Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US
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Newport City Council
Civic Centre
Newport
NP20 4UR

Attention: Kate Riley

CERTIFICATE OF ANALYSIS

Date of report Generation:	08 February 2019
Customer:	H_NCC_NPT
Sample Delivery Group (SDG):	190124-63
Your Reference:	
Location:	Docksway Landfill Site
Report No:	491814

This report has been revised and directly supersedes 491180 in its entirety.

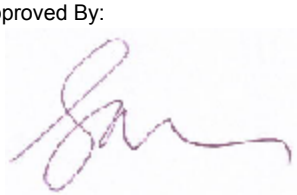
We received 8 samples on Thursday January 24, 2019 and 8 of these samples were scheduled for analysis which was completed on Friday February 08, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 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.

Approved By:



Sonia McWhan

Operations Manager

1291

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
19186328	C3_Asb		0.00 - 0.00	23/01/2019
19186296	C2B		0.00 - 0.00	23/01/2019
19186313	C1C		0.00 - 0.00	23/01/2019
19186269	SW_23		0.00 - 0.00	23/01/2019
19186274	SW_24		0.00 - 0.00	23/01/2019
19186278	SW_25		0.00 - 0.00	23/01/2019
19186285	SW_26		0.00 - 0.00	23/01/2019
19186290	SW_1A		0.00 - 0.00	23/01/2019

Maximum Sample/Coolbox Temperature (°C) : **2.4**

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

Validated

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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)			19186328					19186296										19186313								19186269
Customer Sample Reference			C3_Asb					C2B										C1C								SW_23
AGS Reference																										
Depth (m)			0.00 - 0.00					0.00 - 0.00										0.00 - 0.00								0.00 - 0.00
Container			250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	250ml BOD (ALE212)				
Sample Type			SW	SW	SW	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	LE	SW			
Alkalinity Filtered as CaCO3	All	NDPs: 0 Tests: 2						X								X										
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 8			X				X								X									
Anions by Kone (w)	All	NDPs: 0 Tests: 8		X				X								X										
Asbestos in Water*	All	NDPs: 0 Tests: 1		X																						
BOD True Total	All	NDPs: 0 Tests: 8	X				X								X								X			
COD Unfiltered	All	NDPs: 0 Tests: 8	X				X								X								X			
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 8		X				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 Titration	All	NDPs: 0 Tests: 2																								
EPH (DRO) (C10-C40) Aqueous (W)	All	NDPs: 0 Tests: 2				X								X												
Ionic Balance	All	NDPs: 0 Tests: 2						X								X										
Mercury Dissolved	All	NDPs: 0 Tests: 2								X								X								
Nitrite by Kone (w)	All	NDPs: 0 Tests: 2									X								X							
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 2				X								X												

19186290	SW_1A		0.00 - 0.00	H2SO4 (ALE244)	SW
				500ml Plastic (ALE208)	SW
				250ml BOD (ALE212)	SW
19186285	SW_26		0.00 - 0.00	H2SO4 (ALE244)	SW
				DO KIT + DO 250 ml glass	SW
				500ml Plastic (ALE208)	SW
				250ml BOD (ALE212)	SW
19186278	SW_25		0.00 - 0.00	H2SO4 (ALE244)	SW
				DO KIT + DO 250 ml glass	SW
				500ml Plastic (ALE208)	SW
				250ml BOD (ALE212)	SW
19186274	SW_24		0.00 - 0.00	H2SO4 (ALE244)	SW
				500ml Plastic (ALE208)	SW
				250ml BOD (ALE212)	SW
19186269	SW_23		0.00 - 0.00	H2SO4 (ALE244)	SW
				500ml Plastic (ALE208)	SW

