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SA10 6HJ

Attention: Scott Bowler

CERTIFICATE OF ANALYSIS

Date of report Generation:	12 December 2019
Customer:	Atkins Global Ltd
Sample Delivery Group (SDG):	191128-79
Your Reference:	
Location:	Llanwern
Report No:	533723

We received 30 samples on Thursday November 28, 2019 and 30 of these samples were scheduled for analysis which was completed on Thursday December 12, 2019. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

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

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

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

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

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

Approved By:

Sonia McWhan

Operations Manager





CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
21246609	D0-C		0.00 - 0.00	27/11/2019
21246632	D1-C		0.00 - 0.00	27/11/2019
21246651	D2-C		0.00 - 0.00	27/11/2019
21246536	D1-N		0.00 - 0.00	27/11/2019
21246483	D2-N		0.00 - 0.00	27/11/2019
21246714	D3-N		0.00 - 0.00	27/11/2019
21246683	D1-S		0.00 - 0.00	27/11/2019
21246666	D2-S		0.00 - 0.00	27/11/2019
21246698	D3-S		0.00 - 0.00	27/11/2019
21246579	KW-C		0.00 - 0.00	27/11/2019
21246768	KW-N		0.00 - 0.00	27/11/2019
21246408	KW-S		0.00 - 0.00	27/11/2019
21246562	R1-C		0.00 - 0.00	27/11/2019
21246495	R2-C		0.00 - 0.00	27/11/2019
21246436	R3-C		0.00 - 0.00	27/11/2019
21246875	R4-C		0.00 - 0.00	27/11/2019
21246815	R5-C		0.00 - 0.00	27/11/2019
21246550	R1-E		0.00 - 0.00	27/11/2019
21246469	R2-E		0.00 - 0.00	27/11/2019
21246422	R3-E		0.00 - 0.00	27/11/2019
21246854	R4-E		0.00 - 0.00	27/11/2019
21246800	R5-E		0.00 - 0.00	27/11/2019
21246511	R2-W		0.00 - 0.00	27/11/2019
21246456	R3-W		0.00 - 0.00	27/11/2019
21246894	R4-W		0.00 - 0.00	27/11/2019
21246836	R5-W		0.00 - 0.00	27/11/2019
21246594	R1-W/D0-N		0.00 - 0.00	27/11/2019
21246731	S2-N		0.00 - 0.00	27/11/2019
21246782	S2-S		0.00 - 0.00	27/11/2019
21246747	S2-W		0.00 - 0.00	27/11/2019

Maximum Sample/Coolbox Temperature (°C) :

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

6.8

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.



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend

X Test

N No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

<div>Results Legend</div> <div><div>X</div> Test</div> <div><div>N</div> No Determination Possible</div> <div>Sample Types -</div> <div>S - Soil/Solid</div> <div>UNS - Unspecified Solid</div> <div>GW - Ground Water</div> <div>SW - Surface Water</div> <div>LE - Land Leachate</div> <div>PL - Prepared Leachate</div> <div>PR - Process Water</div> <div>SA - Saline Water</div> <div>TE - Trade Effluent</div> <div>TS - Treated Sewage</div> <div>US - Untreated Sewage</div> <div>RE - Recreational Water</div> <div>DW - Drinking Water Non-regulatory</div> <div>UNL - Unspecified Liquid</div> <div>SL - Sludge</div> <div>G - Gas</div> <div>OTH - Other</div>	Lab Sample No(s)		21246609										21246632										21246651									
	Customer Sample Reference		D0-C										D1-C										D2-C									
	AGS Reference																															
	Depth (m)		0.00 - 0.00										0.00 - 0.00										0.00 - 0.00									
	Container		0.5l glass bottle (ALE227)	1l plastic (ALE221)	250ml Amber Gl. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	1l plastic (ALE221)	250ml Amber Gl. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)	1l plastic (ALE221)	250ml Amber Gl. PTFE/PE (ALE219)	H2SO4 (ALE244)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	NaOH (ALE245)	Vial (ALE297)	ZnAc (ALE246)	0.5l glass bottle (ALE227)		
	Sample Type		SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	SW	
	Ammoniacal Nitrogen	All	NDPs: 0 Tests: 30				X									X																
Anions by Kone (w)	All	NDPs: 0 Tests: 30		X									X																			
BOD True Total	All	NDPs: 0 Tests: 30		X									X																			
COD Unfiltered	All	NDPs: 0 Tests: 30		X									X																			
Conductivity (at 20 deg.C)	All	NDPs: 0 Tests: 30		X									X																			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 30							X								X															
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 30					X									X																
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 30	X									X																			X	
Dissolved Oxygen by Probe	All	NDPs: 0 Tests: 30		X								X																				
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 30			X								X																			
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 30			X								X																			
Fluoride	All	NDPs: 0 Tests: 30		X								X																				
GRO by GC-FID (W)	All	NDPs: 0 Tests: 30							X									X														
Hexavalent Chromium (w)	All	NDPs: 0 Tests: 30		X								X																				
Mercury Dissolved	All	NDPs: 0 Tests: 30					X									X									X							

[illegible]



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Validated

SDG: 191128-79
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Order Number: LLA697

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Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
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PR - Process Water
SA - Saline Water
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TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246609

D0-C

0.00 - 0.00

ZnAc (ALE246)

SW

21246651

D2-C

0.00 - 0.00

ZnAc (ALE246)

SW

X

X

X

X

21246483	D2-N		0.00 - 0.00	H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW		X	
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
21246536	D1-N		0.00 - 0.00	250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
21246651	D2-C		0.00 - 0.00	1lplastic (ALE221)	SW			
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		



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Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
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PL - Prepared Leachate
PR - Process Water
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RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

VOC MS (W)

All

All

NDPs: 0
Tests: 30

NDPs: 0
Tests: 30

21246483

D2-N

0.00 - 0.00

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

250ml Amber Gl.
PTFE/PE (ALE219)

11plastic (ALE221)

0.5l glass bottle
(ALE227)

ZnAc (ALE246)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

21246714

D3-N

0.00 - 0.00

HNO3 Filtered
(ALE204)

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

X

SW

21246698	D3-S		0.00 - 0.00	Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			X
21246666	D2-S		0.00 - 0.00	NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			
				NaOH (ALE245)	SW			
21246683	D1-S		0.00 - 0.00	HNO3 Unfiltered (ALE204)	SW			
				Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				ZnAc (ALE246)	SW			
				0.5l glass bottle (ALE227)	SW			



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Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
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PL - Prepared Leachate
PR - Process Water
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246698

D3-S

0.00 - 0.00

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

X

X

X

X

21246495	R2-C		0.00 - 0.00	250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
21246562	R1-C		0.00 - 0.00	ZnAc (ALE246)	SW			
				Vial (ALE297)	SW		X	
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
21246408	KW-S		0.00 - 0.00	ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			X
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1lplastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			



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SDG: 191128-79
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Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
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PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246495

R2-C

0.00 - 0.00

H2SO4 (ALE244)

SW

250ml Amber Gl.
PTFE/PE (ALE219)

SW

11plastic (ALE221)

SW

0.5l glass bottle
(ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered
(ALE204)

SW

HNO3 Filtered
(ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl.
PTFE/PE (ALE219)

SW

11plastic (ALE221)

SW

0.5l glass bottle
(ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered
(ALE204)

SW

HNO3 Filtered
(ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl.
PTFE/PE (ALE219)

SW

11plastic (ALE221)

SW

0.5l glass bottle
(ALE227)

SW

ZnAc (ALE246)

SW

X

X

X

X

21246550	R1-E		0.00 - 0.00	NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1plastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW		X	
				NaOH (ALE245)	SW			
21246815	R5-C		0.00 - 0.00	HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				H2SO4 (ALE244)	SW			
				250ml Amber Gl. PTFE/PE (ALE219)	SW			
				1plastic (ALE221)	SW	X		
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			
21246875	R4-C		0.00 - 0.00	HNO3 Filtered (ALE204)	SW			
				NaOH (ALE245)	SW			
				Vial (ALE297)	SW			X
				HNO3 Unfiltered (ALE204)	SW			
				HNO3 Filtered (ALE204)	SW			
				0.5l glass bottle (ALE227)	SW			
				ZnAc (ALE246)	SW			
				Vial (ALE297)	SW			
				NaOH (ALE245)	SW			
				HNO3 Unfiltered (ALE204)	SW			

[illegible]



CERTIFICATE OF ANALYSIS

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Client Reference:
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Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
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DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246550

R1-E

0.00 - 0.00

Vial (ALE297)

SW

X

X

21246469

R2-E

0.00 - 0.00

Vial (ALE297)

SW

X

21246422

R3-E

0.00 - 0.00

Vial (ALE297)

