

CONSULTANTS IN ENGINEERING, ENVIRONMENTAL SCIENCE & PLANNING

ALS and Southern Scientific Lab Reports

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19-03614 Rev 0 Page 1 of 5 Report No.

Certificate of Analysis

Customer: Fehily Timoney & Co Project: Dingle

Date Received: 05/09/2019 Core House Pouladuff Rd Cork Address: Condition of Sample: Satisfactory

Emily Archer Date Analysed: 05/09/2019 - 11/09/2019 Report to:

Customer PO Issue Date: 13/09/2019

BATCH NUMBER: Quote No. 19-03614

Conor Murphy

Conor Murphy **Operations Manager**

Manager	Index to symbols used & Notes Analysis is not INAB/UKAS accredited Adopted from Standard Methods when the Examination of Water and Wastewater
	Index to symbols used & Notes
*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
****	Customer specific limits of 188
(F)	Analysis carried out at our Farranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LOD	Parameter Limit of Detection.
Note 6	Subcontracted Parameter.

Notes

- The results relate only to the items tested.
- Opinions and interpretations expressed herein are outside the scope of INAB accreditation.
- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- Sampling is outside the scope of the laboratory activities.

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Report No. 19-03614 Rev 0 Page 2 of 5

Customer Sample Ref: BH 01 - Dingle Customer Sample Code:

Project:DingleSampled By:Emily ArcherOur Reference:11252 (19-03614)Sample Matrix:Ground Water

Date Sampled: 04/09/2019 **Time Sampled:** 08:00

 Method:
 Parameter:
 Units
 LOD
 Result

 Microbiological Analysis: (D)

 SMP 019
 Coliforms
 MPN/100mL
 <1</td>
 28

MPN/100mL

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SMP 124

Faecal coliforms

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directors: K. Murphy, M. Murphy & C. Murphy registered in ireland no 323196 | vat reg no IE 6343196 M





Rev 0 19-03614 Page 3 of 5 Report No.

Customer Sample Ref: BH 02 - Dingle **Customer Sample Code:**

Project: Dingle Sampled By: **Emily Archer** 11253 (19-03614) Ground Water

04/09/2019 Date Sampled: Time Sampled: 08:30

Method:	Parameter:	Units	LOD	Result
	Microbiological Analysis: (D)			
SMP 019	Coliforms	MPN/100mL	<1	345
SMP 124	Faecal coliforms	MPN/100mL	<1	4

Sample Matrix:

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Our Reference:

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Report No. 19-03614 Rev 0 Page 4 of 5

Customer Sample Code:

Customer Sample Ref: SW 01 - Dingle

Project: Dingle Sampled By: Emily Archer

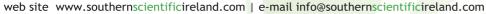
Our Reference:11254 (19-03614)Sample Matrix:Surface WaterDate Sampled:04/09/2019Time Sampled::

Method:	Parameter:	Units	LOD	Result
	Chemical Analysis: (F)			
SCP 015	Biological Oxygen Demand (BOD)	mg/L	1.0	1.1

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Report No. 19-03614 Rev 0 Page 5 of 5

Customer Sample Code:

Customer Sample Ref: SW 02 - Dingle

Project: Dingle Sampled By: Emily Archer

Our Reference:11255 (19-03614)Sample Matrix:Surface Water

Date Sampled: 04/09/2019 Time Sampled: :

Method:	Parameter:	Units	LOD	Result
	Chemical Analysis: (F)			
SCP 015	Biological Oxygen Demand (BOD)	mg/L	1.0	1.8

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19-02904 Rev 0 Page 1 of 5 Report No.

Certificate of Analysis

	Estable Times and Co.	Date Received	18/07/2019
Customer	Fehily Timoney & Co	Date Analysed	18/07/2019 - 26/07/2019
Office	Core House Pouladuff Rd Cork	Issue Date	26/07/2019
		Quote No.	
Customer Contact	Emily Archer	Customer PO	
Project:	Dingle	BATCH NUMBER	19-02904

Conor Murphy

Conor Murphy **Operations Manager**

Manager	Index to symbols used & Notes Analysis is not INAB/UKAS accredited.
	Index to symbols used & Notes
*	Analysis is not INAB/UKAS accredited
**	Adapted from Standard Methods for the Examination of Water and Wastewater.
****	Customer specific limits of 188
(F)	Analysis carried out at our Parranfore Laboratory.
(D)	Analysis carried out at our Dunrine Laboratory.
LÓD	Parameter Limit of Defection.
Note 6	Subcontracted Parameter.

Notes

- The results relate only to the items tested.
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- The analysis report shall not be reproduced except in full without written approval of the laboratory.
- · Sampling is outside the scope of the laboratory activities.

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Customer Sample Ref:	BH-01 - Dingle		BH-01 - Dingle Customer Sample Code:		
Project:	Dingle		Sampled By:	Emily Archer	
Our Reference:	9318 (19-02904)		Sample Matrix:	Ground Water	
Date Sampled:	17/07/2019		Time Sampled:	10:30	

Method:	Parameter:	Units	LOD	Result
	Microbiological Analysis: (D)			
SMP 124	Faecal coliforms	MPN/100mL	<1	10

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Customer Sample Ref:	BH-01 - Dingle		nple Ref: BH-01 - Dingle Customer Sample Code:		
Project:	Dingle		Sampled By:	Emily Archer	
Our Reference:	9319 (19-02904)		Sample Matrix:	Ground Water	
Date Sampled:	17/07/2019		Time Sampled:	10:30	

Method:	Parameter:	Units	LOD	Result
	Microbiological Analysis: (D)			
SMP 124	Faecal coliforms	MPN/100mL	<1	148



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Customer Sample Ref:	SW-01 - Dingle		Ref: SW-01 - Dingle Customer Sample Code:		
Project:	Dingle		Sampled By:	Emily Archer	
Our Reference:	9320 (19-02904)		Sample Matrix:	Surface Water	
Date Sampled:	17/07/2019		Time Sampled:	10:30	

Method:	Parameter:	Units	LOD	Result
	Chemical Analysis: (F)			
SCP 015	Biological Oxygen Demand (BOD)	mg/L	1.0	1.2



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Report No. 19-02904 Rev 0 Page 5 of 5

Customer Sample Ref:	SW-01 - Dingle	Customer Sample Code:				
Project:	Dingle	Sampled By:	Emily Archer			
Our Reference:	9321 (19-02904)	Sample Matrix:	Surface Water			
Date Sampled:	17/07/2019	Time Sampled:	10:30			

Method:	Parameter:	Units	LOD	Result
	Chemical Analysis: (F)			
SCP 015	Biological Oxygen Demand (BOD)	mg/L	1.0	1.3



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> Tel: (01244) 528700 Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com Website: www.alsenvironmental.co.uk

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:07 August 2019Customer:Fehily TimoneySample Delivery Group (SDG):190723-63

Your Reference: P1788 South & South &

Report No: 517008

This report has been revised and directly supersedes 516148 in its entirety.

We received 2 samples on Tuesday July 23, 2019 and 2 of these samples were scheduled for analysis which was completed on Tuesday July 30, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

Chemical testing (unless subcontracted) performed at ALSCLife 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:

Sonia McWhan
Operations Manager







ALS

SDG: 190723-63 Client Reference: P1788 South & South &

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20383581	SW-01 Dingle		0.00 - 0.00	17/07/2019
20383601	SW-02 Dingle		0.00 - 0.00	17/07/2019

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.

21.8

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±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.



ALS

 SDG:
 190723-63
 Client Reference:
 P1788 South & South & Report Number:
 517008

 Location:
 South & South & South & Superseded Report:
 516148

(ALS) Location:	South & amp; W		O. u.	J. 114	iiibci .		Z16	01					p0.000	aea Ke
Results Legend X Test N No Determination	Lab Sample N	No(s)						20383581						20383601
Possible Sample Types -	Custome Sample Refer						SW-01 Dingle						SW-02 Dingle	
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						0.00 - 0.00						0.00 - 0.00	
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)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)
	Sample Ty	pe	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2	Х						XX	jet ilse)*			
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2	Х				og re	diois	X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2			, Xin	A Pur	edilit				X			
Anions by Kone (w)	All	NDPs: 0 Tests: 2	X X	or in	ghto	4.			X					
COD Unfiltered	All	NDPs: 0 Tests: 2	ent of						Х					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2		Х						Х				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2						Х						Х
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				Х						X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2		X						X				
Fluoride	All	NDPs: 0 Tests: 2		X						X				
Mercury Dissolved	All	NDPs: 0 Tests: 2				X						X		
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2	X						X					
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2	X						X					
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2	Х						X					
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2	Х						X					

CERTIFICATE OF ANALYSIS

ALS

SDG: 190723-63 Client Reference: P1788 South & Depart Number: 517008
Location: South & Depart So

(ALS) Location:	South & w	vest Kerry La	arOra	er Nu	mber:		Z16	5/				Su	persec	iea Kej				
Results Legend X Test N No Determination	Lab Sample I						20383581						20383601					
Possible Sample Types -		Customer Sample Reference				Customer Sample Reference						SW-01 Dingle						SW-02 Dingle
S - Soil/Solid UNS - Unspecified Solid GW - Ground 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 (m	1)	0.00 - 0.00				0.00 - 0.00					0.00 - 0.00						
US - Untreated Sewage RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)					
	Sample Type			WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS				
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2	Х						XS	let 115	5 •							
pH Value	All	NDPs: 0 Tests: 2		X	ection of the control	4	05°50	dioi didi	my	X								
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2	х		ectic	y John	Schir		X									
Suspended Solids	All	NDPs: 0 Tests: 2	Ý	of y	ight o					х								
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	Sent O						X									
Total Metals by ICP-MS	All	NDPs: 0 Tests: 2					X						X					
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2			X						X							
VOC MS (W)	All	NDPs: 2 Tests: 0	N						N									



SDG:190723-63Client Reference:P1788 South & South & Report Number:517008Location:South & English & South & Sout

Results Legend		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle			T	
# ISO17025 accredited. M mCERTS accredited.		·	511 01 2 mg/s	OTT 02 Billigio				
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00				
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor repo	rt for	Sample Type Date Sampled	Surface Water (SW) 17/07/2019	Surface Water (S 17/07/2019	SW)			
accreditation status. ** % recovery of the surrogate standard to che		Sample Time						
efficiency of the method. The results of indi- compounds within samples aren't corrected		Date Received SDG Ref	23/07/2019 190723-63	23/07/2019 190723-63				
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20383581	20383601				
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method						
Suspended solids, Total	<2 mg/l	TM022	21	71.6				
	, and the second		#		#			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	125	110				
			#		#			
Oxygen, dissolved	<0.3 mg/l	TM046	8.05	9.63				
Organic Carbon, Total	<3 mg/l	TM090	<3	<3				
Organic Garbon, Total	₹5 mg/i	110000	,5 @#	\"	@#			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2	<u>@</u> "			
·	Ĭ		#		#			
Fluoride	<0.5 mg/l	TM104	<0.5	<0.5				
COD, unfiltered	<7 mg/l	TM107	33.2	14.3	ш			
Conductivity @ 20 deg.C	<0.005	TM120	0.359	0.362	#			
Conductivity (@ 20 deg.C	mS/cm	TIVITZU	0.359	0.302	#			
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5	<0.5				
	1		#		#			
Barium (diss.filt)	<0.2 µg/l	TM152	6.67	7.51				
			#		#	Juse.		
Boron (diss.filt)	<10 µg/l	TM152	21.8	20.5	,,	**6/ ₂		
Cadmium (dian fils)	<0.00	TM152	# -0.09	<0.08	#	74.70)		
Cadmium (diss.filt)	<0.08 µg/l	1101152	<0.08		#	only art other		
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	~O*. 4	200		
(#	01	il Offi			
Copper (diss.filt)	<0.3 µg/l	TM152	1.85	ectit 66 et	To			
			#	ect with	#			
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	inspectant				
Manganage (dies filt)	ا/س، د	TM152	#	97.7	#			
Manganese (diss.filt)	<3 µg/l	1101132	S _H \	91.1	#			
Phosphorus (tot.unfilt)	<20 µg/l	TM152	33.4 sent #	37.1				
, , , , , ,			COURSE #		#			
Nickel (diss.filt)	<0.4 µg/l	TM152	0.929	0.857				
			#		#			
Phosphorus (diss.filt)	<10 µg/l	TM152	<10	<10	,,			
Selenium (diss.filt)	<1 µg/l	TM152	<1	<1	#			
Selemani (diss.iiit)	~1 μg/1	1101132	×1 #	\ 1	#			
Thallium (diss.filt)	<2 µg/l	TM152	<2	<2				
,	, ,		#		#			
Zinc (diss.filt)	<1 µg/l	TM152	10.3	14.8				
			#		#			
Sodium (Dis.Filt)	<0.076 mg/	1 TM152	30.7	28.9	ш			
Magnesium (Dis.Filt)	<0.036 mg/	1 TM152	12	12.1	#			
griodium (Did.i iit)	-0.000 mg/	. IIVIIUL	12 #	12.1	#			
Potassium (Dis.Filt)	<0.2 mg/l	TM152	4.57	4.5				
			#		#			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	32.4	32				
Iron (Die Fils)	20.040	II TAAACO	0.0464	0.0457	#			
Iron (Dis.Filt)	<0.019 mg/	1 TM152	0.0464 #	0.0457	#			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172	<100	<200	π			
							<u> </u>	<u> </u>
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01				
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	<0.05	<0.05				
Chloride	<2 mg/l	TM184	48	47.4	#			
Onionae	\~ IIIg/l	1101104	48 #	47.4	#			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	0.642	0.634	"			
	J		#		#			
Sulphate (soluble) as S	<1 mg/l	TM184	5.93	5.93				
1		1	#		#			

CERTIFICATE OF ANALYSIS



SDG: 190723-63 Client Reference: Location: South & Dest Kerry Lar Order Number: P1788 South & West KeReport Number: Z1657 Superseded Report:

517008 :: 516148

					-		
Results Legend # ISO17025 accredited.	С	ustomer Sample Ref.	SW-01 Dingle	SW-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
* Subcontracted - refer to subcontractor report f	or	Sample Type Date Sampled	Surface Water (SW) 17/07/2019	Surface Water (SW) 17/07/2019			
accreditation status. ** % recovery of the surrogate standard to check	the	Sample Time					
efficiency of the method. The results of individ compounds within samples aren't corrected fo		Date Received	23/07/2019	23/07/2019			
recovery (F) Trigger breach confirmed		SDG Ref Lab Sample No.(s)	190723-63 20383581	190723-63 20383601			
1-3+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method					
PCB congener 28	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.03			
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.03			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.21			
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05			
рН	<1 pH Units	TM256	8.15	7.11 #	riise.		
Trifluralin	<0.01 µg/l	TM343	<0.01	<0.01	W. 14 Other 113		
alpha-HCH	<0.01 µg/l	TM343	<0.01	<0.01	only and		
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.01	<0.01	<u> </u>		
Heptachlor	<0.01 µg/l	TM343	<0.01	cis0.01er 1			
Aldrin	<0.01 µg/l	TM343	<0.01	in the contract of the contrac			
beta-HCH	<0.01 µg/l	TM343	<0.01	ॐ <0.01			
Isodrin	<0.01 µg/l	TM343	<0.01 ent	<0.01			
delta-HCH	<0.01 µg/l	TM343	<0.01	<0.01			
Heptachlor epoxide	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01			
Endosulphan I	<0.01 µg/l	TM343	<0.01	<0.01			
trans-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01			
cis-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01			
p,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01			
Dieldrin	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.01			
Endrin	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-DDT	<0.01 µg/l	TM343	<0.01	<0.01			
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.01			
Endosulphan II	<0.02 µg/l	TM343	<0.02	<0.02			
p,p'-DDT	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.01	<0.01			

CERTIFICATE OF ANALYSIS



SDG: 190723-63 Location:

Client Reference: South & South

P1788 South & West KeReport Number: Z1657 Superseded Report: Z1657

Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to check efficiency of the method. The results of individ		Sample Time Date Received					
compounds within samples aren't corrected for		SDG Ref	23/07/2019 190723-63	23/07/2019 190723-63			
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20383581	20383601			
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
p,p'-Methoxychlor	<0.01 µg/l		<0.01	<0.01			
p,pestery etes	J						
Endosulphan Sulphate	<0.02 µg/l	TM343	<0.02	<0.02			
Permethrin I	<0.01 µg/l	TM343	<0.01	<0.01			
Permethrin II	<0.01 µg/l	TM343	<0.01	<0.01			
1,3,5-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.01			
Hexachlorobutadiene	<0.01 µg/l	TM344	<0.01	<0.01			
1,2,4-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.01			
1,2,3-Trichlorobenzene	<0.01 µg/l	TM344	<0.01	<0.01			
Dichlorvos	<0.01 µg/l	TM344	<0.01	<0.01			
Dichlobenil	<0.01 µg/l	TM344	<0.01	<0.01	only, any other use.		
Mevinphos	<0.01 µg/l	TM344	<0.01	<0.01	other		
Tecnazene	<0.01 µg/l	TM344	<0.01	<0.01	only at.		
Hexachlorobenzene	<0.01 µg/l	TM344	<0.01	O.01 Dility Cilii	2		
Demeton-S-methyl	<0.01 µg/l	TM344	<0.01	geciso.01et			
Phorate	<0.01 µg/l	TM344	<0.01	Till ght 0.01			
Diazinon	<0.01 µg/l	TM344	<0.01	<0.01			
Triallate	<0.01 µg/l	TM344	<0.01 ₅ ent	<0.01			
Atrazine	<0.01 µg/l		<0.01	<0.01			
Simazine	<0.01 µg/l		<0.01	<0.01			
Disulfoton	<0.01 µg/l		<0.01	<0.01			
Propetamphos	<0.01 µg/l		<0.01	<0.01			
Chlorpyriphos-methyl	<0.01 µg/l		<0.01	<0.01			
Dimethoate	<0.01 µg/l		<0.01	<0.01			
Pirimiphos-methyl	<0.01 µg/l		<0.01	<0.01			
Chlorpyriphos	<0.01 µg/l		<0.01	<0.01			
Methyl Parathion	<0.01 µg/l	TM344	<0.01	<0.01			
Malathion	<0.01 µg/l	TM344	<0.01	<0.01			
Fenthion	<0.01 µg/l	TM344	<0.01	<0.01			
Fenitrothion	<0.01 µg/l	TM344	<0.01	<0.01			
Triadimefon	<0.01 µg/l	TM344	<0.01	<0.01			
Pendimethalin	<0.01 µg/l	TM344	<0.01	<0.01			
Parathion	<0.01 µg/l	TM344	<0.01	<0.01			

CERTIFICATE OF ANALYSIS



SDG: 190723-63 Location: South & South

190723-63 Client Reference: South & Client R

P1788 South & West KeReport Number: Z1657 Superseded Report:

M mC aq Aqu diss.filt Dis tot.unfilt Tot: * Sub	Results Legend 17025 accredited. ERTS accredited. ueous / settled sample.		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle			
aq Aqu diss.filt Dis- tot.unfilt Tot: * Sub	ueous / settled sample.					I	I	
tot.unfilt Tota			Depth (m)	0.00 - 0.00	0.00 - 0.00			
	solved / filtered sample. al / unfiltered sample. ocontracted - refer to subcontractor report fo	.	Sample Type	Surface Water (SW)	Surface Water (SW)			
	reditation status. ecovery of the surrogate standard to check the		Date Sampled Sample Time	17/07/2019	17/07/2019			
effic	ecovery of the surrogate standard to check to ciency of the method. The results of individua npounds within samples aren't corrected for	al	Date Received	23/07/2019	23/07/2019			
rece	overy gger breach confirmed	uie	SDG Ref Lab Sample No.(s)	190723-63 20383581	190723-63 20383601			
1-3+§@ San	nple deviation (see appendix)		AGS Reference					
Chlorfenvin		LOD/Units <0.01 μg/l		<0.01	<0.01			
Chionenvin	iprios	<0.01 μg/i	1101344	~ 0.01	\0.01			
trans-Chlor	dane	<0.01 µg/l	TM344	<0.01	<0.01			
cis-Chlorda	ine	<0.01 µg/l	TM344	<0.01	<0.01			
Ethion		<0.01 µg/l	TM344	<0.01	<0.01			
Carbophen	othion	<0.01 µg/l		<0.01	<0.01			
Triazophos	i	<0.01 µg/l	TM344	<0.01	<0.01			
Phosalone		<0.01 µg/l	TM344	<0.01	<0.01			
Azinphos m	nethyl	<0.02 µg/l		<0.02	<0.02			
Azinphos e	thyl	<0.02 µg/l		<0.02	<0.02			
Etridiazole		<0.01 µg/l	TM345	<0.01	<0.01	1150.		
Pentachloro		<0.01 µg/l	TM345	<0.01	<0.01	only any offer use		
Tributylpho	sphate	<0.01 µg/l	TM345	<0.01	<0.01	only air.		
Propachlor		<0.01 µg/l	TM345	<0.01	Plif Cuit	<u> </u>		
Quintozene	e (PCNB)	<0.01 µg/l	TM345	<0.01	₹ 9.01 <i>6</i>			
Omethoate		<0.01 µg/l		<0.01				
Propazine		<0.01 µg/l	TM345	<0.01	< 0.01			
Propyzamio	de	<0.01 µg/l	TM345	<0.01 sent	<0.01			
Alachlor		<0.01 µg/l		<0.01	<0.01			
Prometryn		<0.01 µg/l		<0.01	<0.01			
Telodrin		<0.01 µg/l		<0.01	<0.01			
Terbutryn		<0.01 µg/l		<0.01	<0.01			
Chlorothalo	onil	<0.01 µg/l		<0.01	<0.01			
Etrimphos		<0.01 µg/l		<0.01	<0.01			
Metazachlo		<0.01 µg/l		<0.01	<0.01			
Cyanazine		<0.01 µg/l		<0.01	<0.01			
Trietazine		<0.01 µg/l		<0.01	<0.01			
Coumapho		<0.01 µg/l		<0.01	<0.01			
Phosphami		<0.01 µg/l		<0.01	<0.01			
Phosphami		<0.01 µg/l		<0.01	<0.01			
Dinitro-o-cr	resol	<0.1 µg/l		<0.1	0.11			
Clopyralid		<0.04 µg/l		<0.04	<0.04			
MCPA		<0.05 µg/l	TM411	<0.05	<0.05			

CERTIFICATE OF ANALYSIS



P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190723-63 Client Reference: Location:

South & South Z1657

Results Legend # ISO17025 accredited. M mCERTS accordited		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle]
M mCERTS accredited. aq Aqueous / settled sample.		Donth (m)	0.00	0.00 0.00			
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontracter report		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
accreditation status.		Date Sampled Sample Time	17/07/2019	17/07/2019			
efficiency of the method. The results of individ	dual	Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected for	or the	SDG Ref Lab Sample No.(s)	190723-63 20383581	190723-63 20383601			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		AGS Reference	2000001	2555555			
Component Mecoprop	LOD/Units		<0.04	<0.04			
месоргор	<0.04 µg/l	1101411	<0.04	<0.04			
Dicamba	<0.04 µg/l	TM411	<0.04	<0.04			
МСРВ	<0.05 µg/l	TM411	<0.05	<0.05			
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.1			
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<0.05	<0.05			
Dichlorprop	<0.1 µg/l	TM411	<0.1	<0.1			
Triclopyr	<0.05 µg/l	TM411	<0.05	<0.05			
Fenoprop (Silvex)	<0.1 µg/l		<0.1	<0.1			
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l		<0.05	<0.05			
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l		<0.05	<0.05	only and directise.		
Bromoxynil	<0.04 µg/l		<0.04	<0.04	M. My other		
Benazolin	<0.04 µg/l		<0.04	<0.04	only all.		
loxynil	<0.05 µg/l		<0.05	20,00	<i>y</i>		
Pentachlorophenol	<0.04 µg/l		<0.04	ect 0.04et			
Fluoroxypyr	<0.1 µg/l	TM411		Ting in (0.1			
			Consent of	or,			
			Conseil				

