

# **Technical Note**

Project:	Bradwell B Nuclear Power Plar	nt - Load Investigation	n
Subject:	Discharge Consent Application	- Technical Addend	um to Risk Assessment
Author:		Checked:	
Reviewed:		Authorised:	
Date:	17/02/2020	Project No.:	5193653
Distribution:	National Permitting Service	Representing:	Environment Agency BRB GenCo Ltd

# Updated Specific Substances Risk Assessment

# Methodology

A surface water pollution risk assessment has been completed in-line with Environment Agency guidance on how to carry out a risk assessment in support of a bespoke permit application [1] [2].

For the purpose of this risk assessment, it is considered, in the absence of any site-specific information on groundwater quality, that due to the degree of existing groundwater baseflow index to the Ordinary Watercourse (0.52 [3]), the quality of surface water therein is largely representative of background groundwater quality conditions.

Accordingly, in order to understand whether the proposed discharge potentially includes hazardous pollutants, surface water samples have been collected by Wood Plc [4] [5] from three selected locations on the Ordinary Watercourse and Weymarks River:

- **Sample Point 1** is located on the Ordinary Watercourse located due east of the proposed Load Test Area. The drainage ditch flows in a southerly direction before converging with the Weymarks River located south/south-east of the Load Test Area.
- **Sample Point 2** is located to the south-east of the proposed Load Test Area, at a location immediately downstream of the Ordinary Watercourse converges with the Weymarks River.
- **Sample Point 3** is located to the south east of the proposed Load Test Area, at a location upstream of the point at which the Ordinary Watercourse converges with Weymarks River.

The original risk assessment [6], included two rounds of surface water quality testing from 19 December 2019 [4] and 8 January 2020 [5]. This risk is assessment has been updated to include two additional rounds sampled on the 15 January 2020 [7] and 21 January 2020 [8]. Samples were submitted to a United Kingdom Accreditation Service (UKAS) accredited laboratory for chemical analysis. The results of analysis are provided in Appendix A.

The analysis has enabled identification of potential hazardous pollutants that may be present in the discharge to the Ordinary Watercourse.



# **Screening Tests**

In order to understand whether discharge of the hazardous pollutants identified present a potential risk to the environment, the Environment Agency guidance [2] require four tiers of screening tests to be completed, :

- 1. Check whether the concentration of the pollutant in the discharge is more than 10% of the EQS;
- 2. Check whether the process contribution (PC) of your pollutant is more than 4% of the EQS;
- 3. Check whether your discharge increases the concentration of the pollutant in the river downstream of the discharge by more than 10% of the pollutant's EQS value; and,
- 4. Check whether the PEC is higher than the EQS.

## Identification of pollutants

In order to identify any potential specific pollutants, the results of chemical analysis (Appendix A) have been compared to Environment Agency tables for "*fresh waters specific pollutants and operations Environmental Quality Standards*" and "*freshwaters priority hazardous substances, priority substances and other pollutants*" [2]. Substances recorded above limits of detection are summarised in Table 1.

Determinand	Units	LOD	AA-EQS	MAC-EQS	Round 1			Round 2	Round 2					Round 4			
					SW1	SW2	SW3	SW1	SW2	SW3	SW1	SW2	SW3	SW1	SW2	SW3	
Ammoniacal Nitrogen as N**	mg/l	<0.2	0.2	-	<0.2	0.659	0.37	0.252	<0.2	0.426	<0.2	1.82	0.655	<0.2	0.409	0.314	
Anthracene (aq)	mg/l	<0.000005	0.0001	0.0001	<0.000005	<0.000005	<0.000005	0.000006	<0.000005	0.000017	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	
Arsenic (diss.filt)	mg/l	<0.0005	0.05	-	0.00132	0.00146	0.00147	0.00175	0.00157	0.00144	0.00157	0.00183	0.00165	0.00103	0.00123	0.0011	
Benzo(a)anthracene (aq)	mg/l	<0.000005	-	0.00027	<0.000005	<0.000005	<0.000005	0.000012	0.000006	0.000145	<0.000005	<0.000005	0.000027	<0.000005	<0.000005	<0.000005	
Benzo(a)pyrene (aq)	mg/l	<0.00002	0.00000017		<0.00002	<0.00002	0.000008	0.000044	0.000034	0.00026	0.00002	0.000014	0.000045	<0.00002	<0.00002	0.000009	
Benzo(b)fluoranthene (aq)	mg/l	<0.000005	-	0.000017	<0.000005	<0.000005	0.000012	0.000067	0.000071	0.000383	0.000026	0.000025	0.000043	<0.000005	<0.000005	0.000012	
Benzo(g,h,i)perylene (aq)	mg/l	<0.000005	-	0.0000082	<0.000005	0.000005	0.000012	0.000031	0.000022	0.000212	0.000026	0.000019	0.000019	<0.000005	<0.000005	<0.000005	
Benzo(k)fluoranthene (aq)	mg/l	<0.000005	-	0.000017	<0.000005	<0.000005	<0.000005	0.000028	0.000065	0.000184	0.000013	0.00001	0.000039	<0.000005	<0.000005	0.000006	
Boron (diss.filt)	mg/l	<0.01	2	-	0.0629	0.0757	0.0787	0.058	0.0804	0.0972	0.0773	0.0925	0.0903	0.074	0.0785	0.0926	
Chloride	mg/l	<2	250	-	81.1	95.6	95	56.9	82.7	90.3	72.1	74.8	73.1	82.4	94.6	94.8	
Chromium (diss.filt)	mg/l	<0.001	0.0034	0.032	<0.001	<0.001	<0.001	0.00772	<0.001	0.00636	<0.001	0.00104	<0.001	<0.001	<0.001	<0.001	
Copper (diss.filt)	mg/l	<0.0003	#0.027	-	0.00306	0.00256	0.00242	0.00591	0.00362	0.00311	0.00338	0.00315	0.00258	0.0028	0.00223	0.00207	
Fluoranthene (aq)	mg/l	<0.000005	0.0000063	0.00012	0.000005	0.000006	0.000015	0.000056	0.000043	0.000466	0.000017	0.000018	0.000048	<0.000005	0.000005	0.000015	
Indeno(1,2,3-cd)pyrene (aq)	mg/l	<0.000005	-	-	<0.000005	<0.000005	0.000006	0.000034	0.000028	0.00019	0.000015	<0.000005	0.000037	<0.000005	<0.000005	0.000006	
Nickel (diss.filt)	mg/l	<0.0004	#0.020	0.034	0.00371	0.00296	0.00233	0.00317	0.00284	0.0026	0.00271	0.00268	0.00175	0.0032	0.00257	0.00208	

#### Table 1 – Surface water quality detections and exceedances

Note:

All concentrations in mg/l \*\* denotes addition of Ammoniacal Nitrogen as N in place of Ammonia (unionised) # denotes m-BAT adjusted AA-EQS Blue shading denotes exceedance of AA-EQS or MAC-EQS (whichever is the lower)





## Test 1 – concentrations above 10% of EQS

#### PAH compounds

The presence of PAH compounds (anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene and fluoranthene), are not considered to be representative of background groundwater conditions, as there is no credible source of these within the study area [9] and these compounds are highly recalcitrant and effectively immobile in groundwater systems. PAH compounds in surface waters are likely associated with direct inputs to surface water via run-off, upstream of the proposed discharge activity rather than groundwater baseflow. Accordingly, it is considered that these hazardous substances will be absent from abstracted water and hence, the proposed discharge. It is considered that PAHs will be absent from, or at low levels below the EQS in the discharge.

#### Other substances

With the exception of arsenic and boron, maximum concentrations of all remaining substances listed in Table 4 are in excess of 10% of the EQS.

#### Test 2 – process contribution above 4% of EQS

Assuming an Effluent Flow Rate (EFR) of 15 l/s and a background River Flow Rate (RFR) of approximately 5 l/s [3], it is calculated that all substances listed in Table 4 (with exception of PAHs which are excluded) will be in excess of 4% of the EQS.

#### Test 3 – predicted environmental concentrations

The assumption made is that the release concentration (RC) in the proposed discharge is equal to the background concentration (BC) in surface water. Therefore, the calculated process contribution (PC) and subsequently, the predicted environmental concentration (PEC), are all the same.

There will be no net impact to the Ordinary Watercourse; there will be no difference between the PEC and BC.

# **Total Suspended Solids**

In order to mitigate the potential impact of any sediment load, picked up via surface water run-off within the Load Test Area, the combined discharge will be routed via a Settlement/ Attenuation Pond, discharging into the Ordinary Watercourse.

A limit of 120 mg/l total suspended solids is proposed at the point of discharge. This is based on reasonably achievable physical settlement methods (such as attenuation ponds and laminar plate settlement tanks) without the need for the addition of chemical flocculants.

# Summary of risks

#### Surface Water - Ordinary Watercourse

The net flow impact on flow in the Ordinary Watercourse is likely to be slightly positive, due to the proposed discharge activity, which will include both rainfall incident to the lined drainage across the site and input of groundwater from the London Clay that may not otherwise form part of current baseflow to the receiving watercourse.

There will be no net impact on the quality of the Ordinary Watercourse as the discharged water quality will be representative of background water quality with no additions. Further, all abstracted groundwater from the Load Test Pit excavation will be subject to dilution with surface water run-off from the Surcharge Test, Soil Bund and Peripheral Areas. It is considered that this dilution will sufficiently mitigate any potential impacts to the quality of water discharged to the Ordinary Watercourse.

Whilst concentrations of PAHs have been recorded above their respective EQS in surface water, it is considered that these concentrations are likely to be associated with direct inputs to surface water via run-off rather than groundwater baseflow. It is considered that these substances will be absent from, or at low levels below EQS in abstracted groundwater and the subsequent discharge to the Ordinary Watercourse.



# Surface Water – Weymarks River and Downstream Abstractions

Net flow impact to Weymarks River is considered to be marginally positive, due to the slight increase in flow to the Ordinary Watercourse at its confluence with Weymarks River at NGR TM 01645 08067. There will be no net impact on the quality of Weymarks River or any of the identified downstream surface water abstractions.



# References

- [1] E. Agency, "Risk assessments for your environmetnal permit," [Online]. Available: https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit#risk-assessments-forbespoke-permits. [Accessed 30 January 2020].
- [2] Environment Agency, "Surface water pollution risk assessment for your environmental permit," [Online]. Available: https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmentalpermit#when-you-do-not-need-to-carry-out-screening-tests. [Accessed 29 January 2020].
- [3] C. B. G. Ltd, "Bradwell B Marine Studies, Weymarks Stream Low Flows Report TR56," 2019.
- [4] W. PLC, "Bradwell B Ground Investigation Planning Support Surface Water Sampling (Round 1)," 2020.
- [5] W. PLC, "Bradwell B Ground Investigation Planning Support Surface Water Sampling (Round 2)," 2020.
- [6] Atkins, "Discharge Consent Application Surface water pollution risk assessment," 2020.
- [7] W. PLC, "Bradwell B Ground Investigation Planning Support Surface Water Sampling (Round 3)," 2020.
- [8] W. PLC, "Bradwell B Ground Investigation Planning Support Surface Water Sampling (Round 4)," 2020.
- [9] A. F. W. E. &. I. Limited, "Bradwell B Preliminary Ground Investigation, Phase 1 Contaminated Land Study," 2017.



# Appendix A. – Chemical Analyses



Wood Environment & Infrastructure Solutions UK Limited Northumbria House Regent Centre Gosforth Newcastle Upon Tyne Tyne and Wear NE3 3PX

Attention: Sarah Pi kington

# **CERTIFICATE OF ANALYSIS**

Date of report Generation:
Customer:
Sample Delivery Group (SDG):
Your Reference:
Location:
Report No:

06 January 2020 Wood Environment & Infrastructure Solutions UK Limited 191219-89 41843 Bradwell 536359

We received 3 samples on Thursday December 19, 2019 and 3 of these samples were scheduled for analysis which was completed on Monday January 06, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results. The customer is not permitted to reproduce this report except in full without the approval of the laboratory.

Approved By:

<u>Sonia McWhan</u> Operations Manager



ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291. Version: 2.3 Version Issued: 06/01/2020

	SDG:
$(\Delta I S)$	Location:

191219-89 41843 536359 **Client Reference:** Report Number: 322478 Superseded Report Bradwell Order Number:

## **Received Sample Overview**

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
21407978	SW1			17/12/2019
21407979	SW2			17/12/2019
21407980	SW3			17/12/2019

Maximum Sample/Coolbox Temperature (°C) :

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.

6.2 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.

Validated

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

		с	ERT	IFIC	CAT	ΕO	FA	NAL	YSI	S									Vali	dated	
SDG: Location:	191219-89 Bradwell				ferend mber:		418 322							Numb ded Re			5363	59			
Results Legend           X         Test           N         No Determination	Lab Sample N	lo(s)								21407978								21407979			21407980
Sample Types -	Customer Sample Refer									SW1								SW2			SW3
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Referen	nce																			
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m)	)																			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Container	r	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Typ	De	SW	WS	SM	SM	WS	WS	SW	SM	SW	SW	SW	SW	SW	WS	SW	SW	SW	SW	SM
Alkalinity as CaCO3	All	NDPs: 0 Tests: 3	_	x								x								x	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3		^								^								^	
Anions by Kone (w)	All	NDPs: 0 Tests: 3		x		x						x		X						X	
Chromium III	All	NDPs: 0 Tests: 3					X								X						
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 3		x								x								X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3					X								X						
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3	x								X								X		
Dissolved Oxygen by Titration	All	NDPs: 0 Tests: 3			x								X								x
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								x								x		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								x								x		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3								x								x			
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3		x								x								x	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 3							x								x				
Mercury Dissolved	All	NDPs: 0 Tests: 3					X								x						
Mercury Unfiltered	All	NDPs: 0 Tests: 3						x								x					

				21407980
				SW3
т		т	7	
H2SO4 (ALE244) SW	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245) SW	Vial (ALE297)
SW	SW	SW	SW	SW
x				
	X			
	x			
				x
				^
			x	
	X			
		X		

		с	ERT	IFIC	ATI	ΕO	FA	NAL	YSI	IS									Vali	dated	
SDG: Location:	191219-89 Bradwell		Clie	nt Ref	erenc nber:	e:	4184 3224	43						Numb led Re			5363	59			
Results Legend           X         Test           N         Determination           Possible         Possible	Lab Sample N	lo(s)								21407978								21407979			21407980
	Custome Sample Refer									SW1								SW2			SM3
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate	AGS Refere	nce																			
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	)																			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	r	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Ty	ре	SW	WS	SM	WS	WS	SW	SN	SM	WS	WS	SM	SW	WS	SM	SM	SM	SW	SM	SN
Nitrite by Kone (w)	All	NDPs: 0 Tests: 3							x								x				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3	x						^		X						^		x		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 3	x								x								x		_
pH Value	All	NDPs: 0 Tests: 3		x								x								x	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 3		x								x								x	
Redox Potential	All	NDPs: 0 Tests: 3	x								x								x		
Suspended Solids	All	NDPs: 0 Tests: 3		x								x								x	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3	x								x								x		_
Total Metals by ICP-MS	All	NDPs: 0 Tests: 5 NDPs: 0						x				x				x				x	
Total Nitrogen	All	NDPs: 0 Tests: 3 NDPs: 0		x								x								x	
		Tests: 3				x								x							
TPH CWG (W)	All	NDPs: 0 Tests: 3	x								x								x		
VOC MS (W)	All	NDPs: 0 Tests: 3								x								x			

				21407980 SW3
H2SO4 (ALE244) SW	HNO3 Filtered (ALE204)		NaOH (ALE245) SW	Vial (ALE297)
SW	SW	WS	SW	SM
			X	
		X		
x				
				x

SDG: Location:

Validated

(ALS) Location:	B	radwell	Orde	r Number: 322	2478	Superseded Re	port	
Results Legend	Ci	ustomer Sample Ref.	SW1	SW2	SW3			
ISO17025 accredited.     M mCERTS accredited.								
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report	- for	Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
accreditation status.		Date Sampled	17/12/2019	17/12/2019	17/12/2019			
** % recovery of the surrogate standard to chere efficiency of the method. The results of indiv		Sample Time Date Received	19/12/2019	19/12/2019	19/12/2019			
compounds within samples aren't corrected recovery	for the	SDG Ref	191219-89	191219-89	191219-89			
(F) Trigger breach confirmed		Lab Sample No.(s)	21407978	21407979	21407980			
1-345@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method						
Suspended solids, Total	<2 mg/l	TM022	10 5	6.9	30.1			
	2 11.97	THOLE	#	#	#			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	210	215	245			
, indianay, rotar as caceee	-2 mg/r	111040	#	210 #	240 #			
Carbon, Organic (diss.filt)	<3 mg/l	TM090		12.6				
Carbon, Organic (diss.nit)	-o nigh	110000	12.0	12.0	113			
Organic Carbon, Total	<3 mg/l	TM090	11.6	13	13.8			
organio odrbon, rotar	-o mg/r	110000	#	#	#			
Ammoniacal Nitrogen as N	<0 2 mg/l	TM099	0 252	<0.2	0.426			
Ammoniacal Nillogen as N	-0 2 mg/i	110000	0 232 #	~0.2 #	0.420			
Ammoniacal Nitrogon on NH4	<0 3 mg/l	TM099	0 324	<0.3	0 548			
Ammoniacal Nitrogen as NH4	So o nigh	110000	0 324 #	<0.3 #	0 546			
Redox potential	mV	TM110	# 162	# 171	# 164			
newox potential	1114	TWITTU	102		104			
Conductivity @ 20 deg.C	<0.005	TM120	0.686	0 93	1.08			
Conductivity @ 20 deg.0	<0.005 mS/cm	TWITZU	0.686	0 93 #	1.08			
Chromium, Trivalent	<0.03 mg/l	TM152	# <0.03	# <0.03	# <0.03			
	-0.00 mg/r	TWITUZ	-0.00	-v.vo	-0.00			
Arsenic (diss.filt)	<0.0005	TM152	0.00175	0.00157	0.00144			
	mg/l	1101102	0.00170 #	#	#			
Arsenic (tot unfilt)	<0.002 mg/l	TM152	0.00214	<0.002	" 0.0116			
Albenic (tot unnit)	-0.002 mg/i	1101102	0.00214	<0.002 #	#			
Boron (diss.filt)	<0.01 mg/l	TM152	0.058	<del>۳</del> 0.0804	0.0972			
boron (diss.int)	-o.or mg/	111102	#	#	#			
Boron (tot.unfilt)	<0.02 mg/l	TM152	0.0676	0.0933	0.154			
boron (tot.unint)	-0.02 mg/	111102	#	#	#			
Cadmium (diss. ilt)	<0.00008	TM152	<0.0008	" <0.00008	" <0.00008			
oudmum (diss. ity	mg/l	111102	-0.00000 #	#	-0.00000 #			
Cadmium (tot.unfilt)	< 0.0005	TM152	<0.0005	<0.0005	<0.0005			
Country (Cocumity)	mg/l	111102	#	#	#			
Chromium (tot.unfilt)	<0.003 mg/l	TM152	0.00789	< 0.003	0.0296			
			#	#	#			
Chromium (diss. ilt)	<0.001 mg/l	TM152	0.00772	<0.001	0.00636			
			#	#	#			
Copper (tot.unfilt)	<0.001 mg/l	TM152	0.0073	0.00556	0.0269			
	Ĭ		#	#	#			
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	0.00125	0.0213			
			#	#	#			
Copper (diss.filt)	< 0.0003	TM152	0.00591	0.00362	0.00311			
	mg/l		#	#	#			
Manganese (tot un ilt)	<0.001 mg/l	TM152	0.0281	0.0443	0 214			
			#	#	#			
Lead (diss.filt)	<0.0002	TM152	<0.0002	<0.0002	<0.0002			
	mg/l		#	#	#			
Nickel (tot.unfilt)	<0.001 mg/l	TM152	0.00408	0.00435	0.0212			
	L		#	#	#			
Manganese (diss.filt)	<0.003 mg/l	TM152	0.00766	0.0214	0.0479			
			#	#	#			
Phosphorus (tot.unfilt)	<0.02 mg/l	TM152	0.819	0.504	1.82			
			#	#	#			
Selenium (tot un ilt)	<0.001 mg/l	TM152	0.00186	0.00148	0.00301			
			#	#	#			
Nickel (diss.filt)	<0.0004	TM152	0.00317	0.00284	0.0026			
	mg/l		#	#	#			
Phosphorus (diss.filt)	<0.01 mg/l	TM152	0.678	0.434	0.198			
	-0.001		#	#	#			
Selenium (diss.filt)	<0.001 mg/l	TM152	0.00184	0.00157	0.00178			
Zin - (lat un Ell')	20.005 5	THEF	#	#	#			
Zinc (tot.unfilt)	<0.005 mg/l	TM152	0.0142	0.00879	0 528			
Zine (dias fill)	<0.004 "	TMAGO	# 0.00393	# 0.00351	#			
Zinc (diss.filt)	<0.001 mg/l	TM152			0.00199			
Sodium (Dis.Filt)	<0.076 mg/l	TM152	# 30.6	# 46.3	# 53 2			
oodium (Dis.Filt)	~0.076 mg/l	TWITUZ	30.6	46.3 #	53 Z #			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	# 14 2	# 20.9	26.4			
magnoolam (Dio.1 III)	-0.000 mg/f	TWITUZ	14 2 #	20.5	20.4 #			
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Results Legend		Customer Sample Ref.	SW1	SW2	SW3		
# ISO17025 accredited. M mCERTS accredited.			301	5112	5115		
aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)					
Subcontracted - refer to subcontracted	r report for	Sample Type Date Sampled	Surface Water (SW) 17/12/2019	Surface Water (SW) 17/12/2019	Surface Water (SW) 17/12/2019		
accreditation status. % recovery of the surrogate standard	to check the	Sample Time					
efficiency of the method. The results compounds within samples aren't com		Date Received	19/12/2019	19/12/2019	19/12/2019		
recovery		SDG Ref	191219-89 21407978	191219-89 21407979	191219-89 21407980		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	2140/9/0	2140/9/9	2140/900		
Component	LOD/Units						
Potassium (Dis.Filt)	<0 2 mg/		25.6	17.3	11.8		
			#	#	#		
Calcium (Dis.Filt)	<0 2 mg/	TM152	111	147	189		
	, i i i i i i i i i i i i i i i i i i i		#	#	#		
Iron (Dis.Filt)	<0.019 mg	/I TM152	0.0413	0.0239	0.0302		
			#	#	#		
Magnesium (Tot. Unfilt.)	<0.05 mg/	1 TM152	15	21.9	30.7		
magnooram (roc onnic)	0.00 mg		#	21.0	#		
Iron (Tot. Unfilt.)	<0.024 mg	/I TM152	0.38	0.468	19.7		
	~0.024 mg	1 111132	0.00	0.400 #	15.7		
Manaumu (diaa Elli)	<0.00001	TM183	<del>π</del> <0.00001		<del>،</del> <0.00001		
Mercury (diss.filt)	<0.00001 mg/l	11/103	NU.00001	NU.00001	NU.00001		
Moroury (tot unfilt)		TM183	<0.00002	<0.00002	0.000026		
Mercury (tot.unfilt)	<0.00002	11/103	<0.0000Z	NU.00002	0.000036		
Nikita an NOO	mg/l	T1404	0.070	0.225	0.200	 	
Nitrite as NO2	<0.05 mg/	1 TM184	0 272	0.335	0 309		
Dharabata (0.8	10.05	T1404	#	#	#		
Phosphate (Ortho as PO4)	<0.05 mg/	1 TM184	2.09	1 26	0.27		
			#	#	#	 	
Sulphate	<2 mg/l	TM184	87 9	165	255		
	_		#	#	#	 	
Chloride	<2 mg/l	TM184	56 9	82.7	90 3		
			#	#	#		
Total Oxidised Nitrogen as NO3	<0 3 mg/	TM184	73.4	114	153		
			#	#	#		
Nitrate as NO3	<0 3 mg/	TM184	73.1	114	153		
Oxygen, dissolved	<0 3 mg/	TM187	6.22	7.19	7.47		
			0	@	@		
PCB congener 28	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015		
	mg/l						
PCB congener 52	< 0.000015	5 TM197	< 0.000015	<0.000015	< 0.000015		
	mg/l						
PCB congener 101	< 0.000015	5 TM197	<0.00015	<0.000015	< 0.000015		
, i i i i i i i i i i i i i i i i i i i	mg/l						
PCB congener 118	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
<b>-</b>	ma/l						
PCB congener 138	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
· · · · · · · · · · · · · · · · · · ·	mg/l						
PCB congener 153	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
i ob congonol roo	mg/l			0.000010	0.000010		
PCB congener 180	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
. Se congener rec	mg/l		5.000010	0.000010	5.000010		
Sum of detected EC7 PCB's	<0.000105	5 TM197	<0.000105	<0.000105	<0.000105		
Sam of actedieu EO/ FOD 3	<0.00010. mg/l		-0.000100	-0.000100	-0.000100		
PCB congener 77	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015		
. So oungener ri	<0.000010 mg/l		-0.000010	-0.000010	-0.000010		
PCB congener 81	<0.000015	5 TM197	<0.00015	<0.00015	<0.000015		
1 OD Congener of	<0.00001: mg/l	, 1013/	-0.000010	-0.000010	~0.000010		
PCB congener 105	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015		
FOD Wingener 100	<0.00001 mg/l	, 10197	~0.000010	~0.000010	~v.uuuu10		
PCB congener 114	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015		
1 OD Wrigener 114	<0.000018 mg/l	, 10197	~0.000010	~0.000010	~0.000010		
DCB congener 102	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015	 	
PCB congener 123	<0.00001: mg/l	, 101197	~0.000010	~0.000015	~v.uuuu10		
PCB congener 126	<0.000015	5 TM197	<0.00015	<0.000015	<0.000015		
FOD Whyener 120		, 10197	~0.000010	~0.000010	~0.00010		
DCR congener 450	mg/l	5 TM197	<0.00004F	<0.00004E	<0.000045	 	
PCB congener 156	<0.000015	IM197	<0.000015	<0.000015	<0.000015		
DOD 457	mg/l	T1407	<0.000045	<0.000045	<0.000045		
PCB congener 157	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
D0D 407	mg/l	71407	10 0000 15	10 000015	40.000015	 	
PCB congener 167	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
	mg/l					 	
PCB congener 169	<0.000015	5 TM197	<0.000015	<0.000015	<0.000015		
	mg/l	1					

