				NaOH (ALE245)	LE																X														
				HNO3 Filtered (ALE204)	LE																		X						X						
				H2SO4 (ALE244)	LE						X																								
				0.5l glass bottle (ALE227)	LE																				X										X
20810222	LF11_04		0.00 - 0.00	Vial (ALE297)	LE																														
				NaOH (ALE245)	LE																X														
				HNO3 Filtered (ALE204)	LE																		X						X						

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

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
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SA - Saline Water
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RE - Recreational Water
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UNL - Unspecified Liquid
SL - Sludge
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OTH - Other

Lab Sample No(s)									20810180							20810164						20810195	20810222
Customer Sample Reference									C4							LF08_07						LF11_02	LF11_04
AGS Reference																							
Depth (m)									0.00 - 0.00							0.00 - 0.00						0.00 - 0.00	0.00 - 0.00
Container									0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)
Sample Type									LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 5							X							X						X						X
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 5							X							X						X						X
pH Value	All	NDPs: 0 Tests: 2									X							X										
Phenols by HPLC (W)	All	NDPs: 0 Tests: 5										X							X						X				X
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2									X							X										
Pyrethroids in water by GC-MS	All	NDPs: 0 Tests: 2							X							X												
Sulphide	All	NDPs: 0 Tests: 2													X							X						
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 5							X							X							X						X
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2										X							X										
VOC MS (W)	All	NDPs: 0 Tests: 3																										X	

20810209								
LF11_07								
0.00 - 0.00								
Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	
LE	LE	LE	LE	LE	LE	LE	LE	
				X				
				X				
			X					
				X				
X					X			

20810222								
LF11_04								
0.00 - 0.00								
Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	H2SO4 (ALE244)	0.5l glass bottle (ALE227)	Vial (ALE297)	NaOH (ALE245)	HNO3 Filtered (ALE204)	
LE	LE	LE	LE	LE	LE	LE	LE	
X					X			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	.	.	.	.
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Ionic balance	% Diff	Calulation			-2.41			
Alkalinity, Total as CaCO3	<2 mg/l	TM043		4490 #	3470 #			
Alkalinity,Total as CaCO3 (diss.filt)	<2 mg/l	TM043		4450	3450			
Alkalinity, Bicarbonate as CaCO3 (diss.filt)	<2 mg/l	TM043		4450	3450			
BOD, unfiltered	<1 mg/l	TM045		320 #	67.3 #			
Organic Carbon, Total	<3 mg/l	TM090		984	254			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		2010	663	370	2050 2	1410
Sulphide	<0.01 mg/l	TM101		7.25	0.0582			
COD, unfiltered	<7 mg/l	TM107		1250 #	786 #			
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		10.2 #	10.2 #			
Arsenic (diss.filt)	<0.5 µg/l	TM152		89.8 #	8.02 #	3.89 #	10.5 #	46.1 #
Boron (diss.filt)	<10 µg/l	TM152		8050 #	5620 #	3380 #	192 #	24600 #
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08 #	<0.08 #	<0.08 #	<0.08 #	0.0816 #
Chromium (diss.filt)	<1 µg/l	TM152		107 #	1.35 #	7.44 #	63.3 #	70.3 #
Copper (diss.filt)	<0.3 µg/l	TM152		0.43 #	16.1 #	<0.3 #	0.444 #	0.568 #
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2 #	<0.2 #	<0.2 #	0.954 #	0.926 #
Manganese (diss.filt)	<3 µg/l	TM152		1600 #	1340 #	463 #	5.07 #	154 #
Nickel (diss.filt)	<0.4 µg/l	TM152		81.6 #	147 #	10.9 #	13.7 #	303 #
Selenium (diss.filt)	<1 µg/l	TM152		1.31 #	<1 #	<1 #	1.13 #	1.65 #
Zinc (diss.filt)	<1 µg/l	TM152		12.5 #	13.6 #	9.55 #	8.28 #	6.83 #
Sodium (Dis.Filt)	<0.076 mg/l	TM152		1080 #	31.6 #	508 #	2300 #	2070 #
Magnesium (Dis.Filt)	<0.036 mg/l	TM152		228 #	21.7 #	156 #	58.4 #	90 #
Potassium (Dis.Filt)	<0.2 mg/l	TM152		286 #	337 #	229 #	42.3 #	561 #
Calcium (Dis.Filt)	<0.2 mg/l	TM152		323 #	276 #	174 #	23.6 #	42.5 #
Iron (Dis.Filt)	<0.019 mg/l	TM152		0.498 #	0.0532 #	11.9 #	4.29 #	2.31 #
Hardness, Total as CaCO3	<0.65 mg/l	TM152		1740	780	1080	300	477
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172		1790	596	5130	4690	4940
Mercury (diss.filt)	<0.01 µg/l	TM183		<0.01 #	<0.01 #	<0.01 #	<0.1 #	<0.1 #
Nitrite as NO2	<0.05 mg/l	TM184		<0.05	5.74			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184		7.99	0.143			
Sulphate	<2 mg/l	TM184		<2	1070			
Chloride	<2 mg/l	TM184		1400	1120			

