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Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Kate Riley

CERTIFICATE OF ANALYSIS

Date of report Generation: 08 January 2019
Customer: H_NCC_NPT
Sample Delivery Group (SDG): 181215-31
Your Reference:
Location: Docksway Landfill Site
Report No: 487527

We received 1 sample on Saturday December 15, 2018 and 1 of these samples were scheduled for analysis which was completed on Tuesday January 08, 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.

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: 181215-31	Client Reference:	Report Number: 487527
Location: Docksway Landfill Site	Order Number: 700124102	Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
18971949	LF11_05		0.00 - 0.00	14/12/2018

Maximum Sample/Coolbox Temperature (°C) : 5.2

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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Location: Docksway Landfill Site **Order Number:** 700124102 **Superseded Report:**

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; display: flex; align-items: center; justify-content: center;">N</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	0.5l glass bottle (ALE227)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	Sample Type	LE	LE	LE	LE	LE
		18971949				
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 1	X			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1			X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1		X		
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 1	X			
Mercury Dissolved	All	NDPs: 0 Tests: 1		X		
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 1	X			
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 1	X			
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 1	X			
Phenols by HPLC (W)	All	NDPs: 0 Tests: 1		X		
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1	X			
VOC MS (W)	All	NDPs: 0 Tests: 1				X



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Location:	Docksway Landfill Site	Order Number:	Superseded Report:

Results Legend		Customer Sample Ref.	LF11_05			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % 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 1-5&*\$@ Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Land Leachate (LE) 14/12/2018 15/12/2018 181215-31 18971949				
Component	LOD/Units	Method				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	1560			
Arsenic (diss.filt)	<0.5 µg/l	TM152	69.7	#		
Nickel (diss.filt)	<0.4 µg/l	TM152	492	#		
Potassium (Dis.Filt)	<0.2 mg/l	TM152	680	#		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	3700000			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.1	#		
Cyanide, Total	<0.05 mg/l	TM227	0.06	#		
Cyanide, Free	<0.05 mg/l	TM227	<0.05	#		
Phenols, Total Detected monohydric	<0.016 mg/l	TM259	0.22	◆ #		
Trifluralin	<0.01 µg/l	TM343	<0.2			
alpha-HCH	<0.01 µg/l	TM343	<0.2			
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.2			
Heptachlor	<0.01 µg/l	TM343	<0.2			
Aldrin	<0.01 µg/l	TM343	<0.2			
beta-HCH	<0.01 µg/l	TM343	<0.2			
Isodrin	<0.01 µg/l	TM343	<0.2			
delta-HCH	<0.01 µg/l	TM343	<0.2			
Heptachlor epoxide	<0.01 µg/l	TM343	<0.2			
o,p'-DDE	<0.01 µg/l	TM343	<0.2			
Endosulphan I	<0.01 µg/l	TM343	<0.2			
trans-Chlordane	<0.01 µg/l	TM343	<0.2			
cis-Chlordane	<0.01 µg/l	TM343	<0.2			
p,p'-DDE	<0.01 µg/l	TM343	<0.2			
Dieldrin	<0.01 µg/l	TM343	<0.2			
o,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.2			
Endrin	<0.01 µg/l	TM343	<0.2			
o,p'-DDT	<0.01 µg/l	TM343	<0.2			
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.2			
Endosulphan II	<0.02 µg/l	TM343	<0.4			
p,p'-DDT	<0.01 µg/l	TM343	<0.2			
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.2			
p,p'-Methoxychlor	<0.01 µg/l	TM343	<0.2			



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SDG:	181215-31	Client Reference:	700124102	Report Number:	487527
Location:	Docksway Landfill Site	Order Number:		Superseded Report:	

Component	LOD/Units	Method	Customer Sample Ref.	Depth (m)	Sample Type	Date Sampled	Sampled Time	Date Received	SDG Ref	Lab Sample No.(s)	AGS Reference
<div style="font-size: small;"> Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % 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 1-5&*\$@ Sample deviation (see appendix) </div>											
Endosulphan Sulphate	<0.02 µg/l	TM343	LF11_05	0.00 - 0.00	Land Leachate (LE)	14/12/2018		15/12/2018	181215-31	18971949	
Permethrin I	<0.01 µg/l	TM343									
Permethrin II	<0.01 µg/l	TM343									
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344									
Hexachlorobutadiene	<0.01 µg/l	TM344									
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344									
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									
Parathion	<0.01 µg/l	TM344									
Chlorfenvinphos	<0.01 µg/l	TM344									
Ethion	<0.01 µg/l	TM344									



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Client Reference:
Order Number: 700124102