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	Desuits Learned							
1	Results Legend IS017025 accredited.	C	ustomer Sample Ref.	SW1	SW2	SW3		
	mCERTS accredited.							
aq diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)					
tot.unfilt	Total / unfiltered sample.		Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
· ·	Subcontracted - refer to subcontractor report f	ior 🛛	Date Sampled	17/12/2019	17/12/2019	17/12/2019		
	accreditation status. % recovery of the surrogate standard to check	the	Sample Time					
1	efficiency of the method. The results of individ	lual	Date Received	19/12/2019	19/12/2019	19/12/2019		
	compounds within samples aren't corrected fo recovery	or the	SDG Ref	191219-89	191219-89	191219-89		
(F)	Trigger breach confirmed		Lab Sample No.(a) AGS Reference	21407978	21407979	21407980		
	Sample deviation (see appendix)		AGS Reference					
Compo		LOD/Units	Method				 	
PCB co	ngener 189	<0.000015	TM197	<0.00015	<0.00015	<0.000015		
		mg/l						
Nitroger	n, Total	<1 mg/l	TM212	19 5	27.1	37.1		
Ĭ		Ŭ		#	#	#		
Charmin	um, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03		
Chromit	um, nexavalent	<0.05 mg/i	11/1/2/4 1	NU.U3	NU.U3	NU.U0		
pН		<1 pH Units	TM256	7.98	7 99	7.74		
				#	#	#		
Cvanide	e, Free (low level)	< 0.0025	TM279	< 0.0025	< 0.0025	<0.0025		
		mg/l		#	#	#		
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#### **CERTIFICATE OF ANALYSIS**

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SDG: Location:		91219-89 Bradwell			843 2478	Report Number: Superseded Report	536359	
ALS Location: PAH Spec MS - Aqueous		hadwell	order	Number. 52	2470			
Results Legend		ustomer Sample Ref.	SW1	SW2	SW3			
ISO17025 accredited.     M mCERTS accredited.     aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
<ul> <li>Subcontracted - refer to subcontractor report accreditation status.</li> </ul>		Date Sampled	17/12/2019	17/12/2019	17/12/2019			
** % recovery of the surrogate standard to check efficiency of the method. The results of individ	iual	Sample Time Date Received	19/12/2019	19/12/2019	19/12/2019			
compounds within samples aren't corrected fo recovery (F) Trigger breach confirmed	orthe	SDG Ref Lab Sample No.(s)	191219-89 21407978	191219-89 21407979	191219-89 21407980			
1-3+§@ Sample deviation (see appendix)		AGS Reference						
Component Naphthalene (aq)	LOD/Units <0.00001	Method TM178	<0.00001	<0.00001	<0.00001			
	mg/l		@#	@#	@#			
Acenaphthene (aq)	<0.000005	TM178	<0.00005	<0.00005	0.00009			
Acenaphthylene (aq)	mg/l <0.000005	TM178	@# <0.000005	@# <0.000005	@# <0.000005			
noenapriaryiene (aq)	mg/l	1	@#	@#	@#			
Fluoranthene (aq)	<0.000005	TM178	0.000056	0.000043	0.000466			
Anthrocomo (cz)	mg/l	TM178	@# 0.000006	@#	@# 0.000017			
Anthracene (aq)	<0.000005 mg/l	ιwii/δ	0.000006 @#	<0.000005	0.000017 @#			
Phenanthrene (aq)	<0.000005	TM178	0.000014	<0.000005	0.000123			
	mg/l		@#	@#	@#			
Fluorene (aq)	<0.000005 mg/l	TM178	<0.000005 @#	<0.000005 @#	0.000006 @#			
Chrysene (aq)	<0.000005	TM178	0.000033	0.000023	0.000201			
	mg/l		@#	@#	@#			
Pyrene (aq)	<0.000005	TM178	0.000052	0.000039	0.000404			
Benzo(a)anthracene (aq)	mg/l <0.000005	TM178	@# 0.000012	@# 0.000006	@# 0.000145			
	mg/l		@#	@#	@#			
Benzo(b)fluoranthene (aq)	<0.000005	TM178	0.000067	0.000071	0.000383			
Benzo(k)fluoranthene (aq)	mg/l <0.000005	TM178	@# 0.000028	@# 0.000065	@# 0.000184			
	mg/l		@#	@#	@#			
Benzo(a)pyrene (aq)	<0.000002	TM178	0.000044	0.000034	0.00026			
Dibenzo(a,h)anthracene (aq)	mg/l <0.000005	TM178	@# 0.00001	@# <0.000005	@# 0.000042			
	<0.000005 mg/l	INITO	@#	<0.000005 @#	0.000042			
Benzo(g,h,i)perylene (aq)	<0.000005	TM178	0.000031	0.000022	0.000212			
Indeno(1,2,3-cd)pyrene (aq)	mg/l <0.000005	TM178	@# 0.000034	@# 0.000028	@# 0.00019			
indeno(1,2,0-outpyrene (dq)	<0.000005 mg/l	iwiiro	0.000034	0.000028	0.00019			
PAH, Total Detected USEPA 16	<0.00082	TM178	0.000388	0.000331	0.00264			
(aq)	mg/l		@#	@#	@#			

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SDG: Location:		91219-89 radwell		t Reference: r Number:	418 322	343 2478	Report Number: Superseded Report	536359
VOC MS (W) - Aqueou	s							
Results Legend # IS017025 accredited.		istomer Sample Ref.	SW1	SW2		SW3		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report	t for	Sample Type Date Sampled	Surface Water (SW) 17/12/2019	Surface Water (SV 17/12/2019	N)	Surface Water (SW) 17/12/2019		
accreditation status. ** % recovery of the surrogate standard to cherrory efficiency of the method. The results of indiv		Sample Time Date Received	19/12/2019			19/12/2019		
compounds within samples aren't corrected recovery		SDG Ref	191219-89 21407978	191219-89 21407979		191219-89 21407980		
(F) Trigger breach confirmed 1-3+5@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	2140/978	2140/5/5		210/300		
Component 1,2,4-Trichlorobenzene (aq)	LOD/Units <0.001 mg/l	Method TM176	<0.001	<0.001		<0.002		
	-		@#		@#	@#		
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
	<0.004 mall	TM176	@# <0.001	<0.001	@#	@#		
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TIVET76	<0.001	NU.UU 1	@#	<0.002 @#		
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
_, ,,	g.		@#		@#	@#		
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<i>щ</i> #	<0.002		
	<0.004	Th470	@#	-0.004	@#	@#		
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
	<0.001 mg/r	IMITO	<0.001 @#	-0.001	@#	<0.002 @#		
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	0,4	<0.002		
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
			@#		@#	@#		
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<u>e</u>	<0.002		
2 Nitrophonol (as)	<0.001 mall	TM176	@# <0.001	<0.001	@#	@# <0.002		
2-Nitrophenol (aq)	<0.001 mg/l	TIVET76	<0.001	NU.001	@#	<0.002 @#		
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
	, in the second s		@#		@#	@#		
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<i>w</i> #	<0.002		
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
4-Nitroaniline (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		<u> </u>
	-0.00 T High		@#		@#	@#		
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
Azobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
			@#		@#	@#		
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<u>ه</u> "	<0.002		
Anthronomo (a-)	<0.004	Th470	@#	20.004	@#	@#		
Anthracene (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002		
bis(2-Chloroethoxy)methane	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
(aq)			@#		@#	@#		
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.002	<0.002	@ #	<0.004		
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@# <0.002		
	_		@#		@#	@#		
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @#		

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### CERTIFICATE OF ANALYSIS

	SDG:	10	04040.00							
	ocation:		91219-89 radwell		t Reference: Number:	418 322	343 2478	Report Number: Superseded Report	536359	
SVOC MS (W) -	Aqueous									
Results I # ISO17025 accredited.		Cu	stomer Sample Ref.	SW1	SW2		SW3			
M mCERTS accredited. aq Aqueous / settled sample diss.filt Dissolved / filtered samp			Depth (m)							
tot.unfilt Total / unfiltered sample. Subcontracted - refer to			Sample Type Date Sampled	Surface Water (SW) 17/12/2019	Surface Water (SV 17/12/2019	W)	Surface Water (SW) 17/12/2019			
** % recovery of the surrog efficiency of the method	ate standard to sheck the The results of individual		Sample Time Date Received	19/12/2019	19/12/2019		19/12/2019			
compounds within samp recovery	les aren't corrected for the		SDG Ref	191219-89 21407978	191219-89 21407979		191219-89 21407980			
(F) Trigger breach confirme 1-3+§@ Sample deviation (see ap	ppendix)		Lab Sample No.(s) AGS Reference	2140/3/0	2140/9/9		2140/300			
Component Benzo(b)fluoranthene (a		LOD/Units <0.001 mg/l	Method TM176	<0.001	<0.001		<0.002			
		ÿ		@#		@#	@	#		
Benzo(k)fluoranthene (a	(q)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
Benzo(a)pyrene (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @	#		
Benzo(g,h,i)perylene (ad	a)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @			
Carbazole (aq)		<0.001 mg/l	TM176	<0.001	<0.001		<0.002			
Chrysene (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@ <0.002	#		
Dibenzofuran (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@ <0.002	#		
n-Dibutyl phthalate (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@ <0.002	#		
Diethyl phthalate (aq)		<0.001 mg/l	TM176	<0.001	<0.001	@#	<0.002	#		
		-		@#		@#	@	#		
Dibenzo(a,h)anthracene		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
Dimethyl phthalate (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
n-Dioctyl phthalate (aq)		<0.005 mg/l	TM176	<0.005 @#	<0.005	@#	<0.01	#		
Fluoranthene (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @	#		
Fluorene (aq)		<0.001 mg/l	TM176	<0.001	<0.001	@#	<0.002			
Hexachlorobenzene (aq	)	<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002 @			
Hexachlorobutadiene (a	q) ·	<0.001 mg/l	TM176	<0.001	<0.001	-	<0.002			
Pentachlorophenol (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	<0.002	#		
Phenol (aq)		<0.001 mg/l	TM176	<0.001	<0.001		<0.002			
n-Nitroso-n-dipropylamir	ne (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002			
Hexachloroethane (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@ <0.002	#		
Nitrobenzene (aq)		<0.001 mg/l	TM176	@# <0.001	<0.001	@#	@ <0.002	#		
		Ŭ		@#		@#	0	#		
Naphthalene (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
lsophorone (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
Hexachlorocyclopentadi	ene (aq)	<0.001 mg/l	TM176	<0.001	<0.001		<0.002			
Phenanthrene (aq)		<0.001 mg/l	TM176	<0.001 @#	<0.001	@#	<0.002	#		
Indeno(1,2,3-cd)pyrene	(aq)	<0.001 mg/l	TM176	<0.001	<0.001	@#	<0.002			
Pyrene (aq)		<0.001 mg/l	TM176	<0.001	<0.001		<0.002			
				@#		@#	@	π		
						_		+ +		
								+ +		
								+ +		
								+		

ALS

#### **CERTIFICATE OF ANALYSIS**

Validated

SDG: Location:		91219-89 Fradwell		t Reference: r Number:	418 322	43 478	Report Number: Superseded Report	536359	
TPH CWG (W)									
Results Legend # IS017025 accredited.	Ci	ustomer Sample Ref.	SW1	SW2		SW3			
M mCERTS assredited. 2q Aqueous / settled sample.									
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)		Surface Water (SW)			
<ul> <li>Subcontracted - refer to subcontractor report for accreditation status.</li> <li>% recovery of the surrogate standard to check</li> </ul>		Date Sampled Sample Time	17/12/2019	17/12/2019		17/12/2019			
efficiency of the method. The results of individ compounds within samples aren't corrected fo	ual	Date Received	19/12/2019 191219-89	19/12/2019 191219-89		19/12/2019 191219-89			
recovery (F) Trigger breach confirmed		SDG Ref Lab Sample No.(s)	21407978	21407979		21407980			
1-345@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method							
GRO Surrogate % recovery**	%	TM245	110	106		109			
GRO >C5-C12	<0.05 mg/l	TM245	<0.05	<0.05	#	<0.05			
Methyl tertiary butyl ether (MTBE)	<0.003 mg/l	TM245	<0.003 #	<0.003	#	<0.003 #			
Benzene	<0.007 mg/l	TM245	<0.007 #	<0.007	#	<0.007 #			
Toluene	<0.004 mg/l	TM245	<0.004 #	<0.004	#	<0.004 #			
Ethylbenzene	<0.005 mg/l	TM245	<0.005 #	<0.005	#	<0.005 #			
m,p-Xylene	<0.008 mg/l	TM245	<0.008 #	<0.008	#	<0.008 #			
o-Xylene	<0.003 mg/l	TM245	<0.003 #	<0.003	#	<0.003 #			
Sum of detected Xylenes	<0.011 mg/l	TM245	<0.011	<0.011		<0.011			
Sum of detected BTEX	<0.028 mg/l	TM245	<0.028	<0.028		<0.028			
Aliphatics >C5-C6	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aliphatics >C6-C8	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aliphatics >C8-C10	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aliphatics >C10-C12	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aliphatics >C12-C16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aliphatics >C16-C21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aliphatics >C21-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Total Aliphatics >C12-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aromatics >EC5-EC7	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aromatics >EC7-EC8	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aromatics >EC8-EC10	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aromatics >EC10-EC12	<0.01 mg/l	TM245	<0.01	<0.01		<0.01			
Aromatics >EC12-EC16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aromatics >EC16-EC21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aromatics >EC21-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Total Aromatics >EC12-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Total Aliphatics & Aromatics >C5-35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			
Aliphatics >C16-C35 Aqueous	<0.01 mg/l	TM174	<0.01	<0.01		<0.01			

### **CERTIFICATE OF ANALYSIS**

SDG:	1	91219-89	Clien	t Reference:	11843	Report Number: 536359		
ALS Location		Bradwell			322478	Superseded Report		
OC MS (W)								
Results Legend	Ci	ustomer Sample Ref.	SW1	SW2	SW3			
M mCERTS accredited. aq Aqueous / settled sample.								
diss.fit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
<ul> <li>Subcontracted - refer to subcontractor re accreditation status.</li> <li>% recovery of the surrogate standard to (</li> </ul>	·	Date Sampled Sample Time	17/12/2019	17/12/2019	17/12/2019			
efficiency of the method. The results of in compounds within samples aren't correct	ndividual	Date Received	19/12/2019	19/12/2019	19/12/2019			
recovery (F) Trigger breach confirmed		SDG Ref Lab Sample No.(s)	191219-89 21407978	191219-89 21407979	191219-89 21407980			
1-345@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method						
Dibromofluoromethane**	%	TM208	108	113	108			
Toluene-d8**	%	TM208	99 9	101	100			
4-Bromofluorobenzene**	%	TM208	101	102	100			
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
Chloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
onoromenane	-0.001 mg/r	TIVIZOO	-0.001 #	-0.001	# #			
Vinyl chloride	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
Promono the	<0.004 "	THOOD	#	20.004	# #			
Bromomethane	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
Chloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
			#		# #			
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
1,1-Dichloroethene	<0.001 mg/l	TM208	# <0.001	<0.001	# #			
			#		# #			
Carbon disulphide	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
Dichloromethane	<0.003 mg/l	TM208	# <0.003	<0.003	# #			
Divisionalite	~0.005 mg/l	I WIZUO	<0.003 #	<u>∿0.000</u>	<0.003 #			
Methyl tertiary butyl ether	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
(MTBE)			#		# #			
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
1,1-Dichloroethane	<0.001 mg/l	TM208	<del>#</del> <0.001	<0.001	# <del>"</del> * *			
	, in the second		#		# #			
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
2,2-Dichloropropane	<0.001 mg/l	TM208	# <0.001	<0.001	# #			
	e.cer mg/			0.001				
Bromochloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
Chloroform	<0.001 mg/l	TM208	# <0.001	<0.001	# #			
	~0.001 mg/l	1 WIZUO	<0.001 #	<u>∿0.001</u>	* *			
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
44.5.11		THOSE	#	.0.051	# #			
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
Carbontetrachloride	<0.001 mg/l	TM208	* <0.001	<0.001	# # <0.001			
	_		#		# #			
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
Benzene	<0.001 mg/l	TM208	# <0.001	<0.001	# # #			
	so.oo r mg/l	111/200	<0.001 #	NU.UU I	# #			
Trichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
	<0.004 F	TMOOD	#	20.004	# #			
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
Dibromomethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
			#		# #			
Bromodichloromethane	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	# <0.001	<0.001	# #			
	-o.oo r mg/r	. MEGO	<0.001 #	-0.001	# #			
Toluene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
have 4.2 Disklass	-0.004	THOSE	#	40.001	# #			
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<del>۳</del> <0.001	<0.001	**************************************			
			#		# #			
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001 #	<0.001	<0.001 # #			