CERTIFICATE OF ANALYSIS

Validated

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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
			19186328	C3_Asb		0.00 - 0.00	250ml BOD (ALE212)	SW
							500ml Plastic (ALE208)	SW
							H2SO4 (ALE244)	SW
			19186296	C2B		0.00 - 0.00	0.5l glass bottle (ALE227)	LE
							250ml BOD (ALE212)	LE
							500ml Plastic (ALE208)	LE
							H2SO4 (ALE244)	LE
							HNO3 Filtered (ALE204)	LE
							NaOH (ALE245)	LE
							Vial (ALE297)	LE
							ZnAc (ALE246)	LE
			19186313	C1C		0.00 - 0.00	0.5l glass bottle (ALE227)	LE
							250ml BOD (ALE212)	LE
							500ml Plastic (ALE208)	LE
							H2SO4 (ALE244)	LE
							HNO3 Filtered (ALE204)	LE
							NaOH (ALE245)	LE
							Vial (ALE297)	LE
							ZnAc (ALE246)	LE
			19186269	SW_23		0.00 - 0.00	250ml BOD (ALE212)	SW
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 2						
								X
								X
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2						
								X
								X
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2						
								X
								X
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2						
								X
								X
pH Value	All	NDPs: 0 Tests: 8						
								X
								X
Phenols by HPLC (W)	All	NDPs: 0 Tests: 2						
								X
								X
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2						
								X
								X
Sulphide	All	NDPs: 0 Tests: 2						
								X
								X
Suspended Solids	All	NDPs: 0 Tests: 2						
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2						
								X
								X
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2						
								X
								X
VOC MS (W)	All	NDPs: 0 Tests: 2						
								X
								X

19186290	SW_1A		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208)	SW	
				250ml BOD (ALE212)	SW	
19186285	SW_26		0.00 - 0.00	H2SO4 (ALE244)	SW	
				DO KIT + DO 250 ml glass	SW	
				500ml Plastic (ALE208)	SW	X
				250ml BOD (ALE212)	SW	
19186278	SW_25		0.00 - 0.00	H2SO4 (ALE244)	SW	
				DO KIT + DO 250 ml glass	SW	
				500ml Plastic (ALE208)	SW	X
				250ml BOD (ALE212)	SW	
19186274	SW_24		0.00 - 0.00	H2SO4 (ALE244)	SW	
				500ml Plastic (ALE208)	SW	X
				250ml BOD (ALE212)	SW	
19186269	SW_23		0.00 - 0.00	H2SO4 (ALE244) 500ml Plastic (ALE208)	SW	X

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C3_Asb	C2B	C1C	SW_23	SW_24	SW_25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Land Leachate (LE)	Land Leachate (LE)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019
			Sampled Time	.	.	.	.	.	.
			Date Received	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63	190124-63	190124-63	190124-63	190124-63
			Lab Sample No.(s)	19186328	19186296	19186313	19186269	19186274	19186278
			AGS Reference						
Ionic balance	% Diff	Calulation			0.439	2.31			
Description of Sample*		SUB (ASB)		See Attached					
Asbestos Identification*		SUB (ASB)		See Attached					
Suspended solids, Total	<2 mg/l	TM022							<2 #
Alkalinity,Total as CaCO3 (diss.filt)	<2 mg/l	TM043			7120	6260			
BOD, unfiltered	<1 mg/l	TM045		<1 ♦ #	113 ♦ #	99.6 ♦ #	<1 ♦ #	2.5 ♦ #	<1 ♦ #
Organic Carbon, Total	<3 mg/l	TM090			559	434			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		<0.2 #	1300	1150	15 #	<0.2 #	5.18 #
Sulphide	<0.01 mg/l	TM101			0.0272	0.0236			
COD, unfiltered	<7 mg/l	TM107		58.2 #	1860 #	1490 #	95.2 #	22.2 #	55.8 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		1.71 #	15.3 #	13.3 #	6.46 #	0.579 #	1.24 #
Arsenic (diss.filt)	<0.5 µg/l	TM152			93 #	34 #			
Boron (diss.filt)	<10 µg/l	TM152			10000 #	7460 #			
Cadmium (diss.filt)	<0.08 µg/l	TM152			0.0949 #	0.0852 #			
Chromium (diss.filt)	<1 µg/l	TM152			208 #	115 #			
Copper (diss.filt)	<0.3 µg/l	TM152			1.59 #	1.79 #			
Lead (diss.filt)	<0.2 µg/l	TM152			<2 #	2.47 #			
Manganese (diss.filt)	<3 µg/l	TM152			524 #	745 #			
Nickel (diss.filt)	<0.4 µg/l	TM152			213 #	229 #			
Selenium (diss.filt)	<1 µg/l	TM152			2.15 #	1.19 #			
Zinc (diss.filt)	<1 µg/l	TM152			43.1 #	48.5 #			
Potassium (Dis.Filt)	<0.2 mg/l	TM152			670 #	567 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152			6.88 #	7.27 #			
Hardness, Total as CaCO3	<0.65 mg/l	TM152			1070	1040			
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172			1310	965			
Mercury (diss.filt)	<0.01 µg/l	TM183			<0.01 #	<0.01 #			
Nitrite as NO2	<0.05 mg/l	TM184			<0.05	<0.05			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184			24.4	11.2			
Sulphate	<2 mg/l	TM184			<2	<2			
Chloride	<2 mg/l	TM184		227 #	2260	1770	2180 #	40.3 #	81.1 #
Nitrate as NO3	<0.3 mg/l	TM184			1.26	0.775			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184			0.261	0.168			