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	-	-	-	-
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Nitrate as NO3	<0.3 mg/l	TM184		<0.3	6.69			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184		<0.1	3.26			
Cyanide, Total	<0.05 mg/l	TM227		<0.05 #	<0.05 #	<0.05 #	0.07 #	0.07 #
Cyanide, Free	<0.05 mg/l	TM227				<0.05 #	<0.05 #	<0.05 #
pH	<1 pH Units	TM256		7.56 #	7.7 #			
Phenol	<0.002 mg/l	TM259		0.08 #	0.01 #			
Cresols	<0.006 mg/l	TM259		<0.06 #	0.02 #			
Xylenols	<0.008 mg/l	TM259		0.08 #	0.01 #			
Phenols, Total Detected monohydric	<0.016 mg/l	TM259		0.16 #	0.04 #	0.08 #	0.25 2 #	0.16 #
Dibutyl tin	<5 ng/l	TM328		<50	<30			
Tributyl tin	<1 ng/l	TM328		<10	<6			
Tetrabutyl tin	<2 ng/l	TM328		<20	<12			
Triphenyl tin	<1 ng/l	TM328		<10	<6			
Surrogate	%	TM328		98.5	85			
Trifluralin	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
alpha-HCH	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
gamma-HCH (Lindane)	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Heptachlor	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.05	<0.1
Aldrin	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
beta-HCH	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Isodrin	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
delta-HCH	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Heptachlor epoxide	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
o,p'-DDE	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Endosulphan I	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
trans-Chlordane	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
cis-Chlordane	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
p,p'-DDE	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Dieldrin	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
o,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Endrin	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.15	<0.1
o,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.15	<0.1

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Results Legend

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*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
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1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	-	-	-	-
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
p,p'-DDD (TDE)	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Endosulphan II	<0.02 µg/l	TM343		<0.04	<0.02	<0.02	<0.1	<0.2
p,p'-DDT	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.2	<0.1
o,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.15	<0.1
p,p'-Methoxychlor	<0.01 µg/l	TM343		<0.02	<0.01	<0.05	<0.2	<0.1
Endosulphan Sulphate	<0.02 µg/l	TM343		<0.04	<0.02	<0.02	<0.2	<0.2
Permethrin I	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
Permethrin II	<0.01 µg/l	TM343		<0.02	<0.01	<0.01	<0.05	<0.1
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Hexachlorobutadiene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344		<0.02	<0.01	0.0416	<0.05	<0.02
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Dichlorvos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Dichlobenil	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Mevinphos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Tecnazene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Hexachlorobenzene	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Demeton-S-methyl	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Phorate	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Diazinon	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Triallate	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Atrazine	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Simazine	<0.01 µg/l	TM344		0.81	<0.01	<0.01	<0.05	<0.02
Disulfoton	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Propetamphos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Chlorpyriphos-methyl	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Dimethoate	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Pirimiphos-methyl	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Chlorpyriphos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Methyl Parathion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Malathion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Fenthion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	-	-	-	-
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Fenitrothion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Triadimefon	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Pendimethalin	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Parathion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Chlorfenvinphos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
trans-Chlordane	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
cis-Chlordane	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Ethion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Carbophenothion	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Triazophos	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Phosalone	<0.01 µg/l	TM344		<0.02	<0.01	<0.01	<0.05	<0.02
Azinphos methyl	<0.02 µg/l	TM344		<0.04	<0.02	<0.02	<0.1	<0.04
Azinphos ethyl	<0.02 µg/l	TM344		<0.04	<0.02	<0.02	<0.1	<0.04
Etridiazole	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Pentachlorobenzene	<0.01 µg/l	TM345		<0.02	<0.01			
Propachlor	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Quintozene (PCNB)	<0.01 µg/l	TM345		<0.02	<0.01			
Omethoate	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Propazine	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Propyzamide	<0.01 µg/l	TM345		<0.02	<0.01			
Alachlor	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Prometryn	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Telodrin	<0.01 µg/l	TM345		<0.02	<0.01			
Terbutryn	<0.01 µg/l	TM345		<0.35	<0.13	<0.02	0.138	0.0417
Chlorothalonil	<0.01 µg/l	TM345		<0.15	<0.15	<0.15	<0.15	<0.15
Etrimphos	<0.01 µg/l	TM345		<0.02	<0.01			
Metazachlor	<0.01 µg/l	TM345		<0.02	<0.01			
Cyanazine	<0.01 µg/l	TM345		<0.02	<0.01			
Trietazine	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Coumaphos	<0.01 µg/l	TM345		<0.02	<0.01	<0.01	<0.05	<0.02
Phosphamidon I	<0.01 µg/l	TM345		<0.02	<0.01			
Phosphamidon II	<0.01 µg/l	TM345		<0.02	<0.01			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	.	.	.	.
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Cypermethrin	<0.05 µg/l	TM398		<0.1	<0.05			