### CERTIFICATE OF ANALYSIS

				CERTI	FICATE O	FA	NALYSIS			
	SDG: Location		91219-89 Bradwell		t Reference: r Number:	418 322			Report Numbe Superseded Rep	
	/									
	Results Legend	C	ustomer Sample Ref.	SW1	SW2		SW3			
M mi aq Ad	CERTS accredited. queous / settled sample.									
tot.unfilt To	issolved / filtered sample. otal / unfiltered sample. ubcontracted - refer to subcontractor r	report for	Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)		Surface Water (SW)			
20	screditation status. resovery of the surrogate standard to	·	Date Sampled Sample Time	17/12/2019	17/12/2019		17/12/2019			
ef	ficiency of the method. The results of i ompounds within samples aren't corre-	individual	Date Received SDG Ref	19/12/2019 191219-89	19/12/2019 191219-89		19/12/2019 191219-89			
(F) Tr	rigger breach confirmed		Lab Sample No.(s)	21407978	21407979		21407980			
1-3+§@ Sa Compone	ample deviation (see appendix) ent	LOD/Units	AGS Reference Method							
Tetrachlor	oethene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Dibromoch	hloromethane	<0.001 mg/l	TM208	* <0.001 #	<0.001	#	<0.001	#		
1,2-Dibron	noethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Chloroben	izene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
1,1,1,2-Te	trachloroethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Ethylbenze		<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
m,p-Xylen	e	<0.001 mg/l	TM208	<0.001 #	<0.001	#	< 0.001	#		
o-Xylene		<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Styrene		<0.001 mg/l	TM208 TM208	<0.001 # <0.001	<0.001	#	<0.001	#		
Bromoform			TM208	#	<0.001	#	<0.001	#		
Isopropylb	trachloroethane	<0.001 mg/l	TM208	<0.001 # <0.001	<0.001	#	<0.001	#		
	hloropropane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Bromoben		<0.001 mg/l	TM200	<0.001 #	<0.001	#	<0.001	#		
Propylben		<0.001 mg/l	TM200	<0.001 #	<0.001	#	<0.001	#		
2-Chloroto		<0.001 mg/l	TM208	<0.001 #	<0.001	#	< 0.001	#		
	ethylbenzene	<0.001 mg/l	TM208	# <0.001		#	<0.001	#		
4-Chloroto	oluene	<0.001 mg/l	TM208	# <0.001	<0.001	#	<0.001	#		
tert-Butylb	enzene	<0.001 mg/l	TM208	# <0.001	<0.001	#	<0.001	#		
1,2,4-Trim	ethylbenzene	<0.001 mg/l	TM208	# <0.001	<0.001	#	<0.001	#		
sec-Butylb	penzene	<0.001 mg/l	TM208	# <0.001	<0.001	#	<0.001	#		
4-iso-Prop	yltoluene	<0.001 mg/l	TM208	# <0.001 #	<0.001	#	<0.001	#		
1,3-Dichlo	robenzene	<0.001 mg/l	TM208	# <0.001 #	<0.001	#	<0.001	#		
1,4-Dichlo	robenzene	<0.001 mg/l	TM208		<0.001	#	<0.001	#		
n-Butylber	nzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
1,2-Dichlo	robenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
1,2-Dibron	no-3-chloropropane	<0.001 mg/l	TM208	<0.001	<0.001		<0.001			
1,2,4-Trich	hlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
	obutadiene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
	methyl ether (TAME)	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
Naphthale		<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		
1,2,3-Trich	hlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001	#		

## CERTIFICATE OF ANALYSIS

validated
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			CERTI	FICATE OF	ANALYSIS		
SDG: Location		91219-89 Bradwell			41843 322478	Report Number: Superseded Report	536359
(ALS) Location VOC MS (W)	ι. ι	Jadwell	Olde	Number.	522470	Superseden Report	
Results Legend	C	ustomer Sample Ref.	SW1	SW2	SW3		
mCERTS accredited.     aq Aqueous / settled sample.     diss.filt Dissolved / filtered sample.     tot.unfilt Total / unfiltered sample.     Subcontractor refer to subcontractor re	port for	Depth (m) Sample Type Date Sampled	Surface Water (SW) 17/12/2019	Surface Water (SW) 17/12/2019	Surface Water (SW) 17/12/2019		
accreditation status. ** % recovery of the surrogate standard to ( efficiency of the method. The results of in compounds within samples aren't correc	ndividual	Sample Time Date Received	19/12/2019	19/12/2019	19/12/2019		
recovery (F) Trigger breach confirmed 1-34§@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(9) AGS Reference	191219-89 21407978	191219-89 21407979	191219-89 21407980		
Component 1,3,5-Trichlorobenzene	LOD/Units <0.001 mg/l	Method TM208	<0.001	<0.001	<0.001		
1,0,0-110110100612616	<0.001 High	TW200	NO.001	-0.001	50.001		



SDG:

Location:

Bradwell

CERTIFICATE OF ANALYSIS Client Reference: 41843 Order Number: 322478

Report Number: Superseded Report Validated

536359

# **Table of Results - Appendix**

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
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
TM110	BS 1377: Part 3 1990	Redox Potential
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
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
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
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	By GC-F D	Determination of GRO by Headspace in waters
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
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

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



Client Reference: 41843 Order Number: 322478 Report Number: Superseded Report Validated

536359

Lab Sample No(s)	21407978	21407979	21407980
Customer Sample Ref.	SW1	5W2	5W3
AGS Ref. Depth			
Type	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	31-Dec-2019	31-Dec-2019	31-Dec-2019
Ammoniacal Nitrogen	28-Dec-2019	28-Dec-2019	28-Dec-2019
Anions by Kone (w)	31-Dec-2019	31-Dec-2019	31-Dec-2019
Chromium III	30-Dec-2019	30-Dec-2019	30-Dec-2019
Conductivity (at 20 deg.C)	30-Dec-2019	30-Dec-2019	30-Dec-2019
Dissolved Metals by ICP-MS	30-Dec-2019	30-Dec-2019	30-Dec-2019
Dissolved Organic/Inorganic Carbon	28-Dec-2019	28-Dec-2019	28-Dec-2019
Dissolved Oxygen by Titration	30-Dec-2019	30-Dec-2019	30-Dec-2019
EPH CWG (Aliphatic) Aqueous GC (W)	04-Jan-2020	04-Jan-2020	04-Jan-2020
EPH CWG (Aromatic) Aqueous GC (W)	04-Jan-2020	04-Jan-2020	04-Jan-2020
GRO by GC-FID (W)	30-Dec-2019	30-Dec-2019	30-Dec-2019
Hexavalent Chromium (w)	24-Dec-2019	24-Dec-2019	24-Dec-2019
Low Level Cyanide (W)	23-Dec-2019	23-Dec-2019	23-Dec-2019
Mercury Dissolved	31-Dec-2019	31-Dec-2019	31-Dec-2019
Mercury Unfiltered	28-Dec-2019	30-Dec-2019	30-Dec-2019
Nitrite by Kone (w)	23-Dec-2019	23-Dec-2019	23-Dec-2019
PAH Spec MS - Aqueous (W)	03-Jan-2020	03-Jan-2020	03-Jan-2020
PCB Congeners - Aqueous (W)	03-Jan-2020	03-Jan-2020	03-Jan-2020
pH Value	30-Dec-2019	30-Dec-2019	30-Dec-2019
Phosphate by Kone (w)	24-Dec-2019	24-Dec-2019	24-Dec-2019
Redox Potential	23-Dec-2019	23-Dec-2019	23-Dec-2019
Suspended Solids	30-Dec-2019	30-Dec-2019	30-Dec-2019
SVOC MS (W) - Aqueous	03-Jan-2020	03-Jan-2020	03-Jan-2020
Total Metals by ICP-MS	03-Jan-2020	04-Jan-2020	06-Jan-2020
Total Nitrogen	23-Dec-2019	23-Dec-2019	23-Dec-2019
Total Organic and Inorganic Carbon	27-Dec-2019	27-Dec-2019	27-Dec-2019
TPH CWG (W)	04-Jan-2020	04-Jan-2020	04-Jan-2020
VOC MS (W)	30-Dec-2019	30-Dec-2019	30-Dec-2019

# **Fest Completion Dates**

	SDG:	191219-89	Client Reference:	41843	Report Number:	536359
2	Location:	Bradwell	Order Number:	322478	Superseded Report	

Appendix

#### General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. t 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
Ş	Sampled on date not provided
•	Sample holding time exceeded in laboratory
0	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).

Asba stos Type	Common Name
Chrysoile	White Asbestos
Amosite	Brow nAsbestos
Cro ci dolite	Blue Adve stos
Fibrous Actinolite	-
Fibrous Anhophylite	-
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.



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

Wood Environment & Infrastructure Solutions UK Limited Northumbria House Regent Centre Gosforth Newcastle Upon Tyne Tyne and Wear NE3 3PX

Attention: Sarah Pilkington

# **CERTIFICATE OF ANALYSIS**

Date of report Generation:	
Customer:	
Sample Delivery Group (SDG)	:
Your Reference:	
Location:	
Report No:	

18 January 2020 Wood Environment & Infrastructure Solutions UK Limited 200110-7 41843 Bradwell 537694

This report has been revised and directly supersedes 537575 in its entirety.

We received 5 samples on Friday January 10, 2020 and 3 of these samples were scheduled for analysis which was completed on Friday January 17, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

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

Approved By:

<u>Sonia McWhan</u> Operations Manager



Client Reference: 41843 Order Number: 322478 Report Number:537694Superseded Report:537575

Validated

# **Received Sample Overview**

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
21467099	SW1			08/01/2020
21467101	SW2			08/01/2020
21467100	SW3			08/01/2020
21467102	SW2 DISREGARD			08/01/2020
21467104	SW3 DISREGARD			08/01/2020

#### Maximum Sample/Coolbox Temperature (°C) :

200110-7

Bradwell

7.8

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of  $(5\pm3)$ °C for a period of up to 24hrs.

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.

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

		CE	RTI	FIC	AT	E O	F A	N/	<b>ALY</b>	'SIS	5								Vali	date	d
SDG: Location:	200110-7 Bradwell		Clie Ore	ent R Jer N	lumb	ence ber:	:418 322	843 8478				Re Su	eport pers	t Nu eded	mbe Rep	r: ort:	537 537	694 7575			
Results Legend										21								21			21
X Test	Lab Sample	No(s)								21467099								21467101			21467100
No Determination Possible			-							ē								_			ō
Sample Types -	Custome Sample Refe								SW1								SM5	CMD CMC			
S - Soil/Solid UNS - Unspecified Solid GW - Cround Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate	AGS Refere	ence																			
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (n	n)				-		-			0		0	-		Ŧ			0		0
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	er	0.51 glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.51 glass bottle (ALE227)	500ml Plastic (ALE208)	0 KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.51 glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Ty	/pe	WS MS	WS		MS	MS	WS	MS			ws	MS	WS				WS	WS	WS	
Alkalinity as CaCO3	All	NDPs: 0 Tests: 3		X								X								X	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3				X								X							
Anions by Kone (w)	All	NDPs: 0 Tests: 3		X								X								X	
Chromium III	All	NDPs: 0 Tests: 3					X								X						
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 3		X								X								X	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3					X								X						
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3	x								X								X		
Dissolved Oxygen by Titration	All	NDPs: 0 Tests: 3			x								X								x
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								X								X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								X								X		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3								X								X			
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3		X								X								x	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 3							X								X				
Mercury Dissolved	All	NDPs: 0 Tests: 3					X								X						
Mercury Unfiltered	All	NDPs: 0 Tests: 3						X								X					

				21467100
				SM3
-		т		
H2SO4 (ALE244) SW	HNO3 Filtered (ALE204)	INO3 Unfiltered (ALE204)	NaOH (ALE245) SW	Vial (ALE297) SW
WS	WS	MS	WS	WS
X				
	x			
	x			
				X
			X	
	X			
	^			
		X		

		CE	RTI	FIC	ATI	E <b>O</b>	F A	N/	٨LY	SIS	5								Vali	date	b
SDG: Location:	200110-7 Bradwell			ent R ler N								Re Su	por pers	t Nui eded	mbe Repo	r: ort:	5376 537	694 7575			
Results Legend										21								21			21
X Test	Lab Sample	No(s)								21467099								21467101			21467100
No Determination Possible			-							99								0]	100		
	Custome Sample Refe									SW1								SM5			SM3
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Refere	AGS Reference																			
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (n	n)																			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	er	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Ty	/pe	WS	WS	WS	WS	WS	WS	SN	WS	WS	WS	WS		WS	WS	WS	WS	WS		WS
Nitrite by Kone (w)	All	NDPs: 0 Tests: 3							X								X				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3	x								X								X		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 3	x								x								x		
pH Value	All	NDPs: 0 Tests: 3		X								X								X	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 3		x								X								x	
Redox Potential	All	NDPs: 0 Tests: 3	x								x								X		
Suspended Solids	All	NDPs: 0 Tests: 3		X								x								X	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3	x								X								x		
Total Metals by ICP-MS	All	NDPs: 0 Tests: 3						x								x					
Total Nitrogen	All	NDPs: 0 Tests: 3		X								x								x	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 3				x								X							
TPH CWG (W)	All	NDPs: 0 Tests: 3	x								x								X		
VOC MS (W)	All	NDPs: 0 Tests: 3								x								x			

				21467100
				SW3
H2SO4 (ALE244) SW	HNO3 Filtered (ALE204)	HNO3 Unfiltered SW (ALE204)	NaOH (ALE245) SW	Vial (ALE297) SW
244) SV	ed SW	red SV	45) SV	VS (2
	_	_		`
			X	
		X		
x				
				Х

(ALS)

#### CERTIFICATE OF ANALYSIS Client Reference: 41843

SDG:		200110-7		ICATE OF		Report Number:	537694
ALS Location		Bradwell		er Number: 32		Superseded Report:	537575
Results Legend	Cust	omer Sample Ref.	SW1	SW2	SW3		
SO17025 accredited.     M mCERTS accredited.     Aq Augeous / settled sample.     diss.fit Dissolved / filtered sample.     tot.unfit Total / unfiltered sample.     * Subcontractor	report for	Depth (m) Sample Type Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020		
accreditation status. ** % recovery of the surrogate standard to efficiency of the method. The results o	f individual	Sample Time Date Received	10/01/2020	10/01/2020	10/01/2020		
compounds within samples aren't corr recovery (F) Trigger breach confirmed 1-34§@ Sample deviation (see appendix)		SDG Ref ab Sample No.(s) AGS Reference	200110-7 21467099	200110-7 21467101	200110-7 21467100		
Component Suspended solids, Total	LOD/Units <2 mg/l	Method TM022	6.95	5.6	5.95		
	, in the second se						
Alkalinity, Total as CaCO3	<2 mg/l	TM043	270	266	260		
Carbon, Organic (diss.filt)	<3 mg/l	TM090	9.78	10.3	9.91		
Organic Carbon, Total	<3 mg/l	TM090	8.97	11.3	9.16		
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	0.659	0.37		
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099	<0.3	0.847	0.476		
Redox potential	mV	TM110	163	164	170		
Conductivity @ 20 deg.C	< 0.005	TM120	1.04	1.04	1.09		
Chromium, Trivalent	mS/cm <0.03 mg/l	TM152	<0.03	<0.03	<0.03		
Arsenic (diss.filt)	<0.0005	TM152	0.00132	0.00146	0.00147		
Arsenic (tot.unfilt)	mg/l <0.002 mg/l	TM152	<0.002	<0.002	<0.002		
Boron (diss.filt)	<0.01 mg/l	TM152	0.0629	0.0757	0.0787		
Boron (tot.unfilt)	<0.02 mg/l	TM152	0.0782	0.0955	0.096		
Cadmium (diss.filt)	<0.00008	TM152	<0.0008	<0.0008	<0.0008		
Cadmium (tot.unfilt)	mg/l <0.0005	TM152	<0.0005	<0.0005	<0.0005		
	mg/l						
Chromium (tot.unfilt)	<0.003 mg/l		0.0297	<0.003	<0.003		
Chromium (diss.filt)	<0.001 mg/l	TM152	<0.001	<0.001	<0.001		
Copper (tot.unfilt)	<0.001 mg/l	TM152	0.00382	0.00283	0.00332		
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	<0.001	<0.001		
Copper (diss.filt)	<0.0003 mg/l	TM152	0.00306	0.00256	0.00242		
Manganese (tot.unfilt)	<0.001 mg/l	TM152	0.00715	0.0276	0.0125		
Lead (diss.filt)	<0.0002 mg/l	TM152	<0.0002	<0.0002	<0.0002		
Nickel (tot.unfilt)	<0.001 mg/l	TM152	0.0141	0.00337	0.00257		
Manganese (diss.filt)	<0.003 mg/l	TM152	<0.003	0.0359	0.0101		
Phosphorus (tot.unfilt)	<0.02 mg/l	TM152	0.229	0.387	0.301		
Selenium (tot.unfilt)	<0.001 mg/l	TM152	0.00176	0.00175	0.00126		
Nickel (diss.filt)	<0.0004	TM152	0.00371	0.00296	0.00233		
Phosphorus (diss.filt)	mg/l <0.01 mg/l	TM152	0.203	0.336	0.245		
Selenium (diss.filt)	<0.001 mg/l		0.00206	0.00183	0.00118		
Zinc (tot.unfilt)	<0.005 mg/l	TM152	0.00513	<0.005	0.00538		
	<0.003 mg/l		0.00313	0.003	0.00338		
Zinc (diss.filt)							
Sodium (Dis.Filt)	<0.076 mg/l		40.3	50	48.4		
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	21.5	23.9	24.2		-

ALS

SDG: Location:

# 200110-7 Bradwell

Client Reference:41843 Order Number: 322478

Report Number: Superseded Report: 537694 537575

	Results Legend	6	untermos Comunic Dof	0111	0110	0110			
# M	ISO17025 accredited. mCERTS accredited.	Ci	ustomer Sample Ref.	SW1	SW2	SW3			
aq disə.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)						
tot.unfilt	Total / unfiltered sample. Subcontracted - refer to subcontractor i	report for	Sample Type Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020			
accreditation status. ** % recovery of the surrogate standard to check the efficiency of the method. The results of individual		check the	Sample Time Date Received	10/01/2020	10/01/2020	10/01/2020			
	compounds within samples aren't corre recovery	cted for the	SDG Ref	200110-7	200110-7	200110-7			
(F) 1-3+§@	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	21467099	21467101	21467100			
Comp		LOD/Unit		22	14.5	9.76			
Polass	ium (Dis.Filt)	<0.2 mg/		22	14.5	9.70			
Calciur	n (Dis.Filt)	<0.2 mg/	1 TM152	171	175	178			
leas (D	- Fill)	<0.040 m	a/I TM152	<0.010	<0.010	<0.010			
Iron (D	IS.FIIL)	<0.019 mg	g/i iwii52	<0.019	<0.019	<0.019			
Magne	sium (Tot. Unfilt.)	<0.05 mg	/I TM152	22.6	24.7	25.6			
lean /T	ot. Unfilt.)	<0.024 mg	a/I TM152	0.195	0.284	0.273			
Iron (1	ol. Uniiil.)	≤0.024 mį	g/i iwiioz	0.195	0.284	0.213			
Mercur	y (diss.filt)	<0.00001	TM183	<0.00001	<0.00001	<0.00001			
	(Internet)	mg/l	T1400	-0.00000	-0.00000	-0.00000			
Mercur	y (tot.unfilt)	<0.00002 mg/l	2 TM183	<0.00002	<0.00002	<0.00002			
Nitrite	as NO2	<0.05 mg	/I TM184	0.213	1	0.716			
DE		<0.0F		0.004	4.00	0 707			
Phosp	nate (Ortho as PO4)	<0.05 mg	/I TM184	0.631	1.09	0.797			
Sulpha	te	<2 mg/l	TM184	114	157	180			
				~					
Chlorid	e	<2 mg/l	TM184	81.1	95.6	95			
Total C	xidised Nitrogen as NO3	<0.3 mg/	1 TM184	171	147	141			
	-								
Nitrate	as NO3	<0.3 mg/	1 TM184	170	145	140			
Oxyge	n, dissolved	<0.3 mg/	1 TM187	6.9	5.62	5.69			
PCB a	ongener 28	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
PCB o	ongener 52	mg/l <0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	- -	mg/l							
PCB a	ongener 101	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 118	mg/l <0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	0	mg/l							
PCB a	ongener 138	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 153	< 0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	-	mg/l							
PCB a	ongener 180	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
Sum of	detected EC7 PCB's	<0.00010	5 TM197	<0.000105	<0.000105	<0.000105			
		mg/l							
PCB a	ongener 77	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB o	ongener 81	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
		mg/l							
PCB a	ongener 105	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 114	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	-	mg/l							
PCB a	ongener 123	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 126	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	-	mg/l							
PCB a	ongener 156	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 157	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	•	mg/l							
PCB a	ongener 167	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
PCB a	ongener 169	<0.00001	5 TM197	<0.000015	<0.000015	<0.000015			
	-	mg/l							
PCB a	ongener 189	<0.00001 mg/l	5 TM197	<0.000015	<0.000015	<0.000015			
45.00	38 18/01/2020	mgn					l i		