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C3_Asb	C2B	C1C	SW_23	SW_24	SW_25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Land Leachate (LE)	Land Leachate (LE)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019
			Sampled Time	-	-	-	-	-	-
			Date Received	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63	190124-63	190124-63	190124-63	190124-63
			Lab Sample No.(s)	19186328	19186296	19186313	19186269	19186274	19186278
			AGS Reference						
Oxygen, dissolved	<0.3 mg/l	TM187							7.76
Cyanide, Total	<0.05 mg/l	TM227			<0.05 #	<0.05 #			
pH	<1 pH Units	TM256		7.9 #	8.05 #	8.09 #	7.69 #	7.64 #	7.8 #
Phenols, Total Detected monohydric	<0.016 mg/l	TM259			0.19 #	0.21 #			
Dibutyl tin	<5 ng/l	TM328			<50	<50			
Tributyl tin	<1 ng/l	TM328			<10	<10			
Tetrabutyl tin	<2 ng/l	TM328			<20	<20			
Triphenyl tin	<1 ng/l	TM328			<10	<10			
Surrogate	%	TM328			56	54			
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			

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Results Legend	
#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C3_Asb	C2B	C1C	SW_23	SW_24	SW_25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Land Leachate (LE)	Land Leachate (LE)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019
			Sampled Time	-	-	-	-	-	-
			Date Received	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63	190124-63	190124-63	190124-63	190124-63
			Lab Sample No.(s)	19186328	19186296	19186313	19186269	19186274	19186278
			AGS Reference						
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			
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344			<0.01	<0.01			
Hexachlorobutadiene	<0.01 µg/l	TM344			<0.01	<0.01			
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344			<0.01	<0.01			
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344			<0.01	<0.01			
Dichlorvos	<0.01 µg/l	TM344			<0.01	<0.01			
Dichlobenil	<0.01 µg/l	TM344			<0.01	<0.01			
Mevinphos	<0.01 µg/l	TM344			<0.01	<0.01			
Tecnazene	<0.01 µg/l	TM344			<0.01	<0.01			
Hexachlorobenzene	<0.01 µg/l	TM344			<0.01	<0.01			
Demeton-S-methyl	<0.01 µg/l	TM344			<0.01	<0.01			
Phorate	<0.01 µg/l	TM344			<0.01	<0.01			
Diazinon	<0.01 µg/l	TM344			<0.01	<0.01			
Triallate	<0.01 µg/l	TM344			<0.01	<0.01			
Atrazine	<0.01 µg/l	TM344			<0.01	<0.01			
Simazine	<0.01 µg/l	TM344			<0.01	<0.01			
Disulfoton	<0.01 µg/l	TM344			<0.01	<0.01			
Propetamphos	<0.01 µg/l	TM344			<0.01	<0.01			
Chlorpyriphos-methyl	<0.01 µg/l	TM344			<0.01	<0.01			
Dimethoate	<0.01 µg/l	TM344			<0.01	<0.01			
Pirimiphos-methyl	<0.01 µg/l	TM344			<0.01	<0.01			
Chlorpyriphos	<0.01 µg/l	TM344			<0.01	<0.01			
Methyl Parathion	<0.01 µg/l	TM344			<0.01	<0.01			
Malathion	<0.01 µg/l	TM344			<0.01	<0.01			
Fenthion	<0.01 µg/l	TM344			<0.01	<0.01			
Fenitrothion	<0.01 µg/l	TM344			<0.01	<0.01			
Triadimefon	<0.01 µg/l	TM344			<0.01	<0.01			
Pendimethalin	<0.01 µg/l	TM344			<0.01	<0.01			
Parathion	<0.01 µg/l	TM344			<0.01	<0.01			
Chlorfenvinphos	<0.01 µg/l	TM344			<0.01	<0.01			