Report Number: 487527
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	LF11_05					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00					
M	mCERTS accredited.		Land Leachate (LE)					
aq	Aqueous / settled sample.		14/12/2018					
diss.filt	Dissolved / filtered sample.		.					
tot.unfilt	Total / unfiltered sample.		15/12/2018					
*	Subcontracted test.		181215-31					
**	% 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		18971949					
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<100	♦				
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<100	♦				
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<100	♦				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<100	♦				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<100	♦				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<100	♦				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<100	♦				
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<100	♦				
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<100	♦				
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<100	♦				
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<100	♦				
2-Chlorophenol (aq)	<1 µg/l	TM176	<100	♦				
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<100	♦				
2-Methylphenol (aq)	<1 µg/l	TM176	<100	♦				
2-Nitroaniline (aq)	<1 µg/l	TM176	<100	♦				
2-Nitrophenol (aq)	<1 µg/l	TM176	<100	♦				
3-Nitroaniline (aq)	<1 µg/l	TM176	<100	♦				
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<100	♦				
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<100	♦				
4-Chloroaniline (aq)	<1 µg/l	TM176	<100	♦				
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<100	♦				
4-Methylphenol (aq)	<1 µg/l	TM176	<100	♦				
4-Nitroaniline (aq)	<1 µg/l	TM176	<100	♦				
4-Nitrophenol (aq)	<1 µg/l	TM176	<100	♦				
Azobenzene (aq)	<1 µg/l	TM176	<100	♦				
Acenaphthylene (aq)	<1 µg/l	TM176	<100	♦				
Acenaphthene (aq)	<1 µg/l	TM176	<100	♦				
Anthracene (aq)	<1 µg/l	TM176	<100	♦				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<100	♦				
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<100	♦				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	17000	♦				
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<100	♦				



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SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	LF11_05				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00				
M	mCERTS accredited.		Land Leachate (LE)				
aq	Aqueous / settled sample.		14/12/2018				
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.						
*	Subcontracted test.						
**	% 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		15/12/2018				
(F)	Trigger breach confirmed		181215-31				
1-5&*\$@	Sample deviation (see appendix)		18971949				
Component	LOD/Units		Method				
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<100	♦			
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<100	♦			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<100	♦			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<100	♦			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<100	♦			
Carbazole (aq)	<1 µg/l	TM176	<100	♦			
Chrysene (aq)	<1 µg/l	TM176	<100	♦			
Dibenzofuran (aq)	<1 µg/l	TM176	<100	♦			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<100	♦			
Diethyl phthalate (aq)	<1 µg/l	TM176	<100	♦			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<100	♦			
Dimethyl phthalate (aq)	<1 µg/l	TM176	<100	♦			
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<500	♦			
Fluoranthene (aq)	<1 µg/l	TM176	108	♦			
Fluorene (aq)	<1 µg/l	TM176	<100	♦			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<100	♦			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<100	♦			
Pentachlorophenol (aq)	<1 µg/l	TM176	<100	♦			
Phenol (aq)	<1 µg/l	TM176	<100	♦			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<100	♦			
Hexachloroethane (aq)	<1 µg/l	TM176	<100	♦			
Nitrobenzene (aq)	<1 µg/l	TM176	<100	♦			
Naphthalene (aq)	<1 µg/l	TM176	<100	♦			
Isophorone (aq)	<1 µg/l	TM176	<100	♦			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<100	♦			
Phenanthrene (aq)	<1 µg/l	TM176	<100	♦			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<100	♦			
Pyrene (aq)	<1 µg/l	TM176	<100	♦			



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Client Reference:
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VOC MS (W)

Results Legend		Customer Sample Ref.	LF11_05				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % 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 1-5&*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Land Leachate (LE) 14/12/2018 15/12/2018 181215-31 18971949				
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	109				
Toluene-d8**	%	TM208	91.5				
4-Bromofluorobenzene**	%	TM208	84.5				
Dichlorodifluoromethane	<1 µg/l	TM208	<10				
Chloromethane	<1 µg/l	TM208	<10	◆ #			
Vinyl chloride	<1 µg/l	TM208	<10	◆ #			
Bromomethane	<1 µg/l	TM208	<10	#			
Chloroethane	<1 µg/l	TM208	<10	#			
Trichlorofluoromethane	<1 µg/l	TM208	<10	◆ #			
1,1-Dichloroethene	<1 µg/l	TM208	<10	#			
Carbon disulphide	<1 µg/l	TM208	<10	#			
Dichloromethane	<3 µg/l	TM208	<30	#			
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208	<10	#			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<10	#			
1,1-Dichloroethane	<1 µg/l	TM208	<10	#			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<10	#			
2,2-Dichloropropane	<1 µg/l	TM208	<10	#			
Bromochloromethane	<1 µg/l	TM208	<10	#			
Chloroform	<1 µg/l	TM208	<10	#			
1,1,1-Trichloroethane	<1 µg/l	TM208	<10	#			
1,1-Dichloropropene	<1 µg/l	TM208	<10	#			
Carbontetrachloride	<1 µg/l	TM208	<10	#			
1,2-Dichloroethane	<1 µg/l	TM208	<10	#			
Benzene	<1 µg/l	TM208	10.2	#			
Trichloroethene	<1 µg/l	TM208	<10	#			
1,2-Dichloropropane	<1 µg/l	TM208	<10	#			
Dibromomethane	<1 µg/l	TM208	<10	#			
Bromodichloromethane	<1 µg/l	TM208	<10	#			
cis-1,3-Dichloropropene	<1 µg/l	TM208	<10	#			
Toluene	<1 µg/l	TM208	19.1	#			
trans-1,3-Dichloropropene	<1 µg/l	TM208	<10	#			
1,1,2-Trichloroethane	<1 µg/l	TM208	<10	#			