15:28:38	18/01/2020	0

ort Number: erseded Report: 537694 537575

200110-7	Client Reference:41843	Repo
Bradwell	Order Number: 322478	Supe

				-			
Results Legend # IS017025 accredited.	Cus	tomer Sample Ref.	SW1	SW2	SW3		
M mCERTS accredited. aq Aqueous / settled sample.		D					
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
<ul> <li>Subcontracted - refer to subcontractor accreditation status.</li> </ul>		Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020		
<ul> <li>% recovery of the surrogate standard the efficiency of the method. The results of compounds within samples aren't corr</li> </ul>	to check the of individual	Sample Time Date Received	10/01/2020	10/01/2020	10/01/2020		
compounds within samples aren't corr recovery		SDG Ref	200110-7	200110-7	200110-7		
		.ab Sample No.(s) AGS Reference	s) 21467099	21467101	21467100		
Component	LOD/Units	Method					
Nitrogen, Total	<1 mg/l	TM212	37.1	34.2	30.9		
Chromium, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03		
		714050	774	7.00	7.74		
рН	<1 pH Units	5 TM256	7.74	7.69	7.71		
Cyanide, Free (low level)	<0.0025	TM279	<0.0025	<0.0025	<0.0025	 	
Cyanide, Tree (low level)	~0.0025 mg/l	1111275	~0.0025	~0.0025	~0.0025		
		1 1					
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CERTIFICATE	OF ANALYSIS
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CERTIFICATE OF ANALYSIS								
SDG: Location:		200110-7 Bradwell		nt Reference:41 er Number: 32		Report Nun Superseded I	nber: 537694 Report: 53757	
PAH Spec MS - Aqueous (W)								
Results Legend # ISO17025 accredited.		omer Sample Ref.	SW1	SW2	SW3			
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor r accreditation status.	report for	Sample Type Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020			
** % recovery of the surrogate standard to efficiency of the method. The results of	individual	Sample Time Date Received	10/01/2020	10/01/2020	10/01/2020			
compounds within samples aren't corre recovery (F) Trigger breach confirmed		SDG Ref	200110-7 21467099	200110-7 21467101	200110-7 21467100			
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	ab Sample No.(s) AGS Reference Method						
Naphthalene (aq)	<0.00001 mg/l	TM178	<0.00001	<0.00001	<0.00001			
Acenaphthene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Acenaphthylene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Fluoranthene (aq)	<0.000005 mg/l	TM178	0.000005	0.000006	0.000015			
Anthracene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Phenanthrene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	0.000006			
Fluorene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Chrysene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Pyrene (aq)	<0.000005 mg/l	TM178	<0.000005	0.000006	0.000013			
Benzo(a)anthracene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Benzo(b)fluoranthene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	0.000012			
Benzo(k)fluoranthene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Benzo(a)pyrene (aq)	<0.000002 mg/l	TM178	<0.000002	<0.000002	0.00008			
Dibenzo(a,h)anthracene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Benzo(g,h,i)perylene (aq)	<0.000005 mg/l	TM178	<0.000005	0.000005	0.000012			
Indeno(1,2,3-cd)pyrene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	0.000006			
PAH, Total Detected USEPA 16 (aq)	<0.000082 mg/l	TM178	<0.000082	<0.000082	<0.000082			

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4-Chloroaniline (aq)

4-Methylphenol (aq)

4-Nitroaniline (aq) 4-Nitrophenol (aq)

Azobenzene (aq)

Acenaphthylene (aq)

Acenaphthene (aq)

bis(2-Chloroethyl)ether (aq)

bis(2-Chloroethoxy)methane

Butylbenzyl phthalate (aq)

Benzo(a)anthracene (aq)

bis(2-Ethylhexyl) phthalate (aq)

Anthracene (aq)

(aq)

4-Chlorophenylphenylether (aq)

TM176

< 0.001

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SDG: Location:	: í	200110-7 Bradwell		nt Reference:41 er Number: 32		Report Number: Superseded Report:	537694 537575
SVOC MS (W) - Aque							
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		tomer Sample Ref. Depth (m)	SW1	SW2	SW3		
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor accreditation status. * % recovery of the surrogate standard to		Sample Type Date Sampled Sample Time	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020		
efficiency of the method. The results of compounds within samples aren't corre	individual	Date Received SDG Ref	10/01/2020 200110-7	10/01/2020 200110-7	10/01/2020 200110-7		
recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)	1	ab Sample No.(s) AGS Reference	21467099	21467101	21467100		
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
1,2-Dichlorobenzene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
1,3-Dichlorobenzene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
1,4-Dichlorobenzene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,4,5-Trichlorophenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,4,6-Trichlorophenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,4-Dichlorophenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,4-Dimethylphenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,4-Dinitrotoluene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2,6-Dinitrotoluene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Chloronaphthalene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Chlorophenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Methylnaphthalene (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Methylphenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Nitroaniline (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
2-Nitrophenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
3-Nitroaniline (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
4-Bromophenylphenylether (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		
4-Chloro-3-methylphenol (aq)	<0.001 mg/	TM176	<0.001	<0.001	<0.001		

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CERTIFICATE OF ANALYSIS	
Client Reference:41843	R
Order Number: 322478	S

Report Number:537694Superseded Report:537575

SVOC MS (W) - Aque	ous						
Results Legend # ISO17025 accredited.		omer Sample Ref.	SW1	SW2	SW3		
M mCERTS accredited. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. tot.unfit Total / unfiltered sample. * Subcontracted - refer to subcontractor /	report for	Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)		
* % recovery of the surrogate standard to efficiency of the method. The results of	check the	Date Sampled Sample Time Date Received	08/01/2020	08/01/2020 10/01/2020	08/01/2020 10/01/2020		
compounds within samples aren't corre recovery (F) Trigger breach confirmed	cted for the	SDG Ref ab Sample No.(s)	200110-7 21467099	200110-7 21467101	200110-7 21467100		
1-3+§@ Sample deviation (see appendix)	LOD/Units	AGS Reference Method					
Component Benzo(b)fluoranthene (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Carbazole (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Chrysene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.005	<0.005	<0.005		
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Fluorene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Phenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Hexachloroethane (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Nitrobenzene (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Naphthalene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Isophorone (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Hexachlorocyclopentadiene (aq)	<0.001 mg/l		<0.001	<0.001	<0.001		
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		

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#### 200110-7 on: Bradwell

(ALS)	

SDG: Location		200110-7 Bradwell		nt Reference:41 er Number: 32		Report Number: Superseded Report:	537694 537575
TPH CWG (W)		auwen		ei Nullibel. 32	2470	Superseueu Report.	331313
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	omer Sample Ref.	SW1	SW2	SW3		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor accreditation status.	report for	Depth (m) Sample Type Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020		
** % recovery of the surrogate standard to efficiency of the method. The results of compounds within samples aren't corru- recovery	f individual ected for the	Sample Time Date Received SDG Ref	10/01/2020 200110-7 21467099	10/01/2020 200110-7 21467101	10/01/2020 200110-7 21467100		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix) Component	LOD/Units	ab Sample No.(s) AGS Reference Method	2 1407033	21407101	21407100		
GRO Surrogate % recovery**	%	TM245	95	98	92		
GRO >C5-C12	<0.05 mg/l	TM245	<0.05	<0.05	<0.05		
Methyl tertiary butyl ether (MTBE)	<0.003 mg/l	TM245	<0.003	<0.003	<0.003		
Benzene	<0.007 mg/l	TM245	<0.007	<0.007	<0.007		
Toluene	<0.004 mg/l	TM245	<0.004	<0.004	<0.004		
Ethylbenzene	<0.005 mg/l	TM245	<0.005	<0.005	<0.005		
m,p-Xylene	<0.008 mg/l	TM245	<0.008	<0.008	<0.008		
o-Xylene	<0.003 mg/l	TM245	<0.003	<0.003	<0.003		
Sum of detected Xylenes	<0.011 mg/l	TM245	<0.011	<0.011	<0.011		
Sum of detected BTEX	<0.028 mg/l	TM245	<0.028	<0.028	<0.028		
Aliphatics >C5-C6	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aliphatics >C6-C8	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aliphatics >C8-C10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aliphatics >C10-C12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aliphatics >C12-C16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aliphatics >C16-C21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aliphatics >C21-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Total Aliphatics >C12-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aromatics >EC5-EC7	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aromatics >EC7-EC8	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aromatics >EC8-EC10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aromatics >EC10-EC12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		
Aromatics >EC12-EC16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aromatics >EC16-EC21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aromatics >EC21-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Total Aromatics >EC12-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Total Aliphatics & Aromatics >C5-35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
Aliphatics >C16-C35 Aqueous	<0.01 mg/l	TM174	<0.01	<0.01	<0.01		
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SDG:	2	200110-7		ICATE OF nt Reference:41		<b>Report Number:</b> 537694
(ALS) Location		Bradwell		er Number: 32		Superseded Report: 537575
OC MS (W) Results Legend	Cust	omer Sample Ref.	SW1	SW2	SW3	
# ISO17025 accredited. M mCRT8 accredited. aq Aqueous / settled sample. disa.fit: Dissolved / filtered sample. tot.unfit: Total / unfiltered sample.		Depth (m) Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	
<ul> <li>Subcontracted - refer to subcontractor accreditation status.</li> <li>% recovery of the surrogate standard efficiency of the method. The results of compounds within samples aren't con-</li> </ul>	to check the f individual	Date Sampled Sample Time Date Received	08/01/2020	08/01/2020	08/01/2020	
(F) Trigger breach confirmed 1-34§@ Sample deviation (see appendix) Component		SDG Ref ab Sample No.(s) AGS Reference Method	200110-7 21467099	200110-7 21467101	200110-7 21467100	
Dibromofluoromethane**	%	TM208	111	110	112	
Toluene-d8**	%	TM208	98.4	98.3	98.8	
4-Bromofluorobenzene**	%	TM208	100	100	102	
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Chloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Vinyl chloride	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Bromomethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Chloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Carbon disulphide	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Dichloromethane	<0.003 mg/l	TM208	<0.003	<0.003	<0.003	
Methyl tertiary butyl ether	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
(MTBE) trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Bromochloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Chloroform	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Benzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Trichloroethene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Dibromomethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
Toluene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001	
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SDG: Location		00110-7 Tradwell	Clie	nt Reference:41 er Number: 32	843	Report Number: Superseded Report:	537694 537575
VOC MS (W)							
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	SW1	SW2	SW3		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt / Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor accreditation status.	report for	Depth (m) Sample Type Date Sampled	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020	Surface Water (SW) 08/01/2020		
** % recovery of the surrogate standard t efficiency of the method. The results of compounds within samples aren't com recovery	f individual actad for the	Sample Time Date Received SDG Ref ab Sample No.(s)	10/01/2020 200110-7 21467099	10/01/2020 200110-7 21467101	10/01/2020 200110-7 21467100		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)	LOD/Units	AGS Reference	21401035	21407101	21401100		
Component Tetrachloroethene	<0.001 mg/l	Method TM208	<0.001	<0.001	<0.001		
Dibromochloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Chlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Ethylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
m,p-Xylene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
o-Xylene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Styrene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Bromoform	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Isopropylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Bromobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Propylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
n-Butylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1,2-Dichlorobenzene	<0.001 mg/l		<0.001	<0.001	<0.001		
1,2-Dibromo-3-chloropropane	<0.001 mg/l		<0.001	<0.001	<0.001		
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Naphthalene	<0.001 mg/l		<0.001	<0.001	<0.001		
1,2,3-Trichlorobenzene	<0.001 mg/l		<0.001	<0.001	<0.001		
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		

15:28:38 18/01/2020

tot.unfilt  (F) 1-3+§@	mGERTS accredited. Aqueous / settled sample. Dissolved / Tittered sample. Total / unfiltered sample. Subcontracted - refer to subcontractor accreditation status. % recovery of the surrogate standard the efficiency of the method. The results of compounds within samples aren't com recovery Trigger breach confirmed Sample deviation (see appendix) Content	o check the individual	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	Surface Water (SW) 08/01/2020 10/01/2020 200110-7 21467099	Surface Water (SW) 08/01/2020 10/01/2020 200110-7 21467101	Surface Water (SW) 08/01/2020 10/01/2020 200110-7 21467100		
	f BTEX	<0.005		<0.005	<0.005	<0.005		
						1		

Page 16 of 20

SW2

SW3



15017025

SDG:

#### 200110-7 Client Reference:41843 Bradwell Order Number: 322478

SW1

Customer Sample Ref

#### Validated

### **CERTIFICATE OF ANALYSIS**

Client Reference: 41843 Order Number: 322478 Report Number: Superseded Report: 537694 537575



# SDG: Location:

# **Table of Results - Appendix**

		• •
Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	·
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	S 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
TM110	BS 1377: Part 3 1990	Redox Potential
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
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
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
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	By GC-FID	Determination of GRO by Headspace in waters
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
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

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



Client Reference:41843 Order Number: 322478 Report Number:537694Superseded Report:537575

## **Test Completion Dates**

-			
Lab Sample No(s)	21467099	21467101	21467100
Customer Sample Ref.	SW1	SW2	SW3
AGS Ref.			
Depth			
Туре	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	14-Jan-2020	15-Jan-2020	14-Jan-2020
Ammoniacal Nitrogen	13-Jan-2020	13-Jan-2020	13-Jan-2020
Anions by Kone (w)	13-Jan-2020	13-Jan-2020	13-Jan-2020
Chromium III	15-Jan-2020	15-Jan-2020	15-Jan-2020
Conductivity (at 20 deg.C)	15-Jan-2020	15-Jan-2020	15-Jan-2020
Dissolved Metals by ICP-MS	15-Jan-2020	15-Jan-2020	15-Jan-2020
Dissolved Organic/Inorganic Carbon	12-Jan-2020	12-Jan-2020	12-Jan-2020
Dissolved Oxygen by Titration	11-Jan-2020	11-Jan-2020	11-Jan-2020
EPH CWG (Aliphatic) Aqueous GC (W)	15-Jan-2020	15-Jan-2020	15-Jan-2020
EPH CWG (Aromatic) Aqueous GC (W)	15-Jan-2020	15-Jan-2020	15-Jan-2020
GRO by GC-FID (W)	14-Jan-2020	14-Jan-2020	14-Jan-2020
Hexavalent Chromium (w)	14-Jan-2020	14-Jan-2020	14-Jan-2020
Low Level Cyanide (W)	14-Jan-2020	14-Jan-2020	14-Jan-2020
Mercury Dissolved	13-Jan-2020	13-Jan-2020	13-Jan-2020
Mercury Unfiltered	13-Jan-2020	13-Jan-2020	13-Jan-2020
Nitrite by Kone (w)	13-Jan-2020	13-Jan-2020	13-Jan-2020
PAH Spec MS - Aqueous (W)	14-Jan-2020	14-Jan-2020	14-Jan-2020
PCB Congeners - Aqueous (W)	17-Jan-2020	17-Jan-2020	17-Jan-2020
pH Value	10-Jan-2020	10-Jan-2020	10-Jan-2020
Phosphate by Kone (w)	13-Jan-2020	13-Jan-2020	13-Jan-2020
Redox Potential	16-Jan-2020	16-Jan-2020	16-Jan-2020
Suspended Solids	14-Jan-2020	15-Jan-2020	14-Jan-2020
SVOC MS (W) - Aqueous	14-Jan-2020	14-Jan-2020	14-Jan-2020
Total Metals by ICP-MS	14-Jan-2020	14-Jan-2020	14-Jan-2020
Total Nitrogen	15-Jan-2020	14-Jan-2020	15-Jan-2020
Total Organic and Inorganic Carbon	11-Jan-2020	11-Jan-2020	11-Jan-2020
TPH CWG (W)	15-Jan-2020	15-Jan-2020	15-Jan-2020
VOC MS (W)	13-Jan-2020	13-Jan-2020	13-Jan-2020

	ALS Enviro	onmental, Land		QF.7.5.1 Data Amendments Form (Issue N Date: 10/01/2020 Issued and Authorised by Quality Manage			
SDG	Sample Event	Sample ID	Date Amended	Amendment Reason	Previous Reference	New Reference	Supercedes Report
200110-7	21467100	S2	18/01/2020	Sample ID Change	S2	S3	537575
200110-7	21467101	\$3	18/01/2020	Sample ID Change	S3	52	537575

		CERTIFICATE	OF ANALY	SIS	
SDG:	200110-7	Client Reference:	41843	Report Number:	537694
Location:	Bradwell	Order Number:	322478	Superseded Report:	537575

Appendix

### General

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

2. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part hereof un il 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 remedia ion 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 detec ion 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 he 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 iden ify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive iden ification, 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 subjecter 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 he 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 me hod of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for iden ification 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).

Aste stos Type	Common Name
Chrysoile	WhiteAsbests
Amosite	Brown Asbestos
Crocidolite	Blue Adve stos
Fibrous Actinolite	-
Ribrous Anthophyllite	-
Florous 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  $\mu m$  diameter, longer than 5  $\mu m$  and wi h 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.



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

Wood Environment & Infrastructure Solutions UK Limited Northumbria House Regent Centre Gosforth Newcastle Upon Tyne Tyne and Wear NE3 3PX

Attention: Sarah Pi kington

### PRELIMINARY/INTERIM REPORT

Date of report Generation: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 23 January 2020 Wood Environment & Infrastructure Solutions UK Limited 200116-75 41843 Bradwell 538134

We received 3 samples on Thursday January 16, 2020 and 3 of these samples were scheduled for analysis which was completed on Thursday January 23, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

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

This is a preliminary report which has not had final authorisation

Approved By:



							Preliminary
			PRELIMINARY/IN		RT		
	SDG:	200116-75	Client Reference:	41843	Report Number:	538134	
(ALS)	Location:	Bradwell	Order Number:	322988	Superseded Report		

## **Received Sample Overview**

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
21497429	SW1			15/01/2020
21497431	SW2			15/01/2020
21497432	SW3			15/01/2020
Maximum Sample/Coolbox	x Temperature (°C) :	6.6		

Maximum Sample/Coolbox Temperature (°C) :

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.

maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

ALS have data which show that a cool box with 4 frozen icepacks is capable of

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

<u> </u>		PRE		IINA	RY	/INT			REP	OR'	г								Preli	iminar	у
SDG: Location:	200116-75 Bradwell			ent Re er Nu			4184 3229							Numb led Re			5381	34			
Results Legend										21								21			Ŋ
X Test	Lab Sample	No(s)								21497429								21497431			21497432
No Determination Possible										9								7			Ñ
FUSSIBLE	Custome	r																			
	Sample Refe	rence								SW1								SW2			SM3
Sample Types -																					
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water	AGS Refere	nce																			
LE - Land Leachate PL - Prepared Leachate			-																		
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage	Depth (m	)																			
US - Untreated Sewage RE - Recreational Water			0.5	500		H2S(	NH (	) NHO	NaO	Via	0.5	500		H2S(	, HN	) NHO	NaO	Via	0.5	500	
DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas	Containe	r	0.5l glass bottle (ALE227)	00ml Plastic (ALE208)	DO KIT + DO 250 ml glass	04 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	D3 Filtered ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
OTU Other	Sample Ty	ре	SM	SM	SM			SW	WS	SM	WS	SM	WS	WS	SM	SW	WS	SM	SM	WS	SW
Alkalinity as CaCO3	All	NDPs: 0					~	_	`	~	~	_	_	_	_		_	_	_	_	_
		Tests: 3		X								x								x	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3	-			X								X							
Anions by Kone (w)	All	NDPs: 0 Tests: 3		X								X								x	
Chromium III	All	NDPs: 0 Tests: 3		<u>^</u>			X					~			x					~	
Conductivity (at 20 deg.C)	All	NDPs: 0					^								^						
		Tests: 3		x								x								x	
Dissolved Metals by ICP-MS	All	NDPs:0 Tests:3																			
Disashad Oscarially averagin Oschar	A.I.						X								х						
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3	x								X								x		
Dissolved Oxygen by Titration	All	NDPs: 0																			
		Tests: 3			x								x								x
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs:0 Tests:3	x								X								X		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0																			
		Tests: 3	x								x								x		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3	-							x								X			
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3		X								x								x	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 3							X								X				
Mercury Dissolved	All	NDPs: 0	-						^								^				
		Tests: 3					x								x						
Mercury Unfiltered	All	NDPs:0 Tests:3																			
		Cons. J						x								х					

				21497432
				SW3
H2SO4 (ALE244)	HNO3 Filtered SW (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245) SW	Vial (ALE297) SW
WS	SW	SW	SW	SW
x				
	X			
	x			
				X
			x	
	x			
		x		

		PRE							EP	OR	г								Preli	minan	y
SDG: Location:	200116-75 Bradwell			nt Ref er Nur			4184 3229					Re Su	port l	Numb ded Re	er: port		5381	34			
Results Legend          X       Test         N       Dotetermination	Lab Sample No	(s)								21497429								21497431			21497432
Possible	Customer Sample Referen	nce								SW1								SW2			SW3
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Referenc	e																			
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage	Depth (m)																				
US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas	Container		0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
OTH Other	Sample Type	•	ws	WS	ws	SM	WS	WS	WS	ws	SW	ws	ws	ws	SW	ws	WS	ws	WS	WS	ws
Nitrite by Kone (w)		NDPs: 0 Tests: 3																			
PAH Spec MS - Aqueous (W)		NDPs: 0 Tests: 3	x						x		X						x		X		
PCB Congeners - Aqueous (W)		NDPs: 0 Tests: 3	x								x								x		
pH Value		NDPs: 0 Tests: 3		x								x								x	
Phosphate by Kone (w)		NDPs: 0 Tests: 3		x								x								x	
Redox Potential		NDPs: 0 Tests: 3	x								x								x		
Suspended Solids		NDPs: 0 Tests: 3		x								x								x	_
SVOC MS (W) - Aqueous		NDPs: 0 Tests: 3	x								x								x		
Total Metals by ICP-MS		NDPs: 0 Tests: 3						x								x					
Total Nitrogen		NDPs: 0 Tests: 3		x								x								x	
Total Organic and Inorganic Carbon		NDPs: 0 Tests: 3				x								x							
TPH CWG (W)		NDPs: 0 Tests: 3	x								x								x		_
VOC MS (W)		NDPs: 0 Tests: 3								x								x			

				21497432
				SW3
H2SO4 (ALE244)	HNO3 Filtered SW (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245) SW	Vial (ALE297) SW
SM SM	SM	WS	WS	SM
			x	
		X		
x				
				x