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	.	.	.	.
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Chlorophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Methylphenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Nitroaniline (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
2-Nitrophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
3-Nitroaniline (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Chloroaniline (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Methylphenol (aq)	<1 µg/l	TM176		407	<20	<2	<40	<40
4-Nitroaniline (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
4-Nitrophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Azobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Acenaphthylene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Acenaphthene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Anthracene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<20	<40	<4	<80	105
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	-	-	-	-
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Carbazole (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Chrysene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Dibenzofuran (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Diethyl phthalate (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Dimethyl phthalate (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<50	<100	<10	<200	<200
Fluoranthene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Fluorene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Hexachlorobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Pentachlorophenol (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Phenol (aq)	<1 µg/l	TM176		16.8	<20	<2	<40	<40
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Hexachloroethane (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Nitrobenzene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Naphthalene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Isophorone (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Phenanthrene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
Pyrene (aq)	<1 µg/l	TM176		<10	<20	<2	<40	<40
SVOC TIC (aq)		TM176		Detected	Detected	Detected	Detected	Detected
Total SVOC TIC	<10 µg/l	TM176		6090	2770	1090	4010	7360
Benzenemethanol	µg/l	TM176		119				
Benzothiazolone	µg/l	TM176		1350		242		

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

SVOC MS (W) - Aqueous

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	25/09/2019	25/09/2019	25/09/2019	25/09/2019	25/09/2019
			Sampled Time	00:00:00	-	-	-	-
			Date Received	26/09/2019	26/09/2019	26/09/2019	26/09/2019	26/09/2019
			SDG Ref	190926-94	190926-94	190926-94	190926-94	190926-94
			Lab Sample No.(s)	20810180	20810164	20810195	20810222	20810209
			AGS Reference					
Dimethylheptanoic acid	µg/l	TM176		184				
Ditertbutylhydroxyphenylpropionic acid	µg/l	TM176		145	416	156	936	992
Hexadecanoic acid	µg/l	TM176			559	47.8		
Mercaptobenzothiazole	µg/l	TM176		121				
Methylbenzoic acid	µg/l	TM176		337				
Methylethylidenebisphenol	µg/l	TM176						1280
Mixed Hydrocarbons	µg/l	TM176		1290		405	1730	1750
Octadecanoic acid	µg/l	TM176			427	27.3		
Triethyl phosphate	µg/l	TM176		162				
Triisopropylphosphate	µg/l	TM176		2380	706	27.1		
Trimethylhexanoic acid	µg/l	TM176			658	186	1340	3340

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

VOC MS (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - 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	Customer Sample Ref.	LF11_02	LF11_04	LF11_07			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)			
			Date Sampled	25/09/2019	25/09/2019	25/09/2019			
			Sampled Time	.	.	.			
			Date Received	26/09/2019	26/09/2019	26/09/2019			
			SDG Ref	190926-94	190926-94	190926-94			
			Lab Sample No.(s)	20810195	20810222	20810209			
			AGS Reference						
Dibromofluoromethane**	%	TM208		111	111	106			
Toluene-d8**	%	TM208		99.3	98.6	98.9			
4-Bromofluorobenzene**	%	TM208		97.5	95.5	96.4			
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1			
Chloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Vinyl chloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Trichlorofluoromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbon disulphide	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dichloromethane	<3 µg/l	TM208		<3 #	<3 #	<3 #			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1 #	1.26 #	1.44 #			
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1 #	<1 #	1.59 #			
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1			
Bromochloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Chloroform	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,1-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Carbontetrachloride	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Benzene	<1 µg/l	TM208		5.15 #	5.93 #	5.63 #			
Trichloroethene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,2-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Dibromomethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Bromodichloromethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
Toluene	<1 µg/l	TM208		1.06 #	6.6 #	2.02 #			
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #	<1 #			

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Customer Sample Ref.	LF11_02	LF11_04	LF11_07			
Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)			
Date Sampled	25/09/2019	25/09/2019	25/09/2019			
Sampled Time	-	-	-			
Date Received	26/09/2019	26/09/2019	26/09/2019			
SDG Ref	190926-94	190926-94	190926-94			
Lab Sample No.(s)	20810195	20810222	20810209			
AGS Reference						

Component	LOD/Units	Method						
1,3-Dichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Tetrachloroethene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Dibromochloromethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dibromoethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Chlorobenzene	<1 µg/l	TM208	4.17	#	<1	#	1.2	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Ethylbenzene	<1 µg/l	TM208	<1	#	10.4	#	10.2	#
m,p-Xylene	<1 µg/l	TM208	27.3	#	14.7	#	7.83	#
o-Xylene	<1 µg/l	TM208	3.78	#	9.51	#	10.4	#
Styrene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromoform	<1 µg/l	TM208	<1	#	<1	#	<1	#
Isopropylbenzene	<1 µg/l	TM208	2.56	#	<1	#	1.1	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	#	<1	#	<1	#
Bromobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Propylbenzene	<1 µg/l	TM208	1.7	#	<1	#	<1	#
2-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	#	2.5	#	2.8	#
4-Chlorotoluene	<1 µg/l	TM208	<1	#	<1	#	<1	#
tert-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208	6.62	#	9.32	#	9.09	#
sec-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
4-iso-Propyltoluene	<1 µg/l	TM208	<1	#	9.97	#	1.02	#
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,4-Dichlorobenzene	<1 µg/l	TM208	1.88	#	<1	#	1.23	#
n-Butylbenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
1,2-Dichlorobenzene	<1 µg/l	TM208	1.61	#	<1	#	<1	#
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1		<1		<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	#	<1	#	<1	#
Hexachlorobutadiene	<1 µg/l	TM208	<1	#	<1	#	<1	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	#	<1	#	<1	#
Naphthalene	<1 µg/l	TM208	2.05	#	2.1	#	7.13	#

