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Fehily Timoney 3rd Floor North Park Offices North Park Business Park North Road Dublin Dublin 11

Attention: Daniel Hayden

# **CERTIFICATE OF ANALYSIS**

Date of report Generation:30 June 2021Customer:Fehily TimoneySample Delivery Group (SDG):210623-67Your Reference:P2344

Location: Oxigen Derryarkin

**Report No:** 603904

We received 4 samples on Wednesday June 23, 2021 and 4 of these samples were scheduled for analysis which was completed on Wednesday June 30, 2021. 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:

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PL2 / 22 / 490
21 / 09 / 2022

Sonia McWhan

Operations Manager









P2344 603904 SDG: 210623-67 Client Reference: Report Number: Oxigen Derryarkin Z2770 Superseded Report: Location: Order Number:

# **Received Sample Overview**

ab Sample No(s)	Customer Sample Ref. AC	S Ref. Depth (m) 0.00 - 0.00	Sampled Date
24496437 24496449	RC02	0.00 - 0.00	22/06/2021 22/06/2021
24496461	RC03	0.00 - 0.00	22/06/2021
24496474	RC04	0.00 - 0.00	22/06/2021
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		InspectionPut	X
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# CERTIFICATE OF ANALYSIS SDG: 210623-67 Client Reference: P2344

SDG: 210623-67 Client Reference: Report Number: 603904 Z2770 Superseded Report: Location: Oxigen Derryarkin Order Number: Results Legend 24496437 24496449 24496461 Lab Sample No(s) X Test No Determination Possible Customer RC02 RC01 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00 - 0.00 0.00 - 0.00 0.00 - 0.00 SA - Saline Water Depth (m) TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water HNO3 Filtered (ALE204) H2SO4 (ALE244) 250ml BOD
(ALE212)
0.5l glass bottle
(ALE227) 250ml BOD (ALE212) 0.5l glass bottle (ALE227) 0.5l glass bottle (ALE227) HNO3 Filtered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) NaOH (ALE245) 500ml Plastic (ALE208) HNO3 Filtered (ALE204) NaOH (ALE245) DW - Drinking Water Non-regulatory (ALE208) 250ml BOD (ALE212) Vial (ALE297) Vial (ALE297) 500ml Plastic 500ml Plastic UNL - Unspecified Liquid (ALE208) SL - Sludge Container G - Gas OTH - Other GW Sample Type GW Alkalinity as CaCO3 All NDPs: 0 Tests: 4 Х Х Х Ammonium Low All NDPs: 0 Tests: 4 X Χ Χ Anions by Kone (w) All NDPs: 0 Tests: 4 X X X BOD True Total All NDPs: 0 Tests: 4 X X X COD Unfiltered All NDPs: 0 Tests: 4 Χ Χ Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 4 Х Х X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 4 Х Х Х EPH CWG (Aliphatic) Aqueous GC (W) All NDPs: 0 Tests: 4 X Χ Х EPH CWG (Aromatic) Aqueous GC (W) All NDPs: 0 Tests: 4 X X X GRO by GC-FID (W) All NDPs: 0 Tests: 4 X X Mercury Dissolved All NDPs: 0 Tests: 4 X X Х Nitrite by Kone (w) All NDPs: 0 Tests: 4 X Χ pH Value All NDPs: 0 Tests: 4 Х Х Х All Phosphate by Kone (w) NDPs: 0 Tests: 4 Х Х Х Suspended Solids All NDPs: 0 Tests: 4 Χ Х Χ PLANNING

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24496461 RC03							24496474 RC04	24496474 RC04
0.00 - 0.00							0.00 - 0.00	0.00-0.00
Vial (ALE297) NaOH (ALE245)	0.5l glass bottle (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	Vial (ALE297)	Vial (ALE297)
GW GW					_	) GW	GW	GW CSPECTOR OF THE CONTRACT OF
		X	x	X	X			MATA ROCK OOD-000 Val(ALESSY) OW
x	x		X	35	x	X	X	
			x					Comhairle Chontae Uith Faill  PLANNING