5001
SDG:

41843

Preliminary

538134

200116-75 Client Reference: Report Number: Bradwell 322988 Sup erseded Report Order Number: (ALS) Location: ts Leo er Sample Re Cu SW2 SW1 SW3 ISO17025 mCERTS Aqueous / settled sam Dissolved / filtered sam Total / unfiltered aq diss.filt tot.unfil Depth ( Sample Type Date Samp ogate standard to sheck od. The results of indivi Surface Water (SW) Surface Water (SW) Surface Water (SW) Sample Time 15/01/2020 15/01/2020 15/01/2020 Date Recei SDG Re Lab Sample No.(s) 16/01/2020 16/01/2020 16/01/2020 ACS Pat I OD/Units Component Method TM022 7.4 Suspended solids, Total <2 mg/l 15.8 29.8 Alkalinity, Total as CaCO3 <2 mg/l TM043 245 240 220 TM090 9.58 9.61 Carbon, Organic (diss.filt) <3 mg/l 11.1 Organic Carbon, Total <3 ma/l TM090 9 14 10.9 8 76 TM099 0 655 Ammoniacal Nitrogen as N <0 2 ma/l <02 1 82 Ammoniacal Nitrogen as NH4 <0 3 mg/l TM099 <0.3 234 0.842 Redox potential mV TM110 170 157 165 Conductivity @ 20 deg.C < 0.005 TM120 0 936 0.948 0.857 <0.03 mg/l TM152 < 0.03 <0.03 <0.03 Chromium, Trivalent Arsenic (diss.filt) < 0.0005 TM152 0.00157 0.00183 0.00165 <0.002 mg/l TM152 < 0.002 0.00221 0.00258 Arsenic (tot.unfilt) <0.01 mg/l TM152 0.0773 0.0925 0.0903 Boron (diss. ilt) Boron (tot.unfilt) <0.02 ma/l TM152 0.0849 0.0962 0 103 Cadmium (diss.filt) <0 00008 TM152 <0 00008 <0 00008 <0 00008 Cadmium (tot.unfilt) < 0.0005 TM152 <0 0005 <0 0005 <0 0005 Chromium (tot.unfilt) <0.003 mg/l TM152 < 0.003 < 0.003 < 0.003 Chromium (diss.filt) <0.001 mg/l TM152 < 0.001 0.00104 < 0.001 TM152 0.00379 0.00377 0.00415 Copper (tot unfilt) <0.001 mg/l TM152 Lead (tot unfilt) <0.001 mg/l < 0.001 0.00143 0.00296 < 0.0003 TM152 0.00338 0.00315 0.00258 Copper (diss.filt) <0.001 mg/l 0.0354 TM152 0 0117 0 0274 Manganese (tot unfilt) TM152 Lead (diss.filt) < 0.0002 < 0.0002 0.000252 < 0.0002 Nickel (tot unfilt) <0.001 mg/l TM152 0.00375 0.00373 0.00348 Manganese (diss.filt) <0.003 mg/l TM152 0.00326 0.0276 0.0115 Phosphorus (tot un ilt) <0.02 mg/l TM152 0 316 0.75 0.426 Selenium (tot unfilt) <0.001 mg/l TM152 0.00141 0.00129 < 0.001 TM152 0.00271 0.00175 Nickel (diss.filt) < 0.0004 0.00268 TM152 0 281 0.685 Phosphorus (diss.filt) <0.01 mg/l 0 315 <0.001 mg/l TM152 0.0017 0.00158 < 0.001 Selenium (diss.filt) <0.005 mg/l TM152 Zinc (tot unfilt) incomplete incomplete incomplete 0.00321 Zinc (diss.filt) <0.001 mg/l TM152 0.00419 0 00385 Sodium (Dis.Filt) <0.076 mg/l TM152 39.1 44.5 42 9

SDG:
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Preliminary PRELIMINARY/INTERIM REPORT Report Number: Superseded Report 200116-75 **Client Reference:** 41843 538134 (ALS) Location: Bradwell Order Number: 322988 Results Legend Customer Sample Re SW1 SW2 SW3 ISO17025 accredited. mCERTS accredited. Aqueous / settled samp Dissolved / filtered sam aq diss.filt tot.unfilt Dissolved / filtered sample. Total / unfiltered sample. Subcontractor refer to subcontractor report for accreditation status. Ye recovery of the sumogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the Depth (m) Sample Type Date Sampled Sample Time Date Received ... Surface Water (SW) Surface Water (SW) Surface Water (SW) 15/01/2020 15/01/2020 15/01/2020 SDG Re (F) 1-3+5@ Tri Sa er breach confirmed le deviation (see appendix) Lab Sample No.(s) AGS Reference 16/01/2020 16/01/2020 16/01/2020 Component LOD/Units Method Magnesium (Dis.Filt) <0.036 mg/l TM152 20 2 19.9 20 5 Potassium (Dis Filt) <0 2 mg/l TM152 24.1 17.2 9.43 Calcium (Dis Filt) 134 <0 2 mg/l TM152 140 129 Iron (Dis Filt) <0.019 mg/l TM152 <0.019 0.0428 0.0284 Magnesium (Tot. Unfilt.) <0.05 mg/l TM152 20 3 18.8 20 3 Iron (Tot. Unfilt.) <0.024 mg/l TM152 0 323 0.802 1.43 TM183 Mercury (diss.filt) < 0.00001 incomplete incomplete incomplete

Mercury (tot un ilt)	<0.00002	TM183	incomplete	incomplete	incomplete		
Nitrite as NO2	<0.05 mg/l	TM184	0.174 #	0.734 #	0 554 #		
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	0.859	2.13	1.01 #		
Sulphate	<2 mg/l	TM184	102 #	103 #	133 #		
Chloride	<2 mg/l	TM184	72.1	74.8	73.1 #		
Total Oxidised Nitrogen as	<0 3 mg/l	TM184	142 #	107 #	110 #		
Nitrate as NO3	<0 3 mg/l	TM184	141	107	109		
Oxygen, dissolved	<0 3 mg/l	TM187	6.61	5.61	7.3		
PCB congener 28	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 52	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 101	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 118	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 138	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 153	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 180	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
Sum of detected EC7 PCB's	<0.000105	TM197	<0.000105	<0.000105	<0.000105		
PCB congener 77	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 81	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 105	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 114	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 123	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 126	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 156	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 157	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 167	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
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SDG: Location:		00116-75 Bradwell	Clien Orde	t Reference: 4 r Number: 3	11843 322988	Report Number: Superseded Report	538134
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / setted sample. diss.fit: Dissolved / fibered sample. totumit / total / unitered sample.	Ci	ustomer Sample Ref. Depth (m)	SW1	SW2	SW3		
<ul> <li>Subcontracted - refer to subcontractor report accreditation status.</li> <li>% Recovery of the sumogate standard to check efficiency of the method. The results of indivi compounds within samples aren't corrected for recovery</li> </ul>	k the dual	Sample Type Date Sampled Samole Time Date Received SDG Ref	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020		
(F) Trigger breach confirmed 1-345@ Sample deviation (see appendix) Component	LOD/Units	Lab Sample No.(s) AGS Reference Method	16/01/2020	16/01/2020	16/01/2020		
PCB congener 169	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
PCB congener 189	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
Nitrogen, Total		TM212	29 3	23.9	22 2		
Chromium, Hexavalent	<0.03 mg/l	TM241	# <0.03	<0.03	# #		
рН	<1 pH Units	TM256	7.84	7.73	7.77		
Cyanide, Free (low level)	<0.0025	TM279	# <0.0025	<0.0025	# # <0.0025		
	mall		#		# #		

					PRELIM	INARY/INT	ERIM REPORT			Preliminary
		SDG: Location:		200116-75 Bradwell		nt Reference: er Number:	41843 322988	Report Number: Superseded Report	538134	
	LS) Spec MS		s (W)	Diddireit	Olde	i Number.	022300			
1	ISO17025 accredited		, <b>(11</b> )	Customer Sample Ref.	SW1	SW2	SW3			
M aq diss.filt	mCERTS accredited. Aqueous / settled sa Dissolved / filtered s	mple. ample.		Depth (m)						
tot.unfilt	accreditation status.	r to subcontractor report		Sample Type Date Sampled						
-	efficiency of the met	rrogate standard to check hod. The results of indivi amples aren't corrected f	dual	Sample Time Date Received	Surface Water (SW) 15/01/2020	Surface Water (SW 15/01/2020	) Surface Water (SW) 15/01/2020			
(F) 1-3+§@	recovery Trigger breach confi Sample deviation (se	med		SDG Ref Lab Sample No.(s)			1			
Compo		a appendix)	LOD/Uni	AGS Reference	16/01/2020	16/01/2020	16/01/2020			
	alene (aq)		<0.0000		<0.00001	<0.00001	<0.00001			
Acenap	ohthene (aq)		<0.0000	05 TM178	# <0.000005 #	<0.000005	# # <0.000005 # #			
Acenap	ohthylene (aq)		<0.0000	05 TM178	<0.000005 #	<0.000005	<0.000005 # #			
Fluoran	nthene (aq)		<0.0000	_	0.000017 #	0.000018	0.000048			
Anthrac	cene (aq)		<0.0000	05 TM178	<0.000005 #	<0.000005	<0.000005 # #			
Phenan	nthrene (aq)		<0.0000	05 TM178	<0.000005 #	0.000011	0.000013			
Fluoren	ne (aq)		<0.0000	05 TM178	<0.000005 #	<0.000005	<0.000005 # #			
Chryser	ne (aq)		<0.0000	05 TM178	<0.000005 #	<0.000005	0.000035			
Pyrene	(aq)		<0.0000	05 TM178	0.000016 #	<0.000005	0.000045 # #			
Benzo(a	a)anthracene (	(aq)	<0.0000	05 TM178	<0.000005 #	<0.000005	0.000027 # #			
Benzo(	b)fluoranthene	(aq)	<0.0000	05 TM178	0.000026 #	0.000025	0.000043 # #			
Benzo(I	k)fluoranthene	(aq)	<0.0000	05 TM178	0.000013 #	0.00001	0.000039 # #			
Benzo(a	a)pyrene (aq)		<0.0000	02 TM178	0.00002 #	0.000014	0.000045 # #			
Dibenzo	o(a,h)anthrace	ne (aq)	<0.0000	05 TM178	<0.000005 #	<0.000005	<0.000005 # #			
	g,h,i)perylene		<0.0000		0.000026 #	1	0.000019 # #			
	(1,2,3-cd)pyrer		<0.0000	_	0.000015 #	<0.000005	0.000037 # #			
PAH, To 16 (ag)	otal Detected	USEPA	<0.0000	82 TM178	0.000133 #	0.000095	0.00035 # #			

ALS

Preliminary

SDG: Location:		00116-75 Bradwell			11843 322988	Report Number: Superseded Report	538134
SVOC MS (W) - Aqueou	s						
Results Legend	Ci	ustomer Sample Ref. Depth (m)	SW1	SW2	SW3		
<ul> <li>Subcontracted - refer to subcontractor report accreditation status.</li> <li>** K recovery of the surrogate standard to chee efficiency of the method. The results of indiv compounds within samples aren't corrected recovery</li> </ul>	sk the idual	Sample Type Date Sampled Sample Time Date Received SDG Ref	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)	LOD/Units	Lab Sample No.(s) AGS Reference	16/01/2020	16/01/2020	16/01/2020		
Component 1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	Method TM176	<0.001	<0.001	<0.001	#	
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176		<0.001	#<0.001	#	
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001	#	
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 #	#	
4-Bromophenylphenylether	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # <0.001	#	
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176 TM176	<0.001 # <0.001	<0.001	# <0.001	#	
4-Chloroaniline (aq) 4-Chlorophenylphenylether	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Chiorophenyiphenyiether (ag) 4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001 # <0.001	<0.001	<0.001 # <0.001	#	
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	# <0.001	#	
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	# <0.001	#	
Azobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001	+	
Acenaphthylene (aq)	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
Acenaphthene (aq)	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
Anthracene (aq)	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
bis(2-Chloroethoxy)methane	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
(ag) bis(2-Ethylhexyl) phthalate	<0.002 mg/l	TM176	# <0.002	<0.002	# <0.002	#	
(aq) Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	# <0.001	<0.001	# <0.001	#	
L			#		#	#	

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Preliminary

SDG: Location:		00116-75 Bradwell			41843 322988	Report Number: Superseded Report	538134
SVOC MS (W) - Aqueous	6						
Results Legend  ISO17025 accredited.  M mCERTS accredited.  aq Aqueous / settled sample.	Ci	uətomer Sample Ref.	SW1	SW2	SW3		
disk fit Dissolved / fibered sample. tot.mfit Total unfiltered sample. * Subcontracted - refer to subcontractor report accreditation status. ** % recovery of the surogate standard to check efficiency of the method. The results of indiv compounds within samples aren't corrected fi	k the dual	Depth (m) Sample Type Date Sampled Sample Time Date Received	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020		
recovery (F) Trigger breach confirmed 1-3+5@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(s) AGS Reference	16/01/2020	16/01/2020	16/01/2020		
Component Benzo(a)anthracene (aq)	LOD/Units <0.001 mg/l	Method TM176	<0.001	<0.001	<0.001		
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	# <0.001 #	<0.001	# # <0.001 # #		
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	# <0.001 #	<0.001	# # <0.001 # #		
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176		<0.001	# # <0.001 # #		
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176		<0.001	# ~0.001 # #		
Carbazole (aq)	<0.001 mg/l	TM176		<0.001	# <0.001 # #		
Chrysene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	// <0.001 # #		
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.005 #	<0.005	<0.005 # #		
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Fluorene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Phenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Naphthalene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Isophorone (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Hexachlorocyclopentadiene (ag)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		
Pyrene (aq)	<0.001 mg/l	TM176	<0.001 #	<0.001	<0.001 # #		



Preliminary

(ALS) Location:		radwell	Orde	t Reference: 4 r Number: 33	22988	Report Number: Superseded Report		
PH CWG (W)								
Results Legend # ISO17025 accredited.	G	ustomer Sample Ref.	SW1	SW2	SW3			
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.								
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report	rt for	Depth (m) Sample Type						
** % recovery of the surrogate standard to che		Date Sampled Sample Time	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)			
efficiency of the method. The results of indiv compounds within samples aren't corrected	ridual for the	Date Received	15/01/2020	15/01/2020	15/01/2020			
recovery (F) Trigger breach confirmed 1-345@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(s)						
	LOD/Units	AGS Reference	16/01/2020	16/01/2020	16/01/2020			
GRO Surrogate % recovery**	100/0111S %	Method TM245	96	71	99			
GR0 >C5-C12	<0.05 mg/l	TM245	<0.05	<0.05	<0.05			
Methyl tertiary butyl ether	<0.003 mg/l	TM245	# <0.003	<0.003	<0.003			
(MTRE) Benzene	<0.007 mg/l	TM245	# <0.007 #	4 <0.007	<0.007			
Foluene	<0.004 mg/l	TM245	<0.004 #	<0.004	<0.004			
Ethylbenzene	<0.005 mg/l	TM245	<0.005 #	<0.005	<0.005			
m,p-Xylene	<0.008 mg/l	TM245	<0.008 #	<0.008	<0.008 # #			
o-Xylene	<0.003 mg/l	TM245	<0.003 #	<0.003				
Sum of detected Xylenes	<0.011 mg/l	TM245	<0.011	<0.011	<0.011			
Sum of detected BTEX	<0.028 mg/l	TM245	<0.028	<0.028	<0.028			
Aliphatics >C5-C6 Aliphatics >C6-C8	<0.01 mg/l	TM245 TM245	<0.01	<0.01	<0.01			
Aliphatics >C8-C10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01			
Aliphatics >C10-C12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01		—	
Aliphatics >C12-C16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Aliphatics >C16-C21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Aliphatics >C21-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Total Aliphatics >C12-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Aromatics >EC5-EC7	<0.01 mg/l	TM245	<0.01	<0.01	<0.01			
Aromatics >EC7-EC8	<0.01 mg/l	TM245	<0.01	<0.01	<0.01			
Aromatics >EC8-EC10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01			
Aromatics >EC10-EC12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01			
Aromatics >EC12-EC16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Aromatics >EC16-EC21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Aromatics >EC21-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Total Aromatics >EC12-EC35	<0.01 mg/l	TM174	<0.01	<0.01	<0.01			
Total Aliphatics & Aromatics >C5-35 (ag) Aliphatics >C16-C35 Aqueous	<0.01 mg/l	TM174 TM174	<0.01	<0.01	<0.01			
HIPHAUCS 2010-000 AQUEOUS	~0.01 mg/l	11/11/4	<u>\U.U1</u>	<u>\0.01</u>	NU.U1		—	
							—	
					+ +			



Preliminary

Location         Database         Database         Database         Database         Database         Database           VCC MS         V			00440 75							
Control         Control <t< th=""><th>SDG: Location:</th><th></th><th></th><th></th><th></th><th></th><th></th><th>Report Number: Superseded Report</th><th>538134</th><th></th></t<>	SDG: Location:							Report Number: Superseded Report	538134	
Interface         Interface <thinterface< th="">         Interface         <thinterface< th="">         Interface         <thinterface< th=""> <thinterface< th=""> <thint< td=""><td>VOC MS (W)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></thint<></thinterface<></thinterface<></thinterface<></thinterface<>	VOC MS (W)									
Image: Section of the sectio	# ISO17025 accredited. M mCERTS accredited.	Ci	ustomer Sample Ref.	SW1	SW2		SW3			
Binance         Binance         Binance         Binance         Binance         Binance         Binance           Contract         LATANEL         Matter         Note	diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.	for								
Barbon of a constraint constraint a constraint of a constraint of a constraint of a co	accreditation status. ** % recovery of the surrogate standard to check	the	Date Sampled			0				
1001001000000000000000000000000000000000000	compounds within samples aren't corrected for recovery		SDG Ref	15/01/2020	15/01/2020		15/01/2020			
Denombanewei%TM20M100M101M100<		LOD/Units	AGS Reference	16/01/2020	16/01/2020		16/01/2020			
Monometabel metabolis         Monometabel metabolis         Monometabel metabolis         Monometabel metabolis         Monometabolis         Monome				108	108		108			
DecisorationAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome ParticipantAnome 	Toluene-d8**	%	TM208	103	103	+	103			
Image: Constraint of the second of	4-Bromofluorobenzene**	%	TM208	101	101	1	99 3			
Image: second	Dichlorodifluoromethane	<0.001 mg/l	TM208		<0.001	#				
Image: A start of	Chloromethane	<0.001 mg/l	TM208	<0.001	<0.001		<0.001			
ChickeybareControl <td>Vinyl chloride</td> <td>&lt;0.001 mg/l</td> <td>TM208</td> <td></td> <td>&lt;0.001</td> <td></td> <td></td> <td></td> <td></td> <td></td>	Vinyl chloride	<0.001 mg/l	TM208		<0.001					
Index of the second s	Bromomethane	<0.001 mg/l	TM208	<0.001	<0.001		<0.001			
Index	Chloroethane	<0.001 mg/l	TM208		<0.001	#				
Carbon desceptionCarbon desceptionCa	Trichlorofluoromethane	<0.001 mg/l	TM208		<0.001	#				
Image: constraint of the section of	1,1-Dichloroethene	<0.001 mg/l	TM208		<0.001	#				
Image: sector of the sector	Carbon disulphide	<0.001 mg/l	TM208		<0.001	#				
name name tans.1.2.Dichlorogene      (1.1.Dichlorogene       (1.2.Dichlorogene        <td>Dichloromethane</td> <td>&lt;0.003 mg/l</td> <td>TM208</td> <td></td> <td>&lt;0.003</td> <td>#</td> <td></td> <td></td> <td></td> <td></td>	Dichloromethane	<0.003 mg/l	TM208		<0.003	#				
Image: Constraint of the second se		<0.001 mg/l	TM208		<0.001	#				
i         i	trans-1,2-Dichloroethene	<0.001 mg/l	TM208		<0.001	#				
index         index <t< td=""><td>1,1-Dichloroethane</td><td>&lt;0.001 mg/l</td><td>TM208</td><td></td><td>&lt;0.001</td><td>#</td><td></td><td></td><td></td><td></td></t<>	1,1-Dichloroethane	<0.001 mg/l	TM208		<0.001	#				
Image: Anomaly and the second seco	cis-1,2-Dichloroethene	<0.001 mg/l	TM208		<0.001	#				
Image: constraint of the sector of the se	2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	<0.001		<0.001			
Interfact of the second sec	Bromochloromethane	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the second se	Chloroform	<0.001 mg/l	TM208		<0.001	#				
Image: constraint of the section o	1,1,1-Trichloroethane	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the second se	1,1-Dichloropropene	<0.001 mg/l	TM208		<0.001	#				
Image: series of the serie	Carbontetrachloride	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the	1,2-Dichloroethane	<0.001 mg/l	TM208		<0.001	#				
Image: constraint of the section o	Benzene		TM208		<0.001	#				
International and antipart of the second s	Trichloroethene	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the state of	1,2-Dichloropropane	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the state of	Dibromomethane	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the state of	Bromodichloromethane	<0.001 mg/l	TM208		<0.001	#				
Image: Constraint of the second sec	cis-1,3-Dichloropropene	<0.001 mg/l	TM208		<0.001	#				
	Toluene	<0.001 mg/l	TM208		<0.001	#				
	trans-1,3-Dichloropropene		TM208	<0.001	<0.001	#	<0.001 #			
1,1,2-Trichloroethane <0.001 mg/l TM208 <0.001 <0.001 <0.001 <0.001 # # # #	1,1,2-Trichloroethane	<0.001 mg/l	TM208		<0.001	#				

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Preliminary

SDG: Location:		00116-75 radwell			41843 32298		Report Number: Superseded Report	
VOC MS (W)								
Results Legend SIS017025 accredited. M mCERTS accredited. aq Aqueous / cettled cample.	Gi	uətomer Sample Ref.	SW1	SW2	Τ	SW3		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report accreditation status. * % recovery of the surrogate standard to check	the	Depth (m) Sample Type Date Sampled Sample Time	Surface Water (SW)	Surface Water (SW)		Surface Water (SW)		
efficiency of the method. The results of individ compounds within samples aren't corrected for recovery (F) Trigger breach confirmed 1-345@ Sample deviation (see appendix)		Date Received SDG Ref Lab Sample No.(e)	15/01/2020	15/01/2020		15/01/2020		
Component	LOD/Units	AGS Reference Method	16/01/2020	16/01/2020		16/01/2020		
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Tetrachloroethene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Dibromochloromethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Chlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Ethylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
m,p-Xylene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
o-Xylene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Styrene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Bromoform	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Isopropylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Bromobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Propylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
n-Butylbenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001	<0.001		<0.001		
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		
Naphthalene	<0.001 mg/l	TM208	<0.001 #	<0.001	#	<0.001 #		