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	C3_Asb	C2B	C1C	SW_23	SW_24	SW_25
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Land Leachate (LE)	Land Leachate (LE)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019	23/01/2019
			Sampled Time	-	-	-	-	-	-
			Date Received	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63	190124-63	190124-63	190124-63	190124-63
			Lab Sample No.(s)	19186328	19186296	19186313	19186269	19186274	19186278
			AGS Reference						
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			
Triazophos	<0.01 µg/l	TM344			<0.01	<0.01			
Phosalone	<0.01 µg/l	TM344			<0.01	<0.01			
Azinphos methyl	<0.02 µg/l	TM344			<0.02	<0.02			
Azinphos ethyl	<0.02 µg/l	TM344			<0.02	<0.02			
Etridiazole	<0.01 µg/l	TM345			<0.01	<0.01			
Pentachlorobenzene	<0.01 µg/l	TM345			<0.01	<0.01			
Tributylphosphate	<0.01 µg/l	TM345			<0.01	<0.01			
Propachlor	<0.01 µg/l	TM345			<0.01	<0.01			
Quintozene (PCNB)	<0.01 µg/l	TM345			<0.01	<0.01			
Omethoate	<0.01 µg/l	TM345			<0.01	<0.01			
Propazine	<0.01 µg/l	TM345			<0.01	<0.01			
Propyzamide	<0.01 µg/l	TM345			<0.01	<0.01			
Alachlor	<0.01 µg/l	TM345			<0.01	<0.01			
Prometryn	<0.01 µg/l	TM345			<0.01	<0.01			
Telodrin	<0.01 µg/l	TM345			<0.01	<0.01			
Terbutryn	<0.01 µg/l	TM345			<0.01	<0.01			
Chlorothalonil	<0.01 µg/l	TM345			<0.01	<0.01			
Etrimphos	<0.01 µg/l	TM345			<0.01	<0.01			
Metazachlor	<0.01 µg/l	TM345			<0.01	<0.01			
Cyanazine	<0.01 µg/l	TM345			<0.01	<0.01			
Trietazine	<0.01 µg/l	TM345			<0.01	<0.01			
Coumaphos	<0.01 µg/l	TM345			<0.01	<0.01			
Phosphamidon I	<0.01 µg/l	TM345			<0.01	<0.01			
Phosphamidon II	<0.01 µg/l	TM345			<0.01	<0.01			

Validated

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

Component	LOD/Units	Method	Customer Sample Ref.	SW_26	SW_1A
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)
			Date Sampled	23/01/2019	23/01/2019
			Sampled Time	.	.
			Date Received	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63
			Lab Sample No.(s)	19186285	19186290
			AGS Reference		
Suspended solids, Total	<2 mg/l	TM022		7.1 #	
BOD, unfiltered	<1 mg/l	TM045		4.46 ♦ #	<1 ♦ #
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099		49.2 #	<0.2 #
COD, unfiltered	<7 mg/l	TM107		188 #	<7 #
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120		3.18 #	0.542 #
Chloride	<2 mg/l	TM184		423 #	79 #
Oxygen, dissolved	<0.3 mg/l	TM187		3.34	
pH	<1 pH Units	TM256		7.62 #	7.51 #

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

PAH Spec MS - Aqueous (W)

Results Legend

#	ISO17025 accredited.
M	*m*CERTS 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)

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
			C2B	0.00 - 0.00	Land Leachate (LE)	23/01/2019	.	24/01/2019	190124-63	19186296	
			C1C	0.00 - 0.00	Land Leachate (LE)	23/01/2019	.	24/01/2019	190124-63	19186313	
Naphthalene (aq)	<0.01 µg/l	TM178	1.1								

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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 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)

Component	LOD/Units	Method	Customer Sample Ref.	C2B	C1C			
			Depth (m)	0.00 - 0.00	0.00 - 0.00			
			Sample Type	Land Leachate (LE)	Land Leachate (LE)			
			Date Sampled	23/01/2019	23/01/2019			
			Sampled Time	.	.			
			Date Received	24/01/2019	24/01/2019			
			SDG Ref	190124-63	190124-63			
			Lab Sample No.(s)	19186296	19186313			
			AGS Reference					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Chlorophenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Methylphenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Nitroaniline (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
2-Nitrophenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
3-Nitroaniline (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Chloroaniline (aq)	<1 µg/l	TM176		<8	<8			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Methylphenol (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Nitroaniline (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
4-Nitrophenol (aq)	<1 µg/l	TM176		<8	<8			
Azobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
Acenaphthylene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
Acenaphthene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
Anthracene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<16 ♦	<16 ♦			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦			

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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 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)