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VOC MS (W)

Results Legend		Customer Sample Ref.	LF11_05					
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00					
M	mCERTS accredited.		Land Leachate (LE)					
aq	Aqueous / settled sample.		14/12/2018					
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% 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		15/12/2018					
(F)	Trigger breach confirmed		181215-31					
1-5&*\$@	Sample deviation (see appendix)		18971949					
Component	LOD/Units		Method					
1,3-Dichloropropane	<1 µg/l	TM208	<10	#				
Tetrachloroethene	<1 µg/l	TM208	<10	#				
Dibromochloromethane	<1 µg/l	TM208	<10	#				
1,2-Dibromoethane	<1 µg/l	TM208	<10	#				
Chlorobenzene	<1 µg/l	TM208	<10	#				
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<10	#				
Ethylbenzene	<1 µg/l	TM208	30.1	#				
m,p-Xylene	<1 µg/l	TM208	64	#				
o-Xylene	<1 µg/l	TM208	34	#				
Styrene	<1 µg/l	TM208	<10	#				
Bromoform	<1 µg/l	TM208	<10	#				
Isopropylbenzene	<1 µg/l	TM208	21.6	#				
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<10	#				
1,2,3-Trichloropropane	<1 µg/l	TM208	<10	#				
Bromobenzene	<1 µg/l	TM208	<10	#				
Propylbenzene	<1 µg/l	TM208	<10	#				
2-Chlorotoluene	<1 µg/l	TM208	<10	#				
1,3,5-Trimethylbenzene	<1 µg/l	TM208	18.9	#				
4-Chlorotoluene	<1 µg/l	TM208	<10	#				
tert-Butylbenzene	<1 µg/l	TM208	<10	#				
1,2,4-Trimethylbenzene	<1 µg/l	TM208	43.3	#				
sec-Butylbenzene	<1 µg/l	TM208	<10	#				
4-iso-Propyltoluene	<1 µg/l	TM208	79.4	#				
1,3-Dichlorobenzene	<1 µg/l	TM208	<10	#				
1,4-Dichlorobenzene	<1 µg/l	TM208	<10	#				
n-Butylbenzene	<1 µg/l	TM208	<10	◆ #				
1,2-Dichlorobenzene	<1 µg/l	TM208	<10	◆ #				
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<10					
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<10	◆ #				
Hexachlorobutadiene	<1 µg/l	TM208	<10	◆ #				
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<10	#				
Naphthalene	<1 µg/l	TM208	20.8	#				



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Location:	Docksway Landfill Site	Order Number:	700124102	Superseded Report:	



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SDG: 181215-31 Client Reference: Report Number: 487527
Location: Docksway Landfill Site Order Number: 700124102 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM099	BS 2690: Part 7:1968 / BS 6068: Part 2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
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
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
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC
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

NA = not applicable.

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 181215-31 Client Reference: Report Number: 487527
 Location: Docksway Landfill Site Order Number: 700124102 Superseded Report:

Test Completion Dates

Lab Sample No(s)	18971949
Customer Sample Ref.	LF11_05
AGS Ref.	
Depth	0.00 - 0.00
Type	Land Leachate

Ammoniacal Nitrogen	31-Dec-2018
Cyanide Comp/Free/Total/Thiocyanate	21-Dec-2018
Dissolved Metals by ICP-MS	28-Dec-2018
EPH (DRO) (C10-C40) Aqueous (W)	03-Jan-2019
Mercury Dissolved	21-Dec-2018
Pesticides (Suite I) by GCMS	27-Dec-2018
Pesticides (Suite II) by GCMS	21-Dec-2018
Pesticides (Suite III) by GCMS	21-Dec-2018
Phenols by HPLC (W)	08-Jan-2019
SVOC MS (W) - Aqueous	07-Jan-2019
VOC MS (W)	04-Jan-2019



CERTIFICATE OF ANALYSIS

Validated

SDG: 181215-31
Location: Docksway Landfill Site

Client Reference:
Order Number: 700124102

Report Number: 487527
Superseded Report:

Chromatogram

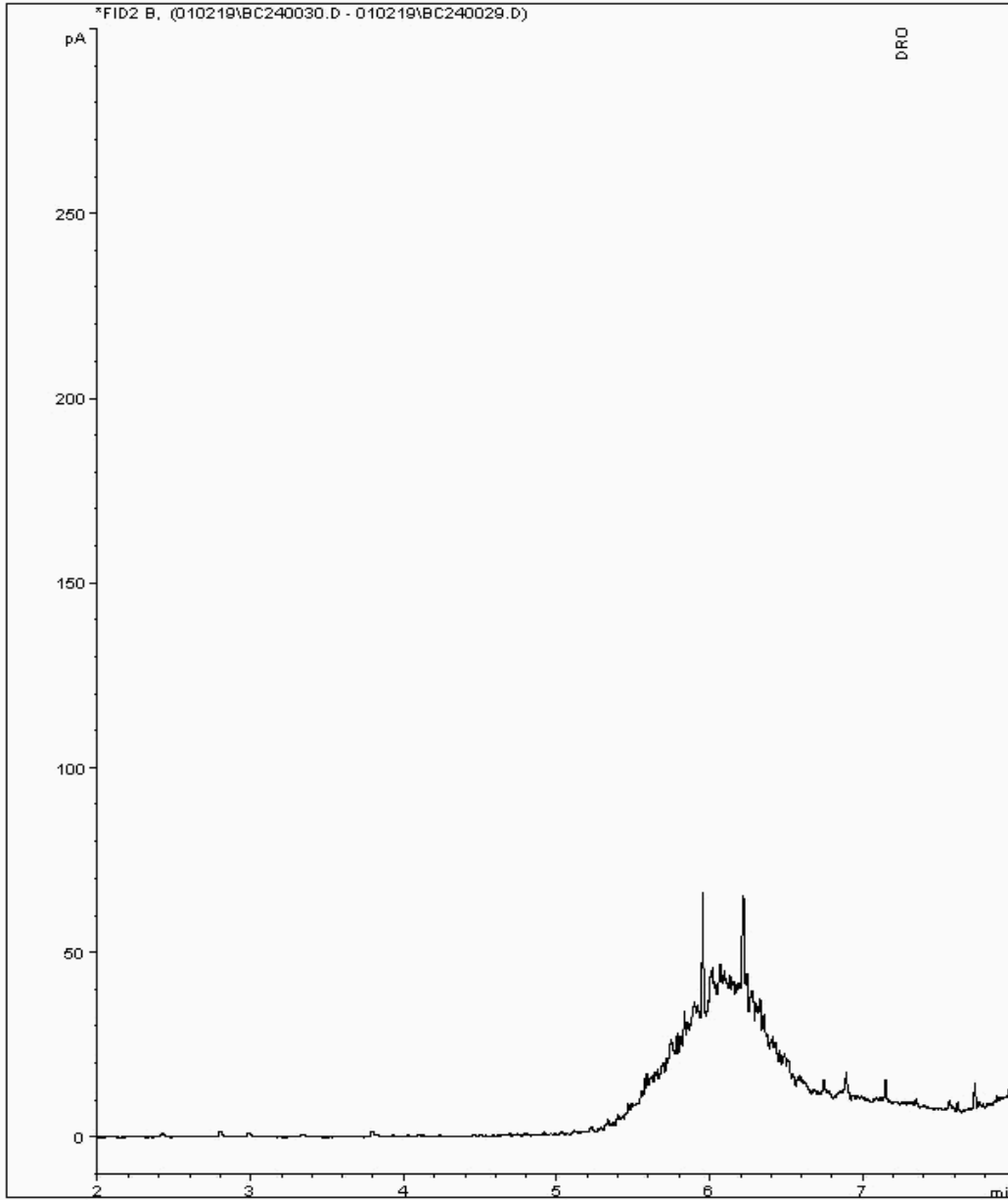
Analysis: EPH (DRO) (C10-C40) Aqueous (W)

Sample No : 18978871
Sample ID : LF11_05

Depth : 0.00 - 0.00

EPH Range Organics (C10 - C40)

Sample Identity: 17826280-
Date Acquired : 03/01/2019 09:17:26 PM
Units : mg/l





CERTIFICATE OF ANALYSIS

SDG: 181215-31	Client Reference:	Report Number: 487527
Location: Docksway Landfill Site	Order Number: 700124102	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. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. 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.

4. 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.

5. 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.

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

7. 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.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

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

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

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

13. **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.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

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

18. 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.

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

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

21. 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.

22. 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.

23. 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.

24. **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.

Sample Deviations

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

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
§	Sampled on date not provided
◆	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

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).

Astestost Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Coisidolite	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.

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.