16:56:50 23/01/2020

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Preliminary

SDG: Location:		00116-75 Bradwell			843 2988	Report Number Superseded Repo	: 538134	
VOC MS (W)	L	Jaawen	Olde	r Number: 32	2300	Supersource Repo		
Results Legend	C	ustomer Sample Ref.	SW1	SW2	SW3			
ISO17025 accredited.     M mCERTS accredited.     Aqueous / settled sample.     diss.filt Discolved / filtered sample.     tot.unfilt Total / unfiltered sample.		Depth (m)						
<ul> <li>Subcontracted - refer to subcontractor repo accreditation status.</li> <li>% recovery of the surrogate standard to che efficiency of the method. The results of indi compounds within samples aren't corrected</li> </ul>	sok the vidual	Sample Type Date Sampled Sample Time Date Received	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020	Surface Water (SW) 15/01/2020			
recovery (F) Trigger breach confirmed 1-34§@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(a) AGS Reference	16/01/2020	16/01/2020	16/01/2020			
Component 1,2,3-Trichlorobenzene	LOD/Units <0.001 mg/l	Method TM208	<0.001	<0.001	<0.001			
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	# <0.001	# <0.001	# <0.001			

200116-75 Bradwell

41843 322988 Client Reference: Order Number:

Report Number: Superseded Report

Report Number: Superseded Report



200116-75 Bradwell

41843 322988 Client Reference: Order Number:

Report Number: Superseded Report

200116-75 Bradwell

41843 322988 Client Reference: Order Number:

Report Number: Superseded Report

200116-75 Bradwell

41843 322988 **Client Reference:** Order Number:

Report Number: Superseded Report

41843 322988 **Client Reference:** 

Order Number:

Report Number: Superseded Report

538134

## **Table of Results - Appendix**

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
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
TM110	BS 1377: Part 3 1990	Redox Potential
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
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
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
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	By GC-F D	Determination of GRO by Headspace in waters
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
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

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



200116-75 Bradwell



#### 200116-75 Bradwell 41843 322988 Report Number: Superseded Report 538134 SDG: Client Reference: Location: Order Number:

## **Test Completion Dates**

Lab Sample No(s)	21497429	21497431	21497432
Customer Sample Ref.	5W1	5W2	5W3
AGS Ref.			
Depth			
Туре	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	20-Jan-2020	20-Jan-2020	20-Jan-2020
Ammoniacal Nitrogen	17-Jan-2020	17-Jan-2020	17-Jan-2020
Anions by Kone (w)	20-Jan-2020	20-Jan-2020	20-Jan-2020
Chromium III	22-Jan-2020	22-Jan-2020	22-Jan-2020
Conductivity (at 20 deg.C)	17-Jan-2020	23-Jan-2020	17-Jan-2020
Dissolved Metals by ICP-MS	22-Jan-2020	22-Jan-2020	22-Jan-2020
Dissolved Organic/Inorganic Carbon	18-Jan-2020	18-Jan-2020	18-Jan-2020
Dissolved Oxygen by Titration	19-Jan-2020	19-Jan-2020	19-Jan-2020
EPH CWG (Aliphatic) Aqueous GC (W)	22-Jan-2020	22-Jan-2020	22-Jan-2020
EPH CWG (Aromatic) Aqueous GC (W)	22-Jan-2020	22-Jan-2020	22-Jan-2020
GRO by GC-FID (W)	20-Jan-2020	20-Jan-2020	20-Jan-2020
Hexavalent Chromium (w)	21-Jan-2020	21-Jan-2020	17-Jan-2020
Low Level Cyanide (W)	21-Jan-2020	22-Jan-2020	21-Jan-2020
Nitrite by Kone (w)	18-Jan-2020	18-Jan-2020	18-Jan-2020
PAH Spec MS - Aqueous (W)	21-Jan-2020	21-Jan-2020	21-Jan-2020
PCB Congeners - Aqueous (W)	21-Jan-2020	21-Jan-2020	21-Jan-2020
pH Value	17-Jan-2020	17-Jan-2020	17-Jan-2020
Phosphate by Kone (w)	21-Jan-2020	21-Jan-2020	21-Jan-2020
Redox Potential	22-Jan-2020	22-Jan-2020	22-Jan-2020
Suspended Solids	19-Jan-2020	19-Jan-2020	19-Jan-2020
SVOC MS (W) - Aqueous	23-Jan-2020	23-Jan-2020	23-Jan-2020
Total Metals by ICP-MS	21-Jan-2020	21-Jan-2020	21-Jan-2020
Total Nitrogen	21-Jan-2020	21-Jan-2020	21-Jan-2020
Total Organic and Inorganic Carbon	19-Jan-2020	19-Jan-2020	19-Jan-2020
TPH CWG (W)	22-Jan-2020	22-Jan-2020	22-Jan-2020
VOC MS (W)	17-Jan-2020	17-Jan-2020	17-Jan-2020

SDG:	200116-75	Client Reference:	41843	Report Number:	538134
Location:	Bradwell	Order Number:	322988	Superseded Report	

Appendix

### General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. t 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
Ş	Sampled on date not provided
•	Sample holding time exceeded in laboratory
0	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).

Asba stos Type	Common Name
Chrysoile	White Asbestos
Amosite	Brow nAsbestos
Cro ci dolite	Blue Adve stos
Fibrous Actinolite	-
Fibrous Anhophylite	-
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.



Wood Environment & Infrastructure Solutions UK Limited Northumbria House Regent Centre Gosforth Newcastle Upon Tyne Tyne and Wear NE3 3PX

Attention: Sarah Pi kington

## **CERTIFICATE OF ANALYSIS**

Date of report Generation:
Customer:
Sample Delivery Group (SDG):
Your Reference:
Location:
Report No:

01 February 2020 Wood Environment & Infrastructure Solutions UK Limited 200122-14 41843 Bradwell 539389

This report has been revised and directly supersedes 539334 in its entirety.

We received 3 samples on Wednesday January 22, 2020 and 3 of these samples were scheduled for analysis which was completed on Friday January 31, 2020. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

All sample data is provided by the customer. The reported results relate to the sample supplied, and on the basis that this data is correct.

Incorrect sampling dates and/or sample information will affect the validity of results.

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

Approved By:

<u>Sonia McWhan</u> Operations Manager

	SDG:
(ALS)	Location:

 SDG:
 200122-14
 Client Reference:
 41843
 Report Number:
 539389

 Location:
 Bradwell
 Order Number:
 322988
 Superseded Report
 539334

### **Received Sample Overview**

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
21526665	SW1			21/01/2020
21526666	SW2			21/01/2020
21526667	SW3			21/01/2020

Maximum Sample/Coolbox Temperature (°C) :

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. **6.8** ALS have data which show that a cool box with 4 frozen icepacks is capable of

Validated

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.

		с	ERT	IFIC	CAT	ΕO	FA	NAL	.YSI	IS									Vali	dated	
SDG: Location:	200122-14 Bradwell			nt Rei er Nu			4184 3229					Re Su	port l persec	Numb led Re	er: port		5393 5393				
Results Legend           X         Test           N         No Determination	Lab Sample N	lo(s)								21526665								21526666			21526667
Sample Types -	Custome Sample Refer									SW1								SW2			SW3
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate	AGS Refere																				
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	)																			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	r	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Ty	pe	U Z	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UN L
Alkalinity as CaCO3	All	NDPs: 0 Tests: 3		x								x								x	
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3				x								x							
Anions by Kone (w)	All	NDPs: 0 Tests: 3		X		^						x		^						x	
Chromium III	All	NDPs: 0 Tests: 3					X								X						
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 3		X								x								x	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3					x								X						
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 3	x								X								x	_	
Dissolved Oxygen by Titration	All	NDPs: 0 Tests: 3			x								x								x
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								x								x		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3	x								x								x		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3								x								x			
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 3		x								x								x	
Low Level Cyanide (W)	All	NDPs: 0 Tests: 3							x								x				
Mercury Dissolved	All	NDPs: 0 Tests: 3					x								x						
Mercury Unfiltered	All	NDPs: 0 Tests: 3						x								x					

				21526667
				SW3
H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245) UNL	Vial (ALE297)
UNL	UNL	UNL	UNL	UNL
x				
	X			
	x			
				X
			x	
	x			
		X		
		^		

		С	ERT	IFIC	CAT	E O	FA	NAL	YSI	s									Vali	dated	
SDG: Location:	200122-14 Bradwell			nt Ref er Nur			4184 3229							Numb led Re			53938 5393				
Results Legend           X         Test           N         No Determination Possible	Lab Sample I	lo(s)								21526665								21526666			21526667
Sample Types -	Custome Sample Refer								SW1								SW2			SW3	
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate	AGS Refere																				
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	)																			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	r	0.5i glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5i glass bottle (ALE227)	500ml Plastic (ALE208)	DO KIT + DO 250 ml glass
	Sample Ty	ре	띡	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	UNL	<b>N</b>
Nitrite by Kone (w)	All	NDPs: 0 Tests: 3							x								x				
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3	x						^		x						<u>^</u>		x		
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 3	x								x								x		
pH Value	All	NDPs: 0 Tests: 3		x								x								x	
Phosphate by Kone (w)	All	NDPs: 0 Tests: 3		x								x								x	
Redox Potential	All	NDPs: 0 Tests: 3	x								x								x		
Suspended Solids	All	NDPs: 0 Tests: 3		x								x								x	
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3	x								x								x		
Total Metals by ICP-MS	All	NDPs: 0 Tests: 3						x								x					
Total Nitrogen	Al	NDPs: 0 Tests: 3		x								x								x	
Total Organic and Inorganic Carbon	Al	NDPs: 0 Tests: 3				x								x							
TPH CWG (W)	All	NDPs: 0 Tests: 3	x								x								x		
VOC MS (W)	All	NDPs: 0 Tests: 3								x								x			

Vial (ALE297)         UNL           NaOH (ALE245)         UNL           HNO3 Unfiltered (ALE204)         UNL           HNO3 Filtered (ALE204)         UNL           UNL         X           HNO3 Filtered         UNL           UNL         X           I         X           HN03 Unfiltered         UNL           Yall (ALE204)         UNL           UNL         X           I         I           I         <					21526667
Image: symbol bound in the symbol bound in					SW3
Image: symbol bound in the symbol bound in					
Image: symbol bound in the symbol bound in					
VI         VI         VI         VI         VI         VI           V         V         X         X         X           V         V         V         X         X           V         V         V         X         X           V         V         V         V         X         X           V         V         V         V         V         X           V         V         V         V         V         V           V         V         V         V         V         V           V         V         V         V         V         V         V           V         V         V         V         V         V         V         V           V </th <th></th> <th>HNO3 Filtered (ALE204)</th> <th></th> <th>NaOH (ALE245)</th> <th>Vial (ALE297)</th>		HNO3 Filtered (ALE204)		NaOH (ALE245)	Vial (ALE297)
Image: second	UNL	UNL	UNL	UNL	UNL N
Image: second				x	
x			x		
X X X X X X X X X X					
x					
	x				
x					

(ALS)

Image: Second	Results Legend		Customer Sample Ref.	SW1	SW2	SW3		
n         number of the sector of the se					0112	c		
Normal sectorNo	aq Aqueous / settled sample.							
Image: Second	<ul> <li>Subcontracted - refer to subcontractor report</li> </ul>	for						
And transfer and		the		2110112020	2110112020	2110112020		
La branch         La branch         Name         Name         Name         Name           General-Lock         1-0000         10000         1.4         4.7.5         116         1         1         1           General-Lock         1-0000         1-0000         1.0000         1.7.5         27.5         20.6         1	efficiency of the method. The results of individ	iual		22/01/2020	22/01/2020	22/01/2020		
Notional and the set of the set		or the	SDG Ref					
Compared Marcel 2.4.1Marcel 2.4.1	(F) Trigger breach confirmed			21526665	21526666	21526667		
Signando Holds, Todi    Signando Holds, Todi        <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Andrey         Andrag         Andra         Andra         Andra <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Loc         Loc <thloc< th=""> <thloc< th=""> <thloc< th=""></thloc<></thloc<></thloc<>	Suspended solids, Total	<2 mg/l	TM022	2.4	4.75	10.6		
Loc         Loc <thloc< th=""> <thloc< th=""> <thloc< th=""></thloc<></thloc<></thloc<>								
And         And         And         And         And         And           Charlow, Dupic (data)         3'mg1         TM90         7.29         9.97         9.15         Image: And	Alkalinity, Total as CaCO3	<2 mg/l	TM043	275	275	265		
Loc         Loc <thloc< th=""> <thloc< th=""> <thloc< th=""></thloc<></thloc<></thloc<>		, in the second s						
Loc         Loc <thloc< th=""> <thloc< th=""> <thloc< th=""></thloc<></thloc<></thloc<>	Carbon Organia (dian fili)	<2 mg/	TM000	0.02	0.05	0.00		
- $   -$ <td>Carbon, Organic (diss.liit)</td> <td>Singli Singli</td> <td>11000</td> <td>9.95</td> <td>60.0</td> <td>0.00</td> <td></td> <td></td>	Carbon, Organic (diss.liit)	Singli Singli	11000	9.95	60.0	0.00		
- $   -$ <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
- $   -$ <td>Organic Carbon, Total</td> <td>&lt;3 mg/l</td> <td>TM090</td> <td>7.59</td> <td>9 97</td> <td>9.18</td> <td></td> <td></td>	Organic Carbon, Total	<3 mg/l	TM090	7.59	9 97	9.18		
- $   -$ <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
- $   -$ <td>Ammoniacal Nitrogen as N</td> <td>&lt;0.2 ma/l</td> <td>TM099</td> <td>&lt;0.2</td> <td>0.409</td> <td>0 314</td> <td></td> <td></td>	Ammoniacal Nitrogen as N	<0.2 ma/l	TM099	<0.2	0.409	0 314		
C         C	,							
C         C	American Nitrana an NULA	<0.2	TM000	<0.2	0.500	0.404		
Conductivity Q2 0 deg C $\alpha_{000}$ TM120         1.09         1.16         1.14         1.00 $\alpha_{000}$ Chronnium, Trivierit $\alpha_{010}$ TM152 $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{0000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{000000}$ $\alpha_{000000}$ $\alpha_{0000000}$ $\alpha_{0000000000}$ $\alpha_{000000000000000000000000000000000000$	Ammoniacal Nitrogen as NH4	<0.3 mg/i	TM099	<0.3	0.526	0.404		
Conductivity Q2 0 deg C $\alpha_{000}$ TM120         1.09         1.16         1.14         1.00 $\alpha_{000}$ Chronnium, Trivierit $\alpha_{010}$ TM152 $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{000}$ $\alpha_{0000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{00000}$ $\alpha_{000000}$ $\alpha_{000000}$ $\alpha_{0000000}$ $\alpha_{0000000000}$ $\alpha_{000000000000000000000000000000000000$								
modern	Redox potential	mV	TM110	209	188	185		
molon         molon <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
molon         molon <t< td=""><td>Conductivity @ 20 deg C</td><td>&lt;0.005</td><td>TM120</td><td>1.09</td><td>1 16</td><td>1 14</td><td></td><td></td></t<>	Conductivity @ 20 deg C	<0.005	TM120	1.09	1 16	1 14		
Chemium, Timelert         40.3 myl         TM152         40.3         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.03         40.011         1	Service and the service and se		111120	1.00	1.10	1.17		
Let         Let <thlet< th=""> <thlet< th=""> <thlet< th=""></thlet<></thlet<></thlet<>			-	-0.00	-0.00			
ngil         ngil <t< td=""><td>Chromium, Trivalent</td><td>&lt;0.03 mg/l</td><td>TM152</td><td>&lt;0.03</td><td>&lt;0.03</td><td>&lt;0.03</td><td></td><td></td></t<>	Chromium, Trivalent	<0.03 mg/l	TM152	<0.03	<0.03	<0.03		
ngil         ngil <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
ngil         ngil <t< td=""><td>Arsenic (diss.filt)</td><td>&lt; 0.0005</td><td>TM152</td><td>0.00103</td><td>0.00123</td><td>0.0011</td><td></td><td></td></t<>	Arsenic (diss.filt)	< 0.0005	TM152	0.00103	0.00123	0.0011		
Arsenic (nd unit)         -0.02 ngl         TM 152         -0.003         -0.003         -0.003         -0.003         -0.003         -0.003         -0.003         -0.003         -0.003         -0.003         -0.0027         -0.0027         -0.0027         -0.0027         -0.0027         -0.0027         -0.0023         -0.0027         -0.0027         -0.0027         -0.0027         -0.0023         -0.0027         -0.0027         -0.0027         -0.0023         -0.0027         -0.0027         -0.0023         -0.0027         -0.0027         -0.0027         -0.0027         -0.0031	,							
Loc         Loc <thloc< th=""> <thloc< th=""> <thloc< th=""></thloc<></thloc<></thloc<>	Americ (Ant Ett)		71460	<0.000	<0.000	<0.000		
And         And <td>Arsenic (tot untilt)</td> <td>&lt;0.002 mg/l</td> <td>1M152</td> <td>&lt;0.002</td> <td>&lt;0.002</td> <td>&lt;0.002</td> <td></td> <td></td>	Arsenic (tot untilt)	<0.002 mg/l	1M152	<0.002	<0.002	<0.002		
And         And <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Led         Led <thled< th=""> <thled< th=""> <thled< th=""></thled<></thled<></thled<>	Boron (diss.filt)	<0.01 mg/l	TM152	0.074	0.0785	0.0926		
Led         Led <thled< th=""> <thled< th=""> <thled< th=""></thled<></thled<></thled<>		-						
Led         Led <thled< th=""> <thled< th=""> <thled< th=""></thled<></thled<></thled<>	Boron (tot unfilt)	<0.02 mg/	TM452	0.0795	0.0991	0.119		
mg1         mg1 <td>boron (tot.uniiit)</td> <td>&lt;0.02 mg/i</td> <td>TWIT</td> <td>0.0700</td> <td>0.0991</td> <td>0.119</td> <td></td> <td></td>	boron (tot.uniiit)	<0.02 mg/i	TWIT	0.0700	0.0991	0.119		
mgl         mgl <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Cadmiam (bcunfit)         -0.005 mgl         TM152         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0005         <0.0003         <0.0005         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.0003         <0.000287         <0.0001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.0017         <0.0017         <0.0017         <0.0017         <0.0017         <0.0017         <0.0017	Cadmium (diss. ilt)	<0.0008	TM152	<0.0008	<0.0008	<0.0008		
Impli         Impli <t< td=""><td></td><td>mg/l</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		mg/l						
Impli         Impli <t< td=""><td>Cadmium (tot unfilt)</td><td>&lt;0.0005</td><td>TM152</td><td>&lt;0.0005</td><td>&lt;0.0005</td><td>&lt;0.0005</td><td></td><td></td></t<>	Cadmium (tot unfilt)	<0.0005	TM152	<0.0005	<0.0005	<0.0005		
Chronium (dst. if)         -0.03 mgl         TM152         -0.003         -0.003         -0.003         -0.001         -0.0028         0.00287         0.00207         -0.001         -0.001         -0.001         -0.001         -0.001         -0.001         -0.001         -0.001         -0.0028         0.00273         0.00203         -0.002         0.00203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0021         0.000203         -0.0023         0.00023         0.000239         <	odumum (iocumity		111102	0.0000	0.0000	0.0000		
A. C.								 
Coper (lot.unfil)         Control         TM 152         Control         Control <thcontrol< th=""> <thcontrol< th=""></thcontrol<></thcontrol<>	Chromium (tot.unfilt)	<0.003 mg/l	IM152	<0.003	<0.003	<0.003		
Coper (lot.unfil)         Control         TM 152         Control         Control <thcontrol< th=""> <thcontrol< th=""></thcontrol<></thcontrol<>								
Coper (lot.unfil)         Control         TM 152         Control         Control <thcontrol< th=""> <thcontrol< th=""></thcontrol<></thcontrol<>	Chromium (diss. ilt)	<0.001 ma/l	TM152	<0.001	<0.001	< 0.001		
Lead (bt.unfil) $< 0.001$ mg/l         TM52 $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.0028$ $0.0028$ $0.0027$ $0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.0028$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ <th< td=""><td>· · · ·</td><td>Ŭ</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	· · · ·	Ŭ						
Lead (bt.unfil) $< 0.001$ mg/l         TM52 $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.0023$ $0.0023$ $0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.0027$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.00279$ $< 0.0028$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ $< 0.001$ <	Conner (tot un5!!)	<0.001 mg/l	TM450	0.002	0.00205	0.00297		
Coper (diss fit) $\sim$	Copper (tot.uniiit)	<0.001 mg/i	TMT52	0.003	0.00295	0.00207		
Coper (diss fit) $\sim$								 
mg1         mg1 <td>Lead (tot.unfilt)</td> <td>&lt;0.001 mg/l</td> <td>TM152</td> <td>&lt;0.001</td> <td>&lt;0.001</td> <td>&lt;0.001</td> <td></td> <td></td>	Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	<0.001	<0.001		
mg1         mg1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
mg/l         mg/l <th< td=""><td>Copper (diss filt)</td><td>&lt;0.0003</td><td>TM152</td><td>0.0028</td><td>0.00223</td><td>0 00207</td><td></td><td></td></th<>	Copper (diss filt)	<0.0003	TM152	0.0028	0.00223	0 00207		
Manganese (bt un it)         <0.001 mg1         TM152         0.00341         0.0374         0.0305              Lead (diss, fit)         <0.0002 mg1         TM152         <0.0002	copper (meaning)							
Lead (diss.fit) $-$ $mg/l$ $-$ TM152 $-$ $-$ $0.002$ $-$ $-$ $0.0023$ $-$ $0.00203$ $-$ $0.00203$ $-$ $0.00203$ $-$ $0.00203$ $-$ $0.00203$ $-$ $0.00203$ $-$ $0.00239$ $-$ $ -$ $ -$ $-$ </td <td>Managara (1.1 20)</td> <td></td> <td>THUSS</td> <td>0.000.11</td> <td>0.0077</td> <td>0.0005</td> <td></td> <td></td>	Managara (1.1 20)		THUSS	0.000.11	0.0077	0.0005		
mgl         mgl <td>manganese (tot un ilt)</td> <td>&lt;0.001 mg/l</td> <td>TM152</td> <td>0.00341</td> <td>0.0374</td> <td>0.0305</td> <td></td> <td></td>	manganese (tot un ilt)	<0.001 mg/l	TM152	0.00341	0.0374	0.0305		
mgl         mgl <thmgl< th=""> <thmgl< th=""> <thmgl< th=""></thmgl<></thmgl<></thmgl<>								
mg/l         mg/l <th< td=""><td>Lead (diss.filt)</td><td>&lt; 0.0002</td><td>TM152</td><td>&lt;0.0002</td><td>&lt;0.0002</td><td>0.000203</td><td></td><td></td></th<>	Lead (diss.filt)	< 0.0002	TM152	<0.0002	<0.0002	0.000203		
Nickel (tot.unfilt)         -0.001 mg/l         TM152         0.00311         0.00303         0.00239         Image (tild)         Image (tild) <th< td=""><td></td><td>mg/l</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		mg/l						
Image and set (diss.filt)         Im	Nickel (tot unfilt)		TM152	0.00311	0.00303	0.00239		
Phosphorus (tot.unfilt)         <0.02 mg/l         TM152         0.185         0.29         0.397              Selenium (tot un ilt)         <0.001 mg/l		~v.vv i nig/i	TWIJZ	0.00011	0.00000	0.00203		
Phosphorus (tot.unfilt)         <0.02 mg/l         TM152         0.185         0.29         0.397              Selenium (tot un ilt)         <0.001 mg/l								
Selenium (tot un it)         <0.001 mg/l         TM 152         0.00193         0.00184         0.00176             Nickel (diss.fil)         <0.0004 mg/l         TM 152         0.0032         0.00257         0.00208  <	Manganese (diss.filt)	<0.003 mg/l	TM152	0.00398	0.0132	0.00892		
Selenium (tot un it)         <0.001 mg/l         TM 152         0.00193         0.00184         0.00176             Nickel (diss.fil)         <0.0004 mg/l         TM 152         0.0032         0.00257         0.00208  <								
Selenium (tot un it)         <0.001 mg/l         TM152         0.00193         0.00184         0.00176             Nickel (diss.filt)         <0.0004 mg/l         TM152         0.0032         0.00257         0.00208 </td <td>Phosphorus (tot.unfilt)</td> <td>&lt;0.02 ma/l</td> <td>TM152</td> <td>0.185</td> <td>0 29</td> <td>0 397</td> <td></td> <td></td>	Phosphorus (tot.unfilt)	<0.02 ma/l	TM152	0.185	0 29	0 397		
Image: Constraint of the second sec	(weathing)	2.52 mg/l		0.100				
Image: Constraint of the second sec	Onlanding that 10	<0.004 ·	THUCO	0.00402	0.00404	0.00470		
mg/l         mg/l <th< td=""><td>Selenium (tot un ilt)</td><td>&lt;0.001 mg/l</td><td>TM152</td><td>0.00193</td><td>0.00184</td><td>0.00176</td><td></td><td></td></th<>	Selenium (tot un ilt)	<0.001 mg/l	TM152	0.00193	0.00184	0.00176		
mg/l         mg/l <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>								
mg/l         mg/l <th< td=""><td>Nickel (diss.filt)</td><td>&lt;0.0004</td><td>TM152</td><td>0.0032</td><td>0.00257</td><td>0.00208</td><td></td><td></td></th<>	Nickel (diss.filt)	<0.0004	TM152	0.0032	0.00257	0.00208		
Phosphorus (diss.filt)         < 0.01 mg/l         TM152         0.176         0.233         0.188		mg/l						
Selenium (diss.filt)         < <td>Phosphorus (diss filt)</td> <td></td> <td>TM152</td> <td>0 176</td> <td>0 233</td> <td>0 188</td> <td></td> <td></td>	Phosphorus (diss filt)		TM152	0 176	0 233	0 188		
Zinc (tot.unfilt)         <         C <thc< th="">         C         <thc< th=""></thc<></thc<>	i noopriorus (uiss.iiit)	-0.01 mg/l	TWIJZ	0.170	0.200	0.100		
Zinc (tot.unfilt)         <         C <thc< th="">         C         <thc< th=""></thc<></thc<>		-0.001		0.0000-	C 0000 -	0.00.17-		
Xinc (diss.filt)         <0.001 mg/l         TM152         0.00187         0.00227         Image: Constraint of the state of the sta	Selenium (diss.filt)	<0.001 mg/l	TM152	0.00238	0.00201	0.00176		
Xinc (diss.filt)         <0.001 mg/l         TM152         0.00187         0.00227         Image: Constraint of the state of the sta								
Xinc (diss.filt)         <0.001 mg/l         TM152         0.00187         0.00227         Image: Constraint of the state of the sta	Zinc (tot.unfilt)	<0.005 ma/l	TM152	0.00868	0.00606	0.00598		
Sodium (Dis.Filt)         <0.076 mg/l         TM152         46.1         54.2         56 3 <th< th=""> <th< th=""> <th<< td=""><td>1 7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<<></th<></th<>	1 7							
Sodium (Dis.Filt)         <0.076 mg/l         TM152         46.1         54.2         56 3 <th< th=""> <th< th=""> <th<< td=""><td>Zine (dias filt)</td><td>&lt;0.004 "</td><td>THEF</td><td>0.00407</td><td>0.00407</td><td>0.00007</td><td></td><td></td></th<<></th<></th<>	Zine (dias filt)	<0.004 "	THEF	0.00407	0.00407	0.00007		
Magnesium (Dis.Filt)         <0.036 mg/l         TM152         24         26         28 5		~0.001 mg/l	101102	0.0010/	0.0016/	0.00227		
Magnesium (Dis.Filt)         <0.036 mg/l         TM152         24         26         28 5								
Magnesium (Dis.Filt)         <0.036 mg/l         TM152         24         26         28 5	Sodium (Dis.Filt)	<0.076 mg/l	TM152	46.1	54.2	56 3		
	Magnesium (Dis Filt)	<0.036 mg/l	TM152	24	26	28.5		
		o.ooo mga		-7		200		
5:15:17 01/02/2020							L .	