SW

X

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

21246511	R2-W		0.00 - 0.00	1l plastic (ALE221)	SW		X		
				0.5l glass bottle (ALE227)	SW				
21246800	R5-E		0.00 - 0.00	ZnAc (ALE246)	SW				
				Vial (ALE297)	SW			X	
				NaOH (ALE245)	SW				
				HNO3 Unfiltered (ALE204)	SW				
				HNO3 Filtered (ALE204)	SW				
				H2SO4 (ALE244)	SW				
				250ml Amber Gl. PTFE/PE (ALE219)	SW				
				1l plastic (ALE221)	SW		X		
				0.5l glass bottle (ALE227)	SW				
				ZnAc (ALE246)	SW				
				Vial (ALE297)	SW			X	
				NaOH (ALE245)	SW				
21246854	R4-E		0.00 - 0.00	HNO3 Unfiltered (ALE204)	SW				
				HNO3 Filtered (ALE204)	SW				
				H2SO4 (ALE244)	SW				
				250ml Amber Gl. PTFE/PE (ALE219)	SW				
				1l plastic (ALE221)	SW				
				0.5l glass bottle (ALE227)	SW				
21246422	R3-E		0.00 - 0.00	ZnAc (ALE246)	SW				
				0.5l glass bottle (ALE227)	SW				
				1l plastic (ALE221)	SW		X		
				250ml Amber Gl. PTFE/PE (ALE219)	SW				
				1l plastic (ALE221)	SW				
				0.5l glass bottle (ALE227)	SW				



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246511

R2-W

0.00 - 0.00

250ml Amber Gl.
PTFE/PE (ALE219)

1l plastic (ALE221)

0.5l glass bottle
(ALE227)

ZnAc (ALE246)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

250ml Amber Gl.
PTFE/PE (ALE219)

1l plastic (ALE221)

0.5l glass bottle
(ALE227)

ZnAc (ALE246)

Vial (ALE297)

NaOH (ALE245)

HNO3 Unfiltered
(ALE204)

HNO3 Filtered
(ALE204)

H2SO4 (ALE244)

250ml Amber Gl.
PTFE/PE (ALE219)

1l plastic (ALE221)

0.5l glass bottle
(ALE227)

ZnAc (ALE246)

Vial (ALE297)

NaOH (ALE245)

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

SW

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SW

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X

X

21246836	R1-W/D0-N	0.00 - 0.00	HNO3 Unfiltered (ALE204)	SW			
			HNO3 Filtered (ALE204)	SW			
			H2SO4 (ALE244)	SW			
			250ml Amber Gl. PTFE/PE (ALE219)	SW			
			1plastic (ALE221)	SW	X		
			0.5l glass bottle (ALE227)	SW			
			ZnAc (ALE246)	SW			
			Vial (ALE297)	SW		X	
			NaOH (ALE245)	SW			
			HNO3 Unfiltered (ALE204)	SW			
21246894	R4-W	0.00 - 0.00	HNO3 Filtered (ALE204)	SW			
			H2SO4 (ALE244)	SW			
			250ml Amber Gl. PTFE/PE (ALE219)	SW			
			1plastic (ALE221)	SW	X		
			0.5l glass bottle (ALE227)	SW			
			ZnAc (ALE246)	SW			
			Vial (ALE297)	SW			X
			NaOH (ALE245)	SW			
			HNO3 Unfiltered (ALE204)	SW			
			HNO3 Filtered (ALE204)	SW			
			H2SO4 (ALE244)	SW			



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend



Test


No Determination
Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
SW - Surface Water
LE - Land Leachate
PL - Prepared Leachate
PR - Process Water
SA - Saline Water
TE - Trade Effluent
TS - Treated Sewage
US - Untreated Sewage
RE - Recreational Water
DW - Drinking Water Non-regulatory
UNL - Unspecified Liquid
SL - Sludge
G - Gas
OTH - Other

Lab Sample No(s)

Customer
Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

Turbidity in waters

All

NDPs: 0
Tests: 30

VOC MS (W)

All

NDPs: 0
Tests: 30

21246594

R1-W/D0-N

0.00 - 0.00

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

250ml Amber Gl. PTFE/PE (ALE219)

SW

1l plastic (ALE221)

SW

0.5l glass bottle (ALE227)

SW

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Unfiltered (ALE204)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

21246782

S2-S

0.00 - 0.00

NaOH (ALE245)

SW

X

X

21246747	S2-W		0.00 - 0.00	ZnAc (ALE246)	SW				
				Vial (ALE297)	SW				X
				NaOH (ALE245)	SW				
				HNO3 Unfiltered (ALE204)	SW				
				HNO3 Filtered (ALE204)	SW				
				H2SO4 (ALE244)	SW				
				250ml Amber Gl. PTFE/PE (ALE219)	SW				
				1lplastic (ALE221)	SW		X		
				0.5l glass bottle (ALE227)	SW				
				ZnAc (ALE246)	SW				
21246782	S2-S		0.00 - 0.00	Vial (ALE297)	SW				X