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TPH CWG (W)	Custome Sample Reference  AGS Reference  Depth (material contained sample Tymps All All All All All All All All All Al	er erence ence n)	0.5I glass bottle GW (ALE227)	250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	24496437 RC01 0.00 - 0.00 Vial	0					24496449 RC02 0.00 - 0.00	200	- (C)	
Sample Types - S - Soil/Solid UNNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Sample Refe  AGS Refere  Depth (n  Containe  Sample Ty	ence n) er		250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALEZ	HNO3 Fil	NaOH (A	0.00 - 0.00	0					0.00-	20	.0	
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UN - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Depth (n  Containe  Sample Ty	n) er /pe NDPs: 0		250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE2	HNO3 Fil	NaOH (A		0					0.00 - 0.0	20	.0	5
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Studge G - Gas OTH - Other	Containe Sample Ty	er /pe		250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE2	HNO3 Fil	NaOH (A		0					0.00 - 0.0			
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other  Total Organic and Inorganic Carbon	Sample Ty	/pe		250ml BOD (ALE212)	500ml Plastic (ALE208)	H2SO4 (ALE2	HNO3 Fil	NaOH (A	Vial (A	0					0			
TPH CWG (W)	All	NDPs: 0	GW			4	tered	LE245)	(ALE227) Vial (ALE297)	(ALE212) 0.5I glass bottle	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	NaOH (ALE245)	(ALE227) Vial (ALE297)	(ALE212) 0.5I glass bottle	500ml Plastic (ALE208)	H2SO4 (ALE244)
TPH CWG (W)				GW W	GW	GW	GW	GW	GW		GW GW	GW	GW	GW	GW	G G	GW GW	GW
	All					Х				(5		Х						X
		NDPs: 0 Tests: 4	Х							K					X			
Offally	Soling		Sign															



24496461	24496474	
RC03	RCO4	Incil, Planning Dept. Inspection Purposes On
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0.5l glass bottle (ALE227) Vial (ALE297) NaOH (ALE245)	Vial (ALE297)  NaOH (ALE245)  HNO3 Filtered (ALE204)  H2SO4 (ALE204)  500ml Plastic (ALE208) 250ml BOD (ALE212)	CHION
GW GW		
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SDG:210623-67Client Reference:P2344Report Number:603904Location:Oxigen DerryarkinOrder Number:Z2770Superseded Report:

Possibility and								
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample Ref.	RC01	RC02	RC03	RC04		
aq Aqueous / settled sample.  diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample.  * Subcontracted - refer to subcontractor report	t for	Sample Type Date Sampled	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021		
accreditation status.  ** % recovery of the surrogate standard to chec		Sample Time						
efficiency of the method. The results of indivi compounds within samples aren't corrected to		Date Received SDG Ref	23/06/2021 210623-67	23/06/2021 210623-67	23/06/2021 210623-67	23/06/2021 210623-67		
recovery (F) Trigger breach confirmed 1-4+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	24496437	24496449	24496461	24496474		
Component	LOD/Units	s Method						
Suspended solids, Total	<2 mg/l	TM022	4760 #	8950 #	867 #	4540 #		
Alkalinity, Total as CaCO3	<2 mg/l	TM043	1860 #	2140 #	390 #	913 #		
BOD, unfiltered	<1 mg/l	TM045	2.72	<3	3.22	2.05		65
Organic Carbon, Total	<3 mg/l	TM090	# 15 #	11.9	11.7	8.52 #		
Ammoniacal Nitrogen as N (low	<0.01 mg/	/I TM099	2.17	0.953	0.2	0.209	97.	
level) COD, unfiltered	<7 mg/l	TM107	238	684	690	976	00	
Conductivity @ 20 deg.C	<0.02	TM120	0.63	0.748	0.68	0.747		
Arsenic (diss.filt)	mS/cm <0.5 μg/l	I TM152	# 7.22	0.672	1.9	3.63	•	
			#	#	#	#		
Cadmium (diss.filt)	<0.08 µg/		<0.08 #	<0.08 #	<0.08			
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #		
Copper (diss.filt)	<0.3 µg/l	TM152	<0.3 #	2.15 #	0.755	<0.3		
Lead (diss.filt)	<0.2 µg/l	TM152	0.204	0.603	0.269	<0.2		
Nickel (diss.filt)	<0.4 µg/l	TM152	2.68	24.1	4.2	16.6 #		
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #	<1 #	<1 #		
Zinc (diss.filt)	<1 µg/l	TM152	3.14 #	11.3 #	2.34 #	12.1		
Mercury (diss.filt)	<0.01 µg/	/I TM183	<0.01 #	<0.01	0.0105 #	0.0186		
Nitrite as NO2	<0.05 mg/	/I TM184	<0.05	<0.05 #	0.056 #	<0.05		
Sulphate	<2 mg/l	TM184	109 #	129 #	89.6 #	97.4 #		
Chloride	<2 mg/l	TM184	13.2	17.6 #	13.1 #	16.7		
Phosphate (Ortho as P)	<0.02 mg/	/I TM184	<0.02	<0.02	<0.02	<0.02		
Nitrate as N	<0.0677 mg/l	TM184	<0.0677	<0.0677	0.0864	<0.0677		
рН	<1 pH Unit	ts TM256	7.47 #	7.12 #	7.52 #	7.39		
	K		#	#	#	#		
70	r							
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TPH CWG (W)

SDG: Client Reference: 603904

P2344 Z2770 210623-67 Oxigen Derryarkin Report Number: Superseded Report: Location: Order Number:

Results Legend		Customer Sample Ref.	RC01	RC02	RC03	RC04		
# ISO17025 accredited.  M mCERTS accredited.  aq Aqueous / settled sample.  diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample.  * Subcontracted - refer to subcontractor report to accreditation status.  * % recovery of the surrogate standard to check		Sample Type Date Sampled Sample Time	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021	Ground Water (GW) 22/06/2021		
efficiency of the method. The results of individ compounds within samples aren't corrected for recovery	iual	Date Received SDG Ref	23/06/2021 210623-67	23/06/2021 210623-67	23/06/2021 210623-67	23/06/2021 210623-67		
(F) Trigger breach confirmed 1-4+§@ Sample deviation (see appendix)	LOD/U	Lab Sample No.(s) AGS Reference nits Method	24496437	24496449	24496461	24496474		
GRO Surrogate % recovery**	% *	TM245	92	102	105	100		
GRO >C5-C12	<50 µ	ıg/l TM245	<50 #	<50 #	<50 #	<50 #		0,
Methyl tertiary butyl ether (MTBE)	<3 µ	g/l TM245	<3 #	<3 #	<3 #	<3 #		6
Benzene	<7 μ	g/l TM245	<7 #	<7 #	<7 #	<7 #	_C	2
Toluene	<4 µ	g/l TM245	<4 #	<4 #	<4 #	<4 #	116	
Ethylbenzene	<5 µ	g/l TM245	<5 #	<5 #	<5 #	<5 #	00	
m,p-Xylene	<8 µ	g/l TM245	<8 #	<8 #	<8 #	<8 #		
o-Xylene	<3 µ	g/l TM245	<3 #	<3 #	<3 #	<3 #		
Sum of detected Xylenes	<11 µ	ıg/l TM245	<11	<11	<11	<11)		
Sum of detected BTEX	<28 µ	ıg/l TM245	<28	<28	<28	<28		
Aliphatics >C5-C6	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aliphatics >C6-C8	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aliphatics >C8-C10	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aliphatics >C10-C12	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aliphatics >C12-C16 (aq)	<10 µ	ıg/l TM174	<10	96	<10	<10		
Aliphatics >C16-C21 (aq)	<10 µ	ıg/l TM174	<10	160	<10	<10		
Aliphatics >C21-C35 (aq)	<10 µ	ıg/l TM174	10	1080	10	<10		
Total Aliphatics >C12-C35 (aq)	<10 µ	ıg/l TM174	10	1340	10	<10		
Aromatics >EC5-EC7	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aromatics >EC7-EC8	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aromatics >EC8-EC10	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aromatics >EC10-EC12	<10 µ	ıg/l TM245	<10	<10	<10	<10		
Aromatics >EC12-EC16 (aq)	<10 µ	ıg/l TM174	<10	<10	<10	<10		
Aromatics >EC16-EC21 (aq)	<10 µ	ıg/l TM174	<10	<10	<10	<10		
Aromatics >EC21-EC35 (aq)	<10 µ	ıg/l TM174	<10	<10	<10	<10		
Total Aromatics >EC12-EC35 (aq)	<10 µ	ıg/l TM174	<10	<10	<10	<10		
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µ	ıg/l TM174	10	1340	10	<10		
Aliphatics >C16-C35 Aqueous	<10 µ	ıg/l TM174	10	1240	10	<10		
							Comhairle Chontae Ulbh Fhaili Offsly County Council	
							PLANNING L2 / 22 / 490	
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# **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
TM045	MEWAM BOD5 2nd Ed.HMSO 1988 / Method 5210B, AWWA/APHA, 20th Ed., 1999; SCA Blue Book 130	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
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
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

NA = not applicable.

Offally County Council, Planning Dept Stally County Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).





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# **Test Completion Dates**

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 SDG:
 210623-67
 Client Reference:
 P2344
 Report Number:
 603904

 Location:
 Oxigen Derryarkin
 Order Number:
 Z2770
 Superseded Report:

# **Appendix**

### General

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

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

- 3. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 4. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 5. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 6. NDP No determination possible due to insufficient/unsuitable sample.
- 7. Results relate only to the items tested.
- 8. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.
- 9. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 10. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

#### 18. Sample Deviations

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

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

#### 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 asbestos present is not determined unless specifically requested.

#### 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).

Asbe stos Type	Common Name
Chrysof le	WhiteAsbests
Amosite	Brown Asbestos
Cro a dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
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  $\mu$ m diameter, longer than 5  $\mu$ m and with aspect ratios of at least 3:1 that can be inhaled into the lower regions of the lung and are generally acknowledged to be most important predictor of hazard and risk for cancers of the lung.

Standing Committee of Analysts, The Quantification of Asbestos in Soil (2017).

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



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