Validated

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

VOC MS (W)

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS accredited.
aq	Aqueous / settled sample.
diss.filt	Dissolved / filtered sample.
tot.unfilt	Total / unfiltered sample.
*	Subcontracted - refer to subcontractor report for accreditation status.
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery
(F)	Trigger breach confirmed
1-3+§@	Sample deviation (see appendix)

Component	LOD/Units	Method	Customer Sample Ref.	LF11_02	LF11_04	LF11_07			
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Land Leachate (LE)	Land Leachate (LE)	Land Leachate (LE)			
			Date Sampled	25/09/2019	25/09/2019	25/09/2019			
			Sampled Time	-	-	-			
			Date Received	26/09/2019	26/09/2019	26/09/2019			
			SDG Ref	190926-94	190926-94	190926-94			
			Lab Sample No.(s)	20810195	20810222	20810209			
			AGS Reference						
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #	<1 #			
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1	<1			

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Notification of NDPs (No determination possible)

Date Received : 26/09/2019 14:23:04

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
20810180	C4	0.00 - 0.00	Ionic Balance	Insufficient Sample
20810164	LF08_07	0.00 - 0.00	Dissolved Metals by ICP-MS	Insufficient Sample
20810180	C4	0.00 - 0.00	Dissolved Metals by ICP-MS	Insufficient Sample

Table of Results - Appendix

Method No	Reference	Description
Calulation		
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and water samples using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
TM328		
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
TM398		Pyrethroids in water by GC-MS

NA = not applicable.

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

CERTIFICATE OF ANALYSIS

SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Test Completion Dates

Lab Sample No(s)	20810180	20810164	20810195	20810222	20810209
Customer Sample Ref.	C4	LF08_07	LF11_02	LF11_04	LF11_07
AGS Ref.					
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Land Leachate	Land Leachate	Land Leachate	Land Leachate	Land Leachate
Alkalinity as CaCO3	04-Oct-2019	03-Oct-2019			
Alkalinity Filtered as CaCO3	04-Oct-2019	04-Oct-2019			
Ammoniacal Nitrogen	15-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019
Anions by ion Chromatography	16-Oct-2019				
Anions by Kone (w)	03-Oct-2019	03-Oct-2019			
BOD True Total	03-Oct-2019	03-Oct-2019			
COD Unfiltered	01-Oct-2019	01-Oct-2019			
Conductivity (at 20 deg.C)	03-Oct-2019	03-Oct-2019			
Cyanide Comp/Free/Total/Thiocyanate	01-Oct-2019	01-Oct-2019	01-Oct-2019	01-Oct-2019	01-Oct-2019
Dissolved Metals by ICP-MS	16-Oct-2019	16-Oct-2019	10-Oct-2019	08-Oct-2019	10-Oct-2019
EPH (DRO) (C10-C40) Aqueous (W)	04-Oct-2019	04-Oct-2019	04-Oct-2019	04-Oct-2019	04-Oct-2019
Ionic Balance		16-Oct-2019			
Mercury Dissolved	01-Oct-2019	01-Oct-2019	01-Oct-2019	02-Oct-2019	02-Oct-2019
Nitrite by Kone (w)	30-Sep-2019	30-Sep-2019			
Organotins in Aqueous Samples	01-Oct-2019	01-Oct-2019			
Pesticides (Suite I) by GCMS	07-Oct-2019	04-Oct-2019	04-Oct-2019	02-Oct-2019	07-Oct-2019
Pesticides (Suite II) by GCMS	02-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019
Pesticides (Suite III) by GCMS	03-Oct-2019	03-Oct-2019	03-Oct-2019	03-Oct-2019	03-Oct-2019
pH Value	03-Oct-2019	03-Oct-2019			
Phenols by HPLC (W)	02-Oct-2019	01-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019
Phosphate by Kone (w)	27-Sep-2019	27-Sep-2019			
Pyrethroids in water by GC-MS	01-Oct-2019	01-Oct-2019			
Sulphide	03-Oct-2019	03-Oct-2019			
SVOC MS (W) - Aqueous	02-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019	02-Oct-2019
Total Organic and Inorganic Carbon	01-Oct-2019	01-Oct-2019			
VOC MS (W)			02-Oct-2019	02-Oct-2019	02-Oct-2019