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	D0-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.								
M	mCERTS accredited.								
sq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246609	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246632	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246651	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246536	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246483	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246714
Suspended solids, Total	<2 mg/l	TM022		8.5	7.5	6	8.5	6	58.2
				#	#	#	#	#	#
BOD, unfiltered	<1 mg/l	TM045		1.61	4.91	1.02	2.33	1.64	2.33
				#	#	#	#	#	#
Oxygen, dissolved	<0.3 mg/l	TM046		10.5	9.91	9.58	12.1	12	10.6
Carbon, Organic (diss.filt)	<3 mg/l	TM090		5.17	8.1	7.01	9.08	7.58	7.5
Organic Carbon, Total	<3 mg/l	TM090		4.41	7.22	17.4	7.41	6.52	5.97
				◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099		<0.3	<0.3	<0.3	<0.3	0.559	2.61
				#	#	#	#	#	#
Sulphide	<0.01 mg/l	TM101		<0.01	<0.01	<0.01	<0.01	<0.01	0.0815
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5	0.539	<0.5	<0.5	0.533
COD, unfiltered	<7 mg/l	TM107		15	<7	15.2	24.1	15.2	17.2
				#	#	#	#	#	#
Redox potential	mV	TM110		166	173	176	172	176	152
Conductivity @ 20 deg.C (diss.filt)	<0.014 mS/cm	TM120		0.391	0.548	0.582	0.558	0.611	0.822
Dissolved solids, Total (meter)	<5 mg/l	TM123		306	432	458	436	485	659
				#	#	#	#	#	#
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	1.22
Antimony (tot.unfilt)	<4 µg/l	TM152		<4	<4	<4	<4	<4	<4
Arsenic (diss.filt)	<0.5 µg/l	TM152		2.02	2.05	1.69	2.02	1.46	2.99
				#	#	#	#	#	#
Arsenic (tot.unfilt)	<2 µg/l	TM152		2.37	2.51	<2	2.45	<2	3.35
				#	#	#	#	#	#
Barium (diss.filt)	<0.2 µg/l	TM152		36.9	42.7	50.8	44.8	58.5	102
				#	#	#	#	#	#
Barium (tot.unfilt)	<0.5 µg/l	TM152		45.8	49.4	57.7	49.9	61.4	120
				#	#	#	#	#	#
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Beryllium (tot.unfilt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152		123	116	114	127	125	83.7
				#	#	#	#	#	#
Boron (tot.unfilt)	<20 µg/l	TM152		110	105	98.8	151	117	65.9
				#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
				#	#	#	#	#	#
Cadmium (tot.unfilt)	<0.5 µg/l	TM152		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
				#	#	#	#	#	#
Chromium (tot.unfilt)	<3 µg/l	TM152		<3	<3	<3	<3	<3	<3
				#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152		<1	1.04	<1	1.36	<1	1.75
				#	#	#	#	#	#
Copper (tot.unfilt)	<1 µg/l	TM152		4.35	3.67	2.81	4.47	2.41	5.76
				#	#	#	#	#	#
Lead (tot.unfilt)	<1 µg/l	TM152			1.23	1.45	1.37		
					#	#	#		
Copper (diss.filt)	<0.3 µg/l	TM152		3.38	2.76	2.35	3.31	1.84	6.13
				#	#	#	#	#	#
Manganese (tot.unfilt)	<1 µg/l	TM152		54.4	104	144	92.9	147	72.7
				#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2	<0.2	<0.2	<0.2	<0.2	0.24
				#	#	#	#	#	#
Nickel (tot.unfilt)	<1 µg/l	TM152		1.3	2.01	1.87	2.19	1.83	2.8
				#	#	#	#	#	#
Manganese (diss.filt)	<3 µg/l	TM152		29.2	83.7	56.2	62.3	120	<3
				#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.		D0-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	27/11/2019 00:00 28/11/2019 191128-79 21246609	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
*	Subcontracted - 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									
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component			LOD/Units	Method						
Phosphorus (tot.unfilt)			<20 µg/l	TM152	25.2	113	86.8	171	93.1	36.3
					#	#	#	#	#	#
Selenium (tot.unfilt)			<1 µg/l	TM152	1.31	1.06	1.37	1.03	1.63	3.12
					#	#	#	#	#	#
Nickel (diss.filt)			<0.4 µg/l	TM152	0.812	1.59	1.68	2.07	1.42	2.14
					#	#	#	#	#	#
Phosphorus (diss.filt)			<10 µg/l	TM152	<10	68.1	43	133	34.7	<10
					#	#	#	#	#	#
Selenium (diss.filt)			<1 µg/l	TM152	1.34	1.51	1.69	1.71	1.75	3.75
					#	#	#	#	#	#
Vanadium (tot.unfilt)			<5 µg/l	TM152	11.6	14.3	13.9	15	10.1	31.1
					#	#	#	#	#	#
Zinc (tot.unfilt)			<5 µg/l	TM152	77.9	15.9	208	12.7	<5	26.7
					#	#	#	#	#	#
Vanadium (diss.filt)			<1 µg/l	TM152	10.2	12.3	12.9	14.1	9.07	30.6
					#	#	#	#	#	#
Zinc (diss.filt)			<1 µg/l	TM152	48.6	40.3	25.2	103	28.7	<1
					#	#	#	#	#	#
Lead (tot.unfilt)			<0.001 mg/l	TM152	0.00215				0.00117	0.00692
					#				#	#
Magnesium (Dis.Filt)			<0.036 mg/l	TM152	6.85	9.56	8.45	10.8	9.65	0.197
					#	#	#	#	#	#
Calcium (Dis.Filt)			<0.2 mg/l	TM152	69.2	94.3	105	92	121	130
					#	#	#	#	#	#
Iron (Dis.Filt)			<0.019 mg/l	TM152	<0.019	0.0432	0.0356	0.0578	0.0471	<0.019
					#	#	#	#	#	#
Hardness, Total as CaCO3			<0.65 mg/l	TM152	201	275	298	274	342	327
Magnesium (Tot. Unfilt.)			<0.05 mg/l	TM152	7.19	10.3	8.72	11	9.73	0.822
					#	#	#	#	#	#
Calcium (Tot. Unfilt.)			<0.057 mg/l	TM152	66.1	90.9	97.7	86.1	110	130
					#	#	#	#	#	#
Iron (Tot. Unfilt.)			<0.024 mg/l	TM152	0.382	0.455	0.252	0.432	0.385	0.664
					#	#	#	#	#	#
Naphthalene (diss.filt)			<0.01 µg/l	TM178	0.0216	<0.02	<0.02	<0.02	<0.03	0.0399
Acenaphthene (diss.filt)			<0.005 µg/l	TM178	<0.005	0.00802	<0.005	<0.005	<0.005	0.134
Acenaphthylene (diss.filt)			<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	0.291
Fluoranthene (diss.filt)			<0.005 µg/l	TM178	0.0224	<0.005	0.0172	0.00932	<0.005	0.257
Anthracene (diss.filt)			<0.005 µg/l	TM178	0.00542	<0.005	0.00548	<0.005	<0.005	0.0517
Phenanthrene (diss.filt)			<0.005 µg/l	TM178	0.0181	<0.005	0.0092	<0.005	<0.005	0.278
Fluorene (diss.filt)			<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	0.197
Chrysene (diss.filt)			<0.005 µg/l	TM178	0.0136	<0.005	0.00872	<0.005	<0.005	0.0125
Pyrene (diss.filt)			<0.005 µg/l	TM178	0.0164	<0.005	0.022	0.0131	<0.005	0.202
Benzo(a)anthracene (diss.filt)			<0.005 µg/l	TM178	0.00686	<0.005	<0.005	<0.005	<0.005	0.0108
Benzo(b)fluoranthene (diss.filt)			<0.005 µg/l	TM178	0.0186	<0.005	0.0129	0.00648	<0.005	<0.005
Benzo(k)fluoranthene (diss.filt)			<0.005 µg/l	TM178	0.0111	<0.005	0.00768	<0.005	<0.005	<0.005
Benzo(a)pyrene (diss.filt)			<0.002 µg/l	TM178	0.00915	<0.002	0.00837	0.00301	<0.002	<0.002
Dibenzo(a,h)anthracene (diss.filt)			<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(g,h,i)perylene (diss.filt)			<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3+5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Suspended solids, Total	<2 mg/l	TM022		10	9.5	3.5	14	8.5	25
				#	#	#	#	#	#
BOD, unfiltered	<1 mg/l	TM045		1.13	1.09	1.45	1.89	1.78	2.3
				#	#	#	#	#	#
Oxygen, dissolved	<0.3 mg/l	TM046		10.5	10.4	11.6	11.2	12.7	13.1
Carbon, Organic (diss.filt)	<3 mg/l	TM090		7.74	7.17	7.89	9.61	9.16	9.09
Organic Carbon, Total	<3 mg/l	TM090		6.89	6.97	6.2	7.42	7.67	8.16
				◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099		<0.3	<0.3	3.3	4.51	3.66	5.34
				#	#	#	#	#	#
Sulphide	<0.01 mg/l	TM101		0.0201	<0.01	0.116	<0.01	<0.01	0.131
Fluoride	<0.5 mg/l	TM104		<0.5	<0.5	<0.5	0.749	<0.5	1.05
COD, unfiltered	<7 mg/l	TM107		16.2	15.9	24.6	10.8	23.1	35.5
				#	#	#	#	#	#
Redox potential	mV	TM110		161	171	153	167	177	165
Conductivity @ 20 deg.C (diss.filt)	<0.014 mS/cm	TM120		0.571	0.59	0.928	0.957	0.818	1.07
Dissolved solids, Total (meter)	<5 mg/l	TM123		445	469	493	793	620	852
				#	#	#	#	#	#
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Antimony (tot.unfilt)	<4 µg/l	TM152		<4	<4	<4	<4	<4	<4
Arsenic (diss.filt)	<0.5 µg/l	TM152		2.01	1.93	2.36	2.61	2.61	3.94
				#	#	#	#	#	#
Arsenic (tot.unfilt)	<2 µg/l	TM152		2.43	2.32	2.64	2.92	2.72	4
				#	#	#	#	#	#
Barium (diss.filt)	<0.2 µg/l	TM152		43.8	52.5	108	82.8	72.5	79.2
				#	#	#	#	#	#
Barium (tot.unfilt)	<0.5 µg/l	TM152		52.9	60	115	90.3	75.5	90
				#	#	#	#	#	#
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Beryllium (tot.unfilt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152		114	122	98.9	73.3	72.3	70.8
				#	#	#	#	#	#
Boron (tot.unfilt)	<20 µg/l	TM152		103	115	86.9	56.3	54.8	43.2
				#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
				#	#	#	#	#	#
Cadmium (tot.unfilt)	<0.5 µg/l	TM152		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
				#	#	#	#	#	#
Chromium (tot.unfilt)	<3 µg/l	TM152		<3	<3	<3	<3	<3	<3
				#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152		1.04	<1	1.34	<1	<1	<1
				#	#	#	#	#	#
Copper (tot.unfilt)	<1 µg/l	TM152		3.85	3.84	4.5	2.15	2.04	2.32
				#	#	#	#	#	#
Lead (tot.unfilt)	<1 µg/l	TM152			2.74		<1	<1	1.26
					#		#	#	#
Copper (diss.filt)	<0.3 µg/l	TM152		2.4	2.04	4.11	1.67	2.01	2.48
				#	#	#	#	#	#
Manganese (tot.unfilt)	<1 µg/l	TM152		112	92.1	8.3	8.27	13.3	7.81
				#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2	<0.2	<0.2	<0.2	<0.2	0.266
				#	#	#	#	#	#
Nickel (tot.unfilt)	<1 µg/l	TM152		2.19	2.22	2.48	4.24	4.07	4.32
				#	#	#	#	#	#
Manganese (diss.filt)	<3 µg/l	TM152		52.3	23.6	<3	<3	13.2	<3
				#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend		Customer Sample Ref.	D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.		Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.		27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.		00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.		28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.		191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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		21246683	21246666	21246698	21246579	21246768	21246408
(F)	Trigger breach confirmed							
1-3*5@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Phosphorus (tot.unfilt)	<20 µg/l	TM152	121	850	<20	20.6	<20	21.5
			#	#	#	#	#	#
Selenium (tot.unfilt)	<1 µg/l	TM152	1.11	1.73	4.07	3.02	2.46	3.02
			#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152	1.64	1.92	2.27	3.88	3.85	4.66
			#	#	#	#	#	#
Phosphorus (diss.filt)	<10 µg/l	TM152	81.7	33.2	<10	10.9	12	14.5