ALS

Image: Section of the sectio	Results Legend	(	Customer Sample Ref.	SW1	SW2	SW3		
Image: Section of the section of th	# ISO17025 accredited.		outonor oumpro rea.	SWI	5112	SWS		
··· <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Barbon Marchan water wate	diss.filt Dissolved / filtered sample.							
Image: Second		for						
Definition of the start of the sta				21/01/2020	21/01/2020	21/01/2020		
Image         Image         Image         Image         Image         Image           Comport         0.0000000         0.000000         0.000000         0.000000 <td>efficiency of the method. The results of individ</td> <td>dual</td> <td></td> <td>22/01/2020</td> <td>22/01/2020</td> <td>22/01/2020</td> <td></td> <td></td>	efficiency of the method. The results of individ	dual		22/01/2020	22/01/2020	22/01/2020		
And the product of		or the	SDG Ref					
Comport Persidentifier 1Lobusting Persidentifier 1Relation Persidentifier 1Relation 1<	(F) Trigger breach confirmed			21526665	21526666	21526667		
Palasam Calisam (DRF)92 and 2 118211812.18.44endendend (end)Calsim (In (F)F)92 and 9 0199011821751771001001001000Inc (B, F)T9.06 ng)11820.2010.40190.40190.00110000		LOD/Unite						
Let         Let <thlet< th=""> <thlet< th=""> <thlet< th=""></thlet<></thlet<></thlet<>				40	42.4	0.44		
Incl. Fri Closer Markee Mar	Potassium (Dis.Fiit)	<0 2 mg/i	TMT52	10	12.1	0.44		
Incl. Fri Closer Markee Mar								
And         And <td>Calcium (Dis.Filt)</td> <td>&lt;0 2 mg/l</td> <td>TM152</td> <td>175</td> <td>177</td> <td>180</td> <td></td> <td></td>	Calcium (Dis.Filt)	<0 2 mg/l	TM152	175	177	180		
And         And <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
Image: Control (Control (Contro (Control (Control (Control (Contro) (Contro) (Contro) (Contro) (	Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	<0.019	<0.019		
Image: Control (Control (Contro (Control (Control (Control (Contro) (Contro) (Contro) (Contro) (								
Image: Control (Control (Contro (Control (Control (Control (Contro) (Contro) (Contro) (Contro) (	Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152	23 3	27.7	28.8		
Maxary (ds. R)         Maxary		, in the second s						
Maxary (ds. R)         Maxary	Iron (Tot Unfilt)	<0.024 mg/l	TM152	0.0628	0 184	0.257		
mpd         mpd <thmpd< th=""> <thmpd< th=""> <thmpd< th=""></thmpd<></thmpd<></thmpd<>		-0.024 mg/i	TWITE	0.0020	0.104	0201		
mpd         mpd <thmpd< th=""> <thmpd< th=""> <thmpd< th=""></thmpd<></thmpd<></thmpd<>	N (F 50)	<0.00004	714402	-0.00004	<0.00004	<0.00004		
Mercary (bd.unit)         0.0002         N183         0.0002 <t< td=""><td>Mercury (diss.filt)</td><td></td><td>IM183</td><td>&lt;0.0001</td><td>&lt;0.0001</td><td>&lt;0.0001</td><td></td><td></td></t<>	Mercury (diss.filt)		IM183	<0.0001	<0.0001	<0.0001		
mgl         mgl <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		-						
Nitela a NO2         -0.05 mgl         TM 194         0.119         0.487         0.352         Image (Constraint)           Phosphule (Orbo as POA)         -0.05 mgl         TM 194         0.487         0.708         0.873         Image (Constraint)         I	Mercury (tot.unfilt)		FM183	<0.00002	<0.00002	<0.00002		
Image: Constraint of the second sec		mg/l						
Link         Link <thlink< th="">         Link         Link         <th< td=""><td>Nitrite as NO2</td><td>&lt;0.05 mg/l</td><td>TM184</td><td>0.119</td><td>0.487</td><td>0 352</td><td></td><td></td></th<></thlink<>	Nitrite as NO2	<0.05 mg/l	TM184	0.119	0.487	0 352		
Link         Link <thlink< th="">         Link         Link         <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<></thlink<>								
Link         Link <thlink< th="">         Link         Link         <th< td=""><td>Phosphate (Ortho as PO4)</td><td>&lt;0.05 ma/l</td><td>TM184</td><td>0.487</td><td>0.708</td><td>0.673</td><td></td><td></td></th<></thlink<>	Phosphate (Ortho as PO4)	<0.05 ma/l	TM184	0.487	0.708	0.673		
Chirade         Car of a mail         TM184         R2.4         94.6         94.8         Component of a mail		2.30 mg/						
Chirade         Car of a mail         TM184         R2.4         94.6         94.8         Component of a mail	Sulphoto	<2 m-4	TM404	109	470	405		
Low         Low <thlow< th=""> <thlow< th=""> <thlow< th=""></thlow<></thlow<></thlow<>	oupnate	<2 mg/i	111184	108	1/3	Cell		
Low         Low <thlow< th=""> <thlow< th=""> <thlow< th=""></thlow<></thlow<></thlow<>							 	
Name         Name <th< td=""><td>Chloride</td><td>&lt;2 mg/l</td><td>TM184</td><td>82.4</td><td>94.6</td><td>94.8</td><td></td><td></td></th<>	Chloride	<2 mg/l	TM184	82.4	94.6	94.8		
Name         Name <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>								
Name         Name <th< td=""><td>Total Oxidised Nitrogen as NO3</td><td>&lt;0.3 mg/l</td><td>TM184</td><td>191</td><td>169</td><td>153</td><td></td><td></td></th<>	Total Oxidised Nitrogen as NO3	<0.3 mg/l	TM184	191	169	153		
Constraint         Constr	, , , , , , , , , , , , , , , , , , ,	Ť						
Constraint         Constr	Nitrate as NO3	<0.3 ma/l	TM184	191	169	152		
Concent 28         Concent 28 <thconcent 28<="" th="">         Concent 28         Concent</thconcent>	Nillale as NOS	-0 5 mg/r	111104	151	105	102		
Concent 28         Concent 28 <thconcent 28<="" th="">         Concent 28         Concent</thconcent>								
nm         mg/         mg/ <thm <="" th=""> <thm <="" th=""> <thm <="" th=""></thm></thm></thm>	Oxygen, dissolved	<0.3 mg/l	IM187	8.74	9.16	9.87		
nm         mg/         mg/ <thm <="" th=""> <thm <="" th=""> <thm <="" th=""></thm></thm></thm>								
PCB congener 52         40.00015 mg/l         TM197         40.00015         40.00015         40.00015         40.00015         40.00015           PCB congener 101         40.00015         TM197         40.00015	PCB congener 28	<0.000015	TM197	<0.00015	<0.00015	<0.000015		
$n_{01}$		mg/l						
PCB congener 101         -0.00015         TM 197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015	PCB congener 52	< 0.000015	TM197	<0.00015	<0.00015	<0.00015		
PCB congener 101         -0.00015         TM 197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015		mg/l						
$n_{cl}$ $n_{gl}$ $l$	PCB congener 101	-	TM197	<0 000015	<0.000015	<0.000015		
PCB congener 118         <0.00015 mgl         TM197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015 <td>·</td> <td>ma/l</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	·	ma/l						
mgl         mgl <td>DCB congoingr 118</td> <td></td> <td>TM107</td> <td>&lt;0.00015</td> <td>&lt;0.000015</td> <td>&lt;0.000015</td> <td></td> <td></td>	DCB congoingr 118		TM107	<0.00015	<0.000015	<0.000015		
PCB congener 138 <ul> <li>Q00015</li> <li>TM197</li> <li>Q000015</li> <li>Q000015</li> <li>TM197</li> <li>Q000015</li> <li>Q0000015</li> <li>Q000015</li> <liq< td=""><td>FOD Congener 110</td><td></td><td>INITST</td><td>~0.000015</td><td>~0.000015</td><td>NU.000015</td><td></td><td></td></liq<></ul>	FOD Congener 110		INITST	~0.000015	~0.000015	NU.000015		
mgl         mgl <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		<u> </u>						
PCB congener 153         <0.000015         TM197         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015	PCB congener 138		IM197	<0.000015	<0.000015	<0.000015		
ngl $ngl$ <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
PCB congener 180         <0.00015 mg/l         TM197         <0.00015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015	PCB congener 153	<0.000015	TM197	<0.00015	<0.00015	<0.000015		
mg/l         mg/l <th< td=""><td></td><td>mg/l</td><td></td><td></td><td></td><td></td><td></td><td></td></th<>		mg/l						
mg/l         mg/l <th< td=""><td>PCB congener 180</td><td>&lt;0.000015</td><td>TM197</td><td>&lt;0.000015</td><td>&lt;0.000015</td><td>&lt;0.000015</td><td></td><td></td></th<>	PCB congener 180	<0.000015	TM197	<0.000015	<0.000015	<0.000015		
Sum of detected EC7 PCB's mg1	-		1 1					
mglmglccc <td>Sum of detected FC7 PCB's</td> <td></td> <td>TM197</td> <td>&lt;0.000105</td> <td>&lt;0.000105</td> <td>&lt;0.000105</td> <td></td> <td></td>	Sum of detected FC7 PCB's		TM197	<0.000105	<0.000105	<0.000105		
PC8 congener 77         40.00015 mg/l         TM197 mg/l         40.00015 (0.00015)         40.000015 (0.00015)         40.00015        <					5.550100	0.000100		
mg/l         mg/l <th< td=""><td>DCB congoiner 77</td><td>1</td><td>TM407</td><td>&lt;0.00045</td><td>&lt;0.00045</td><td>&lt;0.000045</td><td></td><td>  </td></th<>	DCB congoiner 77	1	TM407	<0.00045	<0.00045	<0.000045		
PCB congener 81 <th<< td=""><td></td><td></td><td>11197</td><td>~v.uuuu10</td><td>~0.000010</td><td>~0.000010</td><td></td><td></td></th<<>			11197	~v.uuuu10	~0.000010	~0.000010		
ngl $ngl$ <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>  </td></th<>								
PCB congener 105 <th< td=""><td>PCB congener 81</td><td></td><td>TM197</td><td>&lt;0.00015</td><td>&lt;0.00015</td><td>&lt;0.000015</td><td></td><td></td></th<>	PCB congener 81		TM197	<0.00015	<0.00015	<0.000015		
mg/l         img/l		mg/l					 	
PCB congener 114         <0.00015 mg/l         TM 197 cl         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.000015         <0.00015         <0.000	PCB congener 105	<0.000015	TM197	<0.00015	<0.000015	<0.000015		
PCB congener 114         <0.00015 mg/l         TM 197 cl         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.000015         <0.00015         <0.000		mg/l						
mg/l         mg/l <th< td=""><td>PCB congener 114</td><td>1</td><td>TM197</td><td>&lt;0.000015</td><td>&lt; 0.000015</td><td>&lt;0.000015</td><td></td><td></td></th<>	PCB congener 114	1	TM197	<0.000015	< 0.000015	<0.000015		
PCB congener 123       <0.00015       TM 197       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015       <0.00015	<b>u</b>							
mg/l         mg/l <th< td=""><td>PCB congener 123</td><td></td><td>TM197</td><td>&lt;0.00015</td><td>&lt;0.00015</td><td>&lt;0.000015</td><td></td><td></td></th<>	PCB congener 123		TM197	<0.00015	<0.00015	<0.000015		
PCB congener 126         <0.00015 mg/l         TM197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.000015         <0.00015         <0.00015 </td <td>1 00 Wilgener 120</td> <td></td> <td>111137</td> <td>-0.00010</td> <td>-0.000010</td> <td>-0.000010</td> <td></td> <td></td>	1 00 Wilgener 120		111137	-0.00010	-0.000010	-0.000010		
Img/l         Img/l <th< td=""><td>DCB congeneration</td><td>-</td><td>71407</td><td>&lt;0.00045</td><td>&lt;0.00004F</td><td>&lt;0.00004F</td><td> </td><td>I</td></th<>	DCB congeneration	-	71407	<0.00045	<0.00004F	<0.00004F	 	I
PCB congener 156         < 0.00015 mg/l         TM197         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015         < 0.00015	PUD congener 126		(M19/	~0.000015	~0.000015	~0.000015		
mg/l         mg/l <th< td=""><td></td><td></td><td>ļ</td><td></td><td></td><td></td><td></td><td></td></th<>			ļ					
PCB congener 157         <0.00015 mg/l         TM197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015 <td>PCB congener 156</td> <td></td> <td>TM197</td> <td>&lt;0.000015</td> <td>&lt;0.000015</td> <td>&lt;0.000015</td> <td></td> <td></td>	PCB congener 156		TM197	<0.000015	<0.000015	<0.000015		
PCB congener 157         <0.00015 mg/l         TM197         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015         <0.00015 <td></td> <td>mg/l</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		mg/l						
mg/l         mg/l <th< td=""><td>PCB congener 157</td><td>&lt; 0.000015</td><td>TM197</td><td>&lt;0.000015</td><td>&lt; 0.000015</td><td>&lt;0.000015</td><td></td><td></td></th<>	PCB congener 157	< 0.000015	TM197	<0.000015	< 0.000015	<0.000015		
PCB congener 167         <0.000015 mg/l         TM197         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015         <0.000015	-		1 1					
mg/l         mg/l <th< td=""><td>PCB congener 167</td><td>-</td><td>TM197</td><td>&lt;0.00015</td><td>&lt;0.00015</td><td>&lt;0.00015</td><td></td><td></td></th<>	PCB congener 167	-	TM197	<0.00015	<0.00015	<0.00015		
PCB congener 169 <0.000015 TM197 <0.000015 <0.000015 <0.000015 <0.000015			111131	-0.00010	-0.000/10	-0.000010		
	DCB conserve 400	-	71407	<0.000.45	<0.00004F	<0.00004F	 	
mgi ja	POD congener 169		11/19/	<0.00015	<0.000015	<0.000015		
		mg/i			1			