Component	LOD/Units	Method	Customer Sample Ref.	C2B	C1C
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	23/01/2019	23/01/2019
			Sampled Time	-	-
			Date Received	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63
			Lab Sample No.(s)	19186296	19186313
			AGS Reference		
Benzo(a)anthracene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Benzo(a)pyrene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Carbazole (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Chrysene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Dibenzofuran (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Diethyl phthalate (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Dimethyl phthalate (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
n-Dioctyl phthalate (aq)	<5 µg/l	TM176		<40 ♦	<40 ♦
Fluoranthene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Fluorene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Hexachlorobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Hexachlorobutadiene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Pentachlorophenol (aq)	<1 µg/l	TM176		<8	<8
Phenol (aq)	<1 µg/l	TM176		<8	<8
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Hexachloroethane (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Nitrobenzene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Naphthalene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Isophorone (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176		<8	<8
Phenanthrene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦
Pyrene (aq)	<1 µg/l	TM176		<8 ♦	<8 ♦

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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 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)

Component	LOD/Units	Method	Customer Sample Ref.	C2B	C1C				
			Depth (m)	0.00 - 0.00	0.00 - 0.00				
			Sample Type	Land Leachate (LE)	Land Leachate (LE)				
			Date Sampled	23/01/2019	23/01/2019				
			Sampled Time	.	.				
			Date Received	24/01/2019	24/01/2019				
			SDG Ref	190124-63	190124-63				
			Lab Sample No.(s)	19186296	19186313				
			AGS Reference						
Dibromofluoromethane**	%	TM208		107	112				
Toluene-d8**	%	TM208		98.6	97.2				
4-Bromofluorobenzene**	%	TM208		93.9	94.9				
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 #	2.85 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		5.57 #	4.26 #				
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		1.07 #	<1 #				
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1 #	<1 #				
1,1,2-Trichloroethane	<1 µg/l	TM208		<1 #	<1 #				

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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 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)

Component	LOD/Units	Method	Customer Sample Ref.	C2B	C1C
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	23/01/2019	23/01/2019
			Sampled Time	-	-
			Date Received	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63
			Lab Sample No.(s)	19186296	19186313
			AGS Reference		
1,3-Dichloropropane	<1 µg/l	TM208		<1 #	<1 #
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 #	1.96 #
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208		<1 #	<1 #
Ethylbenzene	<1 µg/l	TM208		7.51 #	2.83 #
m,p-Xylene	<1 µg/l	TM208		1.33 #	1.03 #
o-Xylene	<1 µg/l	TM208		6.32 #	4.64 #
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		1.14 #	1.24 #

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

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 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)

Component	LOD/Units	Method	Customer Sample Ref.	C2B	C1C
			Depth (m)	0.00 - 0.00	0.00 - 0.00
			Sample Type	Land Leachate (LE)	Land Leachate (LE)
			Date Sampled	23/01/2019	23/01/2019
			Sampled Time	-	-
			Date Received	24/01/2019	24/01/2019
			SDG Ref	190124-63	190124-63
			Lab Sample No.(s)	19186296	19186313
			AGS Reference		
1,2,3-Trichlorobenzene	<1 µg/l	TM208		<1 #	<1 #
1,3,5-Trichlorobenzene	<1 µg/l	TM208		<1	<1

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

CERTIFICATE OF ANALYSIS

SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Table of Results - Appendix

Method No	Reference	Description
Calulation		
SUB (ASB)		
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
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
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
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
TM187	Winkler, L.W, Ber Deutsch. Chem. Ges, 21,2843,1888."	Dissolved Oxygen in Natural and Waste Waters HMSO 1979 ISBN 011 751442
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

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:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Test Completion Dates