CERTIFICATE OF ANALYSIS

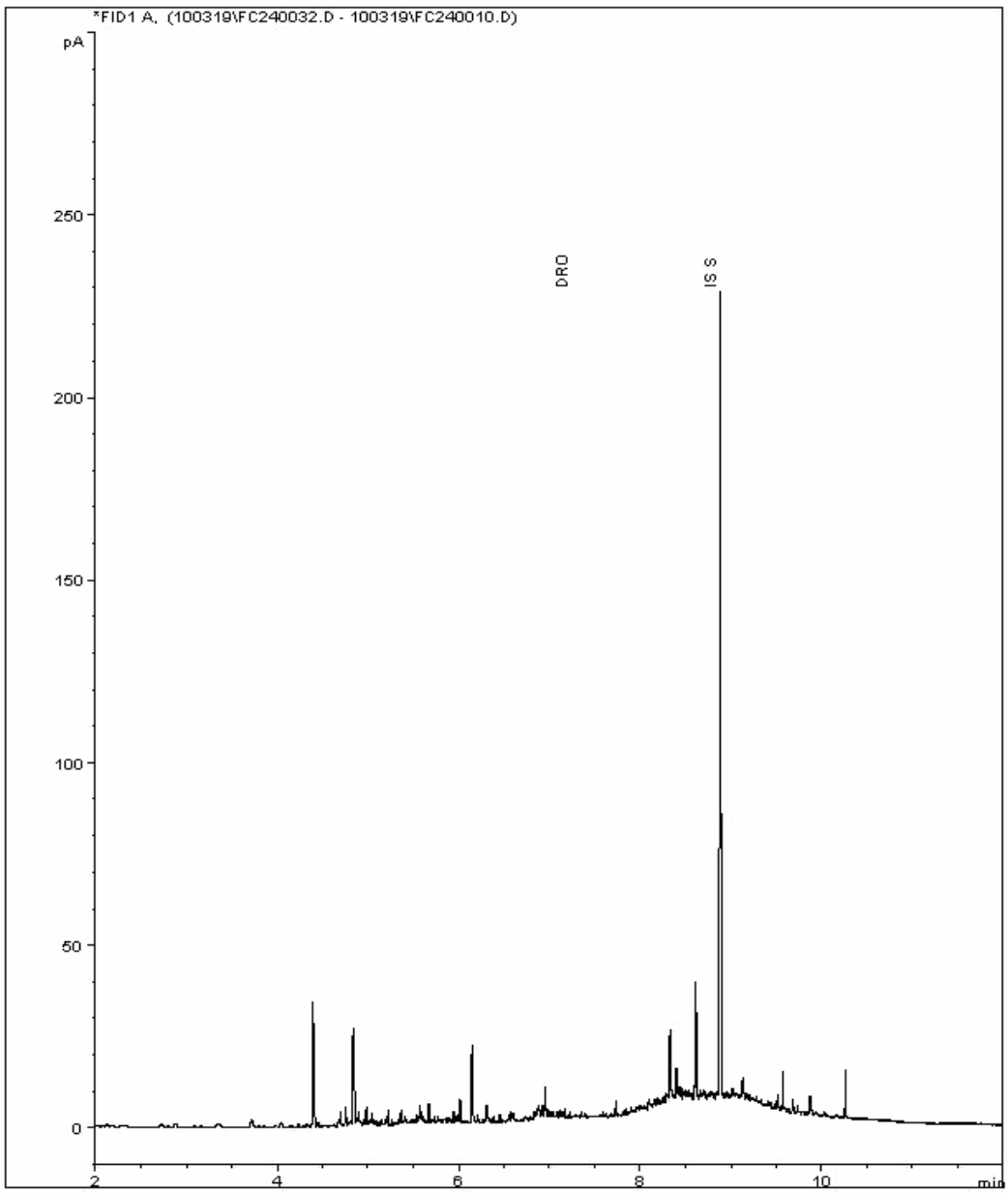
SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 20813072 **Sample ID :** LF11_07 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 19553687-
Date Acquired : 03/10/2019 23:47:30 PM
Units : ppm