SDG: P1788 South & West KeReport Number: Z1657 Superseded Report: 517008 516148 190723-63 Client Reference: South & South Location:

SVOC MS (W) - Aqueous	5						
SVOC MS (W) - Aqueous Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle			
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
* Subcontracted - refer to subcontractor report accreditation status.	for	Sample Type Date Sampled	Surface Water (SW) 17/07/2019	Surface Water (SW) 17/07/2019			
** % recovery of the surrogate standard to check efficiency of the method. The results of indivi-		Sample Time Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected for		SDG Ref	190723-63	190723-63			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20383581	20383601			
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1 **			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1 #	<1			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1 #	<1 <1			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1 "	<1 <1			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 "	* <1			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1 "	* <1			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 "	* <1			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1 #	<u></u>			
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1 #	<1 <1	solid and other use.		
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	<1	Only and		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1 "	<1 putpos	y to		
2-Methylphenol (aq)	<1 µg/l	TM176	<1	ctien gerted			
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	Children of the control of the contr			
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	₹ <1 #			
3-Nitroaniline (aq)	<1 µg/l	TM176	<1 consent #	<1 #			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	\(\frac{1}{4}\) #	<1 #			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #			
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<1			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1 #	<1 #	:		
4-Methylphenol (aq)	<1 µg/l	TM176	<1 #	<1 #			
4-Nitroaniline (aq)	<1 µg/l	TM176	<1 #	<1 #	:		
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1			
Azobenzene (aq)	<1 µg/l	TM176	<1 #	<1 #	!		
Acenaphthylene (aq)	<1 µg/l	TM176	<1 #	<1 #			
Acenaphthene (aq)	<1 µg/l	TM176	<1 #	<1 #			
Anthracene (aq)	<1 µg/l	TM176	<1 #	<1 #			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1 #	<1 #			
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1 #	<1 #			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2 #	<2 #			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 #	<1 #			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1 #	<1			

CERTIFICATE OF ANALYSIS

P1788 South & West KeReport Number: Z1657 Superseded Report: 517008 516148 SDG: 190723-63 Client Reference: South & South Z1657 Location:

SVOC MS (W) - Aqueou	s						
Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle	ĺ		
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
* Subcontracted - refer to subcontractor report accreditation status.		Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi	idual	Sample Time Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected to recovery (F) Trigger breach confirmed	for the	SDG Ref Lab Sample No.(s)	190723-63 20383581	190723-63 20383601			
1-3+§@ Sample deviation (see appendix)		AGS Reference					
Benzo(b)fluoranthene (aq)	LOD/Unit		<1	<1			
20125(5)114014114115115 (44)	. µ9		. #	#			
Benzo(k)fluoranthene (aq)	<1 µg/l	I TM176	<1	<1			
Ponzo(a)nyrona (ag)	<1.ua/	I TM176	# <1	# <1			
Benzo(a)pyrene (aq)	<1 µg/l	I IIVII76	- "	#			
Benzo(g,h,i)perylene (aq)	<1 µg/l	I TM176	<1	<1			
			#	#			
Carbazole (aq)	<1 µg/l	I TM176	<1 #	<1 #			
Chrysene (aq)	<1 µg/l	I TM176	<1	<1			
7 (-1)	13		#	#			
Dibenzofuran (aq)	<1 µg/l	I TM176	<1	<1			
n-Dibutyl phthalate (aq)	<1 µg/l	I TM176	# <1	# <1			
Ti-Dibutyi pritrialate (aq)	\	1 111170	-1 #	#			
Diethyl phthalate (aq)	<1 µg/l	I TM176	<1	<1			
5" (1) " ()		T14470	#	#			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	I TM176	<1 #	<1 #	, 15°E.		
Dimethyl phthalate (aq)	<1 µg/l	I TM176	<1	<1	net		
, , , , , , ,	10		#	#	4. A Of		
n-Dioctyl phthalate (aq)	<5 µg/l	I TM176	<5	<5	only and other use.		
Fluoranthene (aq)	<1 µg/l	I TM176	# <1	<1 ,00 ;	200		
i idorantinene (aq)	\	1 111170	-1 #	<1 right			
Fluorene (aq)	<1 µg/l	I TM176	<1	The city of the ci			
		714470	#	TOTAL #			
Hexachlorobenzene (aq)	<1 µg/l	I TM176	<1 #6	inapidet <1			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1	oP <1			
			·	#			
Pentachlorophenol (aq)	<1 µg/l	I TM176	<1 consent	<1			
Phenol (aq)	<1 µg/l	I TM176	<1	<1			
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	I TM176	<1	<1			
Hexachloroethane (aq)	<1 µg/l	I TM176	# <1	# <1			
rioxadinorodinario (aq)	· γ μg/i	111170	#				
Nitrobenzene (aq)	<1 µg/l	I TM176	<1	<1			
Naphthalene (aq)	44 //	I TM176	# <1	# <1			
Naphinalene (aq)	<1 µg/l	I IIVII76	- "				
Isophorone (aq)	<1 µg/l	I TM176	<1	<1			
			#				
Hexachlorocyclopentadiene (aq)	<1 µg/l	I TM176	<1	<1			
Phenanthrene (aq)	<1 µg/l	I TM176	<1	<1			
			#				
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	I TM176	<1	<1			
Pyrene (aq)	<1 µg/l	I TM176	# <1	# <1			
- ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- μg/		#			 <u> </u>	<u> </u>
						+	



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SDG: 190723-63 Client Reference: P1788 South & Description: P1788 South & Sout

Notification of NDPs (No determination possible)

Date Received: 23/07/2019 13:16:32

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
20383581	SW-01 Dingle	0.00 - 0.00	VOC MS (W)	Insufficient Sample
20383601	SW-02 Dingle	0.00 - 0.00	VOC MS (W)	Insufficient Sample

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Validated





P1788 South & West KeReport Number: Z1657 Superseded Report: 517008 516148 SDG: 190723-63 Client Reference: South & South Location:

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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM197	Modified: US EPA Method 8082.EA Method 174 and 5109631	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Waters
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachare using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS AGI Herbs in Water by GCMS
TM411	Acid_Herbs_GCMS	AGO Herbs in Water by GCMS
ot applicable. al testing (unless	subcontracted) performed at ALS Life Sciences Ltd Hawarden of the Science Ltd Hawarden of	(Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



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SDG: 190723-63 Client Reference: P1788 South & South &

Test Completion Dates

		163
Lab Sample No(s)	20383581	20383601
Customer Sample Ref.	SW-01 Dingle	SW-02 Dingle
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Туре	Surface Water	Surface Water
Acid Herbicides by GCMS	25-Jul-2019	25-Jul-2019
Alkalinity as CaCO3	30-Jul-2019	26-Jul-2019
Ammoniacal Nitrogen	26-Jul-2019	26-Jul-2019
Anions by Kone (w)	30-Jul-2019	30-Jul-2019
COD Unfiltered	24-Jul-2019	24-Jul-2019
Conductivity (at 20 deg.C)	26-Jul-2019	26-Jul-2019
Cyanide Comp/Free/Total/Thiocyanate	26-Jul-2019	26-Jul-2019
Dissolved Metals by ICP-MS	30-Jul-2019	30-Jul-2019
Dissolved Oxygen by Probe	29-Jul-2019	29-Jul-2019
Fluoride	24-Jul-2019	24-Jul-2019
Mercury Dissolved	25-Jul-2019	26-Jul-2019
Mineral Oil C10-40 Aqueous (W)	30-Jul-2019	30-Jul-2019
PCB Congeners - Aqueous (W)	30-Jul-2019	30-Jul-2019
Pesticides (Suite I) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite II) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite III) by GCMS	29-Jul-2019	29-Jul-2019
pH Value	26-Jul-2019	29-Jul-2019
Phosphate by Kone (w)	24-Jul-2019	24-Jul-2019
Suspended Solids	26-Jul-2019	24-Jul-2019
SVOC MS (W) - Aqueous	29-Jul-2019	29-Jul-2019
Total Metals by ICP-MS	29-Jul-2019	29-Jul-2019
Total Organic and Inorganic Carbon	26-Jul-2019	26-Jul-2019

29-Jul-2019
26-Jul-2019
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SDG: 190723-63 Client Reference: South & South Location:

P1788 South & WestReport Number: 517008 Superseded Report: 516148 Z1657

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 quaranteed 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
- 10. Stones/debris are not routinely removed. We always endeavour to the 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 Con method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19 Ashestos

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 osing 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	White Asbests					
Amosite	Brow n Asbestos					
Cro a dolite	Blue Asbe stos					
Fibrous Actinolite	-					
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 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.

07:59:32 07/08/2019 Modification Date: 07/08/2019 EPA Export 09-10-2021:02:56:55



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

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:07 August 2019Customer:Fehily TimoneySample Delivery Group (SDG):190723-62

Your Reference: P1788 South & Description: P1788 South & South & Description: South & Description: South & Description: P1788 Sou

Report No: 517164

This report has been revised and directly supersedes 516270 in its entirety.

We received 2 samples on Tuesday July 23, 2019 and 2 of these samples were scheduled for analysis which was completed on Wednesday July 31, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

Chemical testing (unless subcontracted) performed at ALSCLife 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:

Sonia McWhan
Operations Manager







Validated

SDG: 190723-62 Client Reference: P1788 South & South &

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20383535	BH-01 Dingle		0.00 - 0.00	17/07/2019
20383550	BH-02 Dingle		0.00 - 0.00	17/07/2019

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.

21.8

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±3)°C for a period of up to 24hrs.

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



ALS

SDG: 190723-62 Client Reference: P1788 South & South & Superseded Report: 517164
Location: South & Draw LarOrder Number: Z1657 Superseded Report: 516270

(ALS)	1															
Results Legend X Test	Lab Sample I	No(s)							20383535							20383550
No Determination Possible	Custome Sample Refei								BH-01 Dingle							BH-02 Dingle
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Refere	nce														
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m)							0.00 - 0.00							00.0 - 00.0
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)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	Sample Ty	pe	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2	Х				GW CSES		Š	i <mark>ei</mark> Je						
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2		Х			0,000	dfor	any		Х					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2			X	a Pur	edilit					Х				
Anions by Kone (w)	All	NDPs: 0 Tests: 2	Q	of the	ghto	7					Х					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2	sent of	X							х					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2						Х							Х	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				X							X			
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2		X							X					
Fluoride	All	NDPs: 0 Tests: 2		Х							X					
Mercury Dissolved	All	NDPs: 0 Tests: 2				Х							X			
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2	Х							Х						
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2	х							Х						
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2	X							X						
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2	х							Х						
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2	Х							X						

CERTIFICATE OF ANALYSIS

ALS

SDG: 190723-62 Client Reference: P1788 South & South &

Location.	Journ Kamp, W			J			210	· .				-		aca ite		
Results Legend X Test N No Determination	Lab Sample I	No(s)							20383535							20383550
Possible Sample Types -	Custome Sample Refei								BH-01 Dingle							BH-02 Dingle
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)							0.00 - 0.00							0.00 - 0.00
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Containe			500ml Plastic (ALE208)	=		HNO3 Unfiltered (ALE204)		Vial (ALE297)	0.5l glass bottle (ALE227)		H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	Sample Ty	pe	GW	GW	GW	GW	GW	GW	GW	GW	GW	WĐ	GW	GW	GW	GW
pH Value	All	NDPs: 0 Tests: 2		Х					Š	iei iis	X.					
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2		Х			05°.	dfor	my		Х					
Suspended Solids	All	NDPs: 0 Tests: 2	Х		ectico.	a Pur	edin				Х					
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	x⋞	or the	ghto			GW OF OT		X						
Total Dissolved Solids	All	NDPs: 0 Tests: 2	entof	X							X					
Total Metals by ICP-MS	All	NDPs: 0 Tests: 2					X							X		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2			X							X				
VOC MS (W)	All	NDPs: 0 Tests: 2							Х							Х





 SDG:
 190723-62
 Client Reference:
 P1788 South & South & Report Number:
 517164

 Location:
 South & Enry LarOrder Number:
 Z1657
 Superseded Report:
 516270

Results Legend		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			1	
# ISO17025 accredited. M mCERTS accredited.			. 3					
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00				
* Subcontracted - refer to subcontractor report accreditation status.	for	Sample Type Date Sampled	Ground Water (GW) 17/07/2019	Ground Water (G 17/07/2019	VV)			
** % recovery of the surrogate standard to check efficiency of the method. The results of individual		Sample Time Date Received	23/07/2019	23/07/2019				
compounds within samples aren't corrected for	or the	SDG Ref	190723-62 20383535	190723-62 20383550				
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20303333	20303330				
Component	LOD/Units	Method	2400	405				
Suspended solids, Total	<2 mg/l	TM022	3120 #	105	#			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	132	130				
	00 "	711010	#	2.0	#			
Oxygen, dissolved	<0.3 mg/l	TM046	9.3	8.9				
Organic Carbon, Total	<3 mg/l	TM090	<3	<3				
			@#		@#			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2	ш			
Fluoride	<0.5 mg/l	TM104	<0.5	<0.5	#			
	gi		#	• • • • • • • • • • • • • • • • • • • •	#			
Conductivity @ 20 deg.C	<0.005	TM120	0.379	0.369				
Dissolved solids Total (mater)	mS/cm	TM123	200	200	#			
Dissolved solids, Total (meter)	<5 mg/l	1 IVI 1 2 3	299 #	288	#			
Arsenic (diss.filt)	<0.5 µg/l	TM152	<0.5	<0.5				
			#		#			
Barium (diss.filt)	<0.2 µg/l	TM152	11.5 #	15.5	#	1150.		
Boron (diss.filt)	<10 µg/l	TM152	28.7	15.1	#	otherite		
,	10		#		#	otti		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	0.111		only and		
Chromium (diss.filt)	<1 µg/l	TM152	*	<1	ر#ج د د د د د د د د د د د د د د د د د د د	50 x 0		
Cilionium (diss.iiit)	~1 μg/1	TIVITOZ	<u> </u>	OU	60#1 100%			
Copper (diss.filt)	<0.3 µg/l	TM152	0.495	aecii018 per	40			
1 1/1 (1)	.0.0 //	T14450	#	600 Mil	#			
Lead (diss.filt)	<0.2 µg/l	TM152	0.344 #C	inself0.888	#			
Manganese (diss.filt)	<3 µg/l	TM152	16.4	3620				
	22 1	=======================================	#`		#			
Phosphorus (tot.unfilt)	<20 µg/l	TM152	1400 ent #	91.3	#			
Nickel (diss.filt)	<0.4 µg/l	TM152	0.529	1.06	"			
			#		#			
Phosphorus (diss.filt)	<10 µg/l	TM152	20.1	<10	ш			
Selenium (diss.filt)	<1 µg/l	TM152	*	<1	#			
			#		#			
Thallium (diss.filt)	<2 µg/l	TM152	<2	<2	ш			
Zinc (diss.filt)	<1 µg/l	TM152	5.24	4.33	#			
	. 1497.		#		#			
Sodium (Dis.Filt)	<0.076 mg/l	TM152	27.1	27.4				
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	# 11.7	9.26	#			
Magnesiam (Dis.i iii)	10.000 mg/i	1101102	#	3.20	#			
Potassium (Dis.Filt)	<0.2 mg/l	TM152	2	1.39				
Calcium (Dis.Filt)	<0.2 mg/l	TM152	40.9	38.4	#			
Calcium (Dis.Filt)	<0.2 mg/i	1101132	40.9	30.4	#			
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.019	<0.019				
Minaral allocate of the	4100 "	T14470	#	.100	#			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172	207	<100				
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01				
			#		#			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	<0.05 #	<0.05	#			
Chloride	<2 mg/l	TM184	38.9	44.3	#			
			#		#			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	2.48	0.119	,,			7
Sulphate (soluble) as S	<1 mg/l	TM184	3.73	3.07	#			
calphato (colubio) as c	1 1119/1	TIVITOT	3.73	3.07	#			

CERTIFICATE OF ANALYSIS



SDG: 190723-62 Client Reference: P1788 South & South &

# ISO17025 accredite		Customer Sample Ref.	DIL 04 Dissils	DIT OO Divis			
M mCERTS accredited		Customer Sample Rei.	BH-01 Dingle	BH-02 Dingle			
aq Aqueous / settled s diss.filt Dissolved / filtered	ample.	Depth (m)	0.00 - 0.00	0.00 - 0.00			
tot.unfilt Total / unfiltered sa		Sample Type	Ground Water (GW)	Ground Water (GW)			
accreditation status	S.	Date Sampled Sample Time	17/07/2019	17/07/2019			
efficiency of the me	urrogate standard to check the ethod. The results of individual	Date Received	23/07/2019	23/07/2019			
compounds within recovery	samples aren't corrected for the	SDG Ref	190723-62	190723-62			
(F) Trigger breach cont 1-3+§@ Sample deviation (s	firmed	Lab Sample No.(s) AGS Reference	20383535	20383550			
Component	LOD/U						
PCB congener 28	<0.015		<0.015	<0.015			
PCB congener 52	<0.015	5 μg/l TM197	<0.015	<0.015			
PCB congener 101	<0.015	5 μg/l TM197	<0.015	<0.015			
PCB congener 118	<0.015	5 μg/l TM197	<0.015	<0.015			
PCB congener 138	<0.015	5 μg/l TM197	<0.015	<0.015			
PCB congener 153	<0.015	5 μg/l TM197	<0.015	<0.015			
PCB congener 180	<0.015	5 μg/l TM197	<0.015	<0.015			
Sum of detected EC7	7 PCB's <0.105	5 μg/l TM197	<0.105	<0.105			
Cyanide, Total	<0.05	mg/l TM227	<0.05 #	<0.05 #			
рН	<1 pH		7.01 #	7.04 #	odiff and other use.		
Trifluralin	<0.01		<0.01	<0.01	M. My other		
alpha-HCH	<0.01		<0.01	<0.01	off of air.		
gamma-HCH (Lindar	·		<0.01	VIII CILI	Į.		
Heptachlor	<0.01		<0.01	Dect 50.01et			
Aldrin	<0.01			ith ght 0.01			
beta-HCH	<0.01		of	<0.01			
Isodrin	<0.01		<0.01 ent	<0.01			
delta-HCH Heptachlor epoxide	<0.01		<0.01	<0.01 <0.01			
o,p'-DDE	<0.01		<0.01	<0.01			
Endosulphan I	<0.01		<0.01	<0.01			
trans-Chlordane	<0.01		<0.01	<0.01			
cis-Chlordane	<0.01		<0.01	<0.01			
p,p'-DDE	<0.01		<0.01	<0.01			
Dieldrin	<0.01		<0.01	<0.01			
o,p'-DDD (TDE)	<0.01		<0.01	<0.01			
Endrin	<0.01		<0.01	<0.01			
o,p'-DDT	<0.01	μg/l TM343	<0.01	<0.01			
p,p'-DDD (TDE)	<0.01	μg/l TM343	<0.01	<0.01			
Endosulphan II	<0.02	μg/l TM343	<0.02	<0.02			
p,p'-DDT	<0.01	μg/l TM343	<0.01	<0.01			
o,p'-Methoxychlor	<0.01	μg/l TM343	<0.01	<0.01			





P1788 South & West Ke**Report Number:**Z1657 Superseded Report: SDG: 190723-62 Client Reference: South & Drder Number: Location:

Z1657

Control transmiss Cont		Results Legend		Customer Security D. C	BU 04 5: :	Bulge -:	i		
Description		ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
Base Type Control Price Control Price	aq	Aqueous / settled sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
Component Comp		Total / unfiltered sample.	or	Sample Type	Ground Water (GW)	Ground Water (GW)			
Security Company Com	**	accreditation status.			1//0//2019	17/07/2019			
1		compounds within samples aren't corrected for							
Component CoDUMINS Method Pop Method Pop Method Pop Method Metho	(F)	Trigger breach confirmed		Lab Sample No.(s)					
December Color Fig. TMS43 Color Co			LOD/Unit						
Permethrin					<0.01	<0.01			
Permethrin	Endosul	phan Sulphate	<0.02 µg	/I TM343	<0.02	<0.02			
1,3.5-Trichloroberszene	Permeth	nrin I	<0.01 µg	/I TM343	<0.01	<0.01			
Hexachlorobutadiene	Permeth	nrin II	<0.01 µg	/l TM343	<0.01	<0.01			
1.2.4-Trichlorobenzene	1,3,5-Tri	ichlorobenzene	<0.01 µg	/I TM344	<0.01	<0.01			
1.2,3-Trichlorobenzene	Hexachl	orobutadiene	<0.01 µg	/l TM344	<0.01	<0.01			
Dichlororos	1,2,4-Tri	ichlorobenzene	<0.01 µg	/I TM344	<0.01	<0.01			
Dichlobenii <0.01 μgl TM344 <0.01 <0.01 <0.01	1,2,3-Tri	ichlorobenzene	<0.01 µg	/I TM344	<0.01	<0.01			
Mevinphos	Dichlorv	os	<0.01 µg	/I TM344	<0.01	<0.01			
Mevinphos	Dichlobe	enil	<0.01 µg	/I TM344	<0.01	<0.01	115°.		
Tecnazene <0.01 μg/l TM344 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0	Mevinph	nos	<0.01 µg	/I TM344	<0.01		athe.		
Hexachlorobenzene <0.01 μg/l TM344 <0.01 <0.01 μg/l TM344 <0.01 CM l μg/l TM344 <0.01 CM l μg/l TM344 <0.01 CM l μg/l C	Tecnaze	ene	<0.01 µg	/I TM344	<0.01	<0.01	only at		
Demeton-S-methyl <0.01 µg/l TM344 <0.01 CM CM TM344 <0.01 CM CM CM CM CM CM CM C	Hexachl	orobenzene	<0.01 µg	/l TM344	<0.01	<0.01 purporti	e e		
Phorate <0.01 μg/l	Demeto	n-S-methyl	<0.01 µg	/l TM344		Decisonier			
Triallate	Phorate		<0.01 µg	/l TM344	<0.01	Title 1 0.01			
Atrazine <0.01 μg/l	Diazinor	1	<0.01 µg	/l TM344	Of s	<0.01			
Simazine <0.01 μg/l TM344 <0.01 <0.01	Triallate		<0.01 µg	/l TM344	<0.01 sent	<0.01			
Disulfoton <0.01 μg/l TM344 <0.01 <0.01	Atrazine	1	<0.01 µg	/l TM344	<0.01	<0.01			
Propetamphos <0.01 μg/l	Simazin	е	<0.01 µg		<0.01				
Chlorpyriphos-methyl <0.01 μg/l	Disulfoto	on	<0.01 µg		<0.01	<0.01			
Dimethoate <0.01 μg/l	·								
Pirimiphos-methyl <0.01 μg/l TM344 <0.01 <0.01 Chlorpyriphos <0.01 μg/l TM344 <0.01 <0.01	Chlorpyi	riphos-methyl							
Chlorpyriphos < 0.01 µg/l TM344 < 0.01 < 0.01									
		·							
Methyl Parathion <0.01 μg/l TM344 <0.01 <0.01									
Malathion <0.01 μg/l TM344 <0.01 <0.01									
Fenthion <0.01 μg/l TM344 <0.01 <0.01									
Fenitrothion <0.01 μg/l TM344 <0.01 <0.01	Fenitroth	nion							
Triadimefon <0.01 μg/l TM344 <0.01 <0.01									
Pendimethalin <0.01 μg/l TM344 <0.01 <0.01	Pendime	ethalin							
Parathion <0.01 μg/l TM344 <0.01 <0.01	Parathio	on	<0.01 µg	/l TM344	<0.01	<0.01			