Lab Sample No(s)	19186328	19186296	19186313	19186269	19186274	19186278	19186285	19186290
Customer Sample Ref.	C3_Asb	C2B	C1C	SW_23	SW_24	SW_25	SW_26	SW_1A
AGS Ref.								
Depth	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
Type	Surface Water	Land Leachate	Land Leachate	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Alkalinity Filtered as CaCO3		01-Feb-2019	04-Feb-2019					
Ammoniacal Nitrogen	03-Feb-2019	01-Feb-2019	03-Feb-2019	03-Feb-2019	03-Feb-2019	03-Feb-2019	03-Feb-2019	03-Feb-2019
Anions by Kone (w)	04-Feb-2019	06-Feb-2019	06-Feb-2019	04-Feb-2019	04-Feb-2019	06-Feb-2019	04-Feb-2019	04-Feb-2019
Asbestos in Water*	31-Jan-2019							
BOD True Total	06-Feb-2019	08-Feb-2019	08-Feb-2019	06-Feb-2019	03-Feb-2019	06-Feb-2019	04-Feb-2019	06-Feb-2019
COD Unfiltered	02-Feb-2019	05-Feb-2019	05-Feb-2019	05-Feb-2019	04-Feb-2019	05-Feb-2019	04-Feb-2019	04-Feb-2019
Conductivity (at 20 deg.C)	25-Jan-2019	25-Jan-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	25-Jan-2019	01-Feb-2019
Cyanide Comp/Free/Total/Thiocyanate		28-Jan-2019	28-Jan-2019					
Dissolved Metals by ICP-MS		05-Feb-2019	05-Feb-2019					
Dissolved Oxygen by Titration						25-Jan-2019	25-Jan-2019	
EPH (DRO) (C10-C40) Aqueous (W)		30-Jan-2019	30-Jan-2019					
Ionic Balance		06-Feb-2019	06-Feb-2019					
Mercury Dissolved		01-Feb-2019	01-Feb-2019					
Nitrite by Kone (w)		02-Feb-2019	02-Feb-2019					
Organotins in Aqueous Samples		04-Feb-2019	04-Feb-2019					
PAH Spec MS - Aqueous (W)		30-Jan-2019	30-Jan-2019					
Pesticides (Suite I) by GCMS		04-Feb-2019	04-Feb-2019					
Pesticides (Suite II) by GCMS		04-Feb-2019	04-Feb-2019					
Pesticides (Suite III) by GCMS		04-Feb-2019	04-Feb-2019					
pH Value	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019	01-Feb-2019
Phenols by HPLC (W)		31-Jan-2019	31-Jan-2019					
Phosphate by Kone (w)		01-Feb-2019	01-Feb-2019					
Sulphide		05-Feb-2019	05-Feb-2019					
Suspended Solids						24-Jan-2019	24-Jan-2019	
SVOC MS (W) - Aqueous		07-Feb-2019	04-Feb-2019					
Total Organic and Inorganic Carbon		30-Jan-2019	30-Jan-2019					
VOC MS (W)		03-Feb-2019	04-Feb-2019					

CERTIFICATE OF ANALYSIS

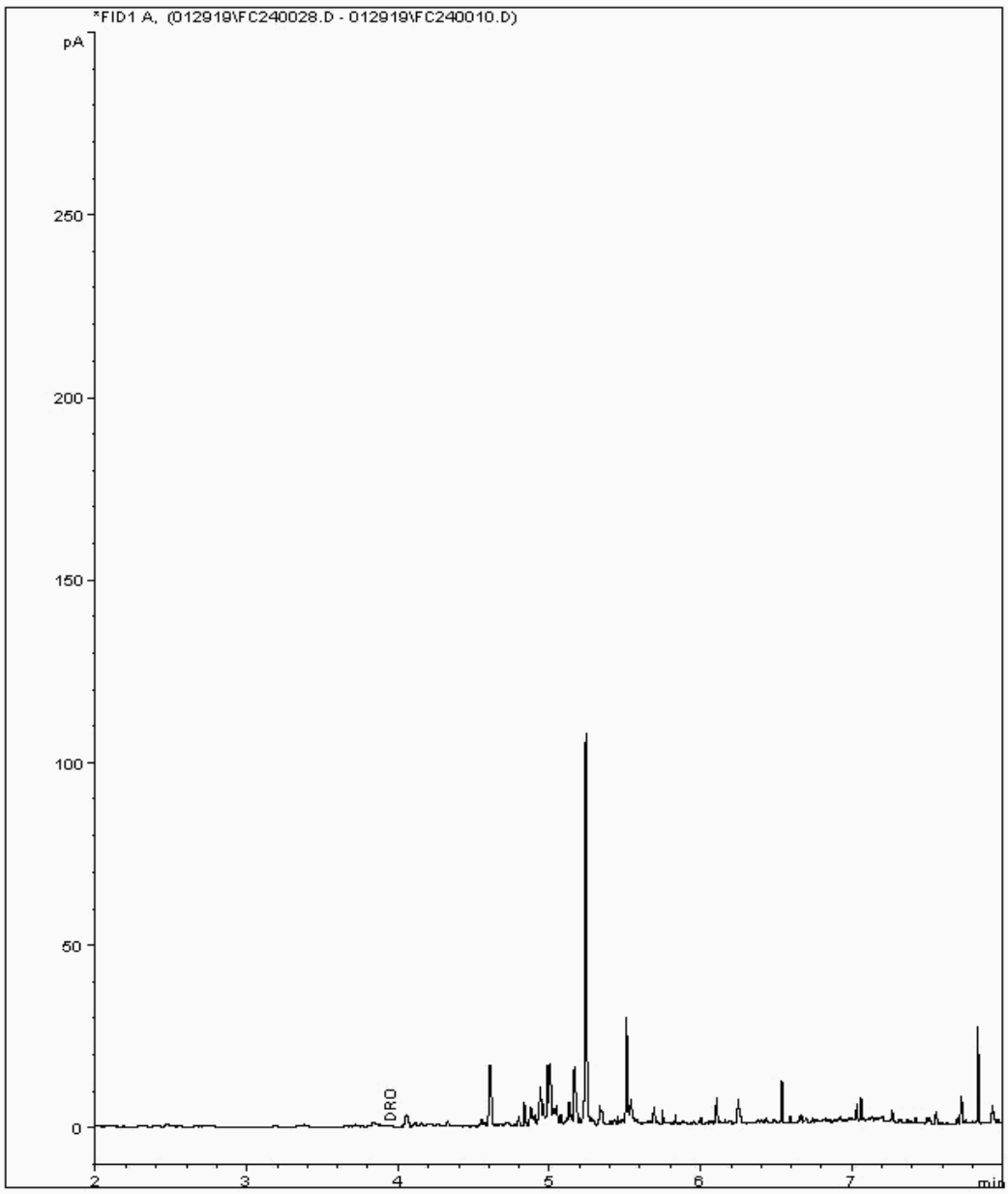
SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 19190010 **Depth :** 0.00 - 0.00
Sample ID : C1C