ALS

	Results Legend IS017025 accredited.		Customer Sample Ref.	SW1	SW2	SW3		
	mCERTS accredited.							
aq diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)					
tot.unfilt	Total / unfiltered sample.		Sample Type	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)		
•	Subcontracted - refer to subcontractor report for accreditation status.	*	Date Sampled	21/01/2020	21/01/2020	21/01/2020		
	% recovery of the surrogate standard to check	the	Sample Time					
1	efficiency of the method. The results of individu compounds within samples aren't corrected for	al	Date Received	22/01/2020	22/01/2020	22/01/2020		
	compounds within samples aren't corrected for recovery	rthe	SDG Ref	200122-14	200122-14	200122-14		
(F)	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No.(s)	21526665	21526666	21526667		
		LODUL	AGS Reference					
Compo		LOD/Units		-0.000045	-0.000015	-0.0000/5	 	
PCB co	ngener 189	<0.000015	TM197	<0.00015	<0.000015	<0.000015		
		mg/l						
Nitroger	n, Total	<1 mg/l	TM212	44.8	39	35.7		
Ĭ		Ŭ						
Chromit	um, Hexavalent	<0.03 mg/l	TM241	<0.03	<0.03	<0.03		
Chromit	ini, nexavalent	<0.03 mg/i	1 11/2/4 1	NU.US	NU.05	NU.00		
pН		<1 pH Units	TM256	8.04	8.06	7.98		
Cyanide	e, Free (low level)	<0.0025	TM279	<0.0025	<0.0025	<0.0025		
- Januar	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	mg/l		0.0020	0.0020	0.0020		
		ingn						
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		00122-14				Dep and blocks	520200	
SDG: Location:		200122-14 Bradwell					539389 539334	
AH Spec MS - Aqueou	s (W)							
Results Legend ISO17025 accredited. MmCERTS accredited.	C	ustomer Sample Ref.	SW1	SW2	SW3			
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)						
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor repor accreditation status.	t for	Sample Type Date Sampled	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020			
* % recovery of the surrogate standard to che efficiency of the method. The results of indiv	ridual	Sample Time Date Received	22/01/2020	22/01/2020	22/01/2020			
compounds within samples aren't corrected recovery (F) Trigger breach confirmed	for the	SDG Ref Lab Sample No.(s)	200122-14 21526665	200122-14 21526666	200122-14 21526667			
1-345@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method						
Naphthalene (aq)	<0.00001	TM178	<0.00001	0.000011	0.000011			
Acenaphthene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	<0.000005			
	mg/l							
Acenaphthylene (aq)	<0.000005 mg/l	TM178	<0.00005	<0.000005	<0.000005			
Fluoranthene (aq)	<0.000005 mg/l	TM178	<0.00005	0.000005	0.000015			
Anthracene (aq)	<0.000005	TM178	<0.000005	<0.000005	<0.000005			
Phenanthrene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	0.000006			
Fluorene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	<0.000005			
	mg/l							
Chrysene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Pyrene (aq)	<0.000005 mg/l	TM178	<0.00005	<0.000005	0.000015			
Benzo(a)anthracene (aq)	<0.000005 mg/l	TM178	<0.000005	<0.000005	<0.000005			
Benzo(b)fluoranthene (aq)	<0.000005	TM178	<0.000005	<0.000005	0.000012			
Benzo(k)fluoranthene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	0.000006			
Benzo(a)pyrene (aq)	mg/l <0.000002	TM178	<0.00002	<0.00002	0.000009			
Dibenzo(a,h)anthracene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	<0.00005			
Benzo(g,h,i)perylene (aq)	mg/l <0.000005	TM178	<0.00005	<0.00005	<0.00005			
Indeno(1,2,3-cd)pyrene (aq)	mg/l <0.000005	TM178	<0.00005	<0.000005	0.000006			
PAH, Total Detected USEPA 16	mg/l <0.000082	TM178	<0.00082	<0.000082	<0.000082			
(aq)	mg/l							
					_ <b>_</b>			

ALS

# CERTIFICATE OF ANALYSIS

Validated

SDG: Location:		00122-14 Bradwell			843 2988	Report Number: Superseded Report	539389 539334
		nauwen	Cide	Number. 32.	2300	Supersourd Report	00004
VOC MS (W) - Aqueou Results Legend		ustomer Sample Ref.	SW1	SW2	SW3		
ISO17025 accredited.     M mCERTS accredited.							
aq Aqueous / settled sample. diss.fit Dissolved / filtered sample.		Depth (m)					
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report	t for	Sample Type Date Sampled	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020		
* % recovery of the surrogate standard to che		Sample Time					
efficiency of the method. The results of indiv compounds within samples aren't corrected		Date Received SDG Ref	22/01/2020 200122-14	22/01/2020 200122-14	22/01/2020 200122-14		
(F) Trigger breach confirmed		Lab Sample No.(s)	21526665	21526666	21526667		
1-34§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
1,2,4-Trichlorobenzene (aq)	< 0.001 mg/l	TM176	<0.001	<0.001	<0.001		
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
	, in the second						
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Azobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Anthracene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.002	<0.002	<0.002		
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		I
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CERTIFICATE OF ANALYSIS							
SDG: Location:		200122-14 Bradwell			1843 22988	Report Number: Superseded Report	539389 539334
SVOC MS (W) - Aqueous							
Results Legend # ISO17025 accredited.		Gustomer Sample Ref.	SW1	SW2	SW3		
M mCERTS ascredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)					
tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report	for	Sample Type	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)		
accreditation status. ** % recovery of the surrogate standard to check		Date Sampled Sample Time	21/01/2020	21/01/2020	21/01/2020		
efficiency of the method. The results of indivi compounds within samples aren't corrected f		Date Received SDG Ref	22/01/2020 200122-14	22/01/2020 200122-14	22/01/2020 200122-14		
recovery (F) Trigger breach confirmed 1-34§@ Sample deviation (see appendix)		Lab Sample No.(a) AGS Reference	21526665	21526666	21526667		
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Carbazole (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Chrysene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176 TM176	<0.001	<0.001	<0.001		
Dimethyl phthalate (aq) n-Dioctyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	< 0.001	<0.001		
Fluoranthene (aq)	<0.000 mg/l	TM176	<0.001	<0.001	<0.000		
Fluorene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Phenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Naphthalene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Isophorone (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
Phenanthrene (aq) Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176 TM176	<0.001	0.00164	<0.001		
Pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001		
, j.one (uq)	-0.00 r hig/l	11110	-0.001	-v.v/I	-0.001		
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## **CERTIFICATE OF ANALYSIS**

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Results Legend IS017025 accredited.				Order Number. 322900			Superseded Report 539334		
	Ci	ustomer Sample Ref.	SW1	SW2	SW3				
M mCERTS ascredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)							
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report	for	Sample Type Date Sampled	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020	Unspecified Liquid (UNL) 21/01/2020				
accreditation status. ** % recovery of the surrogate standard to check efficiency of the method. The results of indivi	dual	Sample Time Date Received		22/01/2020	22/01/2020				
compounds within samples aren't corrected fi recovery (F) Trigger breach confirmed	orthe	SDG Ref Lab Sample No.(s)	200122-14 21526665	200122-14 21526666	200122-14 21526667				
1-345@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method							
GRO Surrogate % recovery**	%	TM245	101	100	109				
GRO >C5-C12	<0.05 mg/l	TM245	<0.05	<0.05	<0.05				
Methyl tertiary butyl ether (MTBE)	<0.003 mg/l	TM245	<0.003	<0.003	<0.003				
Benzene	<0.007 mg/l	TM245	<0.007	<0.007	<0.007				
Toluene	<0.004 mg/l	TM245	<0.004	<0.004	<0.004				
Ethylbenzene	<0.005 mg/l	TM245	<0.005	<0.005	<0.005				
m,p-Xylene	<0.008 mg/l	TM245	<0.008	<0.008	<0.008				
o-Xylene	<0.003 mg/l	TM245	<0.003	<0.003	<0.003				
Sum of detected Xylenes	<0.011 mg/l	TM245	<0.011	<0.011	<0.011				
Sum of detected BTEX	<0.028 mg/l	TM245	<0.028	<0.028	<0.028				
Aliphatics >C5-C6	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aliphatics >C6-C8	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aliphatics >C8-C10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aliphatics >C10-C12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aliphatics >C12-C16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aliphatics >C16-C21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aliphatics >C21-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Total Aliphatics >C12-C35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aromatics >EC5-EC7	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aromatics >EC7-EC8	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aromatics >EC8-EC10	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aromatics >EC10-EC12	<0.01 mg/l	TM245	<0.01	<0.01	<0.01				
Aromatics >EC12-EC16 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aromatics >EC16-EC21 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aromatics >EC21-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Total Aromatics >EC12-EC35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Total Aliphatics & Aromatics >C5-35 (aq)	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				
Aliphatics >C16-C35 Aqueous	<0.01 mg/l	TM174	<0.01	<0.01	<0.01				

SDG:

200122-14

### **CERTIFICATE OF ANALYSIS**

41843

**Client Reference:** 

Location: Bradwell Order Number: 322988 VOC MS (W) Customer Sample Re SW1 SW2 SW3 CERTS : Depth (m) tot.unfil Sample Typ ified Liquid (UNL) cified Liquid (UNL) cified Liquid (UNL) u U Takets a start start start of the surrogate standard to check the y of the method. The results of individual nds within samples aren't corrected for the Date Sample 21/01/2020 21/01/2020 21/01/2020 Sample Tim 22/01/2020 22/01/2020 22/01/2020 Date Receive SDG Re 200122-14 200122-14 200122-14 Lab Sample No.(s 21526665 21526666 21526667 ach confirmed ion (see appendix) AGS Referen Component LOD/Units Method Dibromofluoromethane\* TM208 111 109 115 % TM208 Toluene-d8\* % 97 9 97 9 98.4 4-Bromofluorobenzene\*\* % TM208 97.5 96.6 96 Dichlorodifluoromethane <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 Chloromethane <0.001 mg/l TM208 < 0.001 <0.001 <0.001 Vinyl chloride TM208 <0.001 <0.001 <0.001 <0.001 mg/l Bromomethane <0.001 mg/l TM208 <0.001 < 0.001 <0.001 Chloroethane TM208 <0.001 <0.001 <0.001 <0.001 mg/l Trichlorofluoromethane <0.001 mg/l TM208 <0.001 < 0.001 <0.001 <0.001 mg/l 1.1-Dichloroethene TM208 <0.001 <0.001 <0.001 Carbon disulphide TM208 < 0.001 < 0.001 < 0.001 <0.001 mg/l Dichloromethane <0.003 mg/l TM208 < 0.003 < 0.003 < 0.003 Methyl tertiary butyl ether <0.001 mg/l TM208 < 0.001 <0.001 <0.001 (MTBE) trans-1,2-Dichloroethene <0.001 mg/l TM208 <0.001 <0.001 <0.001 <0.001 <0.001 1,1-Dichloroethane <0.001 mg/l TM208 <0.001 cis-1,2-Dichloroethene <0.001 mg/l TM208 <0.001 < 0.001 <0.001 2,2-Dichloropropane <0.001 mg/l TM208 <0.001 < 0001 <0 001 <0.001 mg/l TM208 < 0.001 < 0.001 Bromochloromethane < 0.001 TM208 < 0.001 < 0.001 < 0.001 Chloroform <0.001 mg/l 1,1,1-Trichloroethane <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 1,1-Dichloropropene <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 Carbontetrachloride <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 1,2-Dichloroethane <0.001 mg/l TM208 <0.001 <0.001 <0.001 TM208 <0.001 <0.001 Benzene <0.001 mg/l <0.001 Trichloroethene TM208 <0.001 <0.001 <0.001 <0.001 mg/l <0.001 1,2-Dichloropropane <0.001 ma/l TM208 < 0.001 < 0.001 <0.001 mg/l Dibromomethane TM208 <0.001 < 0001 < 0.001 Bromodichloromethane <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 cis-1,3-Dichloropropene <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 Toluene <0.001 mg/l TM208 < 0.001 < 0.001 < 0.001 trans-1,3-Dichloropropene <0.001 mg/l TM208 <0.001 < 0.001 < 0.001 1,1,2-Trichloroethane <0.001 mg/l TM208 <0.001 <0.001 <0.001

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<0.001 mg/l

TM208

<0.001

1,3-Dichloropropane

<0.001

<0.001

Validated

539389

539334

Report Number:

Superseded Report

Validated

	SDG:	CERTIFICATE OF ANALTSIS           SDG:         200122-14         Client Reference:         41843         Report Number:         539389						
Lat. Lycal         Lycal <thlycal< th=""> <thlycal< th="">         Lycal<!--</th--><th>ALS Location:</th><th colspan="3"></th><th></th><th></th><th></th><th></th></thlycal<></thlycal<>	ALS Location:							
Image: Section of the sectio								
markane         markane <t< td=""><td># ISO17025 accredited. M mCERTS accredited.</td><td>U.</td><td>istomer oampie Kei.</td><td>SW1</td><td>SW2</td><td>SW3</td><td></td><td></td></t<>	# ISO17025 accredited. M mCERTS accredited.	U.	istomer oampie Kei.	SW1	SW2	SW3		
Normal sectorNormal sectorNormal sectorNormal sectorNormal sectorNormal sectorComport TransformedColl MarkColl MarkCo	diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subsontracted - refer to subsontractor report	rt for	Sample Type Date Sampled					
Image: Control of the second	** % recovery of the surrogate standard to chere efficiency of the method. The results of indiv	vidual	Date Received					
Land Land Land Land Land Land Land Land	recovery (F) Trigger breach confirmed	for the						
Normaliant BarnadakanamikaNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant PatternNormaliant 	1-345@ Sample deviation (see appendix)	LOD/Units						
AlternationAlternatio		, j						
AddityTubeAddityTubeAddity <td>Dibromochloromethane</td> <td>&lt;0.001 mg/l</td> <td>TM208</td> <td>&lt;0.001</td> <td>&lt;0.001</td> <td>&lt;0.001</td> <td></td> <td></td>	Dibromochloromethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1.1.21feinachannes1.0.00 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
International DepartmentInternational ControlInternational Con	Chlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
mp Aylane         control         control         control         control         control         control           a Sylane         0.001 mg         TAGB         0.001 mg         TAGB         0.001 mg		-						
$c_{c}$ Aylene $c_{0}$ All $d_{0}$	Ethylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
NerveAutomNucleAutomAutomAutomAutomAutomBrendom4001 mgNucle-40010.001-4001-4001-4001-4001Isopraybancam4001 mgNucle-40010.001-4001-4001-4001-400111.2.2.Tetradowebane4001 mgNucle-4001-4001-4001-4001-4001-400112.3.Tetrikorgraph4001 mgNucle-4001-4001-4001-4001-4001-4001Danaberzem4001 mgNucle-4001-4001-4001-4001-4001-4001Payberzem4001 mgNucle-4001-4001-4001-4001-4001-4001Schwebkerzem4001 mgNucle-4001-4001-4001-4001-4001-400113.5 Trikowyberzem4001 mgNucle-4001-4001-4001-4001-4001-400114.0 Hordskerzem4001 mgNucle-4001-4001-4001-4001-4001-4001-400114.1 Hordskerzem4001 mgNucle-4001<	m,p-Xylene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Image         Image <th< td=""><td>o-Xylene</td><td>&lt;0.001 mg/l</td><td>TM208</td><td>&lt;0.001</td><td>&lt;0.001</td><td>&lt;0.001</td><td></td><td></td></th<>	o-Xylene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Lognopybename         Q001 mg         TM208         Q0001	Styrene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
1.1.2.2-Tetrackhorechane $10.001$ $10.001$ TM208 $10.001$	Bromoform	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
12.3 Tinkloroprepane         1.0 mm	Isopropylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Number Name	1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Prog/benzene         Qu01 mgl         TM208         Qu001	1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
Link         Link <thlink< th="">         Link         Link         <thl< td=""><td>Bromobenzene</td><td>&lt;0.001 mg/l</td><td>TM208</td><td>&lt;0.001</td><td>&lt;0.001</td><td>&lt;0.001</td><td></td><td></td></thl<></thlink<>	Bromobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
I.A.C         I.M.C         I.M.C <th< td=""><td>Propylbenzene</td><td>&lt;0.001 mg/l</td><td>TM208</td><td>&lt;0.001</td><td>&lt;0.001</td><td>&lt;0.001</td><td></td><td></td></th<>	Propylbenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		
$4-Chiorelobuere-C_{-0001}-C_{-000$		, in the second s						
International and antipart of the second s	1,3,5-Trimethylbenzene							
1.4.         1.4. <th< td=""><td>4-Chlorotoluene</td><td>&lt;0.001 mg/l</td><td></td><td>&lt;0.001</td><td>&lt;0.001</td><td></td><td></td><td></td></th<>	4-Chlorotoluene	<0.001 mg/l		<0.001	<0.001			
Inclusion         Inclusion <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
A iso- Propylloluene         < 0.001 mgl         TM208         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001         < 0.001<	1,2,4-Trimethylbenzene							
1.1         1.1 <th1.1< th="">         1.1         1.1</th1.1<>		, , , , , , , , , , , , , , , , , , ,						
Image: Constraint of the state of			TM208	<0.001	<0.001	<0.001		
n-Butylbenzene         Q0.01 mg/l         TM208         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001								
1.2-Dichlorobenzene         <         Image: Constraint of the constraint of th		, , , , , , , , , , , , , , , , , , ,						
Image: Constraint of the state of		-						
International and an analysis of a state of								
Hexachlorobutadiene         <         Image: Constraint of the state								
Image: Constraint of the state of								
Naphthalene         <0.001 mg/l         TM208         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001         <0.001 <t< td=""><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		-						
1,2,3-Trichlorobenzene <0.001 mg/l TM208 <0.001 <0.001 <0.001								
	1,2,3-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	<0.001	<0.001		

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CERTIFICATE OF ANALYSIS									
	SDG: Location:			Clien	Client Reference: 41843 Order Number: 322988			Report Number:539389Superseded Report539334	
	Location.		Bradwell	Orde	Number. 32	2300	Superseueu Rep	010 000004	
VOC MS (W) Resu	ults Legend	C	ustomer Sample Ref.	SW1	SW2	SW3	г т		
# ISO17025 accredite M mCERTS accredited aq Aqueous / settled s	4.								
diss.filt Dissolved / filtered tot.unfilt Total / unfiltered sa	sample. mple.		Depth (m) Sample Type	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)	Unspecified Liquid (UNL)			
accreditation status	er to subcontractor report i		Date Sampled Sample Time	21/01/2020	21/01/2020	21/01/2020			
efficiency of the me	urrogate standard to check thod. The results of individ samples aren't corrected fo	iual	Date Received	22/01/2020	22/01/2020	22/01/2020			
recovery		n die	SDG Ref Lab Sample No.(s)	200122-14 21526665	200122-14 21526666	200122-14 21526667			
1-3+§@ Sample deviation (s	ee appendix)	LOD/Units	AGS Reference Method						
Component 1,3,5-Trichlorobenzer	ne	<0.001 mg/l	TM208	<0.001	<0.001	<0.001			
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# ALS

SDG:

Location:

200122-14 Bradwell **CERTIFICATE OF ANALYSIS** 

 Client Reference:
 41843

 Order Number:
 322988

Report Number: Superseded Report Validated

539389 539334

# Table of Results - Appendix

Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
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
TM110	BS 1377: Part 3 1990	Redox Potential
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
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
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
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM208	Modified: US EPA Method 8260b & 624	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM212	SO/TR 11905-2: 1997. Water quality – Determination of nitrogen –Part 2:Determination of bound nitrogen, after combustion and oxidation to nitrogen dioxide, chemiluminescence detection.	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	By GC-F D	Determination of GRO by Headspace in waters
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
TM279		Determination of Low Level Easily Liberatable (Free) Cyanides and Total Cyanides in Waters using the Skalar SANS+ System Segmented Flow Analyser

NA = not applicable.

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



322988

Report Number: Superseded Report

Validated

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# **Test Completion Dates**

**Client Reference:** 

Order Number:

Lab Sample No(s)	21526665	21526666	21526667
Customer Sample Ref.	SW1	SW2	5W3
AGS Ref.			
Depth			
Туре	Unspecified Liq	Unspecified Liq	Unspecified Liq
Alkalinity as CaCO3	24-Jan-2020	24-Jan-2020	24-Jan-2020
Ammoniacal Nitrogen	24-Jan-2020	24-Jan-2020	24-Jan-2020
Anions by Kone (w)	24-Jan-2020	27-Jan-2020	27-Jan-2020
Chromium III	27-Jan-2020	27-Jan-2020	29-Jan-2020
Conductivity (at 20 deg.C)	24-Jan-2020	24-Jan-2020	24-Jan-2020
Dissolved Metals by ICP-MS	27-Jan-2020	27-Jan-2020	30-Jan-2020
Dissolved Organic/Inorganic Carbon	24-Jan-2020	24-Jan-2020	24-Jan-2020
Dissolved Oxygen by Titration	24-Jan-2020	24-Jan-2020	24-Jan-2020
EPH CWG (Aliphatic) Aqueous GC (W)	29-Jan-2020	30-Jan-2020	29-Jan-2020
EPH CWG (Aromatic) Aqueous GC (W)	29-Jan-2020	30-Jan-2020	29-Jan-2020
GRO by GC-FID (W)	23-Jan-2020	24-Jan-2020	24-Jan-2020
Hexavalent Chromium (w)	24-Jan-2020	24-Jan-2020	24-Jan-2020
Low Level Cyanide (W)	24-Jan-2020	28-Jan-2020	28-Jan-2020
Mercury Dissolved	31-Jan-2020	30-Jan-2020	31-Jan-2020
Mercury Unfiltered	31-Jan-2020	31-Jan-2020	31-Jan-2020
Nitrite by Kone (w)	23-Jan-2020	25-Jan-2020	25-Jan-2020
PAH Spec MS - Aqueous (W)	29-Jan-2020	29-Jan-2020	29-Jan-2020
PCB Congeners - Aqueous (W)	29-Jan-2020	29-Jan-2020	29-Jan-2020
pH Value	27-Jan-2020	24-Jan-2020	24-Jan-2020
Phosphate by Kone (w)	28-Jan-2020	28-Jan-2020	28-Jan-2020
Redox Potential	28-Jan-2020	28-Jan-2020	28-Jan-2020
Suspended Solids	27-Jan-2020	27-Jan-2020	27-Jan-2020
SVOC MS (W) - Aqueous	29-Jan-2020	28-Jan-2020	29-Jan-2020
Total Metals by ICP-MS	30-Jan-2020	28-Jan-2020	28-Jan-2020
Total Nitrogen	24-Jan-2020	27-Jan-2020	27-Jan-2020
Total Organic and Inorganic Carbon	24-Jan-2020	24-Jan-2020	24-Jan-2020
TPH CWG (W)	29-Jan-2020	30-Jan-2020	29-Jan-2020
VOC MS (W)	24-Jan-2020	24-Jan-2020	24-Jan-2020

200122-14	Client Reference:	41843	Report Number:	539389
Bradwell	Order Number:	322988	Superseded Report	539334
	200122-14 Bradwell	200122-14 Client Reference: Bradwell Order Number:	200122-14 Client Reference: 41843	200122-14 Client Reference: 41843 Report Number:

Appendix

## General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. t 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
Ş	Sampled on date not provided
•	Sample holding time exceeded in laboratory
0	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).

Asba stos Type	Common Name
Chrysoile	WhiteAsbests
Amosite	Brow nAsbestos
Cro ci dolite	Blue Adve stos
Fibrous Actinolite	-
Fibrous Anhophylite	-
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.