SDG: 190723-62 South & South Location:

Client Reference:

P1788 South & West Ke**Report Number:**Z1657 Superseded Report:

Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
* Subcontracted - refer to subcontractor report	for	Sample Type Date Sampled	Ground Water (GW) 17/07/2019	Ground Water (GW) 17/07/2019			
accreditation status. ** % recovery of the surrogate standard to check	k the	Sample Time					
efficiency of the method. The results of indivi- compounds within samples aren't corrected for		Date Received	23/07/2019	23/07/2019			
recovery		SDG Ref Lab Sample No.(s)	190723-62 20383535	190723-62 20383550			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	-					
Chlorfenvinphos	<0.01 µg/l	TM344	<0.01	<0.01			
trans-Chlordane	<0.01 µg/l	TM344	<0.01	<0.01			
cis-Chlordane	<0.01 µg/l	TM344	<0.01	<0.01			
Ethion	<0.01 µg/l	TM344	<0.01	<0.01			
Carbophenothion	<0.01 µg/l	TM344	<0.01	<0.01			
Triazophos	<0.01 µg/l	TM344	<0.01	<0.01			
Phosalone	<0.01 µg/l	TM344	<0.01	<0.01			
			2				
Azinphos methyl	<0.02 µg/l	TM344	<0.02	<0.02			
Azinphos ethyl	<0.02 µg/l	TM344	<0.02	<0.02			
Etridiazole	<0.01 µg/l	TM345	<0.01	<0.01	115°.		
	221 1				25 12		
Pentachlorobenzene	<0.01 µg/l	TM345	<0.01	<0.01	other		
					4.04		
Tributylphosphate	<0.01 µg/l	TM345	<0.01	<0.01	only, and other use.		
					A C		
Propachlor	<0.01 µg/l	TM345	<0.01	<0.01	0		
2.1.				20 to 60			
Quintozene (PCNB)	<0.01 µg/l	TM345	<0.01	C(10.010)			
0 " 1	.0.04 //	T14045	-0.04	in the law of the law			
Omethoate	<0.01 µg/l	TM345	<0.01	itisticative.0.01			
December 2	40.04	TMOAF	-0.04	40.04			
Propazine	<0.01 µg/l	TM345	<0.01	<0.01			
D :1	.0.04 #	T14045	.004 20	.0.04			
Propyzamide	<0.01 µg/l	TM345	<0.01 ent	<0.01			
Alestan	40.04	TMOAF	<0.01	40.04			
Alachlor	<0.01 µg/l	TM345	<0.01	<0.01			
December 12	40.04	TMOAF	-0.04	40.04			
Prometryn	<0.01 µg/l	TM345	<0.01	<0.01			
Telodrin	<0.01 µg/l	TM345	<0.01	<0.01			
I GIUUI III	~υ.υ ι μg/l	1 IVI343	~ 0.01	\U.U1			
Terbutryn	<0.01 µg/l	TM345	<0.01	<0.01		 	
i Gibuti yii	~υ.υ ι μg/l	1101343	~ 0.01	\U.U1			
Chlorothalonil	<0.01 µg/l	TM345	<0.01	<0.01		 	
Griforotrialorill	-υ.υ ι μg/l	1 101040	~ 0.01	\U.U1			
Etrimphos	<0.01 µg/l	TM345	<0.01	<0.01			
Lamphos	-υ.υ ι μg/I	I IVIO+O	~ 0.01	\0.01			
Metazachlor	<0.01 µg/l	TM345	<0.01	<0.01			
Julius	-0.01 µg/l	11040	·0.01	٠٠.٥١			
Cyanazine	<0.01 µg/l	TM345	<0.01	<0.01			
	5.5 i µg/i	1	5.5 .	""			
Trietazine	<0.01 µg/l	TM345	<0.01	<0.01			
	۳3/1		=:= :				
Coumaphos	<0.01 µg/l	TM345	<0.01	<0.01			
Phosphamidon I	<0.01 µg/l	TM345	<0.01	<0.01			
Phosphamidon II	<0.01 µg/l	TM345	<0.01	<0.01			
Dinitro-o-cresol	<0.1 µg/l	TM411	0.175	0.581			
	1 1-3.	1 "					
Clopyralid	<0.04 µg/l	TM411	<0.04	<0.04			
"	"3"	1					
MCPA	<0.05 µg/l	TM411	<0.05	<0.05			
		1					
<u> </u>	•	-			•	•	





 SDG:
 190723-62
 Client Reference:
 P1788 South & South & Report Number:
 517164

 Location:
 South & Enry LarOrder Number:
 Z1657
 Superseded Report:
 516270

Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.		B., #. ()					
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi	k the	Sample Time					
compounds within samples aren't corrected f	or the	Date Received SDG Ref	23/07/2019 190723-62	23/07/2019 190723-62			
(F) Trigger breach confirmed Lab Sample No.(s)		20383535	20383550				
1-3+§@ Sample deviation (see appendix)	LOD/Units	AGS Reference					
Component Mecoprop	<0.04 µg/		<0.04	<0.04			
Месоргор	10.04 μg//	1101-111	10.04	10.04			
Dicamba	<0.04 µg/	I TM411	<0.04	<0.04			
МСРВ	<0.05 µg/l	I TM411	<0.05	<0.05			
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.1			
2,3,6-Trichlorobenzoic acid	<0.05 µg/	I TM411	<0.05	<0.05			
Dichlorprop	<0.1 µg/l	TM411	<0.1	<0.1			
Triclopyr	<0.05 µg/l		<0.05	<0.05			
Fenoprop (Silvex)	<0.1 µg/l		<0.1	<0.1			
2,4-Dichlorophenoxyacetic acid	<0.05 µg/		<0.05	<0.05			
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l		<0.05	<0.05	3115e.		
Bromoxynil	<0.04 µg/l		<0.04	<0.04	on and other use.		
Benazolin	<0.04 µg/l		<0.04	<0.04	official a		
loxynil	<0.05 µg/l		<0.05	<0.05 tripoditi			
Pentachlorophenol Fluoroxypyr	<0.04 µg/l		<0.1	THE COUNTY ON THE COUNTY OF TH			
Пастохуруг	-0.1 μg/ι	TIVITTI	-0.1	of the second			
			entof				
			Consent of				



SDG: P1788 South & West KeReport Number: Z1657 Superseded Report: 517164 516270 190723-62 Client Reference: South & South Location:

SVOC MS (W) - Aqueou	ıs						
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.		D #.()					
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.	46-	Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
* Subcontracted - refer to subcontractor report accreditation status.		Date Sampled Sample Time	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to che efficiency of the method. The results of indiv compounds within samples aren't corrected	vidual .	Date Received	23/07/2019	23/07/2019			
recovery (F) Trigger breach confirmed	TOT the	SDG Ref Lab Sample No.(s)	190723-62 20383535	190723-62 20383550			
1-3+§@ Sample deviation (see appendix)	1	AGS Reference					
Component 1,2,4-Trichlorobenzene (aq)	LOD/Units		<20	<1			
1,2,4-Thoriotoperizerie (aq)	ν μς/ι	1101170	@#	, , ,			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	<1			
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	@ # <20	# <1			
1,4 Diomoroponizono (aq)	γ μg/i	1111170	@#	#			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<20	<1			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	@# <20	# <1			
_, . 5.55.5pilonoi (uq)	, µg/i	1111110	@#	, , , , , , , , , , , , , , , , , , , ,			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<20	<1			
0.4.5: "	<u> </u>		@#	#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<20	<1 #			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	@# <20	<1			
, ()/	יינים י		@#		use.		
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<20	<1	ong and other use.		
201 1 1/)		71470	@#	#	14. 0)		
2-Chlorophenol (aq)	<1 µg/l	TM176	<20 @#	<1 #-	office are		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<20	<1 ~	200		
7 (13		@#	<1 purposition			
2-Methylphenol (aq)	<1 µg/l	TM176	<20	<1 purposition #			
OAR II /)	-4 "	T14470	@#	# # #			
2-Nitroaniline (aq)	<1 µg/l	TM176	<20	inspired #			
2-Nitrophenol (ag)	<1 µg/l	TM176	<20	o₹ <1 "			
. , "			@\#\	#			
3-Nitroaniline (aq)	<1 µg/l	TM176	<20 cm @#	<1			
4 Promonhanylphonylathar (ag)	<1.ug/l	TM176	20 @ #	#			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<20 @#	<1 #			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<20	<1			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<20	<1			
T officiophonyiphonyiothor (aq)	T pg/	1111110	@#	#			
4-Methylphenol (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<20	<1 **			
4-Nitrophenol (aq)	<1 µg/l	TM176	@# <20	# <1			
1 · · · · · · · · · · · · · · · · · · ·	. 49.			·			
Azobenzene (aq)	<1 µg/l	TM176	<20	<1			
Assessability ()		T14470	@#	#			
Acenaphthylene (aq)	<1 µg/l	TM176	<20 @#	<1 #			
Acenaphthene (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
Anthracene (aq)	<1 µg/l	TM176	<20	<1			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	@# <20	# <1			
Sio(2 Officiosally) Jealel (ay)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	TIVIT/U	^20 @#	<u> </u>			
bis(2-Chloroethoxy)methane	<1 µg/l	TM176	<20	<1			
(aq)			@#	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<40	<2 #			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	@# <20	# <1			
= =-,1.50.1.2,1. printidato (uq)		1111110	@#	*			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<20	<1			
			@#	#	l		
16:15:42 07/08/2019							

Validated

CERTIFICATE OF ANALYSIS



 SDG:
 190723-62
 Client Reference:
 P1788 South & South & Report Number:
 517164

 Location:
 South & Enry LarOrder Number:
 Z1657
 Superseded Report:
 516270

SVOC MS (W) - Aqueous	s							
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle				
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00 Cround Water (CW)	0.00 - 0.00 Ground Water (GW)				
* Subcontracted - refer to subcontractor report accreditation status.	for	Sample Type Date Sampled	Ground Water (GW) 17/07/2019	17/07/2019				
** % recovery of the surrogate standard to chec		Sample Time						
efficiency of the method. The results of indivi	or the	Date Received SDG Ref	23/07/2019 190723-62	23/07/2019 190723-62				
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550				
1-3+§@ Sample deviation (see appendix) Component	LOD/Unit	AGS Reference Method						
Benzo(b)fluoranthene (aq)	<1 µg/l		<20	<1				
			@#		#			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<20	<1				
2 (1)		T14470	@#		#			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<20	<1	#			
Carbazole (aq)	<1 µg/l	TM176	@# <20	<1	#			
Ourbazoic (uq)	1 µg/1	1111170	@#	''	#			
Chrysene (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
Dibenzofuran (aq)	<1 µg/l	TM176	<20	<1				
Di al la como de la co	<u> </u>		@#		#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<20	<1	щ			
Diethyl phthalato (ag)	~1 ··~//	TM176	@# <20	<1	#			
Diethyl phthalate (aq)	<1 µg/l	1101170	<20 @#	`1	#			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<20	<1		_		
,			@#		#	1150.		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<20	<1		ather		
			@#		#	4.04		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<100	<5	nî.	only ary o		
Fluorenthana (as)	-1//	TM176	@# <20	<1 ,00	#	E		
Fluoranthene (aq)	<1 µg/l	TIVITO	~20 @#	Ollis	J¥1)	1		
Fluorene (aq)	<1 µg/l	TM176	<20	cital Pres	π			
(- 1)	"		@ #	Declimine	#			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<20	inspector				
			@#	N Jilo	#			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<20 @#	⁵ <1	,,			
Danta shi sa sharasi (sa)	44	TM470	400	-1	#			
Pentachlorophenol (aq)	<1 µg/l	TM176	120 SE	<1				
Phenol (aq)	<1 µg/l	TM176	<20	<1				
	""							
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
Hexachloroethane (aq)	<1 µg/l	TM176	<20	<1	,,			
Nitrohanzana (ag)	<1 un/l	TM176	@# <20	<1	#			
Nitrobenzene (aq)	<1 µg/l	TM176	<20 @#	<u> </u>	#			
Naphthalene (aq)	<1 µg/l	TM176	<20	<1				
4 V-W	-3/.		@#		#			
Isophorone (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<20	<1				
Phenanthrene (aq)	<1 µg/l	TM176	<20	<1	_			
Friendittilene (aq)	\ \ μg/i	TIMITIO	~20 @#		#			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<20	<1	-			
			@#		#			
Pyrene (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
		+ +			\dashv			
					\neg			
		+			_			



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 SDG:
 190723-62
 Client Reference:
 P1788 South & South & Report Number:
 517164

 Location:
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 Z1657
 Superseded Report:
 516270

	<u> 2000</u>		1,	reserventy Euroras				
VOC	MS (W)					i		
#	Results Legend ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M aq	mCERTS accredited. Aqueous / settled sample.							
diss.filt tot.unfilt	Dissolved / filtered sample. Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
*	Subcontracted - refer to subcontractor report accreditation status.	for	Sample Type Date Sampled	Ground Water (GW) 17/07/2019	Ground Water (GW) 17/07/2019			
**	% recovery of the surrogate standard to check		Sample Time					
	efficiency of the method. The results of individ compounds within samples aren't corrected for		Date Received SDG Ref	23/07/2019 190723-62	23/07/2019 190723-62			
(F)	recovery Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550			
1-3+§@	Sample deviation (see appendix)		AGS Reference					
Compo		LOD/Units	Method					
Dibromo	ofluoromethane**	%	TM208	114	111			
T .	10++	0/	T14000	00.4	00.5			
Toluene	9-08^^	%	TM208	98.4	98.5			
4.5		0/	T11000	0.1.0	04.5			
4-Brom	ofluorobenzene**	%	TM208	94.6	94.5			
D: 11	ra u	.4 //	T14000	-4	.4			
Dictior	odifluoromethane	<1 µg/l	TM208	<1	<1			
Chlaran	noth an a	<1.va/l	TM208	<1	<1			
Chioron	nethane	<1 µg/l	I IVIZUO	<u> </u>	#			
Vinyl ch	Javida	<1/l	TM208	<1	<1			
VIIIIYI CII	lionae	<1 µg/l	1101200	-1 #	#			
Promon	nethane	<1 µg/l	TM208	<1	<1			
Бібінон	iletilalie	- 1 μg/i	1101200		#			
Chloroe	thono	<1 µg/l	TM208	<1	<1			
Cillorde	tulane	- 1 μg/i	1101200		#			
Trichlor	ofluoromethane	<1 µg/l	TM208	<1	<1			
THEHIO	oliuoromethane	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1101200		#			
1 1-Dick	hloroethene	<1 µg/l	TM208	<1	<1			
1,1 Dici	nior octricite	γ μg/i	1101200	#	1 #	1150.		
Carbon	disulphide	<1 µg/l	TM208	<1	<1	officerity difference.		
Carbon	disdipriide	γ μg/i	1101200	#	1 #	othe		
Dichloro	omethane	<3 µg/l	TM208	<3	<3	214 217		
Biornois	Smothano	то дауг	1111200	#	#	ortoria		
Methyl t	tertiary butyl ether	<1 µg/l	TM208	<1	<1 purposition #	20		
(MTBE)		l Pg/i	1111200	#	MIT WILL			
` '	2-Dichloroethene	<1 µg/l	TM208	<1	· (8) - 1 / 100 /			
.,		" "		#	actioning #			
1.1-Dich	hloroethane	<1 µg/l	TM208	<1	THE ECT WHE #			
' '		"		#(* 1, 1991 #			
cis-1,2-l	Dichloroethene	<1 µg/l	TM208	<1	o₹) <1			
				<i>₩</i>	#			
2,2-Dich	hloropropane	<1 µg/l	TM208	<1 consent	<1			
				COUSE				
Bromoc	chloromethane	<1 µg/l	TM208	<1	<1			
				#	#			
Chlorofo	orm	<1 µg/l	TM208	<1	<1			
				#	#			
1,1,1-Tr	richloroethane	<1 µg/l	TM208	<1	<1			
				#				
1,1-Dich	hloropropene	<1 µg/l	TM208	<1	<1			
				#				
Carbon	tetrachloride	<1 µg/l	TM208	<1	<1			
				#	#			
1,2-Dich	hloroethane	<1 µg/l	TM208	<1	<1			
_				#				
Benzen	е	<1 µg/l	TM208	<1	<1			
-		4 "	T11000	#				
Irichlor	oethene	<1 µg/l	TM208	<1	<1			
4.0.001.1		.4 //	T14000	#	#			
1,2-Dict	hloropropane	<1 µg/l	TM208	<1	<1			
Dil		.4 ()	T14000	#				
Dibromo	omethane	<1 µg/l	TM208	<1	<1			
Decree	E-1-1	44	TM000	#	-			
Bromod	lichloromethane	<1 µg/l	TM208	<1 #	<1 #			
-:- 4.0.1	Di-bl	44	TM000					
CIS-1,3-	Dichloropropene	<1 µg/l	TM208	<1 #	<1 #			
Toluer	`	~1 ··~/l	TM208	# <1	# <1			
Toluene	-	<1 µg/l	ΙΝΙΖUδ	<1 #				
tranc 1	3-Dichloropropene	<1 µg/l	TM208	<1	<1			
u ans-1,	o Pioriiorohroherie	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	I IVIZUO	<u> </u>	#			
110 T	richloroethane	<1 µg/l	TM208	<1	<1			
1, 1,2-11	nonoroetralie	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	I IVIZUO	<u> </u>				
1.3-Dict	hloropropane	<1 µg/l	TM208	<1	<1			
.,0 2101		Hg/1	1111200	#	#			

Validated

CERTIFICATE OF ANALYSIS



 SDG:
 190723-62
 Client Reference:
 P1788 South & South & Report Number:
 517164

 Location:
 South & Amp; West Kerry LarOrder Number:
 Z1657
 Superseded Report:
 516270

VOC MS (W)								
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle	П			
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)				
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	17/07/2019	17/07/2019				
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi		Sample Time						
compounds within samples aren't corrected in		Date Received SDG Ref	23/07/2019 190723-62	23/07/2019 190723-62				
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550				
1-3+§@ Sample deviation (see appendix) Component	LOD/Uni	AGS Reference ts Method						
Tetrachloroethene	<1 µg/	The state of the s	<1	<1	┪			
	'		#		#			
Dibromochloromethane	<1 µg/	'I TM208	<1	<1	П			
			#		#			
1,2-Dibromoethane	<1 µg/	'I TM208	<1	<1				
		" T14000	#		#			
Chlorobenzene	<1 µg/	'I TM208	<1 #	<1	#			
1,1,1,2-Tetrachloroethane	<1 µg/	'I TM208	<1	<1	#			
1, 1, 1,2-Tettacilloroettiarie	-1 μg/	1 1101200	#		#			
Ethylbenzene	<1 µg/	/I TM208	<1	<1				
	1		#		#			
m,p-Xylene	<1 µg/	'I TM208	<1	<1	┪			
			#		#			
o-Xylene	<1 µg/	TM208	<1	<1]
0:	<u> </u>	,	#		#			
Styrene	<1 µg/	'I TM208	<1 "	<1	_			
Bromoform	<1 un	'I TM208	<1	<1	#			
DIVINOION	<1 µg/	1 1101200	-1 #		#	Jise.		
Isopropylbenzene	<1 µg/	/I TM208	<1	.4	\neg	(7 i*		
	1		#		#	1. 4 ott		
1,1,2,2-Tetrachloroethane	<1 µg/	TM208	<1	<1	┑	onthing and other		
			#	ي	Ė	Lion		
1,2,3-Trichloropropane	<1 µg/	I TM208	<1	_1 ~	j)	2		
			#	Thirt ed	燿			
Bromobenzene	<1 µg/	'I TM208	<1 "	etian or rec				
Propylbenzene	<1 µg/	/I TM208	<1	100 W 1	#			
1 Topyibonzone	11 µg/	1 110200	#	institut <1	#			
2-Chlorotoluene	<1 µg/	'I TM208	<1	. <mark>०१</mark> <1	╛			
					#			
1,3,5-Trimethylbenzene	<1 µg/	'I TM208	<1 consent #	<1				
					#			
4-Chlorotoluene	<1 µg/	'I TM208	<1 #	<1	#			
tert-Butylbenzene	<1 µg/	'I TM208	<1	<1	#			
tert-butyiberizerie	ν ημα/	1 1101200	#		#			
1,2,4-Trimethylbenzene	<1 µg/	'I TM208	<1	<1	\dashv			
•	. •		#		#			
sec-Butylbenzene	<1 µg/	'I TM208	<1	<1	П			
			#		#			
4-iso-Propyltoluene	<1 µg/	'I TM208	<1	<1	_			
1,3-Dichlorobenzene	<1 µg/	/I TM208	<1	<1	#			
1,3-Dictiloropenzene	~1 μg/	1 1101200	<u> </u>		#			
1,4-Dichlorobenzene	<1 µg/	1 TM208	<1	<1	~			
,	"		#		#			
n-Butylbenzene	<1 µg/	'I TM208	<1	<1	٦			
			#		#			
1,2-Dichlorobenzene	<1 µg/	'I TM208	<1	<1				
4.0 Dibaaaa 2 ahlaaaaaa	44	U TM000	#	<1	#			
1,2-Dibromo-3-chloropropane	<1 µg/	1 TM208	<1	<1				
1,2,4-Trichlorobenzene	<1 µg/	1 TM208	<1	<1	\dashv			
, ,,	, pg/	200	#		#			
Hexachlorobutadiene	<1 µg/	'I TM208	<1	<1	\dashv			
			#		#			
tert-Amyl methyl ether (TAME)	<1 µg/	TM208	<1	<1	1			
N. J. I.		u T. 1000	#		#			
Naphthalene	<1 µg/	1 TM208	<1 #	<1	#			
1,2,3-Trichlorobenzene	<1 µg/	'I TM208	<1	<1	#			
.,_,=	, µg/		#		#			
-	•				_			





P1788 South & West Ke**Report Number:**Z1657 Superseded Report: 517164 516270 SDG: 190723-62 Client Reference: South & South Z1657 Location:

voc	MS (W)							
# M aq diss.filt tot.unfilt *	Results Legend ISD17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted - refer to subcontractor report accreditation status. % recovery of the surrogate standard to checked feliciency of the method. The results of individent of the surrogate standard to checked feliciency of the method. The results of individent of the surrogate standard to checked feliciency of the method. The results of individent	for the	Customer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received	BH-01 Dingle 0.00 - 0.00 Ground Water (GW) 17/07/2019 23/07/2019	BH-02 Dingle 0.00 - 0.00 Ground Water (GW) 17/07/2019 23/07/2019			
(F) 1-3+§@	compounds within samples aren't corrected for recovery Trigger breach confirmed Sample deviation (see appendix)	or the	SDG Ref Lab Sample No.(s) AGS Reference	190723-62 20383535	190723-62 20383550			
1,3,5-T	onent richlorobenzene	LOD/Units <1 µg/l	Method TM208	<1	<1			
						only, any other tise.		
					چ چ	ouly, and or		
					The Direction	<u> </u>		
					sinspectionner			
				Causeut of C	OR!			
				Consent				





P1788 South & West Ke**Report Number:**Z1657 Superseded Report: 517164 516270 SDG: 190723-62 Client Reference: South & South Location:

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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
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
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS AGE Herbs in Water by GCMS
TM411	Acid_Herbs_GCMS	Herbs in Water by GCMS
ot applicable. al testing (unless		(Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



ALS

 SDG:
 190723-62
 Client Reference:
 P1788 South & mp; West KeReport Number:
 517164

 Location:
 South & amp; West Kerry LarOrder Number:
 Z1657
 Superseded Report:
 516270

Test Completion Dates

	_	103
Lab Sample No(s)	20383535	20383550
Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Туре	Ground Water	Ground Water
Acid Herbicides by GCMS	25-Jul-2019	25-Jul-2019
Alkalinity as CaCO3	30-Jul-2019	26-Jul-2019
Ammoniacal Nitrogen	26-Jul-2019	26-Jul-2019
Anions by Kone (w)	30-Jul-2019	29-Jul-2019
Conductivity (at 20 deg.C)	26-Jul-2019	26-Jul-2019
Cyanide Comp/Free/Total/Thiocyanate	26-Jul-2019	26-Jul-2019
Dissolved Metals by ICP-MS	30-Jul-2019	30-Jul-2019
Dissolved Oxygen by Probe	24-Jul-2019	24-Jul-2019
Fluoride	24-Jul-2019	24-Jul-2019
Mercury Dissolved	26-Jul-2019	26-Jul-2019
Mineral Oil C10-40 Aqueous (W)	30-Jul-2019	26-Jul-2019
PCB Congeners - Aqueous (W)	30-Jul-2019	25-Jul-2019
Pesticides (Suite I) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite II) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite III) by GCMS	29-Jul-2019	29-Jul-2019
pH Value	29-Jul-2019	29-Jul-2019
Phosphate by Kone (w)	24-Jul-2019	24-Jul-2019
Suspended Solids	26-Jul-2019	24-Jul-2019
SVOC MS (W) - Aqueous	31-Jul-2019	29-Jul-2019
Total Dissolved Solids	26-Jul-2019	26-Jul-2019
Total Metals by ICP-MS	29-Jul-2019	29-Jul-2019
Total Organic and Inorganic Carbon	26-Jul-2019	26-Jul-2019
VOC MS (W)	26-Jul-2019	26-Jul-2019

26-Jul-2019
26-Jul-2019
26-Jul-2019
26-Jul-2019
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SDG: 190723-62 Client Reference: Location: South & West Kerry Landfills Order Number:

P1788 South & Superseded Report: 517164
Z1657 Superseded Report: 516270

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 the representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres sing 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	White Asbests
Amosite	Brown Asbestos
Cro a dolite	Blue Asbe stos
Fibrous Actinolite	-
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 μ m diameter, longer than 5 μ 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 (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.