CERTIFICATE OF ANALYSIS

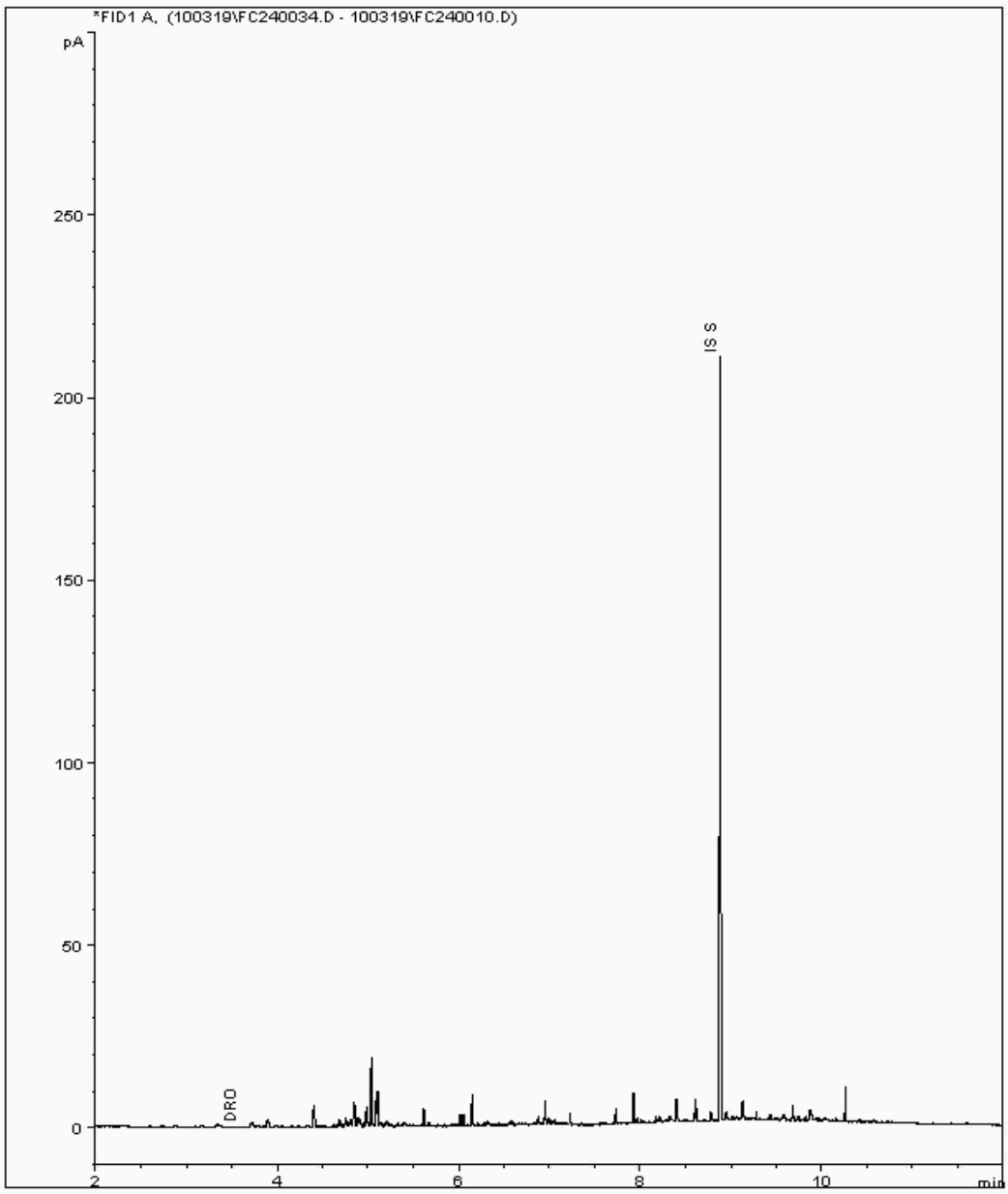
SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 20813085 **Sample ID :** LF11_04 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 19553705-
Date Acquired : 04/10/2019 00:36:32 PM
Units : ppm



CERTIFICATE OF ANALYSIS

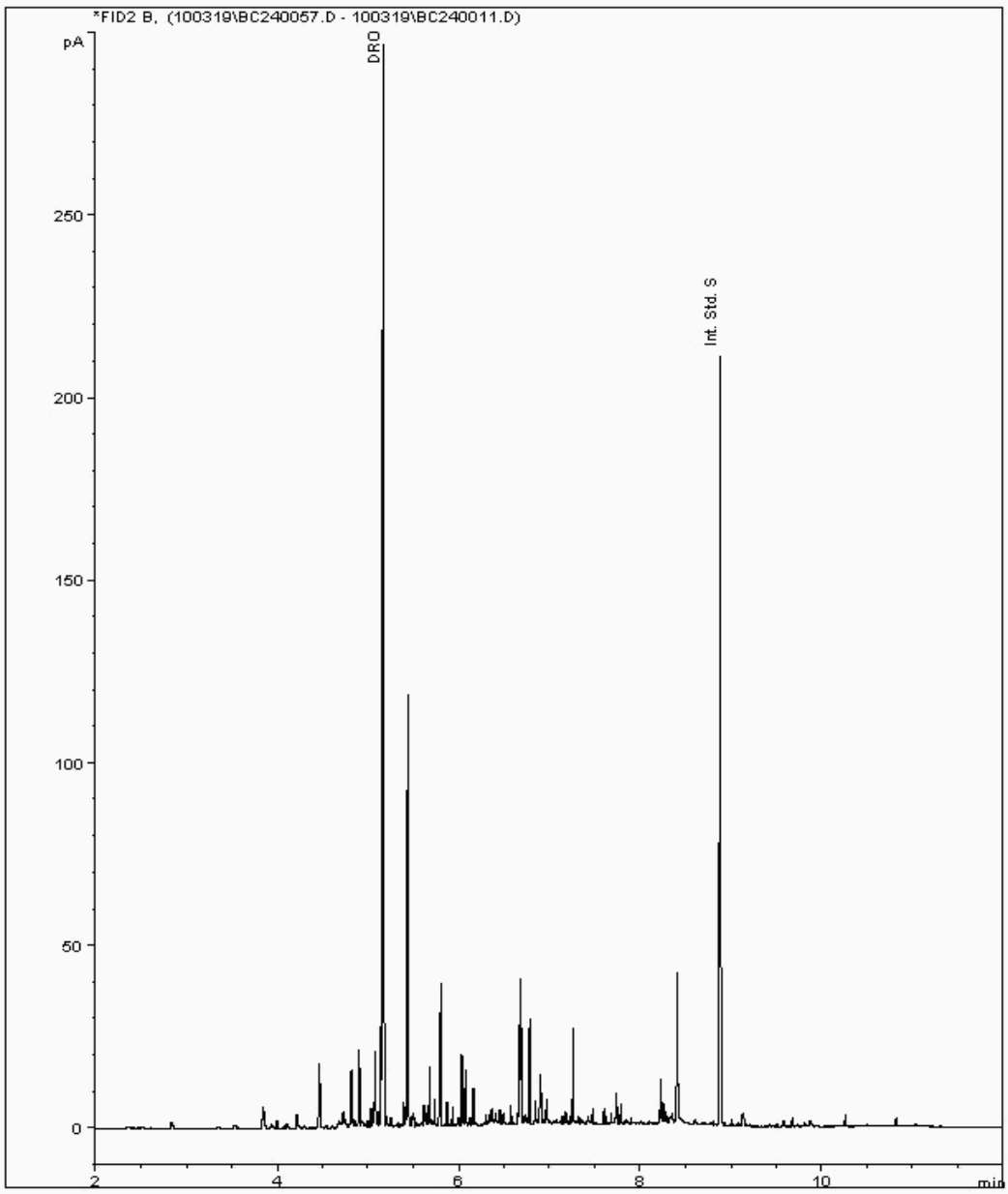
SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 20813740 **Sample ID :** C4 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 19553635-
Date Acquired : 04/10/2019 09:44:29 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