			#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152	1.45	1.79	4.26	3.34	2.85	3.61
			#	#	#	#	#	#
Vanadium (tot.unfilt)	<5 µg/l	TM152	11.7	17.6	28.4	23.8	23.2	32.9
			#	#	#	#	#	#
Zinc (tot.unfilt)	<5 µg/l	TM152	19.5	24.1	13.4	6.61	7.73	<5
			#	#	#	#	#	#
Vanadium (diss.filt)	<1 µg/l	TM152	9.67	15.3	27.8	24.7	23.2	34.1
			#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152	2.61	85.4	2.51	<1	1.59	<1
			#	#	#	#	#	#
Lead (tot.unfilt)	<0.001 mg/l	TM152	0.00151		<0.001			
			#		#			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	10.1	8.77	0.21	0.846	1.36	0.712
			#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152	94.8	102	128	138	113	141
			#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.045	0.0313	0.0254	<0.019	0.0485	0.0365
			#	#	#	#	#	#
Hardness, Total as CaCO3	<0.65 mg/l	TM152	279	291	322	349	288	355
Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152	11.8	9.36	0.283	1.16	1.46	1.11
			#	#	#	#	#	#
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	98.5	96.4	123	137	106	142
			#	#	#	#	#	#
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	0.469	0.415	0.0656	0.0628	0.0643	0.0693
			#	#	#	#	#	#
Naphthalene (diss.filt)	<0.01 µg/l	TM178	<0.02	<0.02	0.0931	0.318	0.221	0.398
Acenaphthene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.13	0.127	0.0946	0.156
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.1	0.0488	0.0383	0.0808
Fluoranthene (diss.filt)	<0.005 µg/l	TM178	0.0123	0.00811	0.113	0.0718	0.0711	0.0803
Anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0321	0.0207	0.0108	0.0238
Phenanthrene (diss.filt)	<0.005 µg/l	TM178	0.0086	0.00674	0.168	0.144	0.115	0.168
Fluorene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.101	0.0652	0.0576	0.091
Chrysene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pyrene (diss.filt)	<0.005 µg/l	TM178	0.0135	0.012	0.0805	0.0606	0.0512	0.0822
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178	0.00896	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178	0.00571	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3+5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Suspended solids, Total	<2 mg/l	TM022		19.5	6.5	3.5	5.5	4	17.5
				#	#	#	#	#	#
BOD, unfiltered	<1 mg/l	TM045		4.28	1.78	1.34	1.5	1.41	6.85
				#	#	#	#	#	#
Oxygen, dissolved	<0.3 mg/l	TM046		9.65	12.2	11.5	11.1	11.3	9.76
Carbon, Organic (diss.filt)	<3 mg/l	TM090		4.19	7.92	7.71	9.29	9.31	6.78
Organic Carbon, Total	<3 mg/l	TM090		3.9	7	6.87	7.85	7.88	6.75
				◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099		<0.3	<0.3	0.874	2.71	2.83	<0.3
				#	#	#	#	#	#
Sulphide	<0.01 mg/l	TM101		0.0117	<0.01	<0.01	<0.01	<0.01	0.0318
Fluoride	<0.5 mg/l	TM104		0.519	<0.5	0.604	1.08	1.05	0.829
COD, unfiltered	<7 mg/l	TM107		19.4	15.3	<7	19.8	21.8	23.7
				#	#	#	#	#	#
Redox potential	mV	TM110		185	168	180	213	153	174
Conductivity @ 20 deg.C (diss.filt)	<0.014 mS/cm	TM120		0.357	0.594	0.64	0.711	0.743	0.491
Dissolved solids, Total (meter)	<5 mg/l	TM123		280	466	512	558	519	390
				#	#	#	#	#	#
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Antimony (tot.unfilt)	<4 µg/l	TM152		<4	<4	<4	<4	<4	<4
Arsenic (diss.filt)	<0.5 µg/l	TM152		1.62	2.05	1.56	2.11	2.2	2.06
				#	#	#	#	#	#
Arsenic (tot.unfilt)	<2 µg/l	TM152		<2	2.67	2.15	2.25	2.46	2.34
				#	#	#	#	#	#
Barium (diss.filt)	<0.2 µg/l	TM152		35.6	58.2	56.7	57.2	61.6	44.4
				#	#	#	#	#	#
Barium (tot.unfilt)	<0.5 µg/l	TM152		56.6	60.2	63.6	57	66.1	57.3
				#	#	#	#	#	#
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Beryllium (tot.unfilt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152		100	115	117	178	149	156
				#	#	#	#	#	#
Boron (tot.unfilt)	<20 µg/l	TM152		90.5	107	116	174	140	150
				#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
				#	#	#	#	#	#
Cadmium (tot.unfilt)	<0.5 µg/l	TM152		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
				#	#	#	#	#	#
Chromium (tot.unfilt)	<3 µg/l	TM152		<3	<3	<3	<3	<3	<3
				#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152		1.13	<1	<1	<1	<1	1.47
				#	#	#	#	#	#
Copper (tot.unfilt)	<1 µg/l	TM152		3.79	2.94	4.05	2.25	2.04	3.87
				#	#	#	#	#	#
Lead (tot.unfilt)	<1 µg/l	TM152			1.03	<1			
					#	#			
Copper (diss.filt)	<0.3 µg/l	TM152		2.82	1.93	1.72	1.98	1.74	2.11
				#	#	#	#	#	#
Manganese (tot.unfilt)	<1 µg/l	TM152		72.3	223	151	41.2	44.1	74.5
				#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
				#	#	#	#	#	#
Nickel (tot.unfilt)	<1 µg/l	TM152		1.48	1.89	2.02	2.61	2.76	2.11
				#	#	#	#	#	#
Manganese (diss.filt)	<3 µg/l	TM152		23.6	197	98	14.5	3.12	31.7
				#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.		R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246562	21246495	21246436	21246875	21246815	21246550
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Phosphorus (tot.unfilt)	<20 µg/l	TM152			33.9	141	487	<20	<20	181
					#	#	#	#	#	#
Selenium (tot.unfilt)	<1 µg/l	TM152			1.11	1.07	1.84	2.65	2.39	2.35
					#	#	#	#	#	#
Nickel (diss.filt)	<0.4 µg/l	TM152			0.636	1.72	1.76	2.09	2.89	1.27
					#	#	#	#	#	#
Phosphorus (diss.filt)	<10 µg/l	TM152			13.6	58.2	40.2	<10	11.3	132
					#	#	#	#	#	#
Selenium (diss.filt)	<1 µg/l	TM152			1.79	1.42	1.65	2.83	3.14	2.08
					#	#	#	#	#	#
Vanadium (tot.unfilt)	<5 µg/l	TM152			8.43	7.43	13.2	22.6	21.4	16
					#	#	#	#	#	#
Zinc (tot.unfilt)	<5 µg/l	TM152			154	9.87	13.8	15.1	40	50.3
					#	#	#	#	#	#
Vanadium (diss.filt)	<1 µg/l	TM152			6.9	6.51	12.5	22.4	20.9	14
					#	#	#	#	#	#
Zinc (diss.filt)	<1 µg/l	TM152			81.5	15.2	50	42	1.8	5.65
					#	#	#	#	#	#
Lead (tot.unfilt)	<0.001 mg/l	TM152			0.00289			<0.001	<0.001	0.00188
					#			#	#	#
Magnesium (Dis.Filt)	<0.036 mg/l	TM152			4.65	11.7	8.96	6.74	4.83	8.65
					#	#	#	#	#	#
Calcium (Dis.Filt)	<0.2 mg/l	TM152			63.4	129	119	116	122	85.1
					#	#	#	#	#	#
Iron (Dis.Filt)	<0.019 mg/l	TM152			<0.019	0.114	0.0601	0.0455	0.0314	0.0378
					#	#	#	#	#	#
Hardness, Total as CaCO3	<0.65 mg/l	TM152			178	370	334	317	324	248
Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152			5.07	11.3	9.94	6.77	5.3	9.16
					#	#	#	#	#	#
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152			61.1	111	115	106	116	82.1
					#	#	#	#	#	#
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152			0.63	0.646	0.84	0.11	0.156	0.486
					#	#	#	#	#	#
Naphthalene (diss.filt)	<0.01 µg/l	TM178			<0.02	<0.02	<0.02	0.492	0.159	<0.02
Acenaphthene (diss.filt)	<0.005 µg/l	TM178			<0.005	0.00846	<0.005	0.131	0.127	<0.005
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	0.0414	0.037	<0.005
Fluoranthene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	0.00641	0.0573	0.0499	<0.005
Anthracene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	0.0156	0.0152	<0.005
Phenanthrene (diss.filt)	<0.005 µg/l	TM178			0.00659	<0.005	0.00567	0.0453	0.0705	<0.005
Fluorene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	0.0525	0.0545	<0.005
Chrysene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Pyrene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	0.00982	0.0586	0.0504	<0.005
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246469	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246422	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246854	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246800	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246511	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246456
Suspended solids, Total	<2 mg/l	TM022		9	4	<2	22	30	9
				#	#	#	#	#	#
BOD, unfiltered	<1 mg/l	TM045		1.32	1.24	2.07	2.08	4.02	1.18
				#	#	#	#	#	#
Oxygen, dissolved	<0.3 mg/l	TM046		11.8	9.35	11.7	12.2	9.21	11.2
Carbon, Organic (diss.filt)	<3 mg/l	TM090		8.16	7.34	8.65	9.43	7.13	7.02
Organic Carbon, Total	<3 mg/l	TM090		6.81	6.55	8.35	7.58	7.36	6.07
				◆ #	◆ #	◆ #	◆ #	◆ #	◆ #
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099		0.559	0.971	3.01	3.56	<0.3	0.42
				#	#	#	#	#	#
Sulphide	<0.01 mg/l	TM101		0.0134	<0.01	<0.01	<0.01	<0.01	0.0112
Fluoride	<0.5 mg/l	TM104		0.548	0.644	1	0.523	0.961	<0.5
COD, unfiltered	<7 mg/l	TM107		16.9	<7	23.9	70.5	14.8	7.88
				#	#	#	#	#	#
Redox potential	mV	TM110		172	198	229	158	164	171
Conductivity @ 20 deg.C (diss.filt)	<0.014 mS/cm	TM120		0.614	0.616	0.654	0.816	0.575	0.574
Dissolved solids, Total (meter)	<5 mg/l	TM123		491	465	509	614	444	447
				#	#	#	#	#	#
Antimony (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
Antimony (tot.unfilt)	<4 µg/l	TM152		<4	<4	<4	<4	<4	<4
Arsenic (diss.filt)	<0.5 µg/l	TM152		1.82	1.88	2.3	2.38	2.3	1.68
				#	#	#	#	#	#
Arsenic (tot.unfilt)	<2 µg/l	TM152		2.14	2.2	2.28	2.68	3.04	2.51
				#	#	#	#	#	#
Barium (diss.filt)	<0.2 µg/l	TM152		56	52.2	57.6	70.5	53.5	51.6
				#	#	#	#	#	#
Barium (tot.unfilt)	<0.5 µg/l	TM152		61.1	57.5	57.9	75	106	57
				#	#	#	#	#	#
Beryllium (diss.filt)	<0.1 µg/l	TM152		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Beryllium (tot.unfilt)	<1 µg/l	TM152		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Boron (diss.filt)	<10 µg/l	TM152		123	134	165	113	213	126
				#	#	#	#	#	#
Boron (tot.unfilt)	<20 µg/l	TM152		151	118	157	105	222	145
				#	#	#	#	#	#
Cadmium (diss.filt)	<0.08 µg/l	TM152		<0.08	<0.08	0.0836	<0.08	<0.08	<0.08
				#	#	#	#	#	#
Cadmium (tot.unfilt)	<0.5 µg/l	TM152		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
				#	#	#	#	#	#
Chromium (tot.unfilt)	<3 µg/l	TM152		<3	<3	<3	<3	<3	<3
				#	#	#	#	#	#
Chromium (diss.filt)	<1 µg/l	TM152		<1	<1	<1	<1	1.09	<1
				#	#	#	#	#	#
Copper (tot.unfilt)	<1 µg/l	TM152		2.92	2.87	2.17	2.23	3.28	3.45
				#	#	#	#	#	#
Lead (tot.unfilt)	<1 µg/l	TM152		1.52	<1			1.73	3.02
				#	#			#	#
Copper (diss.filt)	<0.3 µg/l	TM152		1.81	1.48	2.49	1.7	1.63	2.21
				#	#	#	#	#	#