EPA Export 09-10-2021:02:56:55

16:16:42 07/08/2019 Modification Date: 07/08/2019



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

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:31 July 2019Customer:Fehily TimoneySample Delivery Group (SDG):190723-62

Your Reference: P1788 South & South & Kerry Landfills South & South &

Report No: 516270

We received 3 samples on Tuesday July 23, 2019 and 2 of these samples were scheduled for analysis which was completed on Wednesday July 31, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

Chemical testing (unless subcontracted) performed at ALSCLife 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:

Sonia McWhan
Operations Manager







A

SDG: 190723-62 Client Reference: P1788 South & South &

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20383535	BH-01 Dingle		0.00 - 0.00	17/07/2019
20383929	BH-01 Dingle		0.00 - 0.00	17/07/2019
20383550	BH-02 Dingle		0.00 - 0.00	17/07/2019

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.

21.8

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

Validated

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



ALS

SDG: 190723-62 Client Reference: P1788 South & South &

X Test No Determination Possible	Lab Sample No(s)								20383535							20383550
Sample Types -	Custome Sample Refe								BH-01 Dingle							BH-02 Dingle
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Refere	ence														
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	1)							0.00 - 0.00							0.00 - 0.00
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)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	Sample Ty	pe	GW	GW	GW	GW	GW	GW	GW	GW	GW.	GW	GW	GW	GW	GW
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2	3.5							61 JE						
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2	Х				25	aly.	My of	×X						
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2		X	X X	n Pur	05es C	<u>,</u>			X	X				
Anions by Kone (w)	All	NDPs: 0 Tests: 2	Ý	of the	ght o	31					X					
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2	entof	X							Х					
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2						Х							Х	
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				Х							X			
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2		Х							х					
Fluoride	All	NDPs: 0 Tests: 2		Х							х					
Mercury Dissolved	All	NDPs: 0 Tests: 2				Х							X			
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2	х							X						
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2	х							X						
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2	Х							X						
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2	х							Х						
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2	Х							Х						

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 190723-62 Client Reference: P1788 South & South &

(ALS)																
Results Legend X Test No Determination	Lab Sample	No(s)							20383535							20383550
Possible Sample Types -	Custome Sample Refe							BH-01 Dingle							BH-02 Dingle	
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate PL - Prepared Leachate	AGS Refere	AGS Reference														
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	1)							0.00 - 0.00							0.00 - 0.00
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)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	0		Vial (ALE297)		500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)
	Sample Ty	ре	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
pH Value	All	NDPs: 0 Tests: 2		X					S ^X	iei iise	X					
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2		Х			05°.48	GW Affor	my		Х					
Suspended Solids	All	NDPs: 0 Tests: 2	х		ection.	y Dur	ECHIN				Х					
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	x≺	or inc	ght o					X						
Total Dissolved Solids	All	NDPs: 0 Tests: 2	entof	X							х					
Total Metals by ICP-MS	All	NDPs: 0 Tests: 2					X							Х		
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2			X							X				
VOC MS (W)	All	NDPs: 0 Tests: 2							X							X

CERTIFICATE OF ANALYSIS



SDG: 190723-62 Client Reference: Location: South & Dest Kerry LarOrder Number: P1788 South & Description P1788 South & P1788 South & P1788 Supersoled P17

Z1657 Superseded Report:

Customer Sample Re BH-01 Dingle BH-02 Dingle ISO17025 accred mCERTS accred mCERTS accredited.

Aqueous / settled sample.

Dissolved / filtered sample.

Total / unfiltered sample.

Subcontracted - refer to subcontractor report for accreditation status. Depth (m 0.00 - 0.00 0.00 - 0.00 Ground Water (GW) 17/07/2019 Sample Type Ground Water (GW) Date Sample 17/07/2019 accreditation status.

% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the Sample Tim 23/07/2019 23/07/2019 Date Receive 190723-62 190723-62 SDG Re Lab Sample No.(s 20383535 20383550 Sample deviation (see appendix) 1-3**+**§@ AGS Referenc Component LOD/Units Method Suspended solids, Total TM022 3120 105 <2 mg/l TM043 130 Alkalinity, Total as CaCO3 132 <2 mg/l Oxygen, dissolved <0.3 mg/l TM046 9.3 8.9 Organic Carbon, Total <3 mg/l TM090 <3 <3 @# @# Ammoniacal Nitrogen as N <0.2 mg/l TM099 <0.2 <0.2 Fluoride TM104 <0.5 <0.5 <0.5 mg/l Conductivity @ 20 deg.C <0.005 TM120 0.379 0.369 # # mS/cm <5 mg/l TM123 299 288 Dissolved solids, Total (meter) # # <0.5 µg/l TM152 Arsenic (diss.filt) < 0.5 < 0.5 <0.2 µg/l TM152 Barium (diss.filt) 11.5 15.5 TM152 28.7 15.1 Boron (diss.filt) <10 µg/l Cadmium (diss.filt) <0.08 µg/l TM152 < 0.08 0.111 Chromium (diss.filt) <1 µg/l TM152 <1 <1 ŝ # Copper (diss.filt) <0.3 µg/l TM152 0.495 0.6 ner 7 10.888 2110.888 Lead (diss.filt) TM152 0.344 <0.2 µg/l TM152 Manganese (diss.filt) <3 µg/l 16.4 3620 # 1400 Phosphorus (tot.unfilt) <20 µg/l TM152 91.3 # TM152 0.529 Nickel (diss.filt) 1.06 <0.4 µg/l TM152 Phosphorus (diss.filt) <10 µg/l 20.1 <10 Selenium (diss.filt) <1 µg/l TM152 <1 <1 Thallium (diss.filt) <2 µg/l TM152 <2 <2 # Zinc (diss.filt) <1 µg/l TM152 5.24 4.33 # Sodium (Dis.Filt) <0.076 mg/l TM152 27.1 27.4 # TM152 11.7 9.26 Magnesium (Dis.Filt) <0.036 mg/l Potassium (Dis.Filt) TM152 2 1.39 <0.2 mg/l # Calcium (Dis.Filt) TM152 40.9 38.4 <0.2 ma/l # # <0.019 mg/l Iron (Dis.Filt) TM152 < 0.019 < 0.019 # Mineral oil >C10 C40 (aq) <100 µg/l TM172 207 <100 Mercury (diss.filt) <0.01 µg/l TM183 < 0.01 < 0.01 Phosphate (Ortho as PO4) <0.05 mg/l TM184 < 0.05 < 0.05 Chloride <2 mg/l TM184 38.9 44.3 # Total Oxidised Nitrogen as N TM184 2.48 0.119 <0.1 mg/l Sulphate (soluble) as S <1 mg/l TM184 3.73 3.07

CERTIFICATE OF ANALYSIS



SDG: 190723-62 Location:

Client Reference: South & South

P1788 South & West KeReport Number: Z1657 Superseded Report:

Results Legend # ISO17025 accredited.	(Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
 Subcontracted - refer to subcontractor report f accreditation status. 	for	Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to check efficiency of the method. The results of individ	the	Sample Time Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected for recovery		SDG Ref	190723-62	190723-62			
(F) Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550			
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
PCB congener 28	<0.015 µg/l	_	<0.015	<0.015			
	, •						
PCB congener 52	<0.015 µg/l	TM197	<0.015	<0.015			
PCB congener 101	<0.015 µg/l	TM197	<0.015	<0.015			
PCB congener 118	<0.015 µg/l	TM197	<0.015	<0.015			
PCB congener 138	<0.015 µg/l	TM197	<0.015	<0.015			
PCB congener 136	<0.015 μg/i	1101197	~0.015	<0.015			
PCB congener 153	<0.015 µg/l	TM197	<0.015	<0.015			
1 CD congenior rec	10.010 µg/1	111101	0.010	-0.010			
PCB congener 180	<0.015 µg/l	TM197	<0.015	<0.015			
Sum of detected EC7 PCB's	<0.105 µg/l	TM197	<0.105	<0.105			
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05			
			#	#			
рН	<1 pH Units	TM256	7.01	7.04	1150.		
Trifluralin	<0.01	TM343	<0.01	*	W. 124 Other 112		
Trilluralin	<0.01 µg/l	1101343	<0.01	<0.01	othe		
alpha-HCH	<0.01 µg/l	TM343	<0.01	<0.01	-111/ 211A		
				OF C	only are		
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.01		200		
				<0.01 requir			
Heptachlor	<0.01 µg/l	TM343	<0.01	;< 0 .01€			
				2000101 EQU			
Aldrin	<0.01 µg/l	TM343	<0.01	Transcount Court			
beta-HCH	40.04	TM343	<0.01	OP <0.01			
Deta-non	<0.01 µg/l	1101343	V0.01	<0.01			
Isodrin	<0.01 µg/l	TM343	<0.01 ent	<0.01			
iodaini	10.01 µg/i	1111010	CONSC	10.01			
delta-HCH	<0.01 µg/l	TM343	<0.01	<0.01			
Heptachlor epoxide	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01			
Endoquinhor !	ZO 04 · · · · "	TMOAO	-0.01	-0.04			
Endosulphan I	<0.01 µg/l	TM343	<0.01	<0.01			
trans-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01			
22.10 0.110.00110	σ.σ. μg/ι	11110 10	.0.01	-0.01			
cis-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01			
p,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01		 	
		1					
Dieldrin	<0.01 µg/l	TM343	<0.01	<0.01			
o,p'-DDD (TDE)	∠0.01··~″	TMOAO	~ 0.01	<0.01			
ס'ה (וח⊏)	<0.01 µg/l	TM343	<0.01	\U.U1			
Endrin	<0.01 µg/l	TM343	<0.01	<0.01			
	3.0. Mg/l		0.0.	0.01			
o,p'-DDT	<0.01 µg/l	TM343	<0.01	<0.01			
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.01		 	
Endosulphan II	<0.02 µg/l	TM343	<0.02	<0.02			
p,p'-DDT	∠0.01··~″	TM343	<0.01	<0.01			
ו חת- ליל	<0.01 µg/l	1 IVI 343	\ U.U1	\U.U1			
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.01	<0.01			



CERTIFICATE OF ANALYSIS



SDG: 190723-62 Location:

Client Reference: South & amp; West Kerry LarOrder Number:

P1788 South & Dest KeReport Number: Z1657

Superseded Report:

Customer Sample Ref BH-02 Dingle BH-01 Dingle ISO17025 accredited.
mCERTS accredited.
Aqueous' settled sample.
Dissolved if filtered sample.
Total / unfiltered sample.
Subcontracted ris outcontractor report for accreditation status.

% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the Depth (m 0.00 - 0.00 0.00 - 0.00 Sample Type Ground Water (GW) Ground Water (GW) 17/07/2019 17/07/2019 Sample Time SDG Re 190723-62 190723-62 20383535 20383550 Lab Sample No.(s) AGS Referenc Component LOD/Units Method p,p'-Methoxychlor <0.01 µg/l TM343 <0.01 <0.01 TM343 <0.02 Endosulphan Sulphate <0.02 µg/l <0.02 Permethrin I <0.01 µg/l TM343 < 0.01 < 0.01 TM343 <0.01 Permethrin II <0.01 µg/l < 0.01 <0.01 µg/l 1,3,5-Trichlorobenzene TM344 < 0.01 < 0.01 Hexachlorobutadiene <0.01 µg/l TM344 < 0.01 < 0.01 1,2,4-Trichlorobenzene <0.01 µg/l TM344 < 0.01 <0.01 1,2,3-Trichlorobenzene <0.01 µg/l TM344 <0.01 <0.01 Dichlorvos <0.01 µg/l TM344 <0.01 <0.01 TM344 <0.01 <0.01 Dichlobenil <0.01 µg/l TM344 <0.01 Mevinphos <0.01 µg/l <0.01 For all TM344 <0.01 <0.01 Tecnazene <0.01 µg/l TM344 < 0.01 < 0.01 Hexachlorobenzene <0.01 µg/l 50.01ci TM344 <0.01 Demeton-S-methyl <0.01 µg/l tight 0.01 Phorate <0.01 µg/l TM344 < 0.01 Diazinon <0.01 µg/l TM344 < 0.01 < 0.01 <0.01_& Triallate <0.01 µg/l TM344 <0.01 TM344 <0.01 <0.01 Atrazine <0.01 µg/l Simazine <0.01 µg/l TM344 <0.01 <0.01 Disulfoton TM344 <0.01 <0.01 <0.01 µg/l Propetamphos <0.01 µg/l TM344 < 0.01 < 0.01 TM344 Chlorpyriphos-methyl <0.01 µg/l < 0.01 < 0.01 Dimethoate <0.01 µg/l TM344 < 0.01 < 0.01 Pirimiphos-methyl <0.01 µg/l TM344 < 0.01 < 0.01 Chlorpyriphos <0.01 µg/l TM344 < 0.01 <0.01 Methyl Parathion <0.01 µg/l TM344 <0.01 <0.01 TM344 <0.01 <0.01 Malathion <0.01 µg/l Fenthion <0.01 µg/l TM344 <0.01 <0.01 TM344 <0.01 < 0.01 Fenitrothion <0.01 µg/l TM344 <0.01 < 0.01 Triadimefon <0.01 µg/l Pendimethalin TM344 <0.01 µg/l < 0.01 < 0.01 Parathion <0.01 µg/l TM344 < 0.01 < 0.01

CERTIFICATE OF ANALYSIS



SDG: 190723-62

Client Reference: South & amp; West Kerry LarOrder Number:

P1788 South & Dest KeReport Number: Z1657

Superseded Report:

Location: Customer Sample Ref BH-02 Dingle BH-01 Dingle ISO17025 accredited.
mCERTS accredited.
Aqueous / settled sample.
Dissolved filteed sample.
Total / unfiltered sample.
Subcontractact - refer to subcontractor report for accreditation status.
Ye recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the Depth (m 0.00 - 0.00 0.00 - 0.00 Sample Type Ground Water (GW) Ground Water (GW) 17/07/2019 17/07/2019 Sample Tim SDG Re 190723-62 190723-62 20383535 20383550 Lab Sample No.(s) AGS Referenc Component LOD/Units Method Chlorfenvinphos <0.01 µg/l TM344 <0.01 <0.01 TM344 <0.01 trans-Chlordane <0.01 µg/l <0.01 cis-Chlordane <0.01 µg/l TM344 < 0.01 < 0.01 TM344 Ethion <0.01 <0.01 µg/l < 0.01 TM344 < 0.01 < 0.01 Carbophenothion <0.01 µg/l Triazophos <0.01 µg/l TM344 < 0.01 < 0.01 Phosalone <0.01 µg/l TM344 < 0.01 <0.01 Azinphos methyl <0.02 µg/l TM344 <0.02 < 0.02 Azinphos ethyl <0.02 µg/l TM344 <0.02 <0.02 TM345 <0.01 <0.01 Etridiazole <0.01 µg/l TM345 <0.01 Pentachlorobenzene <0.01 µg/l <0.01 For all TM345 <0.01 <0.01 Tributylphosphate <0.01 µg/l TM345 < 0.01 < 0.01 Propachlor <0.01 µg/l TM345 <0.01 150.01es Quintozene (PCNB) <0.01 µg/l tight 0.01 Omethoate <0.01 µg/l TM345 < 0.01 Propazine <0.01 µg/l TM345 < 0.01 < 0.01 <0.01_& <0.01 µg/l TM345 <0.01 Propyzamide TM345 <0.01 <0.01 Alachlor <0.01 µg/l Prometryn <0.01 µg/l TM345 <0.01 <0.01 Telodrin TM345 <0.01 <0.01 <0.01 µg/l <0.01 µg/l TM345 Terbutryn < 0.01 < 0.01 TM345 Chlorothalonil <0.01 µg/l < 0.01 < 0.01 Etrimphos <0.01 µg/l TM345 < 0.01 < 0.01 Metazachlor <0.01 µg/l TM345 < 0.01 < 0.01 Cyanazine <0.01 µg/l TM345 < 0.01 <0.01 Trietazine <0.01 µg/l TM345 <0.01 <0.01 TM345 <0.01 <0.01 Coumaphos <0.01 µg/l Phosphamidon I <0.01 µg/l TM345 <0.01 <0.01 TM345 <0.01 Phosphamidon II < 0.01 <0.01 µg/l TM411 0.175 Dinitro-o-cresol 0.581 <0.1 µg/l

Clopyralid

MCPA

< 0.04

< 0.05

TM411

TM411

<0.04 µg/l

<0.05 µg/l

< 0.04

< 0.05



SDG: 190723-62 Location:

Client Reference: South & South

P1788 South & West KeReport Number: Z1657 Superseded Report:

516270

Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor repo	rt for	Sample Type	Ground Water (GW)	Ground Water (GW)			
accreditation status. ** % recovery of the surrogate standard to che		Date Sampled Sample Time	17/07/2019	17/07/2019			
efficiency of the method. The results of indi-	vidual	Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected recovery	for the	SDG Ref	190723-62	190723-62			
(F) Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550			
1-3+§@ Sample deviation (see appendix)	1	AGS Reference					
Component	LOD/Units						
Mecoprop	<0.04 µg/l	TM411	<0.04	<0.04			
Dicamba	<0.04 µg/l	TM411	<0.04	<0.04			
МСРВ	<0.05 µg/l	TM411	<0.05	<0.05			
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.1			
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<0.05	<0.05			
Dichlorprop	<0.1 µg/l	TM411	<0.1	<0.1			
Triclopyr	<0.05 µg/l	TM411	<0.05	<0.05			
Fenoprop (Silvex)	<0.1 µg/l	TM411	<0.1	<0.1			
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l		<0.05	<0.05			
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l		<0.05	<0.05	only, any other use.		
Bromoxynil	<0.04 µg/l		<0.04	<0.04	W. my other		
Benazolin	<0.04 µg/l		<0.04	<0.04	odici di		
loxynil	<0.05 µg/l		<0.05		<u> </u>		
Pentachlorophenol	<0.04 µg/l		<0.04	ingerioodater of the control of the			
Fluoroxypyr	<0.1 µg/l	TM411	<0.1	A Tright O. 1			
			Consent of G				
			Course				
				<u> </u>			

SDG: P1788 South & West KeReport Number: Z1657 Superseded Report: 190723-62 Client Reference: 516270 South & South Location:

SVOC MS (W) - Aqueous	6						
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
 Subcontracted - refer to subcontractor report accreditation status. 	for	Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to check efficiency of the method. The results of indivi-		Sample Time Date Received	23/07/2019	23/07/2019			
compounds within samples aren't corrected for		SDG Ref	190723-62	190723-62			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20383535	20383550			
Component	LOD/Units						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	<1			
12.7111			@#	#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<20	<1			
1,4-Dichlorobenzene (aq)	<1 ug/l	TM176	@ # <20	# <1			
1,4-Dichloroberizerie (aq)	<1 µg/l	TIVITO	°20 @#	#			
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<20	<1			
2, 1,0 1110111011011011(04)	. 125/		@#	. #			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<20	<1			
1 1			@#	#			
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<20	<1			
0.4.00		7111-0	@#	#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<20	<1 **			
2,6-Dinitrotoluene (aq)	<1 ··~//	TM176	<u>@</u> #	# <1			
2,0-Diriiiioloidene (aq)	<1 µg/l	11011/0	<20 @#		use.		
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<20	<1	ong and other use.		
2 0.110101142114114110110 (44)	. 125/		@#	. #	Office		
2-Chlorophenol (aq)	<1 µg/l	TM176	<20	<1	119 2019		
			@#	.#.	o'kor'		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<20	<1 purposition #	, go		
			@#	On COM			
2-Methylphenol (aq)	<1 µg/l	TM176	<20	ection of tech			
			@#	ect with #			
2-Nitroaniline (aq)	<1 µg/l	TM176	<20	1112 111 <1			
2 Nitrophonal (ag)	z1/l	TM476	<20	or <1			
2-Nitrophenol (aq)	<1 µg/l	TM176	@\#\`	%' <1 #			
3-Nitroaniline (aq)	<1 µg/l	TM176	<20 cm @ #	<1			
o madamino (aq)	1 1 1 1 1 1	1111110	6013 ⁶ @#	#			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	20	<1			
, ,, , (),	, ,		@#	#			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<20	<1			
			@#	#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<20	<1			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<20	<1			
4-Methylphenol (aq)	<1 µg/l	TM176	@# <20	# <1			
4-ivietriyipilerioi (aq)	~1 μg/1	TIVITO	°20 @#	#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<20	<1			
(~4)	. 49/1		@#	#			
4-Nitrophenol (aq)	<1 µg/l	TM176	<20	<1			
Azobenzene (aq)	<1 µg/l	TM176	<20	<1			
			@#	#		 	
Acenaphthylene (aq)	<1 µg/l	TM176	<20	<1			
A 111 ()	.4 //	T14470	@#	#			
Acenaphthene (aq)	<1 µg/l	TM176	<20 @#	<1 #			
Anthracene (aq)	<1 µg/l	TM176	<20	<1		-	
, and according (aq)	- ' μg/l	1101170	°20 @#	<u> </u>			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<20	<1		 	
. , , , , , , , , , , , , , , , , , , ,			@#	#		 <u> </u>	
bis(2-Chloroethoxy)methane	<1 µg/l	TM176	<20	<1			
(aq)			@#	#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<40	<2			
			@#	#		 	
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<20	<1			
Ponzo(a)anthrocena (a=)	24	TN4470	@#	#			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<20 @#	<1 #			
13:00:52 31/07/2019			@#	#	1		