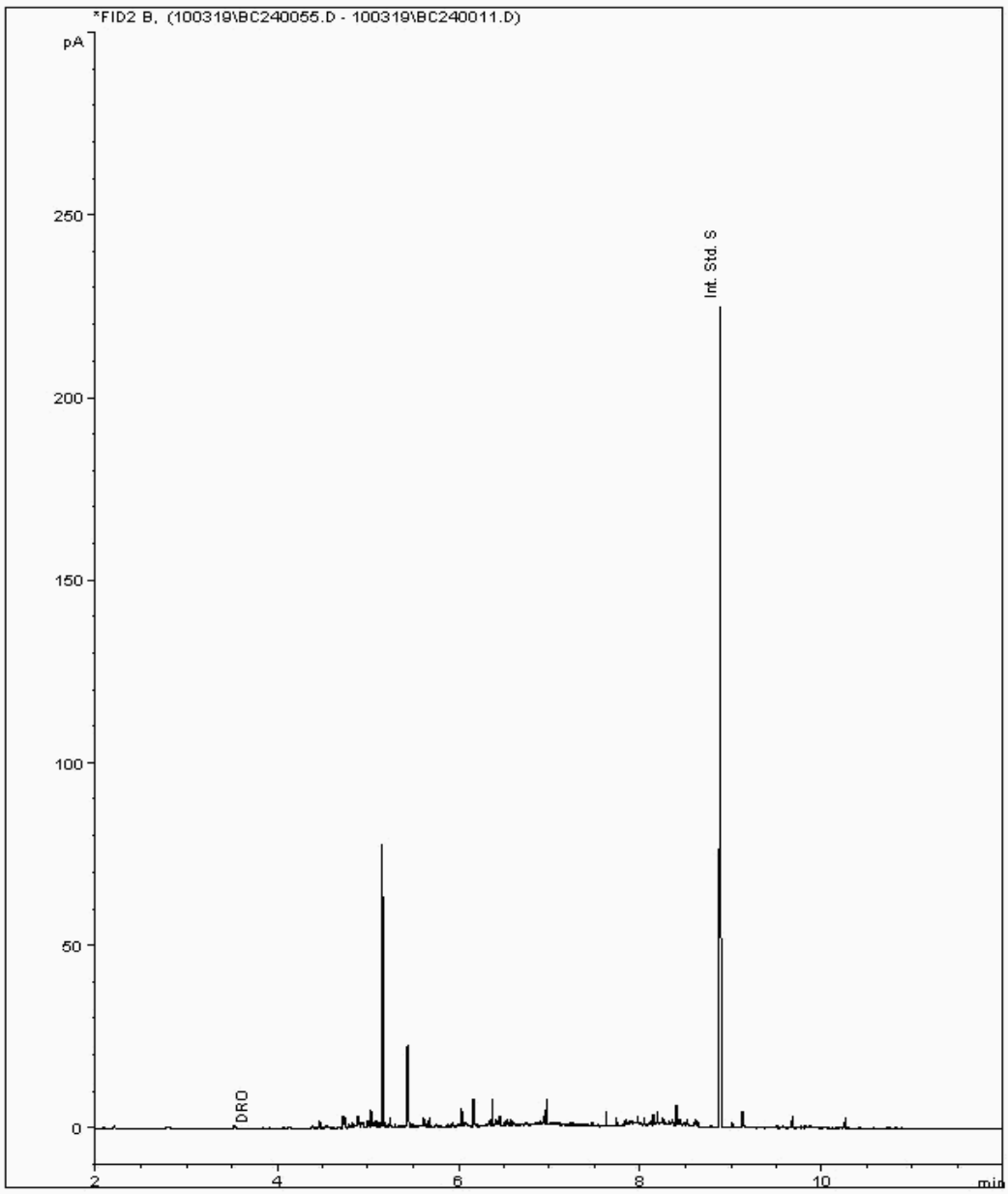
SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 20813751 **Sample ID :** LF08_07 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 19553595-
Date Acquired : 04/10/2019 08:59:33 PM
Units : mg/l