Manganese (tot.unfilt)	<1 µg/l	TM152		157	81.1	40.2	22.3	256	207
				#	#	#	#	#	#
Lead (diss.filt)	<0.2 µg/l	TM152		<0.2	<0.2	0.335	<0.2	<0.2	<0.2
				#	#	#	#	#	#
Nickel (tot.unfilt)	<1 µg/l	TM152		2.2	2.09	2.35	3.42	2.25	2.19
				#	#	#	#	#	#
Manganese (diss.filt)	<3 µg/l	TM152		113	65.6	12.6	<3	101	112
				#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.			Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.			27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.			00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.			28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.			191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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			21246469	21246422	21246854	21246800	21246511	21246456
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Phosphorus (tot.unfilt)	<20 µg/l	TM152	191	109	21	120	284	152	
			#	#	#	#	#	#	
Selenium (tot.unfilt)	<1 µg/l	TM152	1.48	1.97	2.89	2.46	2.14	1.63	
			#	#	#	#	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	1.42	1.44	2.75	3.57	1.02	1.4	
			#	#	#	#	#	#	
Phosphorus (diss.filt)	<10 µg/l	TM152	44.5	39.9	<10	<10	96.6	33.7	
			#	#	#	#	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	1.98	1.79	3.14	3.34	2.31	1.49	
			#	#	#	#	#	#	
Vanadium (tot.unfilt)	<5 µg/l	TM152	10.1	15.5	21.7	22.5	14.1	11.1	
			#	#	#	#	#	#	
Zinc (tot.unfilt)	<5 µg/l	TM152	13	36.2	5.46	42.2	102	23.4	
			#	#	#	#	#	#	
Vanadium (diss.filt)	<1 µg/l	TM152	9.7	12.7	22.9	21.8	10.7	8.55	
			#	#	#	#	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	2.77	8.68	22.4	12.9	46.4	41.3	
			#	#	#	#	#	#	
Lead (tot.unfilt)	<0.001 mg/l	TM152			<0.001	<0.001			
					#	#			
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	9.58	7.88	6.28	3.36	14.1	9.57	
			#	#	#	#	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	117	107	112	127	109	112	
			#	#	#	#	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.0605	0.0668	0.0646	0.0239	0.0503	0.0427	
			#	#	#	#	#	#	
Hardness, Total as CaCO3	<0.65 mg/l	TM152	331	300	307	332	331	319	
Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152	9.79	8.36	6.34	3.89	14.9	9.42	
			#	#	#	#	#	#	
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	112	110	108	122	104	101	
			#	#	#	#	#	#	
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	0.476	0.306	0.131	0.0797	0.838	0.561	
			#	#	#	#	#	#	
Naphthalene (diss.filt)	<0.01 µg/l	TM178	<0.02	<0.02	0.115	0.212	<0.03	<0.02	
Acenaphthene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.0351	0.165	0.122	<0.005	<0.005	
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0335	0.0388	<0.005	<0.005	
Fluoranthene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.0146	0.0498	0.0583	0.00928	<0.005	
Anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0141	0.0187	<0.005	<0.005	
Phenanthrene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0603	0.0943	<0.005	<0.005	
Fluorene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.00602	0.0581	0.0579	<0.005	<0.005	
Chrysene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Pyrene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.016	0.0447	0.0518	0.0101	<0.005	
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.			Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.			27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.			00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.			28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.			191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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			21246894	21246836	21246594	21246731	21246782	21246747
(F)	Trigger breach confirmed								
1-3+5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Suspended solids, Total	<2 mg/l	TM022	4.5	<2	13.2	3.5	12	13	
BOD, unfiltered	<1 mg/l	TM045	2	1.15	2.84	1.28	<1	<1	
Oxygen, dissolved	<0.3 mg/l	TM046	9.96	12.4	10.5	10.4	10.3	10.5	
Carbon, Organic (diss.filt)	<3 mg/l	TM090	6.94	8.94	5.99	9.38	9.72	9.63	
Organic Carbon, Total	<3 mg/l	TM090	6.18	8.18	4.4	7.6	7.75	7.69	
Ammoniacal Nitrogen as NH4	<0.3 mg/l	TM099	0.406	2.56	<0.3	2.91	2.97	3.12	
Sulphide	<0.01 mg/l	TM101	0.0148	<0.01	<0.01	0.0262	0.0149	0.0227	
Fluoride	<0.5 mg/l	TM104	<0.5	0.977	0.533	<0.5	0.905	<0.5	
COD, unfiltered	<7 mg/l	TM107	15.6	17.2	<7	18.9	17.8	22.2	
Redox potential	mV	TM110	187	155	182	157	205	155	
Conductivity @ 20 deg.C (diss.filt)	<0.014 mS/cm	TM120	0.594	0.686	0.358	0.543	0.523	0.524	
Dissolved solids, Total (meter)	<5 mg/l	TM123	469	530	287	421	419	508	
Antimony (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1	
Antimony (tot.unfilt)	<4 µg/l	TM152	<4	<4	<4	<4	<4	<4	
Arsenic (diss.filt)	<0.5 µg/l	TM152	1.14	2.12	1.68	2.8	2.63	2.9	
Arsenic (tot.unfilt)	<2 µg/l	TM152	<2	2.37	<2	3.14	3.14	3.55	
Barium (diss.filt)	<0.2 µg/l	TM152	58.4	62.1	35	53.2	53.5	56	
Barium (tot.unfilt)	<0.5 µg/l	TM152	63.8	62.6	43.5	55.6	55.1	63.8	
Beryllium (diss.filt)	<0.1 µg/l	TM152	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Beryllium (tot.unfilt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1	
Boron (diss.filt)	<10 µg/l	TM152	75.3	179	113	82	85.1	83.3	
Boron (tot.unfilt)	<20 µg/l	TM152	58.6	160	100	65.5	59.2	62.9	
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	
Cadmium (tot.unfilt)	<0.5 µg/l	TM152	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Chromium (tot.unfilt)	<3 µg/l	TM152	<3	<3	<3	<3	<3	<3	
Chromium (diss.filt)	<1 µg/l	TM152	<1	<1	<1	<1	<1	<1	
Copper (tot.unfilt)	<1 µg/l	TM152	2.74	2.14	3.84	2.46	2.44	3.02	
Copper (diss.filt)	<0.3 µg/l	TM152	1.86	2.05	3.09	2.62	2.37	2.54	
Manganese (tot.unfilt)	<1 µg/l	TM152	108	37	68.2	2.87	8.73	65.8	
Lead (diss.filt)	<0.2 µg/l	TM152	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	
Nickel (tot.unfilt)	<1 µg/l	TM152	1.73	2.46	1.47	3.76	4.03	4.63	
Manganese (diss.filt)	<3 µg/l	TM152	94.1	9.74	34.5	<3	<3	<3	
Phosphorus (tot.unfilt)	<20 µg/l	TM152	115	<20	27.9	<20	<20	25.7	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Results Legend			Customer Sample Ref.	R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Selenium (tot.unfilt)	<1 µg/l	TM152	<1	2.65	1.2	2.83	2.52	2.61	
			#	#	#	#	#	#	
Nickel (diss.filt)	<0.4 µg/l	TM152	1.4	2.4	0.697	3.95	3.77	4.01	
			#	#	#	#	#	#	
Phosphorus (diss.filt)	<10 µg/l	TM152	62.1	<10	<10	<10	<10	<10	
			#	#	#	#	#	#	
Selenium (diss.filt)	<1 µg/l	TM152	<1	2.99	1.46	2.91	2.92	2.89	
			#	#	#	#	#	#	
Vanadium (tot.unfilt)	<5 µg/l	TM152	<5	23.8	10.8	27.1	26.9	26	
			#	#	#	#	#	#	
Zinc (tot.unfilt)	<5 µg/l	TM152	15.5	5.9	14.7	<5	5.08	24.9	
			#	#	#	#	#	#	
Vanadium (diss.filt)	<1 µg/l	TM152	3.53	24	8.55	24.2	24.7	27	
			#	#	#	#	#	#	
Zinc (diss.filt)	<1 µg/l	TM152	3.49	3.39	5.27	4.03	1.2	4.95	
			#	#	#	#	#	#	
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	<0.001	0.00244	<0.001	<0.001	0.00638	
			#	#	#	#	#	#	
Magnesium (Dis.Filt)	<0.036 mg/l	TM152	9.73	6.38	6.03	1.16	1.06	1.03	
			#	#	#	#	#	#	
Calcium (Dis.Filt)	<0.2 mg/l	TM152	123	123	63.1	90.9	88.4	95.6	
			#	#	#	#	#	#	
Iron (Dis.Filt)	<0.019 mg/l	TM152	0.118	0.0406	<0.019	<0.019	<0.019	<0.019	
			#	#	#	#	#	#	
Hardness, Total as CaCO3	<0.65 mg/l	TM152	348	334	183	232	225	243	
Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152	10.3	6.58	6.42	1.29	1.27	1.48	
			#	#	#	#	#	#	
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	117	114	62.3	85.1	84.3	92	
			#	#	#	#	#	#	
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	0.431	0.0823	0.38	0.0713	0.216	0.947	
			#	#	#	#	#	#	
Naphthalene (diss.filt)	<0.01 µg/l	TM178	0.0286	0.126	<0.02	0.111	0.112	0.125	
Acenaphthene (diss.filt)	<0.005 µg/l	TM178	0.0404	0.117	<0.005	0.0474	0.0482	0.0534	
Acenaphthylene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.032	<0.005	0.0138	0.014	0.016	
Fluoranthene (diss.filt)	<0.005 µg/l	TM178	0.00707	0.0498	0.0134	0.0498	0.0507	0.0523	
Anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	0.0146	<0.005	0.01	0.0103	0.00818	
Phenanthrene (diss.filt)	<0.005 µg/l	TM178	0.00978	0.0624	0.0131	0.0921	0.0876	0.103	
Fluorene (diss.filt)	<0.005 µg/l	TM178	0.0107	0.0502	<0.005	0.0355	0.0364	0.0384	
Chrysene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0103	<0.005	<0.005	<0.005	
Pyrene (diss.filt)	<0.005 µg/l	TM178	0.00653	0.043	0.0107	0.0286	0.0284	0.0297	
Benzo(a)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(b)fluoranthene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0119	<0.005	<0.005	<0.005	
Benzo(k)fluoranthene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.00653	<0.005	<0.005	<0.005	
Benzo(a)pyrene (diss.filt)	<0.002 µg/l	TM178	<0.002	<0.002	0.00534	<0.002	<0.002	<0.002	
Dibenzo(a,h)anthracene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Benzo(g,h,i)perylene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Indeno(1,2,3-cd)pyrene (diss.filt)	<0.005 µg/l	TM178	<0.005	<0.005	0.0064	<0.005	<0.005	<0.005	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.	DO-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.	mCERTS accredited.							
M	Aqueous / settled sample.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246609	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246632	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246651	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246536	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246483	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246714
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2	<2	<2	<2	<2	<2
				#	#	#	#	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Carbazole (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
Dibenzofuran (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	#	#	#