P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190723-62 Client Reference: 516270 South & South Location:

SVOC MS (W) - Aqueous	6							
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle				
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)				
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	17/07/2019	17/07/2019				
** % recovery of the surrogate standard to check efficiency of the method. The results of individ		Sample Time Date Received	23/07/2019	23/07/2019				
compounds within samples aren't corrected for recovery	or the	SDG Ref	190723-62	190723-62				
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20383535	20383550				
Component	LOD/Units	Method			+			
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<20 @#	<1	#			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<20	<1	π			
()	10		@#		#			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<20	<1				
D(- h.))()	44 //	TM470	@#		#			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<20 @#	<1	#			
Carbazole (aq)	<1 µg/l	TM176	<20	<1	Ť			
			@#		#			
Chrysene (aq)	<1 µg/l	TM176	<20	<1	,,			
Dibenzofuran (aq)	<1 µg/l	TM176	@# <20	<1	#		+	
5.50120101011 (uq)	- μg/ι	1111110	~20 @#		#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<20	<1				
			@#		#			
Diethyl phthalate (aq)	<1 µg/l	TM176	<20	<1	#			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	@# <20	<1	#		+	
Bibon25(a,rr)arrarrasono (aq)	i pg/i	1111110	@#		#	, 15°E.		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<20	<1	T	ather		
	- "	=======================================	@#	_	#	14. 10H		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<100 @#	<5	ď	hor di		
Fluoranthene (aq)	<1 µg/l	TM176	<20	<1 .700	., 2	Afer any other use.		
(-1)	. 1-3		@#	000	¥			
Fluorene (aq)	<1 µg/l	TM176	<20	dial let				
H	.4 ()	T14470	@#	250 Oth	#			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<20 ⋒∕#	11. 21. cl	#			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<20		Ϊ			
			<20 @# <20 gent		#			
Pentachlorophenol (aq)	<1 µg/l	TM176	<20 sett	<1				
Phenol (aq)	<1 µg/l	TM176	<20	<1	+			
Thonor (aq)	i pg/i	1111110	-20					
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<20	<1				
	.4 ()	T14470	@ # <20	<1	#			
Hexachloroethane (aq)	<1 µg/l	TM176	<20 @#		#			
Nitrobenzene (aq)	<1 µg/l	TM176	<20	<1	Ϊ			
			@#		#			
Naphthalene (aq)	<1 µg/l	TM176	<20	<1	ш			
Isophorone (aq)	<1 µg/l	TM176	@ # <20	<1	#		+	
	. μg//	170	°20 @#		#		 <u> </u>	
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<20	<1				
Di ii ()		T111=0	22		4		-	
Phenanthrene (aq)	<1 µg/l	TM176	<20 @#	<1	#		1	
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<20	<1	11			
			@#		#			
Pyrene (aq)	<1 µg/l	TM176	<20	<1	_			
		1	@#		#		+	
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SDG: 190723-62 Client Reference: P1788 South & South &

(ALS) EGGGGGG		1,	root tony Edicido				
VOC MS (W)		0		1	†		
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
* Subcontracted - refer to subcontractor repr accreditation status.	ort for	Date Sampled	17/07/2019	17/07/2019			
** % recovery of the surrogate standard to ch	eck the	Sample Time					
efficiency of the method. The results of ind compounds within samples aren't correcte		Date Received SDG Ref	23/07/2019 190723-62	23/07/2019 190723-62			
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20383535	20383550			
1-3+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method	444	111			
Dibromofluoromethane**	%	TM208	114	111			
Toluene-d8**	%	TM208	98.4	98.5			
Toluene-do	70	1101200	90.4	90.5			
4.5	0/	T14000	04.0	04.5			
4-Bromofluorobenzene**	%	TM208	94.6	94.5			
Dichlorodifluoromethane	z1/l	TM208	<1	<1			
Dichiorodilidoromethane	<1 µg/l	1101200	\ 1	` '			
Chloromethane	<1 µg/l	TM208	<1	<1			
Chloromethane	~1 μg/1	1101200	#	#			
Vinyl chloride	<1 µg/l	TM208	<1	<1			
Viriyi chionde	~1 μg/1	1101200	#	#			
Bromomethane	<1 µg/l	TM208	<1	<1			
Dioniometiane	×1 μg/1	1101200	#	#			
Chloroethane	<1 µg/l	TM208	<1	<1			
Onlordenane	1 pg/i	1101200	#	#			
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1			
onorongoroniogialic	- 1 μg/1	1111200	#	#]
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1			
1,1 210.110.100	. 49	200	. #		, 115e.		
Carbon disulphide	<1 µg/l	TM208	<1	<1	offet and other rise.		
Carson alcalpinas	. 49	200	. #	. #	office		
Dichloromethane	<3 µg/l	TM208	<3	<3	113 M		
	5 F-9		#	#	of for t		
Methyl tertiary butyl ether	<1 µg/l	TM208	<1	<1 philosophic #	200		
(MTBE)	. 1-9		#	Will Chi			
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	· al or lear			
,	13		#	ectioning #			
1,1-Dichloroethane	<1 µg/l	TM208	<1	THE ECULUATION #			
			#	K 1185 #			
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	<i>ত</i> ি <1			
			#	#			
2,2-Dichloropropane	<1 µg/l	TM208	<1 consent	<1			
			COUS				
Bromochloromethane	<1 µg/l	TM208	4	<1			
			#	#			
Chloroform	<1 µg/l	TM208	<1	<1			
			#	#			
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1			
			#	#			
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1			
Onderstates III II	.4 0	T14000	#	#			
Carbontetrachloride	<1 µg/l	TM208	<1	<1]
1.0 Dieblere - th	-A 11	T14000	#	#		-	
1,2-Dichloroethane	<1 µg/l	TM208	<1 **	<1 #]
Ponzono	ا/ما	TM208	# <1	# <1		 	
Benzene	<1 µg/l	ΙΝΙΖUδ	<1 #	<1 #]
Trichloroethene	<1 µg/l	TM208	<1	<1		 	
monoralene	\	I IVIZUO	<i #<="" td=""><td><u> </u></td><td></td><td></td><td>] </td></i>	<u> </u>]
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1			
1,2-Dichioroproparie	×1 μg/1	1101200	#	#			
Dibromomethane	<1 µg/l	TM208	<1	<1			
Dibiomometrane	~1 μg/1	1101200	#	#			
Bromodichloromethane	<1 µg/l	TM208	<1	<1			
2. 3modiomorniomornanie	- , μg/i	1111200	#	#]
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
5.5 1,0 Diomoropropolic	- , μg/i	1111200	#	#]
Toluene	<1 µg/l	TM208	<1	<1			
	- μg/ι	1111250	#	#]
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1			
2 2 3 1,0 2.0oproporto	, Ma,	200	#	#			
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1			
, ,,	. 49/1	250	#	#]
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1		•	
I ' ' '	"		#	#			



P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190723-62 Client Reference: 516270 South & South Location:

VOC MS (W)							
Results Legend # ISO17025 accredited.	C	ustomer Sample Ref.	BH-01 Dingle	BH-02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted - refer to subcontractor report accreditation status.		Depth (m) Sample Type Date Sampled	0.00 - 0.00 Ground Water (GW) 17/07/2019	0.00 - 0.00 Ground Water (GW) 17/07/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi compounds within samples aren't corrected f	dual	Sample Time Date Received	23/07/2019	23/07/2019			
recovery (F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		SDG Ref Lab Sample No.(s) AGS Reference	190723-62 20383535	190723-62 20383550			
Component	LOD/Units	Method					
Tetrachloroethene	<1 µg/l	TM208	<1 #	<1 #			
Dibromochloromethane	<1 µg/l	TM208	<1 #	<1 #			
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208	<1 #	<1 #			
Styrene	<1 µg/l	TM208	<1 #	<1 #			
Bromoform	<1 µg/l	TM208	<1 #	<1	1150.		
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	only, any other ties		
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1	office att.		
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	7 Suit Suit	2		
Bromobenzene	<1 µg/l	TM208	<1 #	cital per			
Propylbenzene	<1 µg/l	TM208	<1 # ⁽	43.7			
2-Chlorotoluene	<1 µg/l	TM208	<1 **	√ <1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 sent #	<1 #			
4-Chlorotoluene	<1 µg/l	TM208	<1 #	<1 #			
tert-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1 #	<1 #			
sec-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #			
4-iso-Propyltoluene	<1 µg/l	TM208	<1 #	<1 #			
1,3-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #			
1,4-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #			
n-Butylbenzene	<1 µg/l	TM208	<1 #	<1 #			
1,2-Dichlorobenzene	<1 µg/l	TM208	<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1			
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #			
Hexachlorobutadiene	<1 µg/l	TM208	<1 #	<1 #			
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1 #	<1 #			
Naphthalene	<1 µg/l	TM208	<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1 #	<1 #			

Validated

CERTIFICATE OF ANALYSIS

P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190723-62 Client Reference: 516270 South & South Z1657 Location:

VOC	MS (W)							
. 55	Results Legend		Customer Sample Ref.	BH-01 Dingle	BH-02 Dingle		I	
# M	Results Legend ISO17025 accredited. mCERTS accredited.		, , , , , , , , , , , , , , , , , , , ,	Bit-of Biligie	Di POZ Diligie			
aq diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
tot.unfilt	Total / unfiltered sample.		Sample Type	Ground Water (GW)	Ground Water (GW)			
	Subcontracted - refer to subcontractor report accreditation status.		Date Sampled	17/07/2019	17/07/2019			
**	% recovery of the surrogate standard to check efficiency of the method. The results of individuals of the standard to check the standard the standa	k the dual	Sample Time Date Received	23/07/2019	23/07/2019			
	compounds within samples aren't corrected for recovery	or the	SDG Ref	190723-62	190723-62			
(F)	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20383535	20383550			
Compo		LOD/Uni	ts Method					
	richlorobenzene	<1 µg/		<1	<1			
						ond and other ree.		
						eo.		
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						Office		
						2017 - 2124		
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P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190723-62 Client Reference: 516270 South & South Location:

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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
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
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and the chate using the GLpH pH Meter Determination of Selection Pesticides (Suite I) in Liquids by GCMS
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS ACM Herbs in Water by GCMS
TM411	Acid_Herbs_GCMS	ACT Herbs in Water by GCMS
ot applicable. al testing (unless		(Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

ALS

SDG: 190723-62 Client Reference: P1788 South & South & South & Superseded Report: 516270 South & South & Superseded Report: 21657 Superseded Report: 516270

Test Completion Dates

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth	20383535 BH-01 Dingle	20383550 BH-02 Dingle
Customer Sample Ref. AGS Ref.	·	BH-02 Dingle
	0.00 - 0.00	
Depth	0.00 - 0.00	
	0.00 0.00	0.00 - 0.00
Туре	Ground Water	Ground Water
Acid Herbicides by GCMS	25-Jul-2019	25-Jul-2019
Alkalinity as CaCO3	30-Jul-2019	26-Jul-2019
Ammoniacal Nitrogen	26-Jul-2019	26-Jul-2019
Anions by Kone (w)	30-Jul-2019	29-Jul-2019
Conductivity (at 20 deg.C)	26-Jul-2019	26-Jul-2019
Cyanide Comp/Free/Total/Thiocyanate	26-Jul-2019	26-Jul-2019
Dissolved Metals by ICP-MS	30-Jul-2019	30-Jul-2019
Dissolved Oxygen by Probe	24-Jul-2019	24-Jul-2019
Fluoride	24-Jul-2019	24-Jul-2019
Mercury Dissolved	26-Jul-2019	26-Jul-2019
Mineral Oil C10-40 Aqueous (W)	30-Jul-2019	26-Jul-2019
PCB Congeners - Aqueous (W)	30-Jul-2019	25-Jul-2019
Pesticides (Suite I) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite II) by GCMS	29-Jul-2019	29-Jul-2019
Pesticides (Suite III) by GCMS	29-Jul-2019	29-Jul-2019
pH Value	29-Jul-2019	29-Jul-2019
Phosphate by Kone (w)	24-Jul-2019	24-Jul-2019
Suspended Solids	26-Jul-2019	24-Jul-2019
SVOC MS (W) - Aqueous	31-Jul-2019	29-Jul-2019
Total Dissolved Solids	26-Jul-2019	26-Jul-2019
Total Metals by ICP-MS	29-Jul-2019	29-Jul-2019
Total Organic and Inorganic Carbon	26-Jul-2019	26-Jul-2019
VOC MS (W)	26-Jul-2019	26-Jul-2019

26-Jul-2019
26-Jul-2019
26-Jul-2019
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SDG: 190723-62 Client Reference: South & South Location:

P1788 South & WestReport Number: Superseded Report: Z1657

516270

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 quaranteed 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
- 10. Stones/debris are not routinely removed. We always endeavour to the 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 Con method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19 Ashestos

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 osing 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	White Asbests					
Amosite	Brow n Asbestos					
Cro a dolite	Blue Asbe stos					
Fibrous Actinolite	-					
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 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

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:24 September 2019Customer:Fehily TimoneySample Delivery Group (SDG):190907-95

Your Reference: P1788 South & South &

Report No: 522624

This report has been revised and directly supersedes 521626 in its entirety.

We received 2 samples on Saturday September 07, 2019 and 2 of these samples were scheduled for analysis which was completed on Tuesday September 24, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditations.

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 ALSCLife 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:

Sonia McWhan
Operations Manager







SDG: 190907-95 Client Reference: Location: South & amp; West Kerry LarOrder Number:

P1788 South & West KeReport Number: Z1657 Superseded Report: 522624 521626 Validated

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20675956	SW01 Dingle		0.00 - 0.00	04/09/2019
20675970	SW02 Dingle		0.00 - 0.00	04/09/2019

15.6

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.

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

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



ALS

SDG:190907-95Client Reference:P1788 South & South &

X Test No Determination	Lab Sample I	Lab Sample No(s)						20675956						20675970
Possible Sample Types -	Custome Sample Refer							SW01 Dingle						SW02 Dingle
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Refere	nce												
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m)						0.00 - 0.00						0.00 - 0.00
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Container		0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)
	Sample Ty	Sample Type		WS	WS	WS	WS	WS	WS	WS	WS	WS	WS	WS
Acid Herbicides by GCMS	All	NDPs: 0 Tests: 2	Х						X _N	let Use	٠.			
Alkalinity as CaCO3	All	NDPs: 0 Tests: 2	Х				- es	dioi	X X					
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 2			Xico	A PHY	editte o. te	,			Х			
Anions by Kone (w)	All	NDPs: 0 Tests: 2	X X X Sent of	Of The	ight o	4,			Х					
BOD True Total	All	NDPs: 0 Tests: 2	entof	X						Х				
COD Unfiltered	All	NDPs: 0 Tests: 2	Х						X					
Coliforms (W)	All	NDPs: 2 Tests: 0		N						N				
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 2		X						Х				
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2						Х						Х
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 2				X						X		
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 2		X						Х				
Fluoride	All	NDPs: 0 Tests: 2		Х						х				
Mercury Dissolved	All	NDPs: 0 Tests: 2				X						X		
Mineral Oil C10-40 Aqueous (W)	All	NDPs: 0 Tests: 2		X						X				
PCB Congeners - Aqueous (W)	All	NDPs: 0 Tests: 2		Х						х				

Validated

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 190907-95
 Client Reference:
 P1788 South & South & Report Number:
 522624

 Location:
 South & Amp; West Kerry LarOrder Number:
 Z1657
 Superseded Report:
 521626

(ALS) Location:				ernu										
Results Legend X Test No Determination	Lab Sample I	No(s)						20675956						20675970
Possible Sample Types -	Custome Sample Refe							SW01 Dingle						SW02 Dingle
S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water LE - Land Leachate	AGS Refere	nce												
PL - Prepared Leachate PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (m	0.00 - 0.00								0.00 - 00.0				
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)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	0.5l glass bottle (ALE227)	500ml Plastic (ALE208)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)
	Sample Ty	pe	WS	WS	WS	WS	WS	WS	WS	SW	SW	WS	WS	WS
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 2	Х						XX	det de	ø.			
Pesticides (Suite II) by GCMS	All	NDPs: 0 Tests: 2	Х				్రాల్ (dioi	X					
Pesticides (Suite III) by GCMS	All	NDPs: 0 Tests: 2	Х		ecito ohto	1 Pil	chite) -	X					
pH Value	All	NDPs: 0 Tests: 2	Q	of the	Polit o	N,				Х				
Phosphate by Kone (w)	All	NDPs: 0 Tests: 2	X X	COX					Х					
Suspended Solids	All	NDPs: 0 Tests: 2		Х						Х				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 2	Х						X					
Total Metals by ICP-MS	All	NDPs: 0 Tests: 2					Х						Х	
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 2			X						Х			
VOC MS (W)	All	NDPs: 0 Tests: 2	х						X					



SDG: 190907-95 Client Reference: P1788 South & South & South & Superseded Report: 521624
Location: South & South & Superseded Report: 521626

Results Legend # ISO17025 accredited.	(Customer Sample Ref.	SW01 Dingle	SW02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
 Subcontracted - refer to subcontractor report accreditation status. 		Date Sampled	04/09/2019	04/09/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi compounds within samples aren't corrected f	dual	Sample Time Date Received	07/09/2019	07/09/2019			
recovery (F) Trigger breach confirmed	or the	SDG Ref Lab Sample No.(s)	190907-95 20675956	190907-95 20675970			
1-3+§@ Sample deviation (see appendix)	LOD/Units	AGS Reference					
Suspended solids, Total	<2 mg/l	Method TM022	11	18.7			
All 1' '1 T 1 O OOO	.0 #	T14040	#	#			
Alkalinity, Total as CaCO3	<2 mg/l	TM043	100 #	100 #			
BOD, unfiltered	<1 mg/l	TM045	<1 #	<1 #			
Oxygen, dissolved	<0.3 mg/l	TM046	9.94	12			
Organic Carbon, Total	<3 mg/l	TM090	5.81 #	5.84 #			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	<0.2			
Fluoride	<0.5 mg/l	TM104	<0.5	<0.5			
COD, unfiltered	<7 mg/l	TM107	11.4	9.55 #			
Conductivity @ 20 deg.C	<0.005 mS/cm	TM120	0.304 #	0.302			
Arsenic (diss.filt)	<0.5 µg/l	TM152	0.861	0.597	115°.		
Barium (diss.filt)	<0.2 µg/l	TM152	6.5	6.86	other		
Boron (diss.filt)	<10 µg/l	TM152	15.4	14 #	ony and other nec.		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08 purposition	20		
Chromium (diss.filt)	<1 µg/l	TM152	<1 #	cital net ,			
Copper (diss.filt)	<0.3 µg/l	TM152	3.14	3.05			
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	O.224 #			
Manganese (diss.filt)	<3 µg/l	TM152	62.3 ent #	59.4 #			
Phosphorus (tot.unfilt)	<20 µg/l	TM152	35.6 #	22.7 #			
Nickel (diss.filt)	<0.4 µg/l	TM152	1.61 #	1.81 #			
Phosphorus (diss.filt)	<10 µg/l	TM152	<10 #	11.1 #			
Selenium (diss.filt)	<1 µg/l	TM152	<1 #	<1 #			
Thallium (diss.filt)	<2 µg/l	TM152	<2 #	<2 #			
Zinc (diss.filt)	<1 µg/l	TM152	11 #	10.4 #			
Sodium (Dis.Filt)	<0.076 mg/l	TM152	21.9	22.1			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	9.05	9.17			
Potassium (Dis.Filt)	<0.2 mg/l	TM152	2.59 #	2.63			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	26.1	26.9 #			
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.076	0.0749 #			
Mineral oil >C10 C40 (aq)	<100 µg/l	TM172	<200	<200			
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01	<0.01			
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	<0.05	<0.05			
Chloride	<2 mg/l	TM184	38.7	38.6 #			
Total Oxidised Nitrogen as N	<0.1 mg/l	TM184	0.429 #	0.43 #			•



P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190907-95 Client Reference: South & Drder Number: Location:

522624 521626

Companies Section Se							
Component Comp		Customer Sample Re	Ref. SW01 Dingle	SW02 Dingle			
	Aqueous / settled sample.	Donath (m.					
Component Comp	filt Total / unfiltered sample.						
Commonant	accreditation status.	Date Sampleo	led 04/09/2019				
Second S				07/09/2019			
10 10 10 10 10 10 10 10	compounds within samples aren't corrected for the		Ref 190907-95	190907-95			
Commont Comm	Trigger breach confirmed	Lab Sample No.(s		20675970			
Suphibile (potable) as S			ice				
PCB congener 28							
PCB congener 101	congener 28	<0.015 μg/l TM197					
PCB congener 138	congener 52	<0.015 µg/l TM197	<0.03	<0.03			
PCB congener 138	congener 101	<0.015 μg/l TM197	<0.03	<0.03			
PCB congener 153	congener 118	<0.015 μg/l TM197	<0.03	<0.03			
PCB congener 180	congener 138	<0.015 μg/l TM197	<0.03	<0.03			
Sum of detected EC7 PCB's	congener 153	<0.015 µg/l TM197	<0.03	<0.03			
Cyanide, Total	congener 180	<0.015 µg/l TM197	<0.03	<0.03			
PH	of detected EC7 PCB's	<0.105 µg/l TM197	<0.21	<0.21			
PH	ide, Total	<0.05 mg/l TM227	<0.05		. 1150.		
Semma-HCH		<1 pH Units TM256		7.31 #	other		
Semma-HCH	ralin	<0.01 µg/l TM343	<0.01	<0.01	only all		
gamma-HCH (Lindane) <0.01 µg/l	i-HCH	<0.01 µg/l TM343	<0.01	70.01 Purpolit	2		
Heptachlor <0.01 μg/l	na-HCH (Lindane)	<0.01 µg/l TM343	<0.01	30.01			
Aldrin <0.01 µg/l	achlor		Ŷ	till gik 0.01			
Isodrin <0.01 µg/l TM343 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01			ó	<0.01			
delta-HCH	HCH		<0.01 sett				
Heptachlor epoxide <0.01 μg/l TM343 <0.01 <0.01							
o,p'-DDE <0.01 μg/l							
Endosulphan I <0.01 μg/l TM343 <0.01 <0.01	·						
trans-Chlordane <0.01 μg/l TM343 <0.01 <0.01 cis-Chlordane <0.01 μg/l TM343 <0.01 <0.01 p,p'-DDE <0.01 μg/l TM343 <0.01 <0.01 Dieldrin <0.01 μg/l TM343 <0.01 <0.01 0,p'-DDD (TDE) <0.01 μg/l TM343 <0.01 <0.01							
cis-Chlordane <0.01 µg/l							
p,p'-DDE <0.01 μg/l							
Dieldrin <0.01 μg/l							
o,p'-DDD (TDE) <0.01 µg/l TM343 <0.01 <0.01							
Endrin <0.01 μg/l TM343 <0.01 <0.01							
ο,p'-DDT <0.01 μg/l TM343 <0.01 <0.01							
p,p'-DDD (TDE) <0.01 μg/l TM343 <0.01 <0.01							
Endosulphan II <0.02 μg/l TM343 <0.02 <0.02							
p,p'-DDT <0.01 μg/l TM343 <0.01 <0.01	TOC	<0.01 µg/l TM343	<0.01	<0.01			