CERTIFICATE OF ANALYSIS

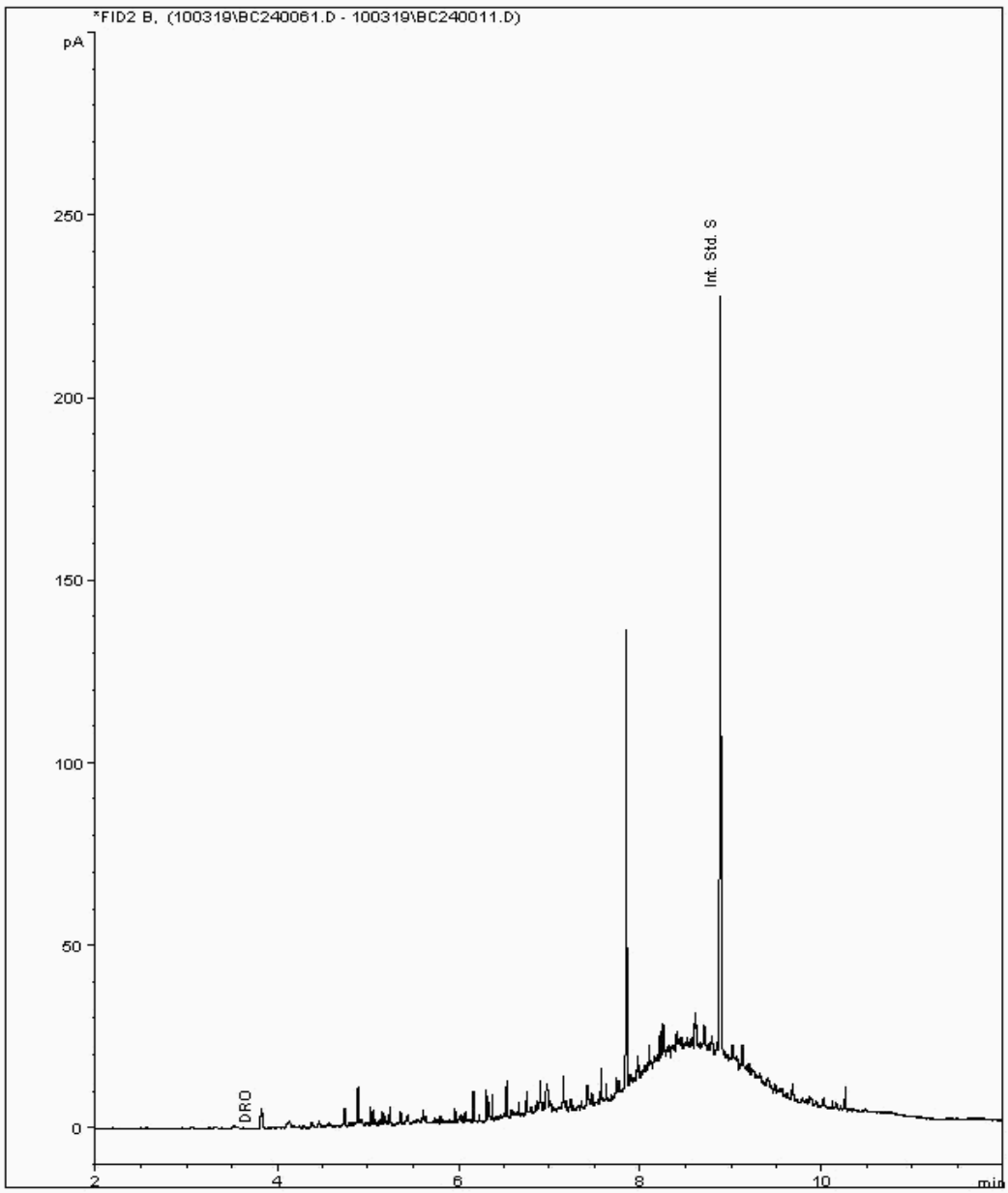
SDG:	190926-94	**Client Reference:**	Leachate Sept Part 2	**Report Number:**	525949
Location:	Docks Way	**Order Number:**	700142918	**Superseded Report:**	525926

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 20817287 **Sample ID :** LF11_02 **Depth :** 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 19553667-
Date Acquired : 04/10/2019 11:25:56 PM
Units : mg/l



Appendix General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

17. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as “mixed hydrocarbons”. Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

18. **Sample Deviations**

If a sample is classed as deviated then the associated results may be compromised.

1	**Container with Headspace provided for volatiles analysis**
2	**Incorrect container received**
3	**Deviation from method**
§	**Sampled on date not provided**
♦	**Sample holding time exceeded in laboratory**
@	**Sample holding time exceeded due to late arrival of instructions or samples**

19. **Asbestos**

When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as “Not detected”. If no asbestos fibre types are found all will be reported as “Not detected” and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of

Identification of Asbestos in Bulk Materials & Soils

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

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

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

Visual Estimation Of Fibre Content

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

Respirable Fibres

Respirable fibres are defined as fibres of <3 µm diameter, longer than 5 µm and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.
Standing Committee of Analysts, *The Quantification of Asbestos in Soil (2107).*

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.