SDG:	191128-79
Location:	Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.			D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference			0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.					Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.					27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.					00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.					28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.					191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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					21246683	21246666	21246698	21246579	21246768	21246408
(F)	Trigger breach confirmed										
1-3+5@	Sample deviation (see appendix)										
Component	LOD/Units	Method									
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Methylphenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Methylphenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176				<2	<2	<2	<2	<2	<2
						#	#	◆ #	#	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
Carbazole (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
Dibenzofuran (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#
n-Dibutyl phthalate (aq)	<1 µg/l	TM176				<1	<1	<1	<1	<1	<1
						#	#	◆ #	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.	R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.								
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
			Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
			Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
			Date Sampled	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
			Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
			Date Received	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
			SDG Ref	191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
			Lab Sample No.(s)	21246562	21246495	21246436	21246875	21246815	21246550
			AGS Reference						
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Methylphenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176	<1						
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Methylphenol (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176	<1						
Azobenzene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176	<2	#	#	#	#	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
Carbazole (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
Dibenzofuran (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	#
n-Dibutyl phthalate (aq)	<1 µg/l	TM176	<1	#	#	#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.	R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.	mCERTS accredited.							
M	Aqueous / settled sample.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246469	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246422	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246854	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246800	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246511	0.00 - 0.00 Surface Water (SW) 27/11/2019 00:00 28/11/2019 191128-79 21246456
dis.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Methylphenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176		<2	<2	<2	<2	<2	<2
				#	#	#	◆ #	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
Carbazole (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
Dibenzofuran (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#
n-Dibutyl phthalate (aq)	<1 µg/l	TM176		<1	<1	<1	<1	<1	<1
				#	#	#	◆ #	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.		R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246894	21246836	21246594	21246731	21246782	21246747
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
1,2,4-Trichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,4-Dichlorobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,4,5-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,4,6-Trichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,4-Dichlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,4-Dimethylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,4-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2,6-Dinitrotoluene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Chloronaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Chlorophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Methylnaphthalene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
3-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Bromophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Chloro-3-methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Chloroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
4-Chlorophenylphenylether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Methylphenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Nitroaniline (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Nitrophenol (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
Azobenzene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
bis(2-Chloroethyl)ether (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
bis(2-Chloroethoxy)methane (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
bis(2-Ethylhexyl) phthalate (aq)	<2 µg/l	TM176			<2	<2	<2	<2	<2	<2
					#	#	#	#	#	#
Butylbenzyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Benzo(k)fluoranthene (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Carbazole (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Dibenzofuran (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
n-Dibutyl phthalate (aq)	<1 µg/l	TM176			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#