EPH Range Organics (C10 - C40)

Sample Identity: 18030255-
Date Acquired : 30/01/2019 00:30:23 PM
Units : ppm



CERTIFICATE OF ANALYSIS

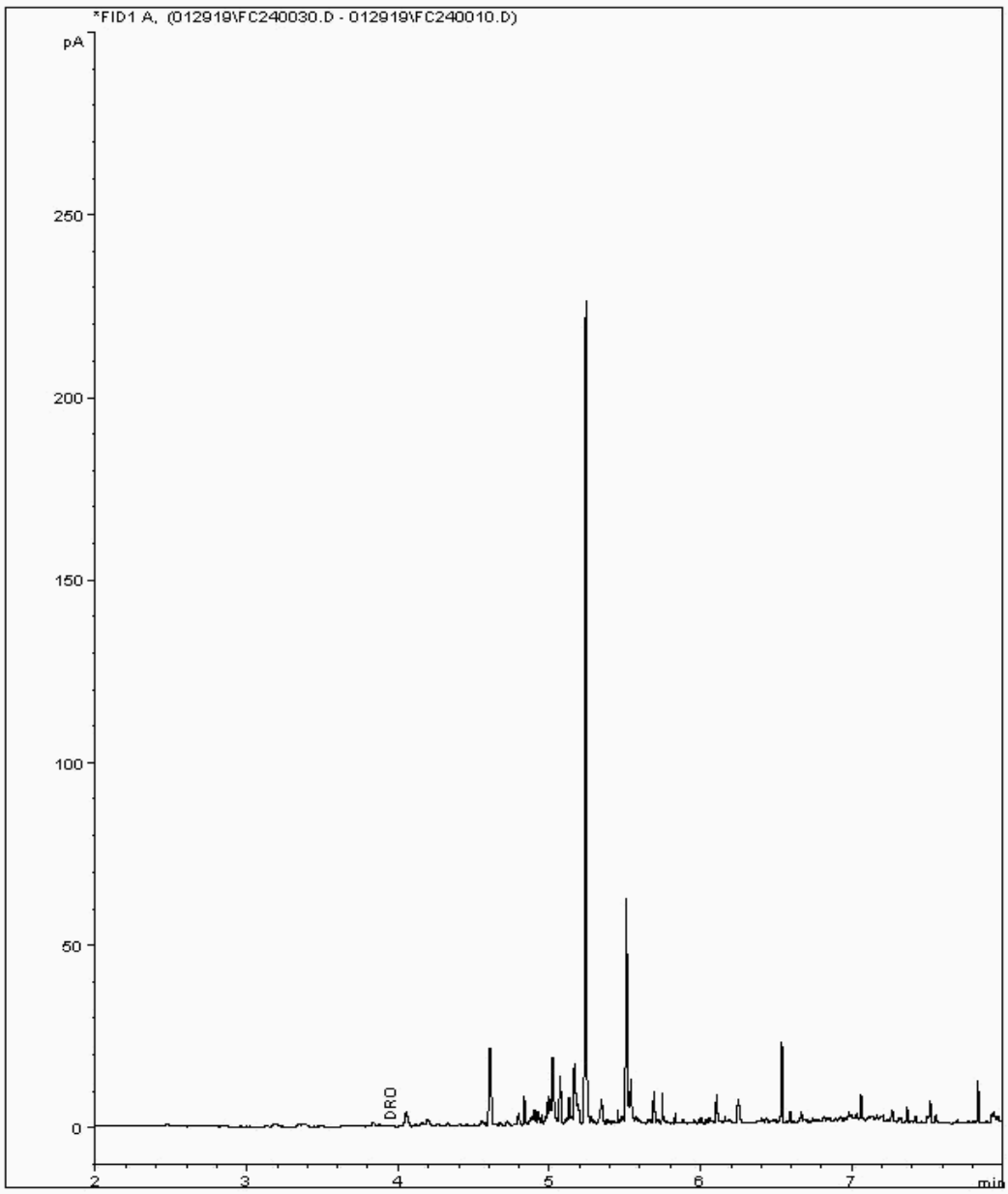
SDG:	190124-63	**Client Reference:**		**Report Number:**	491814
Location:	Docksway Landfill Site	**Order Number:**	700124102	**Superseded Report:**	491180