SDG: 190907-95 Location:

Client Reference: South & Drder Number:

P1788 South & West KeReport Number: Z1657 Superseded Report:

522624 521626

Control Part Cont							1	
	# ISO17025 accredited.	gend	Customer Sample Ref.	SW01 Dingle	SW02 Dingle			
	aq Aqueous / settled sample.		Donth (m)	0.00 0.00	0.00 0.00			
Comparison Com	tot.unfilt Total / unfiltered sample.							
Composers Comp	accreditation status.			04/09/2019	04/09/2019			
Decision	efficiency of the method. Th	e results of individual						
Component	recovery	aren't corrected for the						
6.9 Attentocystror <0.01 μgl 178343 <0.01 <0.01 pG Attentocystror <0.01 μgl 178343 <0.01 <0.01 Endoutylen Sukrate <0.02 μgl 178343 <0.01 <0.01 Permethro I <0.01 μgl 178343 <0.01 <0.01 1.3.5 Trichrocherozone <0.01 μgl 178444 <0.01 <0.01 1.2.4 Trichrocherozone <0.01 μgl 178444 <0.01 <0.01 1.2.3 Trichrocherozone <0.01 μgl 178344 <0.01 <0.01 Dichipone <0.01 μgl 178344 <0.01 <0.01 Moringhos <0.01 μgl 178344 <0.01 <0.01 Hauszehe <0.01 μgl 178344 <0.01 <0.01 Prozerie <0.01 μgl 178344	1-3+§@ Sample deviation (see appe		AGS Reference					
Delicons				<0.01	<0.01			
Endosulphan Sulphabe	o,p -ivietrioxycritor	<0.01	µул Пиз43	<0.01	<0.01			
Permethin	p,p'-Methoxychlor	<0.01	μg/l TM343	<0.01	<0.01			
Permethrin	Endosulphan Sulphate	<0.02	μg/l TM343	<0.02	<0.02			
1.3.5-Trichtoricburszene	Permethrin I	<0.01	μg/l TM343	<0.01	<0.01			
Hexachbrobutsdene	Permethrin II	<0.01	μg/l TM343	<0.01	<0.01			
1.2.4-Trichiorobenzene	1,3,5-Trichlorobenzene	<0.01	μg/l TM344	<0.01	<0.01			
12.3-Trichlorobenzene	Hexachlorobutadiene			<0.01	<0.01			
Dichloross								
Dichlobenil <0.01 μgl TM344 <0.01 <0.01								
Decisional Co.01 µgl TM344 Co.01 Co.	Dichlorvos					, 15°C.		
Hexachlorobenzene	Dichlobenil		. •		<0.01	M. Mother		
Hexachlorobenzene	Mevinphos				<0.01	our, or.		
Hexachlorobenzene	Tecnazene	<0.01	μg/l TM344	<0.01	Diriganii	, E		
Phorate <0.01 μg/l	Hexachlorobenzene	<0.01	μg/l TM344	<0.01	<9.01			
Diazinon <0.01 µg/l TM344 <0.01	·			<0.01	Title 10.01			
Triallate <0.01 μg/l				8	0.0.			
Atrazine				<0.01 conserv				
Simazine <0.01 μg/l TM344 <0.01 <0.01								
Disulfoton <0.01 μg/l								
Propetamphos <0.01 μg/l								
Chlorpyriphos-methyl <0.01 μg/l								
Dimethoate <0.01 μg/l								
Pirimiphos-methyl <0.01 μg/l								
Chlorpyriphos <0.01 μg/l								
Methyl Parathion <0.01 μg/l								
Malathion <0.01 μg/l TM344 <0.01 <0.01 Fenthion <0.01 μg/l TM344 <0.01 <0.01								
Fenthion <0.01 µg/l TM344 <0.01 <0.01								
Fenitrothion <0.01 μg/l TM344 <0.01 <0.01	Fenthion							
Triadimefon <0.01 μg/l TM344 <0.01 <0.01	Triadimefon	<0.01	μg/l TM344	<0.01	<0.01			
Pendimethalin <0.01 μg/l TM344 <0.01 <0.01	Pendimethalin	<0.01	μg/l TM344	<0.01	<0.01			



SDG: 190907-95 Client Reference: P1788 South & South & South & Superseded Report: 521624
Location: South & South & Superseded Report: 521626

Results Legend		Customer Sample Ref.	SW01 Dingle	SW02 Dingle		1	
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.]						
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
* Subcontracted - refer to subcontractor report accreditation status.		Date Sampled Sample Time	04/09/2019	04/09/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi compounds within samples aren't corrected f	dual	Date Received	07/09/2019	07/09/2019			
recovery (F) Trigger breach confirmed		SDG Ref Lab Sample No.(s)	190907-95 20675956	190907-95 20675970			
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
Parathion	<0.01 µg/l		<0.01	<0.01			
Chlorfenvinphos	<0.01 µg/l	TM344	<0.01	<0.01			
trans-Chlordane	<0.01 µg/l	TM344	<0.01	<0.01			
cis-Chlordane	<0.01 µg/l	TM344	<0.01	<0.01			
Ethion	<0.01 µg/l	TM344	<0.01	<0.01			
Carbophenothion	<0.01 µg/l	TM344	<0.01	<0.01			
Triazophos	<0.01 µg/l	TM344	<0.01	<0.01			
Phosalone	<0.01 µg/l	TM344	<0.01	<0.01			
Azinphos methyl	<0.02 µg/l	TM344	<0.02	<0.02			
Azinphos ethyl	<0.02 µg/l		<0.02	<0.02	oditi and other ise.		
Etridiazole	<0.01 µg/l		<0.01	<0.01	d. A other		
Pentachlorobenzene	<0.01 µg/l		<0.01	<0.01	official.		
Propachlor	<0.01 µg/l		<0.01	Durk Chir	Ď.		
Quintozene (PCNB)	<0.01 µg/l		<0.01	₹9.01			
Omethoate	<0.01 µg/l		<0.01	itis in 0.01			
Propazine	<0.01 µg/l		S.	,			
Propyzamide	<0.01 µg/l		<0.01 _{sert}	<0.01			
Alachlor	<0.01 µg/l		<0.01	<0.01			
Prometryn	<0.01 µg/l		<0.01	<0.01			
Telodrin	<0.01 µg/l		<0.01	<0.01			
Terbutryn	<0.01 µg/l		<0.01	<0.01			
Chlorothalonil	<0.01 µg/l		<0.01	<0.01			
Etrimphos	<0.01 µg/l		<0.01	<0.01			
Metazachlor	<0.01 µg/l		<0.01	<0.01			
Cyanazine	<0.01 µg/l		<0.01	<0.01			
Trietazine	<0.01 µg/l		<0.01	<0.01			
Coumaphos	<0.01 µg/l		<0.01	<0.01			
Phosphamidon I	<0.01 µg/l		<0.01	<0.01			
Phosphamidon II	<0.01 µg/l		<0.01	<0.01			
Dinitro-o-cresol	<0.1 µg/l	TM411	0.179	0.242			
Clopyralid	<0.04 µg/l	TM411	<0.04	<0.04			
MCPA	<0.05 µg/l	TM411	<0.05	<0.05			
		-					



SDG: 190907-95 Client Reference: P1788 South & South & South & Superseded Report: 521624
Location: South & South & Superseded Report: 521626

Described accord							
Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW01 Dingle	SW02 Dingle			
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW)			
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	04/09/2019	04/09/2019			
** % recovery of the surrogate standard to check	k the	Sample Time					
efficiency of the method. The results of indivi- compounds within samples aren't corrected for	dual or the	Date Received	07/09/2019 190907-95	07/09/2019			
recovery		SDG Ref Lab Sample No.(s)	190907-95 20675956	190907-95 20675970			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	Method					
Mecoprop	<0.04 µg/l	TM411	<0.04	<0.04			
Dicamba	<0.04 µg/l	TM411	<0.04	<0.04			
МСРВ	<0.05 µg/l	TM411	<0.05	<0.05			
2,4-DB	<0.1 µg/l	TM411	<0.1	<0.1			
2,3,6-Trichlorobenzoic acid	<0.05 µg/l	TM411	<0.05	<0.05			
Dichlorprop	<0.1 µg/l	TM411	<0.1	<0.1			
Triclopyr	<0.05 µg/l	TM411	<0.05	<0.05			
Fenoprop (Silvex)	<0.1 µg/l	TM411	<0.1	<0.1			
2,4-Dichlorophenoxyacetic acid	<0.05 µg/l	TM411	<0.05	<0.05			
2,4,5-Trichlorophenoxyacetic acid	<0.05 µg/l	TM411	<0.05	<0.05	officially offer use.		
Bromoxynil	<0.04 µg/l		<0.04	<0.04	4. 14 other		
Benazolin	<0.04 µg/l	TM411	<0.04	<0.04	off of all		
loxynil	<0.05 µg/l	TM411	<0.05		9		
Pentachlorophenol	<0.04 µg/l		<0.04	out			
Fluoroxypyr	<0.1 µg/l	TM411	<0.1	or it gives.			
			Consent of G				
			Course				
		-		1			



ALS

SDG:190907-95Client Reference:P1788 South & South & Report Number:522624Location:South & South & Report Number:Z1657Superseded Report:521626

(ALS) Location.		, т	root itony Laiorae				021020	
SVOC MS (W) - Aqueou								
Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW01 Dingle	SW02 Dingle				
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (SW	ın			
 Subcontracted - refer to subcontractor repo accreditation status. 	rt for	Date Sampled	04/09/2019	04/09/2019)			
** % recovery of the surrogate standard to che	eck the	Sample Time						
efficiency of the method. The results of indi- compounds within samples aren't corrected		Date Received SDG Ref	07/09/2019 190907-95	07/09/2019 190907-95				
recovery (F) Trigger breach confirmed		Lab Sample No.(s)	20675956	20675970				
1-3+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<2	<1	O "			
40 B: 11 1 ()	-4 ()	T14470	@#		@#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<2	<1	@#			
40 B: 11 1 ()	-4 "	T14470	@#		@#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<2	<1	@#			
1.4 Diablerahannana (as)	<1/l	TM176	<u>@</u> #		@#			
1,4-Dichlorobenzene (aq)	<1 µg/l	TIVITO		<1	@#			
2,4,5-Trichlorophenol (aq)	<1 ug/l	TM176	<u>@</u> #	<1	@#			
2,4,5-Trichiorophenoi (aq)	<1 µg/l	TIVITO			@#			
2.4.6 Trichlorophonol (cg)	<1 ug/l	TM176	<u>@</u> #	<1	@#			
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	< <u>~</u> @#		@#			
2.4 Diablerenhand (as)	<1.va/l	TM176	<2		<u>@</u> #			
2,4-Dichlorophenol (aq)	<1 µg/l	TIVITO		<1	@#			
0.4 Dissetted be sel ()	44	TM470	@#		@#			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<2 @#	<1	@#			
2.4 Dinitratal (as)	24 · · - II	TN4470	@#		@#			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
2.6 Dinitratalisana (as)	24 11	TN4470	@#		@#			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>	offer any other use.		
2 Ohlanan anhthalana (an)	44	TM470	@#	-4	@#	112		
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<2	<1	ο μ	othe.		
0.011	-4 ()	T14470	@#	.4	@#	14.10)		
2-Chlorophenol (aq)	<1 µg/l	TM176	<2	<1	O #	official		
	4 "	T14470	@#	,	@#	2/0		
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<2	<1 Option	50.13			
	4 "	T14470	@#					
2-Methylphenol (aq)	<1 µg/l	TM176	<2	apectical Daylier	·			
0.5111	4 "	T14470	@#	26. OH	@#			
2-Nitroaniline (aq)	<1 µg/l	TM176	<2	inspet on	. "			
	4 "	T14470	<u>@#</u>	insperon	@#			
2-Nitrophenol (aq)	<1 µg/l	TM176	<2	0 % <1	O "			
0.10	-4 ()	T14470	@#		@#			
3-Nitroaniline (aq)	<1 µg/l	TM176	<2 cm @#	<1	O "			
45	4 "	T14470	CO113 @#		@#			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	^ 2	<1	O "			
4011 0 11 17	-4 "	T14470	@#		@#			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<2	<1	O "			
4.011	4 "	T14470	@#		@#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<2	<1				
4011	4 "	T14470						
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<2	<1	ο μ			
4 Mothylphosel (ag)	24 11	TN4470	@#		@#			
4-Methylphenol (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
4 Nitrophiling ()	2A B	T14470	@#		@#			
4-Nitroaniline (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
4 Nitrophonel (cg)	ا/م.٠٠/	TM476	@#		@#			
4-Nitrophenol (aq)	<1 µg/l	TM176	<2	<1				
Azohonzono (cz.)	24 #	TN4470	٠٥	-4	-			
Azobenzene (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
Acamanhthulara (as)	2A B	TM176	@# <2	<1	@#			
Acenaphthylene (aq)	<1 µg/l	TIVIT76			@#			
Aconomistans (25)	24 11	TN4470	@#		@#			
Acenaphthene (aq)	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
Anthropono (ca)	۸ ۱۱	TN4470	@# <2	<1	@#			
Anthracene (aq)	<1 µg/l	TM176			@ <u>"</u>			
his/2 Chloroothy/lather (ar)	ا/م.٠٠/	TM476	@#	<1	@#			
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<2		@ <u>"</u>			
hio/2 Chloroethaus/meth	24 #	TN4470	@#		@#			
bis(2-Chloroethoxy)methane	<1 µg/l	TM176	<2	<1	@ <u>"</u>			
(aq)	-0 "	T14470	@#	<2	@#			
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<4		@ <u>"</u>			
Putulbonaul phihalaia /\	24 · · - II	TN4470	@#	<1	@#			
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<2 @#		@#			
Ponzo(a)anthrocono (an)	ا/م.٠٠/	TM476	@#		w #			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<2	<1	@ //			
40.40.05.04/00/0045			@#	<u> </u>	@#	Į.		
10:46:05 24/09/2019								

P1788 South & West KeReport Number: Z1657 Superseded Report: 522624 521626 SDG: 190907-95 Client Reference: South & South Z1657 Location:

SVOC MS (W) - Aqueous	s							
Results Legend # ISO17025 accredited.		Customer Sample Ref.	SW01 Dingle	SW02 Dingl	е			
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Surface Water (SW)	0.00 - 0.00 Surface Water (
* Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled	04/09/2019	04/09/2019				
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi		Sample Time Date Received	07/09/2019	07/09/2019	ı			
compounds within samples aren't corrected f recovery	for the	SDG Ref	190907-95	190907-95				
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20675956	20675970				
Component	LOD/Unit							
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<2 @#	<1	@#			
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<u>ω</u> #	<1	ω π			
()	1.0		@#		@#			
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<2	<1				
D(- b. i)()	44	TM470	@#	-4	@#			
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<2 @#	<1	@#			
Carbazole (aq)	<1 µg/l	TM176	<2	<1	<u></u>			
			@#		@#			
Chrysene (aq)	<1 µg/l	TM176	<2	<1	0 "			
Dibenzofuran (aq)	<1 µg/l	TM176	@ # <2	<1	@#			
5.50nzoraran (uq)	- 1 μg/l	1111170	~² @#]	@#			
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<2	<1				
	<u> </u>		@#		@#			
Diethyl phthalate (aq)	<1 µg/l	TM176	<2	<1	@ #			
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	@ # <2	<1	@#			
Bibonzo(a,n)antinacióno (aq)	T pg/	110	@#		@#	, 115°.		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<2	<1		ather		
	- "	=111=2	@#	_	@#	74. 254 O.		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<10 @#	<5	@# <u></u>	only, any other user		
Fluoranthene (aq)	<1 µg/l	TM176	<2	<1	@#	20 ,		
1 10010110110 (04)	. 149		_ @#	Q	TIPO II			
Fluorene (aq)	<1 µg/l	TM176	<2	inspection of the control of the con	5			
	.4 ()	T14470	@#	Vales OM,	@#			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<2 മഷ	insort <1	@#			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<2	OR <1	<u>@</u> "			
			@#		@#			
Pentachlorophenol (aq)	<1 µg/l	TM176	<2 Self	<1				
Phenol (aq)	<1 µg/l	TM176	<2 (2) (2) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	<1				
Thonor (aq)	T pg/	110						
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<2	<1				
	.4 ()	T14470	@ # <2	<1	@#			
Hexachloroethane (aq)	<1 µg/l	TM176	<2 @#		@#			
Nitrobenzene (aq)	<1 µg/l	TM176	<2	<1	<u>@</u> "			
			@#		@#			
Naphthalene (aq)	<1 µg/l	TM176	<2	<1	0 "			
Isophorone (aq)	<1 µg/l	TM176	@ # <2	<1	@#			
ισοριισιστισ (αη)	- 1 μg/l	TIVITIO	~z @#		@#			
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	<2	<1				
D			_					
Phenanthrene (aq)	<1 µg/l	TM176	<2 @#	<1	@#			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<2	<1	w #			
() / (@#		@#			
Pyrene (aq)	<1 µg/l	TM176	<2	<1	_			
	1		@#		@#		-	
								



SDG: P1788 South & West KeReport Number: Z1657 Superseded Report: 522624 521626 190907-95 Client Reference: South & Drder Number: Location:

Results Legend 7028 accredited. ERTS accredite	or the sal	ustomer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received	SW01 Dingle 0.00 - 0.00 Surface Water (SW 04/09/2019	/)	SW02 Dingle 0.00 - 0.00 Surface Water (\$					
sous / settled sample. lowled / filtered sample. li / unfiltered sample. li / unfiltered sample. contracted - refer to subcontractor report for editation status. covery of the surrogate standard to check is ency of the method. The results of individu. pounds within samples aren't corrected for very ger breach confirmed pile devisition (see appendix)	the ual	Sample Type Date Sampled Sample Time	Surface Water (SW	<i>I</i>)						
contracted - refer to subcontractor report for editation status. covery of the surrogate standard to check iency of the method. The results of individu pounds within samples aren't corrected for very every ger breach conf	the ual	Sample Type Date Sampled Sample Time	Surface Water (SW	/)						
editation status. covery of the surrogate standard to check incovery of the method. The results of individu pounds within samples aren't corrected for very experience of the confirmed pile deviation (see appendix)	the ual	Sample Time	04/09/2019			SW)				
iency of the method. The results of individu pounds within samples aren't corrected for very ger breach confirmed pile deviation (see appendix)	ıal				04/09/2019					
very ger breach confirmed ple deviation (see appendix) 1t	uie		07/09/2019		07/09/2019					
ple deviation (see appendix)		SDG Ref	190907-95 20675956		190907-95 20675970					
		Lab Sample No.(s) AGS Reference	20070300		20070070					
oromethane**	LOD/Units	Method								
	%	TM208	115		108					
4.4				2		2				
**	%	TM208	100		99.5	•				
				2		2				
orobenzene**	%	TM208	99.2	٦	98	^				
	.4 ()	T14000		2	.4	2				
uoromethane	<1 µg/l	TM208	<1	2	<1	2				
ane	<1 µg/l	TM208	<1	2	<1	2				
ane	×1 μg/1	TIVIZOO	~1	2#	~1	2#				
de	<1 µg/l	TM208	<1	Δπ	<1	Δπ				
	11 µ 9/1	TWIZOO	- 1	2#	71	2#				
ane	<1 un/l	TM208	<1	<u>-</u> π	<1	- π				
	· ۳3″			2#	*1	2#				
ne	<1 un/l	TM208	<1		<1	- "				
	. L.D.,	"	•	2#	•	2#				
oromethane	<1 µg/l	TM208	<1		<1					
	1.3			2#		2#				
pethene	<1 µg/l	TM208	<1		<1					
				2#		2#	115°.			
ılphide	<1 µg/l	TM208	<1		<1		net.			
				2#		2#	Oli			
thane	<3 µg/l	TM208	<3		<3		जाति यह			
				2#		2#	Los			
ary butyl ether	<1 µg/l	TM208	<1		<1	1003.1	2 ^C			
				2#	QÚ.) (8) (A)				
chloroethene	<1 µg/l	TM208	<1		igh of	1				
				2#	Secr. Mir	2#				
pethane	<1 µg/l	TM208	<1		instit <1					
					1116	2#				
loroethene	<1 µg/l	TM208	<1	ی ک	% , <1					
				23#		2#				
propane	<1 µg/l	TM208	<1 set	,	<1	^				
	4 "	T11000	Con	2		2				
omethane	<1 µg/l	TM208	₹1	۰	<1	о 4				
	44 //	TMOOO		2#	-4	2#				+
	<1 µg/I	1 M208	<1	2.4	<1	0.4				
oroothono	<1 ug/l	TMOOO		2#	-/1	Z #				
Didethane	<1 μg/1	TIVIZUO	\ 1	2#	\ 1	2#				
nronene	<1//	TM208	<1	Δπ	<1	Δ 11				
эргороло	· Pg/	1111200	.,	2#	•	2#				
chloride	<1 µa/l	TM208	<1		<1	- "				
	F 30.		•	2#	•	2#				
pethane	<1 µg/l	TM208	<1		<1					
				2#		2#				
	<1 µg/l	TM208	<1		<1					
				2#		2#				
iene	<1 µg/l	TM208	<1		<1					
				2#		2#				
propane	<1 µg/l	TM208	<1		<1					
				2#		2#				
thane	<1 µg/l	TM208	<1	Ţ	<1					
		<u> </u>		2#		2#				
oromethane	<1 µg/l	TM208	<1	ایا	<1					
				2#		2#				+
lloropropene	<1 µg/l	1M208	<1		<1	.				
		T1 1000		2#		2#				
	<1 µg/l	1M208	<1	١,,	<1	٥.,				
iahla san sa a a a	-A "	T14000	.,	2#		2#			+	+
cnioropropene	<1 µg/l	1M208	<1	2 4	<1	о 4				
oroothana	∠4#	TMADOO		∠#	-4	Z #				+
oroethane	<1 µg/l	ΙΝΙΖUδ	<]	2#	<1	2#				
nronane	<1 ua/l	OUCIVIT.		4 #	-1	<i>L</i> #			1	
γρι υμαι ι σ	~ ι μg/ι	I IVIZUO	\1	2#	<u> </u>	2#				
	promethane ethene liphide hane liry butyl ether chloroethene ethane loroethene propane propene chloride ethane ethane lary butyl ether chloroethene ethane loroethene propane chloride ethane	Interest	Image	Interest	Second Content	Second Parison	TM208 Section Sectio	ane	ane	ane

P1788 South & West KeReport Number: Z1657 Superseded Report: 522624 521626 SDG: 190907-95 Client Reference: South & South Z1657 Location:

VOC MS (
	Results Legend 25 accredited.		Customer Sample Ref.	SW01 Dingle	SW02 Dingl	е			
aq Aqueous diss.filt Dissolve tot.unfilt Total / ur * Subconti accredita ** % recove	'S accredited. sr / settled sample. red / filtered sample. unfiltered sample. stracted - refer to subcontractor report fraction status. very of the surrogate standard to check cy of the method. The results of individ	the	Depth (m) Sample Type Date Sampled Sample Time Date Received	0.00 - 0.00 Surface Water (SW) 04/09/2019 	0.00 - 0.00 Surface Water (04/09/2019 07/09/2019	(SW)			
compour recovery (F) Trigger b	unds within samples aren't corrected for		SDG Ref Lab Sample No.(s) AGS Reference	190907-95 20675956	190907-95 20675970				
Component Tetrachloroeth	hene	LOD/Unit <1 µg/l		<1	<1				
Dibromochloro	omethane	<1 µg/l	TM208	2 # <1 2 #	<1	2#			
1,2-Dibromoet	thane	<1 µg/l	TM208	<1 2#	<1	2#			
Chlorobenzene	ne	<1 µg/l	TM208	<1 2#	<1	2#			
1,1,1,2-Tetracl	chloroethane	<1 µg/l	TM208	<1 2#	<1	2#			
Ethylbenzene	1	<1 µg/l	TM208	<1 2#	<1	2#			
m,p-Xylene		<1 µg/l		<1 2#	<1	2#			
o-Xylene		<1 µg/l		<1 2#	<1	2#			
Styrene Bromoform		<1 µg/l		<1 2 # <1	<1	2#			
Isopropylbenze	zene	<1 µg/l		2# <1	<1	2#	net 115°C.		
1,1,2,2-Tetracl		<1 μg/l		2#	<1	2#	all aryoth		
1,2,3-Trichloro		<1 μg/l		2 # <1	<1	2# 1170 iii	officially offer ise		
Bromobenzene	ne	<1 µg/l	TM208	2 # <1	ection of	_0#			
Propylbenzene	ie	<1 µg/l	TM208	2 # <1	1112 111 <1				
2-Chlorotoluen	ne	<1 µg/l	TM208	2# <1 2#	OP <1	2#			
1,3,5-Trimethy	ylbenzene	<1 µg/l	TM208	<1 consent	<1	2#			
4-Chlorotoluen	ne	<1 µg/l	TM208	<1 2#	<1	2#			
tert-Butylbenze	zene	<1 µg/l	TM208	<1 2#	<1	2#			
1,2,4-Trimethy	ylbenzene	<1 µg/l	TM208	<1 2#	<1	2#			
sec-Butylbenzo		<1 µg/l		<1 2#	<1	2#			
4-iso-Propyltol		<1 µg/l		<1 2#	<1	2#			
1,3-Dichlorobe		<1 µg/l		<1 2#	<1	2#			
1,4-Dichlorobe		<1 µg/l		<1 2 #	<1	2#			
n-Butylbenzen 1,2-Dichlorobe		<1 µg/l		<1 2#	<1	2#			
	3-chloropropane	<1 μg/l		2# <1	I	2#			
1,2,4-Trichloro		<1 μg/l		<1 2	<1	2			
Hexachlorobut		<1 µg/l		2#	<1	2#		1	
	hyl ether (TAME)	<1 μg/l		2 # <1	I	2#			
Naphthalene		<1 µg/l	TM208	2 # <1	<1	2#			
1,2,3-Trichloro	obenzene	<1 µg/l	TM208	2 # <1	<1	2#			
				2#		2#		1	

Validated

CERTIFICATE OF ANALYSIS



P1788 South & West KeReport Number: Z1657 Superseded Report: 522624 521626 SDG: 190907-95 Client Reference: South & South Z1657 Location:

VOC I	MS (W)							
. 551	Results Legend		Customer Sample Ref.	SW01 Dingle	SW02 Dingle			
# M	Results Legend ISO17025 accredited. mCERTS accredited.		Cuctomor Cumple Non	SW01 Diligie	SW02 Diligie			
aq	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00			
tot.unfilt	Total / unfiltered sample.		Sample Type	Surface Water (SW)	Surface Water (SW)			
	Subcontracted - refer to subcontractor report accreditation status.		Date Sampled	04/09/2019	04/09/2019			
**	% recovery of the surrogate standard to check efficiency of the method. The results of individuals of the standard to check efficiency of the surrogate standard	k the dual	Sample Time Date Received	07/09/2019	07/09/2019			
	compounds within samples aren't corrected for recovery	or the	SDG Ref	190907-95	190907-95			
(F)	Trigger breach confirmed Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20675956	20675970			
Compo		LOD/Unit	ts Method					
	ichlorobenzene	<1 µg/		<1	<1			
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SDG: 190907-95 Client Reference: P1788 South & South &

Notification of NDPs (No determination possible)

Date Received: 07/09/2019 12:40:21

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
20675956	SW01 Dingle	0.00 - 0.00	Coliforms (W)	See Comments for cancellation details
20675970	SW02 Dingle	0.00 - 0.00	Coliforms (W)	See Comments for cancellation details

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SDG: 190907-95 Client Reference: P1788 South & South &

Table of Results - Appendix

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								
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter								
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								
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser								
TM107	ISO 6060-1989	Determination of Chemical Oxygen Demand using COD Dr Lange Kit								
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter								
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS								
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters								
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS								
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry								
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers								
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								
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate								
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter Determination of Selected Pesticides (Suite I) in Liquids by GCMS								
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of Selected Pesticides (Suite I) in Liquids by GCMS								
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS								
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS Petermination of selected pesticides (Suite III) by GCMS Acid Herbs in Water by GCMS								
TM411	Acid Herbs GCMS	Acid Herbs in Water by GCMS								

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).





 SDG:
 190907-95
 Client Reference:
 P1788 South & South & Report Number:
 522624

 Location:
 South & Amp; West Kerry LarOrder Number:
 Z1657
 Superseded Report:
 521626

Test Completion Dates

	_	162
Lab Sample No(s)	20675956	20675970
Customer Sample Ref.	SW01 Dingle	SW02 Dingle
AGS Ref.		
Depth	0.00 - 0.00	0.00 - 0.00
Туре	Surface Water	Surface Water
Acid Herbicides by GCMS	12-Sep-2019	12-Sep-2019
Alkalinity as CaCO3	15-Sep-2019	15-Sep-2019
Ammoniacal Nitrogen	12-Sep-2019	12-Sep-2019
Anions by Kone (w)	13-Sep-2019	13-Sep-2019
BOD True Total	12-Sep-2019	12-Sep-2019
COD Unfiltered	11-Sep-2019	11-Sep-2019
Conductivity (at 20 deg.C)	11-Sep-2019	11-Sep-2019
Cyanide Comp/Free/Total/Thiocyanate	12-Sep-2019	12-Sep-2019
Dissolved Metals by ICP-MS	16-Sep-2019	16-Sep-2019
Dissolved Oxygen by Probe	12-Sep-2019	12-Sep-2019
Fluoride	09-Sep-2019	11-Sep-2019
Mercury Dissolved	11-Sep-2019	11-Sep-2019
Mineral Oil C10-40 Aqueous (W)	18-Sep-2019	16-Sep-2019
PCB Congeners - Aqueous (W)	16-Sep-2019	16-Sep-2019
Pesticides (Suite I) by GCMS	13-Sep-2019	13-Sep-2019
Pesticides (Suite II) by GCMS	13-Sep-2019	13-Sep-2019
Pesticides (Suite III) by GCMS	12-Sep-2019	12-Sep-2019
pH Value	12-Sep-2019	12-Sep-2019
Phosphate by Kone (w)	11-Sep-2019	11-Sep-2019
Suspended Solids	12-Sep-2019	12-Sep-2019
SVOC MS (W) - Aqueous	24-Sep-2019	18-Sep-2019
Total Metals by ICP-MS	14-Sep-2019	14-Sep-2019
Total Organic and Inorganic Carbon	11-Sep-2019	11-Sep-2019
VOC MS (W)	17-Sep-2019	17-Sep-2019

14-Sep-2019
11-Sep-2019
17-Sep-2019
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SDG: 190907-95 Client Reference: Location: South & Kerry Landfills Order Number:

 P1788 South & Dr. WestReport Number:
 522624

 Z1657
 Superseded Report:
 521626

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 the representative sub sample from the received sample.
- 11. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19. Asbestos

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

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres sing 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	White Asbests
Amosite	Brown Asbestos
Cro a dolite	Blue Asbe stos
Fibrous Actinolite	-
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 μ m diameter, longer than 5 μ 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 (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.

EPA Export 09-10-2021:02:56:56

10:46:21 24/09/2019 Modification Date: 24/09/2019



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

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:25 September 2019Customer:Fehily TimoneySample Delivery Group (SDG):190907-96

Your Reference:

Location:

P1788 South & Description:

South & Description:

South & Description:

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Report No: 522869

We received 3 samples on Saturday September 07, 2019 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 25, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

Chemical testing (unless subcontracted) performed at ALSCLife 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:

Sonia McWhan
Operations Manager







SDG: 190907-96 P1788 South & West KeReport Number: 522869 Client Reference: Location: South & amp; West Kerry Lar Order Number: Z1657 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
20676026	BH01 Dingle		0.00 - 0.00	04/09/2019
20676057	BH02 Dingle		0.00 - 0.00	04/09/2019
20676079	BH02 Milltown		0.00 - 0.00	04/09/2019

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.

15.6

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.



SDG: P1788 South & Dest KeReport Number: 190907-96 Client Reference: 522869 South & amp; West Kerry Lar Order Number: Z1657 Superseded Report: Location: Results Legend 20676026 20676057 20676079 Lab Sample No(s) X Test No Determination Possible BH02 Milltown BH01 Dingle BH02 Dingle Customer 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 SA - Saline Water Depth (m) TE - Trade Effluent - 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 0.5l glass bottle (ALE227) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) H2SO4 (ALE244) 0.5l glass bottle (ALE227) H2SO4 (ALE244) 0.5l glass bottle (ALE227) H2SO4 (ALE244) HNO3 Filtered (ALE204) NaOH (ALE245) 500ml Plastic (ALE208) HNO3 Filtered (ALE204) HNO3 Filtered (ALE204) 500ml Plastic (ALE208) NaOH (ALE245) 500ml Plastic (ALE208) DW - Drinking Water Non-regulatory Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other GW GW Sample Type GW GW GΜ GW GΜ GW GW GW GW GW GW GW GW GW G۷ G۷ GW Acid Herbicides by GCMS All NDPs: 0 Tests: 3 X Χ Alkalinity as CaCO3 All NDPs: 0 Tests: 3 Χ Х X Ammoniacal Nitrogen All NDPs: 0 Tests: 3 Х Х Anions by Kone (w) ΔII NDPs: 0 Tests: 3 X X Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 3 Х Х Х Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 3 X Χ Dissolved Metals by ICP-MS All NDPs: 0 Tests: 3 X Χ Χ Dissolved Oxygen by Probe All NDPs: 0 Tests: 3 Χ Х Χ Fluoride All NDPs: 0 Tests: 3 X X X Mercury Dissolved All NDPs: 0 Tests: 3 X Х Х Mineral Oil C10-40 Aqueous (W) All NDPs: 0 Tests: 3 Х Х Х PCB Congeners - Aqueous (W) All NDPs: 0 Tests: 3 Х Х Х Pesticides (Suite I) by GCMS All NDPs: 0 Tests: 3 Х Χ Х Pesticides (Suite II) by GCMS All NDPs: 0 Tests: 3 Χ Χ Х Pesticides (Suite III) by GCMS All NDPs: 0 Tests: 3 X X X

	20676079
	BH02 Milltown
	0.00 - 0.00
NaOH (ALE245)	Vial (ALE297)
GW	GW
X	

Consent of copyright owner required for any other use.

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: P1788 South & Dest KeReport Number: 190907-96 Client Reference: 522869 Location: South & amp; West Kerry Lar Order Number: Z1657 Superseded Report: **Results Legend** 20676026 20676057 20676079 Lab Sample No(s) X Test No Determination Possible BH02 Milltown **BH01 Dingle BH02** Dingle Customer 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 SA - Saline Water Depth (m) TE - Trade Effluent 0.00 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water HNO3 Unfiltered (ALE204) HNO3 Filtered (ALE204) H2SO4 (ALE244) 0.5l glass bottle (ALE227) HNO3 Unfiltered (ALE204) 0.5l glass bottle (ALE227) HNO3 Unfiltered (ALE204) 0.5l glass bottle (ALE227) H2SO4 (ALE244) H2SO4 (ALE244) HNO3 Filtered (ALE204) NaOH (ALE245) 500ml Plastic (ALE208) HNO3 Filtered (ALE204) NaOH (ALE245) DW - Drinking Water Non-regulatory 500ml Plastic (ALE208) 500ml Plastic (ALE208) Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other Sample Type GW pH Value All NDPs: 0 Х X Х All Phosphate by Kone (w) NDPs: 0 Tests: 3 Х Х Χ Suspended Solids All NDPs: 0 Tests: 3 Χ Х Х or in SVOC MS (W) - Aqueous All NDPs: 0 Tests: 3 Х Х Total Dissolved Solids All NDPs: 0 Tests: 3 Χ X Χ Total Metals by ICP-MS All NDPs: 0 Tests: 3 X X Х Total Organic and Inorganic Carbon All NDPs: 0 Tests: 3 Χ Χ X VOC MS (W) All NDPs: 0 Tests: 3 Х Х

	20676079
	BH02 Milltown
	0.00 - 0.00
NaOH (ALE245)	Vial (ALE297)
_	
GW	GW

Consent of copyright owner required for any other use.

522869

CERTIFICATE OF ANALYSIS

SDG: 190907-96 Client Reference: South & Drder Number: Location:

P1788 South & West KeReport Number: Z1657 Superseded Report:

Results Legend		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
* Subcontracted - refer to subcontractor report accreditation status.	for	Sample Type Date Sampled	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019		
** % recovery of the surrogate standard to check efficiency of the method. The results of individ	the fual	Sample Time Date Received	07/09/2019	07/09/2019	07/09/2019		
compounds within samples aren't corrected for recovery	or the	SDG Ref	190907-96	190907-96	190907-96		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20676026	20676057	20676079		
Component	LOD/Un				-		
Suspended solids, Total	<2 mg	/I TM022	344 #	43.4 #	<2 #		
Alkalinity, Total as CaCO3	<2 mg	/I TM043	130	135	25.5		
	Ĭ		#	#	#		
Oxygen, dissolved	<0.3 m	g/l TM046	9.24	8.71	9.23		
Organic Carbon, Total	-2 ma	/I TM090	<3	<3	<3		
Organic Carbon, Total	<3 mg	/1 110000	@#	-5	, , ,		
Ammoniacal Nitrogen as N	<0.2 m	g/l TM099	<0.2	0.402	<0.2		
			#	#	#		
Fluoride	<0.5 m	g/l TM104	<0.5 #	<0.5 #	<0.5 #		
Conductivity @ 20 deg.C	<0.00	5 TM120	0.356	0.365	0.235		
, , , , , , , , , , , , , , , , , , , ,	mS/cm		#	#	#		
Dissolved solids, Total (meter)	<5 mg	/I TM123	278	284	184		
A (P . CH)	-0.5	" TM450	#	#	#		
Arsenic (diss.filt)	<0.5 µ	g/l TM152	3.06 #	<0.5 #	<0.5 #		
Barium (diss.filt)	<0.2 µ	g/l TM152	34.4	9.82	2.85		
			#	#	JS ^Q #		
Boron (diss.filt)	<10 μί	g/l TM152	14.1	13.5	22.2 et #		
Cadmium (diss.filt)	<0.08 µ	ıa/l TM152	0.112	<0.08	oil ³ a ² 0.08		
Caumum (diss.iiit)	√0.00 μ	10/132	U.112 #	11	511 0 0.00 #		
Chromium (diss.filt)	<1 µg	/I TM152	3.56	<1 purposition			
			#	<1 70 14 1 2 14 1	#		
Copper (diss.filt)	<0.3 µ	g/l TM152	16.7 #	cit258 et ,	1.79 #		
Lead (diss.filt)	<0.2 µ	g/l TM152	32.3	tight 0.2	<0.2		
	5 p.	5	#0	#	#		
Manganese (diss.filt)	<3 µg	/I TM152	506	3690	45.3		
Phosphorus (tot.unfilt)	<20 µg	g/l TM152	663	79.5	23.9		
Priospriorus (tot.uniiit)	\20 μί	g/i 11V1152	663 ent #	19.5	23.9		
Nickel (diss.filt)	<0.4 µ	g/l TM152	2.01	0.886	1.58		
			#	#	#		
Phosphorus (diss.filt)	<10 µç	g/l TM152	341 #	<10	<10		
Selenium (diss.filt)	<1 µg	/I TM152	<1	# <1	# <1		
Coloniam (Glocimy)	. 43		. #	. #	. #		
Thallium (diss.filt)	<2 µg	/I TM152	<2	<2	<2		
Zina (dina fila)	z1	/I TM152	14.8	12.6	13.7		
Zinc (diss.filt)	<1 µg	/1 1101152	14.0	12.0	13.7		
Sodium (Dis.Filt)	<0.076 r	ng/l TM152	22.8	25.2	38.4		
			#	#	#		
Magnesium (Dis.Filt)	<0.036 r	ng/l TM152	10.9 #	7.87 #	10.5 #		
Potassium (Dis.Filt)	<0.2 m	g/l TM152	1.51	1.25	2.05		
			#	#	#		
Calcium (Dis.Filt)	<0.2 m	g/l TM152	37.1	34.9	6.01		
Iron (Dis Filt)	<0.019 r	ng/l TM152	4.94	0.0857 #	0.0269		
Iron (Dis.Filt)	\U.U191	ng/i IIVI15Z	4.94	0.0857	0.0269		
Mineral oil >C10 C40 (aq)	<100 µ	g/l TM172	<100	<100	<100		
Mercury (diss.filt)	<0.01 µ	ıg/l TM183	0.0324	<0.01	<0.01		
Phosphate (Ortho as PO4)	<0.05 m	ng/l TM184	4 <0.05	<0.05	<0.05		
	.0.0011		¥.0.05	\0.03 #	40.05	 	
Chloride	<2 mg	/I TM184	39.6	42.6	43.8		
Total Ocidina (Alii	.0.4	-/I This	#	#	2.02		
Total Oxidised Nitrogen as N	<0.1 m	g/l TM184	2.39 #	0.104 #	3.62 #		
Sulphate (soluble) as S	<1 mg	/I TM184	3.37	2.97	6.7		
			#	#	#		
09:17:33 25/09/2019							



SDG: 190907-96 Location:

Client Reference: South & Drder Number:

P1788 South & West KeReport Number: Z1657 Superseded Report:

522869

Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
* Subcontracted - refer to subcontractor report	for	Sample Type Date Sampled	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019		
accreditation status. ** % recovery of the surrogate standard to check	k the	Sample Time					
efficiency of the method. The results of individ compounds within samples aren't corrected for		Date Received	07/09/2019	07/09/2019	07/09/2019		
recovery		SDG Ref Lab Sample No.(s)	190907-96 20676026	190907-96 20676057	190907-96 20676079		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		AGS Reference					
Component	LOD/Units	1					
PCB congener 28	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
50	0.045	71407	0.045	2.245	0.045		
PCB congener 52	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
DOD 404	.0.045 //	T14407	.0.045	.0.045	.0.045		
PCB congener 101	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
DOD	40.045	TM407	-0.045	40.045	40.04E		
PCB congener 118	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
DCD congener 139	<0.01E	I TM197	<0.015	<0.01E	<0.015		
PCB congener 138	<0.015 µg/	I INITE	<0.015	<0.015	<0.015		
PCB congener 153	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
POB congener 199	<0.015 μg/i	1 1101197	\0.013	V0.013	V0.013		
PCB congener 180	<0.015 µg/	I TM197	<0.015	<0.015	<0.015		
1 OD CONGENE 100	-υ.υ ιο μg/l	1101131	~U.U1J	\0.010	\U.U.IJ		
Sum of detected EC7 PCB's	<0.105 µg/	I TM197	<0.105	<0.105	<0.105		
Out of defended FOLS	-0.105 μg/l	1101131	N. 100	×0.103	N. 100		
Cyanide, Total	<0.05 mg/l	TM227	<0.05	<0.05	<0.05		
-,	0.00 mg/l	1111221	\0.05 #	40.03	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
pH	<1 pH Units	TM256	6.71	6.7	6.53		
	. p. / Omite		#	#	15#		
Trifluralin	<0.01 µg/l	TM343	<0.01	<0.01	<0.0Her		
					Oli		
alpha-HCH	<0.01 µg/l	TM343	<0.01	<0.01	11 al<0.01		
'	'			يعي	on 250.01		
gamma-HCH (Lindane)	<0.01 µg/l	TM343	<0.01	<0.01 rolling	<0.01		
,	'			<0.01 Purpositi			
Heptachlor	<0.01 µg/l	TM343	<0.01	Decito 011st to	<0.01		
'				Decraying			
Aldrin	<0.01 µg/l	TM343	<0.01	High 0.01	<0.01		
			¢.C	Nilo			
beta-HCH	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
			્રે				
Isodrin	<0.01 µg/l	TM343	<0.01 sent	<0.01	<0.01		
			COTT				
delta-HCH	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
Heptachlor epoxide	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
o,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
Endosulphan I	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
. 011	.0.04	71.0.0	2.24	2.24	2.24		
cis-Chlordane	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
/ DDF	-0.04 "	Th40.40	40.04	10.04	40.04		
p,p'-DDE	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
Dioldrin	Z0.04 · · · · *	TMOAD	-0.01	-0.04	<0.01		
Dieldrin	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
o n' DDD /TDE\	ZO 04"	TM343	<0.01	<0.01	<0.01	-	
o,p'-DDD (TDE)	<0.01 µg/l	1101343	\U.U 1	\U.U1	\U.U1		
Endrin	<0.01 µg/l	TM343	<0.02	<0.01	<0.02		
Lituini	-υ.υ ι μg/ι	1 IVIO43	~ 0.02	\U.U1	\U.UZ		
o,p'-DDT	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
J., P DD 1	-0.01 µg/l	I IVIO+O	~0.01	\0.01	₹0.01		
p,p'-DDD (TDE)	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
F,P 555 (15L)	.o.o i µg/i	11040	·0.01	٠٠.٥١	١٥.٥٠		
Endosulphan II	<0.02 µg/l	TM343	<0.02	<0.02	<0.02		
	J.02 µg/i		3.02	3.02	3.02		
p,p'-DDT	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
1		1 1					
o,p'-Methoxychlor	<0.01 µg/l	TM343	<0.01	<0.01	<0.01		
	· •	<u></u>					



SDG: 190907-96 Location:

Client Reference: South & Drder Number:

P1788 South & West KeReport Number: Z1657 Superseded Report: Z1657

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Results Legend		Customer Sample Ref.	DIM Pini	DUO DI	DI 100 Millio	1	
# ISO17025 accredited. M mCERTS accredited.		Customer Sample Ker.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report	for	Sample Type Date Sampled	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019		
accreditation status. ** % recovery of the surrogate standard to check efficiency of the method. The results of individe		Sample Time					
compounds within samples aren't corrected for		Date Received SDG Ref	07/09/2019 190907-96	07/09/2019 190907-96	07/09/2019 190907-96		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20676026	20676057	20676079		
Component	LOD/Units						
p,p'-Methoxychlor	<0.01 µg/	/I TM343	<0.01	<0.01	<0.01		
Endosulphan Sulphate	<0.02 µg/	/I TM343	<0.06	<0.02	<0.06		
Permethrin I	<0.01 µg/	/I TM343	<0.01	<0.01	<0.01		
Permethrin II	<0.01 µg/	/I TM343	<0.01	<0.01	<0.01		
1,3,5-Trichlorobenzene	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Hexachlorobutadiene	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
1,2,4-Trichlorobenzene	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
1,2,3-Trichlorobenzene	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Dichlorvos	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Dichlobenil	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Mevinphos	<0.01 µg/	/I TM344	<0.01	<0.01	<0.010		
Tecnazene	<0.01 µg/	/I TM344	<0.01	<0.01	ORT 200.01		
Hexachlorobenzene	<0.01 µg/	/I TM344	<0.01	<0.01 redii			
Demeton-S-methyl	<0.01 µg/	/I TM344	<0.01	ci80.0121	<0.01		
Phorate	<0.01 µg/	/I TM344	<0.01	right 0.01	<0.01		
Diazinon	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Triallate	<0.01 µg/	/I TM344	<0.01 ent	<0.01	<0.01		
Atrazine	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Simazine	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Disulfoton	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Propetamphos	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Chlorpyriphos-methyl	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Dimethoate	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Pirimiphos-methyl	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Chlorpyriphos	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Methyl Parathion	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Malathion	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Fenthion	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Fenitrothion	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Triadimefon	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Pendimethalin	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
Parathion	<0.01 µg/	/I TM344	<0.01	<0.01	<0.01		
		_					