SDG:	191128-79
Location:	Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

SVOC MS (W) - Aqueous

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		D0-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TM245	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246609	21246632	21246651	21246536	21246483	21246714
(F)	Trigger breach confirmed									
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			103	94	104	107	100	113
GRO >C5-C12	<50 µg/l	TM245			<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245			<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245			<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245			<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245			<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246683	21246666	21246698	21246579	21246768	21246408
(F)	Trigger breach confirmed									
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			104	108	111	96	112	103
GRO >C5-C12	<50 µg/l	TM245			<50	<50	74	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245			<7	<7	10	<7	<7	<7
Toluene	<4 µg/l	TM245			<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245			<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245			<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245			<10	<10	10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245			<10	<10	11	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245			<10	<10	15	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	<10	10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			<10	<10	12	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245			<10	<10	10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174			<10	<10	73	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246562	21246495	21246436	21246875	21246815	21246550
(F)	Trigger breach confirmed									
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			105	105	107	101	110	101
GRO >C5-C12	<50 µg/l	TM245			<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245			<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245			<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245			<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245			<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TM245	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246469	21246422	21246854	21246800	21246511	21246456
(F)	Trigger breach confirmed									
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			94	94	100	107	99	107
GRO >C5-C12	<50 µg/l	TM245			<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245			<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245			<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245			<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245			<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	11	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

TPH CWG (W)

Results Legend			Customer Sample Ref.		R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TM245	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246894	21246836	21246594	21246731	21246782	21246747
(F)	Trigger breach confirmed									
1-3+5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
GRO Surrogate % recovery**	%	TM245			101	100	105	96	103	98
GRO >C5-C12	<50 µg/l	TM245			<50	<50	<50	<50	<50	<50
Methyl tertiary butyl ether (MTBE)	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Benzene	<7 µg/l	TM245			<7	<7	<7	<7	<7	<7
Toluene	<4 µg/l	TM245			<4	<4	<4	<4	<4	<4
Ethylbenzene	<5 µg/l	TM245			<5	<5	<5	<5	<5	<5
m,p-Xylene	<8 µg/l	TM245			<8	<8	<8	<8	<8	<8
o-Xylene	<3 µg/l	TM245			<3	<3	<3	<3	<3	<3
Sum of detected Xylenes	<11 µg/l	TM245			<11	<11	<11	<11	<11	<11
Sum of detected BTEX	<28 µg/l	TM245			<28	<28	<28	<28	<28	<28
Aliphatics >C5-C6	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C21-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics >C12-C35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC5-EC7	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/l	TM245			<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC16-EC21 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aromatics >EC21-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aromatics >EC12-EC35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Total Aliphatics & Aromatics >C5-35 (aq)	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10
Aliphatics >C16-C35 Aqueous	<10 µg/l	TM174			<10	<10	<10	<10	<10	<10



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.	D0-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.	mCERTS accredited.							
M	Aqueous / settled sample.		Depth (m)	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
dis.filt	Disolved / filtered sample.		Sample Type	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
tot.unfilt	Total / unfiltered sample.		Date Sampled	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.		Sample Time	00:00	00:00	00:00	00:00	00:00	00:00
**	% 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		Date Received	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
(F)	Trigger breach confirmed		SDG Ref	191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
1-3*§@	Sample deviation (see appendix)		Lab Sample No.(s)	21246609	21246632	21246651	21246536	21246483	21246714
	AGS Reference								
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208		118	118	119	112	118	17.8
Toluene-d8**	%	TM208		97.4	96.9	96.4	99.5	96.9	97.5
4-Bromofluorobenzene**	%	TM208		98.1	98	97.6	98.9	96.2	98.7
Dichlorodifluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208		<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208		<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		D0-C	D1-C	D2-C	D1-N	D2-N	D3-N
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246609	21246632	21246651	21246536	21246483	21246714
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Dibromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
o-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Isopropylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Propylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
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
					#	#	#	#	#	#
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246683	21246666	21246698	21246579	21246768	21246408
(F)	Trigger breach confirmed									
1-3*§§	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			117	111	74.9	9.09	101	0.68
Toluene-d8**	%	TM208			97.7	99.8	97	101	97.4	101
4-Bromofluorobenzene**	%	TM208			96.5	99.4	97	100	97.3	98.6
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	<1	6.21	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.	D1-S	D2-S	D3-S	KW-C	KW-N	KW-S
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.			Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.			27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.			00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.			28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.			191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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			21246683	21246666	21246698	21246579	21246768	21246408
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Styrene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Bromoform	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Bromobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Propylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
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	
			#	#	#	#	#	#	
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Naphthalene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	

CERTIFICATE OF ANALYSIS



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Disolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246562	21246495	21246436	21246875	21246815	21246550
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			109	111	112	108	107	120
Toluene-d8**	%	TM208			99.2	98.9	97.9	99.9	100	97
4-Bromofluorobenzene**	%	TM208			98.5	97.6	99.4	99.7	101	96.3
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		R1-C	R2-C	R3-C	R4-C	R5-C	R1-E
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246562	21246495	21246436	21246875	21246815	21246550
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Dibromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dibromoethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Chlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Ethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
m,p-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
o-Xylene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Styrene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromoform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Isopropylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,3-Trichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Bromobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Propylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
2-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,3,5-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-Chlorotoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,4-Trimethylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
sec-Butylbenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
4-iso-Propyltoluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
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
					#	#	#	#	#	#
1,2-Dichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2,4-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Hexachlorobutadiene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
Naphthalene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#
1,2,3-Trichlorobenzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
					#	#	#	#	#	#



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246469	21246422	21246854	21246800	21246511	21246456
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			116	118	112	72.2	121	122
Toluene-d8**	%	TM208			97.3	96.7	99.5	100	96.1	96.5
4-Bromofluorobenzene**	%	TM208			95.2	98.1	101	98.4	96.7	95.4
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.	Depth (m)	R2-E	R3-E	R4-E	R5-E	R2-W	R3-W
#	ISO17025 accredited.				0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
aq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
diss.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246469	21246422	21246854	21246800	21246511	21246456
(F)	Trigger breach confirmed									
1-3*5@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Styrene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Bromoform	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Bromobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Propylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,3-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,4-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
n-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
Naphthalene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.		R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
M	mCERTS accredited.				Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)	Surface Water (SW)
sq	Aqueous / settled sample.				27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019	27/11/2019
dis.filt	Dissolved / filtered sample.				00:00	00:00	00:00	00:00	00:00	00:00
tot.unfilt	Total / unfiltered sample.				28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019	28/11/2019
*	Subcontracted - refer to subcontractor report for accreditation status.				191128-79	191128-79	191128-79	191128-79	191128-79	191128-79
**	% 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				21246894	21246836	21246594	21246731	21246782	21246747
(F)	Trigger breach confirmed									
1-3*§@	Sample deviation (see appendix)									
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM208			121	105	120	120	114	118
Toluene-d8**	%	TM208			96.9	100	97.4	96.8	97.5	97.9
4-Bromofluorobenzene**	%	TM208			95.4	101	97.2	98.4	98.3	97.2
Dichlorodifluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Vinyl chloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichlorofluoromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbon disulphide	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dichloromethane	<3 µg/l	TM208			<3	<3	<3	<3	<3	<3
Methyl tertiary butyl ether (MTBE)	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,2-Dichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
2,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromochloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Chloroform	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,1-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Carbontetrachloride	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Benzene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Trichloroethene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Dibromomethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Bromodichloromethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
Toluene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
trans-1,3-Dichloropropene	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,1,2-Trichloroethane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1
1,3-Dichloropropane	<1 µg/l	TM208			<1	<1	<1	<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

VOC MS (W)

Results Legend			Customer Sample Ref.	R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference							
M	mCERTS accredited.								
aq	Aqueous / settled sample.								
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.								
*	Subcontracted - 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								
(F)	Trigger breach confirmed								
1-3*5@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Tetrachloroethene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Dibromochloromethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2-Dibromoethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Chlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,1,1,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Ethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
m,p-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
o-Xylene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Styrene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Bromoform	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Isopropylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,1,2,2-Tetrachloroethane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,3-Trichloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Bromobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Propylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
2-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,3,5-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
4-Chlorotoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
tert-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,4-Trimethylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
sec-Butylbenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
4-iso-Propyltoluene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
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	
			#	#	#	#	#	#	
1,2-Dichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2-Dibromo-3-chloropropane	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Hexachlorobutadiene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
tert-Amyl methyl ether (TAME)	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
Naphthalene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	
1,2,3-Trichlorobenzene	<1 µg/l	TM208	<1	<1	<1	<1	<1	<1	
			#	#	#	#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

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
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
TM101	Method 4500B & C, AWWA/APHA, 20th Ed., 1999	Determination of Sulphide in soil and 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
TM110	BS 1377: Part 3 1990	Redox Potential
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
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
TM174	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM176	EPA 8270D Semi-Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	Determination of SVOCs in Water by GCMS
TM178	Modified: US EPA Method 8100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM195	Colour and Turbidity of water. Methods for the Examination of Waters and Associated Materials. HMSO, 1981, ISBN 0 11 751955 3.	Determination of Turbidity in Waters & Associated Matrices
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
TM228	US EPA Method 6010B	Determination of Major Cations in Water by iCap 6500 Duo ICP-OES
TM241	Methods for the Examination of Waters and Associated Materials; Chromium in Raw and Potable Waters and Sewage Effluents 1980.	The Determination of Hexavalent Chromium in Waters and Leachates using the Kone Analyser
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC

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).