Chromatogram

Analysis: EPH (DRO) (C10-C40) Aqueous (W) **Sample No :** 19190068 **Depth :** 0.00 - 0.00
Sample ID : C2B

EPH Range Organics (C10 - C40)

Sample Identity: 18030181-
Date Acquired : 30/01/2019 01:18:36 PM
Units : ppm



ALS Environmental Ltd
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www.alsenvironmental.co.uk

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

30 January 2019

Test Report: COV/1664716/2019

Dear Subcon Results

Analysis of your sample(s) submitted on 25 January 2019 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: R. Stocks

Title: Inorganic Team Leader

Report Summary

ANALYSED BY

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

Date of Issue: **30 January 2019**

Report Number: **COV/1664716/2019** Issue **1**

This issue replaces all previous issues

Job Description: 2017-2018 Analysis

Number of Samples included in this report **1**

Number of Test Results included in this report **2**

Job Received: **25 January 2019**

Analysis Commenced: **30 January 2019**

Signed:

Name: **R. Stocks** Date: **30 January 2019**

Title: **Inorganic 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.
Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

Certificate of Analysis

ANALYSED BY

Report Number:	**COV/1664716/2019**	Issue	**1**
Laboratory Number:	**17888672**	Sample	**1** of **1**
Sample Source:	**ALS Life Sciences Limited**		
Sample Point Description:			
Sample Description:	**19189161 C3_Asb**		
Sample Matrix:	**Surface Water**		
Sample Date/Time:	**23 January 2019**		
Sample Received:	**25 January 2019**		
Analysis Complete:	**30 January 2019**		

Test Description	Result	Units	Analysis Date	Accreditation	Method
Description of Sample	Analyst Com	Text	30/01/2019	N Cov	70
Asbestos Identification	Analyst Com	Text	30/01/2019	N Cov	70

Analyst Comments for 17888672: ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Water

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), CTD = Coatbridge(ML5 4FR), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2SW), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG).
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: **R. Stocks** Date: **30 January 2019**

Title: **Inorganic Team Leader**

ANALYST COMMENTS FOR REPORT COV/1664716/2019

Issue 1 This issue replaces all previous issues

Date of Issue: **30 January 2019**

Sample No	Analysis Comments
17888672	ASBESTOS COMMENTS Asbestos ID: Non Detected, Description of Sample: Water

Signed:

Name: **R. Stocks** Date: **30 January 2019**

Title: **Inorganic Team Leader**

DETERMINAND COMMENTS FOR REPORT COV/1664716/2019

ISSUE 1

This issue replaces all previous issues

Date of Issue: 30 January 2019

Sample No	Description	Determinand	Comments
17888672	19189161 C3_Asb	Asbestos Identification	{/*}Non Detected{*/}
17888672	19189161 C3_Asb	Description of Sample	{/*}Water{*/}

Signed: 

Name: **R. Stocks** Date: **30 January 2019**

Title: **Inorganic Team Leader**

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. 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 Dimethyphenol, 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 presevation 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).

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.

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.