SDG: 190907-96 Location:

Client Reference: South & Drder Number:

P1788 South & West KeReport Number: Z1657 Superseded Report: Z1657

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Results Legend		Customer Sample Ref.	DLI04 Dissail	D) 100 Diag (BH02 Milltown	1	
# ISO17025 accredited. M mCERTS accredited.		Customer Sample Ker.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report	for	Sample Type Date Sampled	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019	Ground Water (GW) 04/09/2019		
accreditation status. ** % recovery of the surrogate standard to check efficiency of the method. The results of individe		Sample Time					
compounds within samples aren't corrected for		Date Received SDG Ref	07/09/2019 190907-96	07/09/2019 190907-96	07/09/2019 190907-96		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20676026	20676057	20676079		
Component	LOD/Units	Method					
Chlorfenvinphos	<0.01 µg/l	I TM344	<0.01	<0.01	<0.01		
trans-Chlordane	<0.01 µg/l	I TM344	<0.01	<0.01	<0.01		
cis-Chlordane	<0.01 µg/l	I TM344	<0.01	<0.01	<0.01		
Ethion	<0.01 µg/l	I TM344	<0.01	<0.01	<0.01		
Carbophenothion	<0.01 µg/l	TM344	<0.01	<0.01	<0.01		
Triazophos	<0.01 µg/l	TM344	<0.01	<0.01	<0.01		
Phosalone	<0.01 µg/l	TM344	<0.01	<0.01	<0.01		
Azinphos methyl	<0.02 µg/	I TM344	<0.02	<0.02	<0.02		
Azinphos ethyl	<0.02 µg/	I TM344	<0.02	<0.02	<0.02		
Etridiazole	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Pentachlorobenzene	<0.01 µg/	I TM345	<0.01	<0.01	<0.010		
Propachlor	<0.01 µg/	I TM345	<0.01	<0.01	office at 0.01		
Quintozene (PCNB)	<0.01 µg/	I TM345	<0.01	<0.01 Purpolit	<0.01		
Omethoate	<0.01 µg/	I TM345	<0.01	ci50.01er	<0.01		
Propazine	<0.01 µg/	I TM345	<0.01	· Hart 0.01	<0.01		
Propyzamide	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Alachlor	<0.01 µg/	I TM345	<0.01 ent	<0.01	<0.01		
Prometryn	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Telodrin	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Terbutryn	<0.01 µg/	TM345	<0.01	<0.01	<0.01		
Chlorothalonil	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Etrimphos	<0.01 µg/	TM345	<0.01	<0.01	<0.01		
Metazachlor	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Cyanazine	<0.01 µg/	TM345	<0.01	<0.01	<0.01		
Trietazine	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Coumaphos	<0.01 µg/	I TM345	<0.01	<0.01	<0.01		
Phosphamidon I	<0.01 µg/	TM345	<0.01	<0.01	<0.01		
Phosphamidon II	<0.01 µg/	TM345	<0.01	<0.01	<0.01		
Dinitro-o-cresol	<0.1 µg/l	TM411	0.17	<0.1	<0.1		
Clopyralid	<0.04 µg/l	I TM411	<0.04	<0.04	<0.04		
MCPA	<0.05 µg/l	I TM411	<0.05	<0.05	<0.05		
Mecoprop	<0.04 µg/l	I TM411	<0.04	<0.04	<0.04		

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CERTIFICATE OF ANALYSIS



SDG: 190907-96 Client Reference: South & amp; West Kerry Lar Order Number: Location:

P1788 South & Dest KeReport Number:

Z1657 Superseded Report:

Results Legend
ISO17025 accredited.
mCERTS accredited.
Aqueous / settled sample.
Dissolved / filtered sample.
Total / unfiltered sample.
Subcontractor - refer to subcontractor report for accreditation status.
'% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery Customer Sample Ref. BH01 Dingle BH02 Dingle BH02 Milltown Depth (m) Sample Type 0.00 - 0.00 0.00 - 0.00 0.00 - 0.00 Ground Water (GW) Ground Water (GW) Ground Water (GW) 04/09/2019 04/09/2019 04/09/2019 Sample Time 07/09/2019 SDG Re 190907-96 190907-96 190907-96 20676026 20676057 20676079 Lab Sample No.(s) AGS Reference Component LOD/Units Method Dicamba <0.04 µg/l TM411 <0.04 <0.04 <0.04 MCPB TM411 <0.05 <0.05 <0.05 <0.05 µg/l 2,4-DB TM411 < 0.1 <0.1 <0.1 <0.1 µg/l TM411 < 0.05 <0.05 2,3,6-Trichlorobenzoic acid <0.05 µg/l <0.05 TM411 Dichlorprop <0.1 µg/l < 0.1 <0.1 < 0.1 <0.05 Triclopyr <0.05 µg/l TM411 < 0.05 <0.05 Fenoprop (Silvex) <0.1 µg/l TM411 <0.1 <0.1 <0.1 2,4-Dichlorophenoxyacetic acid <0.05 µg/l TM411 < 0.05 < 0.05 < 0.05 2,4,5-Trichlorophenoxyacetic <0.05 µg/l TM411 <0.05 <0.05 <0.05 acid TM411 <0.04 <0.04 <0.04 Bromoxynil <0.04 µg/l <0.040 TM411 <0.04 <0.04 Benazolin <0.04 µg/l ni 7 al < 0.05 TM411 <0.05 <0.05 loxynil <0.05 µg/l TM411 <0.04 Pentachlorophenol <0.04 µg/l < 0.04 < 0.04 cited. 1 er Fluoroxypyr <0.1 µg/l TM411 <0.1 <0.1

ALS

SDG: 190907-96 Client Reference: P1788 South & South &

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SVOC MS (W) - Aqueou Results Legend		Contamas Camala Dat						
# ISO17025 accredited.		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown			
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)			
* Subcontracted - refer to subcontractor repor accreditation status.	for	Date Sampled	04/09/2019	04/09/2019	04/09/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indiv	k the	Sample Time Date Received	07/09/2019	07/09/2019	07/09/2019			
compounds within samples aren't corrected recovery		SDG Ref	190907-96	190907-96	190907-96			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20676026	20676057	20676079			
Component	LOD/Units	Method						
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#	@#			
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#	@#			
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#				
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#				
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1			
0.40.7:11	4 "	T14470	@#	@#				
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	<1	<1			
0.4 Dishlassah anal (a.a.)	44 //	TM470	@#	@#				
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1 @#	<1 @#	<1			
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	@ # <1	@ # <1	@ # <1			+
د, ד-טוווופנוואוואוופווטו (ay)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1101170	@#	(# @#	1			
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<1	<1			
2,1 2 (44)	1 P9/1	1111110	@#	@#	1			
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	<1	<1			
,			@#	@#	œ#			
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	<1	<1 net			
			@#	@#	@#			
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	<1	0119 21121 @#			
			@#	@#	@#			
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	<1 ,003.	<1			
			@#	Jil @#	@#			
2-Methylphenol (aq)	<1 µg/l	TM176	<1	ison of a	<1			
			@#	@#				
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	1112 Ht <1	<1			
O Nitrophopol (pp)	44 //	TM176	<u>@</u> #C	00° <1	@ # <1			
2-Nitrophenol (aq)	<1 µg/l	TIVITO	@\#\	.% <1 	1			
3-Nitroaniline (aq)	<1 µg/l	TM176	(1 consent @#	<1	<1			
3-Mill darilline (aq)	×1 μg/1	1101170	Conser @#	`' @#	1			
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	Q , <u>g</u> .,	<1	<1			
. Dromophony,phony,outer (aq)	. 43		@#	@#	1			
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	<1	<1			
	, ,		@#	@#	@#			
4-Chloroaniline (aq)	<1 µg/l	TM176	<1	<1	<1			
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#				
4-Methylphenol (aq)	<1 µg/l	TM176	<1	<1	<1			
4 8 19 4 3			@#	@#				
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	<1	<1			
4 Nitrophonol />	-A : "	T14470	@#	@#				-
4-Nitrophenol (aq)	<1 µg/l	TM176	<1	<1	<1			
Azobenzene (aq)	<1 µg/l	TM176	<1	<1	<1			
, reonetizetie (ad)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1101170	<1 @#	(# @#	1			
Acenaphthylene (aq)	<1 µg/l	TM176	<1	<1	<1			
	- μ9/1	7	@#		1			
Acenaphthene (aq)	<1 µg/l	TM176	<1	<1	<1			
. , , , , ,			@#	@#				
Anthracene (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#				
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	<1	<1			
			@#	@#				
bis(2-Chloroethoxy)methane	<1 µg/l	TM176	<1	<1	<1			
(aq)			@#	@#				
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	<2	<2			
Dutable and state at a 1 1	ad : 11	T14470	@#	@#				-
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1 @#	<1 @#	<1 @#			
Benzo(a)anthracene (aq)	<1 µg/l	TM176	<1	<1	<1		l .	1
Bonzo(a)anunaoene (ay)	\ \ \ μg/ι	1101170	<1 @#	(# 	1			
09:17:33 25/09/2019			<u>w</u> #	<u>w</u> #	<u> </u>	ı		

P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190907-96 Client Reference: 522869 South & South Location:

SVOC MS (W) - Aqueou	s						
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
M mCERTS accredited. aq Aqueous / settled sample.							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)	0.00 - 0.00 Ground Water (GW)		
* Subcontracted - refer to subcontractor repor accreditation status.	for	Date Sampled	04/09/2019	04/09/2019	04/09/2019		
** % recovery of the surrogate standard to chec efficiency of the method. The results of indiv		Sample Time Date Received	07/09/2019	07/09/2019	07/09/2019		
compounds within samples aren't corrected recovery		SDG Ref	190907-96	190907-96	190907-96		
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	20676026	20676057	20676079		
Component	LOD/Unit						
Benzo(b)fluoranthene (aq)	<1 µg/l	TM176	<1	<1	<1		
Danza (Iv)fluoranthana (as)	<1 · · ~//	TM176	@# <1	@; <1	# <u>@</u> #		
Benzo(k)fluoranthene (aq)	<1 µg/l	TIVITO	@#	<u>`</u> (@;	1		
Benzo(a)pyrene (aq)	<1 µg/l	TM176	<1	<1	<1		
(- //-) (//	""		@#	@;	I		
Benzo(g,h,i)perylene (aq)	<1 µg/l	TM176	<1	<1	<1		
			@#	@;			
Carbazole (aq)	<1 µg/l	TM176	<1	<1	<1		
Chrysene (aq)	<1 µg/l	TM176	@# <1	@; <1	# @# <1		
Onlysene (aq)	ν μς/ι	1101170	@#	(0)	1		
Dibenzofuran (aq)	<1 µg/l	TM176	<1	<1	<1		
			@#	@;	1		
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	<1	<1		
District shift ()	.4 "	T14470	@#	@;			
Diethyl phthalate (aq)	<1 µg/l	TM176	<1 @#	<1 @;	<1 # @#		
Dibenzo(a,h)anthracene (aq)	<1 µg/l	TM176	<1	<1	<1		
Bibonzo(a,n)ananacono (aq)	T pg/	1111110	@#	@;	٠.		
Dimethyl phthalate (aq)	<1 µg/l	TM176	<1	<1	<1 other @#		
			@#	@;	# @#		
n-Dioctyl phthalate (aq)	<5 µg/l	TM176	<5	<5	5 150t at <5 @#		
[haranthana (an)	44	TM470	@#	@a	@#		
Fluoranthene (aq)	<1 µg/l	TM176	<1 @#	<1 TUTYO	<1 @#		
Fluorene (aq)	<1 µg/l	TM176	<1	: 19 of 190	<1		
(-4)			@#	Sectioning @			
Hexachlorobenzene (aq)	<1 µg/l	TM176	<1	1115 Jtt <1	<1		
			@#	@;			
Hexachlorobutadiene (aq)	<1 µg/l	TM176	<1	♂ ′ <1	<1		
Dentachlerenhenel (eg)	<1 ug/l	TM176	<1 consent	@; <1	# <u>@</u> #		
Pentachlorophenol (aq)	<1 µg/l	TIVITO	Conser	``			
Phenol (aq)	<1 µg/l	TM176	<1	<1	<1		
, <i>"</i>	, ,						
n-Nitroso-n-dipropylamine (aq)	<1 µg/l	TM176	<1	<1	<1		
	4 "	T14470	@#	@;			
Hexachloroethane (aq)	<1 µg/l	TM176	<1 @#	<1 @;	<1 # @#		
Nitrobenzene (aq)	<1 µg/l	TM176	<1	<1	<1		
(***/	יישיי		@#	@;		 	<u> </u>
Naphthalene (aq)	<1 µg/l	TM176	<1	<1	<1		
			@#	@;			
Isophorone (aq)	<1 µg/l	TM176	<1	<1	<1		
Hexachlorocyclopentadiene (aq)	<1 µg/l	TM176	@# <1	@ i	# <u>@</u> #		
	- 1 μg/l	IWIII	`'	,,	, "		
Phenanthrene (aq)	<1 µg/l	TM176	<1	<1	<1		
			@#	@;			
Indeno(1,2,3-cd)pyrene (aq)	<1 µg/l	TM176	<1	<1	<1		
Purono (ag)	24 ··-#	T84470	@# <1	@ i	# @# <1		
Pyrene (aq)	<1 µg/l	TM176	<1 @#	<1 @;	I		
		1	₩ #	, ,	₩ #		
					-		

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SDG: 190907-96 Client Reference: P1788 South & South &

VOC MS (W)							
Results Legend		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
# ISO17025 accredited. M mCERTS accredited.		· ·	Si io i Siligio	Si ioz Singio	5.102 11		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
tot.unfilt Total / unfiltered sample.	1600	Sample Type	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
* Subcontracted - refer to subcontractor repor accreditation status.		Date Sampled	04/09/2019	04/09/2019	04/09/2019		
** % recovery of the surrogate standard to che efficiency of the method. The results of indiv		Sample Time Date Received	07/09/2019	07/09/2019	07/09/2019		
compounds within samples aren't corrected recovery	for the	SDG Ref	190907-96	190907-96	190907-96		
(F) Trigger breach confirmed		Lab Sample No.(s)	20676026	20676057	20676079		
1-3+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method					
Dibromofluoromethane**	"" LOD/Ullis	TM208	112	108	109		
Bibliomondicimentalia	/*	1111200	112	100	100		
Toluene-d8**	%	TM208	99.1	99.4	98.6		
4-Bromofluorobenzene**	%	TM208	98.2	98	97.2		
Dichlorodifluoromethane	<1 µg/l	TM208	<1	<1	<1		
Chloromethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Vinyl chloride	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Bromomethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Chloroethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Trichlorofluoromethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
1,1-Dichloroethene	<1 µg/l	TM208	<1	<1	<1		
			#	#	₩ ⁹		
Carbon disulphide	<1 µg/l	TM208	<1	<1	<1 their #		
			#	#	, ov #		
Dichloromethane	<3 µg/l	TM208	<3	<3	जारित खाँ रे 3		
			#	#	#		
Methyl tertiary butyl ether	<1 µg/l	TM208	<1	<1 pliposition	<mark>کا <</mark> 1		
(MTBE)			#	Olli COM	#		
trans-1,2-Dichloroethene	<1 µg/l	TM208	<1	ection #	<1		
			#	CCL WITH #	#		
1,1-Dichloroethane	<1 µg/l	TM208	<1	inspired #	<1		
			#0	#	#		
cis-1,2-Dichloroethene	<1 µg/l	TM208	<1	, <1	<1		
				#	#		
2,2-Dichloropropane	<1 µg/l	TM208	<1 consent	<1	<1		
			COIL				
Bromochloromethane	<1 µg/l	TM208	4	<1	<1		
			#	#	#		
Chloroform	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
1,1,1-Trichloroethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
1,1-Dichloropropene	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Carbontetrachloride	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
1,2-Dichloroethane	<1 µg/l	TM208	<1	<1	<1		
_			#	#	. #		
Benzene	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Trichloroethene	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
1,2-Dichloropropane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Dibromomethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
Bromodichloromethane	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
cis-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1		
- .			#	#	#		
Toluene	<1 µg/l	TM208	<1	<1	<1		
			#	#	#		
trans-1,3-Dichloropropene	<1 µg/l	TM208	<1	<1	<1 ,,		
4407:11 "		T11000	#	#	#		
1,1,2-Trichloroethane	<1 µg/l	TM208	<1	<1	<1		
40 B: 11		T11000	#	#	#		
1,3-Dichloropropane	<1 µg/l	TM208	<1	<1 #	<1 #		



P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190907-96 Client Reference: 522869 South & South Z1657 Location:

VOC MS (W)								
Results Legend # ISO17025 accredited.		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown			
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted - refer to subcontractor report accreditation status.	l for	Depth (m) Sample Type Date Sampled	0.00 - 0.00 Ground Water (GW) 04/09/2019	0.00 - 0.00 Ground Water (GW) 04/09/2019	0.00 - 0.00 Ground Water (GW) 04/09/2019			
** % recovery of the surrogate standard to chec efficiency of the method. The results of indivi		Sample Time Date Received	07/09/2019	07/09/2019	07/09/2019			
compounds within samples aren't corrected to recovery	for the	SDG Ref Lab Sample No.(s)	190907-96 20676026	190907-96 20676057	190907-96 20676079			
(F) Trigger breach confirmed 1-3+§@ Sample deviation (see appendix)		AGS Reference	2007.0020	25070007	25075075			
Tetrachloroethene	LOD/Units <1 µg/l	Method TM208	<1	<1	<1			
Dibromochloromethane	<1 µg/l	TM208	<1 "	<1 **	<1 "			
1,2-Dibromoethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Chlorobenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Ethylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
m,p-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
o-Xylene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Styrene	<1 µg/l	TM208	<1 #	<1 #	<1 #			
Bromoform	<1 µg/l	TM208	<1 #	<1 #	<1 <1 %#			
Isopropylbenzene	<1 µg/l	TM208	<1 #	<1 #	<1the #			
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1 #	<1	official *1			
1,2,3-Trichloropropane	<1 µg/l	TM208	<1 #	<1 regit	<1 #			
Bromobenzene	<1 µg/l	TM208	<1 #	cited et ec#	<1 #			
Propylbenzene	<1 µg/l	TM208	<1 #	Kilightel #	<1 #			
2-Chlorotoluene	<1 µg/l	TM208	<1	#	<1 #			
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1 consent #	<1 #	<1 #			
4-Chlorotoluene tert-Butylbenzene	<1 µg/l	TM208 TM208	<1 <1	<1 # <1	<1 # <1			
1,2,4-Trimethylbenzene	<1 µg/l	TM208	*1 *1	*1 <1	<1 #			
sec-Butylbenzene	<1 μg/l	TM208	<u>#</u>	*1 <1	<1 **			
		TM208	<1 <1	*1 <1	<1 #			
4-iso-Propyltoluene 1,3-Dichlorobenzene	<1 µg/l	TM208	<1 <1	<1 <1	<1 <1			
1,4-Dichlorobenzene	<1 μg/l	TM208	<1 <1	<1 <1	<1 <1			
n-Butylbenzene	<1 μg/l	TM208	<1 <1	*1 <1	<1 #			
1,2-Dichlorobenzene	<1 μg/l	TM208	<u>#</u>	<1 #	<1 #			
1,2-Dibromo-3-chloropropane	<1 μg/l	TM208	<u>#</u>	*1 <1	<1 #			
1,2,4-Trichlorobenzene	<1 μg/l	TM208	<1	<1	<1			
Hexachlorobutadiene	<1 μg/l	TM208	<u>#</u>	*1 <1	<1 <1			
tert-Amyl methyl ether (TAME)	<1 μg/l	TM208	<u>#</u>	*1 <1	<1 **			
Naphthalene	<1 μg/l	TM208	*1 <1	<1 #	<1 #			
1,2,3-Trichlorobenzene	<1 μg/l	TM208	3 # <1	**************************************	<1 #			
, ,,=	. Ma.,	200	#		#			

Validated

CERTIFICATE OF ANALYSIS

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SDG: 190907-96 Client Reference: P1788 South & South &

* Subcontracted - refer to subcontractor report for accreditation status. ** **Facovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples earn't corrected for the compounds within samples earn't corrected for the recovery SDG Ref 190907-96 19090	VOC I	MS (W)							
a value of the company detection under the company detecti	Ī	Results Legend		Customer Sample Ref.	BH01 Dingle	BH02 Dingle	BH02 Milltown		
Submitted from the product of the state of t	М	mCERTS accredited.							
Sample Type Concent Water (RW) Composition Status. Next accordance st	aq diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00		
2	tot.unfilt	Total / unfiltered sample.		Sample Type					
** Newsy of the surgius contract tracks to which the made of which	'	Subcontracted - refer to subcontractor report accreditation status.	for	Date Sampled		04/09/2019	04/09/2019		
Sop Ref 1999/198	**	% recovery of the surrogate standard to check	the		·				
1 Target basic continued Lab Sample holds 20070009 20070		compounds within samples aren't corrected for	or the		07/09/2019 190907-96				
Table in the interpretation is a register for interpretation in the interpretation in th	(F)	recovery Trigger breach confirmed							
Component	1-3+§@	Sample deviation (see appendix)		AGS Reference					
				s Method					
	1,3,5-Tr	ichlorobenzene	<1 µg/l	TM208	<1	<1	<1		
The state of the s									
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P1788 South & West KeReport Number: Z1657 Superseded Report: SDG: 190907-96 Client Reference: 522869 South & Drder Number: Location:

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
TM046	Method 4500G, AWWA/APHA, 20th Ed., 1999	Measurement of Dissolved Oxygen by Oxygen Meter
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
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
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
TM227	Standard methods for the examination of waters and wastewaters 20th Edition, AWWA/APHA Method 4500.	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and the chate using the GLpH pH Meter Determination of Selection Pesticides (Suite I) in Liquids by GCMS
TM343	EPA 8270D - Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	
TM344	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite II) by GCMS
TM345	EPA 8270D – Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of selected pesticides (Suite III) by GCMS
TM411	Acid_Herbs_GCMS	Herbs in Water by GCMS
ot applicable. al testing (unless		(Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).



SDG: 190907-96 Location:

Client Reference: South & South

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522869

Test Completion Dates

190907-96 SDG: Client Reference: South & South Location:

P1788 South & WestReport Number: Superseded Report: Z1657

522869

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 quaranteed 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
- 10. Stones/debris are not routinely removed. We always endeavour to the 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 Con method detection limit to be raised.
- 12. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 13. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.
- 14. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 16. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

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

18. Sample Deviations

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

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

19 Ashestos

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 osing 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	White Asbests
Amosite	Brow n Asbestos
Cro a dolite	Blue Asbe stos
Fibrous Actinolite	-
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 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.





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