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	21246609	21246632	21246651	21246536	21246483	21246714	21246683	21246666	21246698	21246579
	D6-C	D1-C	D2-C	D1-N	D2-N	D3-N	D1-S	D2-S	D3-S	KW-C
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Anions by Kone (w)	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019
BOD True Total	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019
COD Unfiltered	09-Dec-2019	09-Dec-2019	09-Dec-2019	07-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	07-Dec-2019
Conductivity (at 20 deg.C)	09-Dec-2019	09-Dec-2019	09-Dec-2019	04-Dec-2019	04-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	04-Dec-2019	04-Dec-2019
Cyanide Comp/Free/Total/Thiocyanate	03-Dec-2019	30-Nov-2019	30-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	05-Dec-2019	03-Dec-2019	03-Dec-2019	05-Dec-2019
Dissolved Metals by ICP-MS	10-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	10-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Dissolved Organic/Inorganic Carbon	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	04-Dec-2019
Dissolved Oxygen by Probe	28-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019
EPH CWG (Aliphatic) Aqueous GC (W)	06-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019
EPH CWG (Aromatic) Aqueous GC (W)	06-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019
Fluoride	29-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019
GRO by GC-FID (W)	05-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	05-Dec-2019	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019
Hexavalent Chromium (w)	29-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019
Mercury Dissolved	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019
Mercury Unfiltered	06-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019
PAH in waters by GC-MS (diss.filt)	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
PAH Spec MS - Aqueous (W)	06-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
pH Value	06-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	09-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	09-Dec-2019	08-Dec-2019
Phenols by HPLC (W)	03-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	03-Dec-2019	04-Dec-2019	04-Dec-2019	02-Dec-2019	04-Dec-2019	03-Dec-2019
Phosphate by Kone (w)	29-Nov-2019	29-Nov-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019
Redox Potential	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019
Sulphide	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Sulphur Dissolved by ICP-OES	29-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019
Suspended Solids	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019
SVOC MS (W) - Aqueous	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019
Total Dissolved Solids	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Total Metals by ICP-MS	09-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019	12-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019	04-Dec-2019	04-Dec-2019
Total Organic and Inorganic Carbon	05-Dec-2019	05-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
TPH CWG (W)	06-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019
Turbidity in waters	29-Nov-2019	29-Nov-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019
VOC MS (W)	05-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019



CERTIFICATE OF ANALYSIS

Validated

SDG: 191128-79
Location: Llanwern

Client Reference:
Order Number: LLA697

Report Number: 533723
Superseded Report:

Lab Sample No(s)
Customer Sample Ref.
AGS Ref.
Depth
Type

	21246768	21246408	21246562	21246495	21246436	21246875	21246815	21246550	21246469	21246422
	KW-N	KW-S	R1-C	R2-C	R3-C	R4-C	R5-C	R1-E	R2-E	R3-E
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Anions by Kone (w)	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019
BOD True Total	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019
COD Unfiltered	06-Dec-2019	06-Dec-2019	06-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	06-Dec-2019	06-Dec-2019	07-Dec-2019	09-Dec-2019
Conductivity (at 20 deg.C)	04-Dec-2019	04-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019	03-Dec-2019	04-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019
Cyanide Comp/Free/Total/Thiocyanate	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019
Dissolved Metals by ICP-MS	09-Dec-2019	09-Dec-2019	06-Dec-2019	10-Dec-2019	09-Dec-2019	10-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	11-Dec-2019
Dissolved Organic/Inorganic Carbon	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019
Dissolved Oxygen by Probe	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	29-Nov-2019
EPH CWG (Aliphatic) Aqueous GC (W)	06-Dec-2019	07-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019
EPH CWG (Aromatic) Aqueous GC (W)	06-Dec-2019	07-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019
Fluoride	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	29-Nov-2019
GRO by GC-FID (W)	04-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019
Hexavalent Chromium (w)	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	29-Nov-2019
Mercury Dissolved	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019
Mercury Unfiltered	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019
PAH in waters by GC-MS (diss.filt)	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
PAH Spec MS - Aqueous (W)	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	06-Dec-2019	05-Dec-2019
pH Value	09-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	08-Dec-2019	09-Dec-2019	08-Dec-2019
Phenols by HPLC (W)	04-Dec-2019	04-Dec-2019	04-Dec-2019	03-Dec-2019	04-Dec-2019	04-Dec-2019	03-Dec-2019	04-Dec-2019	04-Dec-2019	03-Dec-2019
Phosphate by Kone (w)	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	29-Nov-2019
Redox Potential	06-Dec-2019	05-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	04-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	05-Dec-2019
Sulphide	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Sulphur Dissolved by ICP-OES	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	29-Nov-2019
Suspended Solids	09-Dec-2019	09-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
SVOC MS (W) - Aqueous	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Total Dissolved Solids	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Total Metals by ICP-MS	09-Dec-2019	12-Dec-2019	04-Dec-2019	09-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019	10-Dec-2019	10-Dec-2019	12-Dec-2019
Total Organic and Inorganic Carbon	05-Dec-2019	05-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
TPH CWG (W)	06-Dec-2019	07-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019
Turbidity in waters	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	29-Nov-2019
VOC MS (W)	05-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019

Lab Sample No(s)
Customer Sample Ref.
AGS Ref.
Depth
Type

	21246854	21246800	21246511	21246456	21246894	21246836	21246594	21246731	21246782	21246747
	R4-E	R5-E	R2-W	R3-W	R4-W	R5-W	R1-W/D0-N	S2-N	S2-S	S2-W
	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00	0.00 - 0.00
	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water
Ammoniacal Nitrogen	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Anions by Kone (w)	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019
BOD True Total	05-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019
COD Unfiltered	07-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	07-Dec-2019
Conductivity (at 20 deg.C)	09-Dec-2019	04-Dec-2019	09-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Cyanide Comp/Free/Total/Thiocyanate	03-Dec-2019	05-Dec-2019	03-Dec-2019	03-Dec-2019	05-Dec-2019	03-Dec-2019	03-Dec-2019	30-Nov-2019	30-Nov-2019	30-Nov-2019
Dissolved Metals by ICP-MS	10-Dec-2019	09-Dec-2019	06-Dec-2019	10-Dec-2019	09-Dec-2019	10-Dec-2019	10-Dec-2019	10-Dec-2019	10-Dec-2019	10-Dec-2019
Dissolved Organic/Inorganic Carbon	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019	06-Dec-2019	07-Dec-2019	07-Dec-2019	07-Dec-2019
Dissolved Oxygen by Probe	03-Dec-2019	03-Dec-2019	28-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	28-Nov-2019	28-Nov-2019	28-Nov-2019	28-Nov-2019
EPH CWG (Aliphatic) Aqueous GC (W)	09-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019
EPH CWG (Aromatic) Aqueous GC (W)	09-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019
Fluoride	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
GRO by GC-FID (W)	05-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019
Hexavalent Chromium (w)	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
Mercury Dissolved	06-Dec-2019	06-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
Mercury Unfiltered	06-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019
PAH in waters by GC-MS (diss.filt)	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
PAH Spec MS - Aqueous (W)	05-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	05-Dec-2019
pH Value	08-Dec-2019	09-Dec-2019	08-Dec-2019	09-Dec-2019	08-Dec-2019	09-Dec-2019	08-Dec-2019	08-Dec-2019	06-Dec-2019	08-Dec-2019
Phenols by HPLC (W)	04-Dec-2019	03-Dec-2019	04-Dec-2019	03-Dec-2019	04-Dec-2019	03-Dec-2019	04-Dec-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019
Phosphate by Kone (w)	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
Redox Potential	05-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019	04-Dec-2019
Sulphide	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
Sulphur Dissolved by ICP-OES	03-Dec-2019	03-Dec-2019	29-Nov-2019	03-Dec-2019	03-Dec-2019	03-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
Suspended Solids	09-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019
SVOC MS (W) - Aqueous	06-Dec-2019	09-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019
Total Dissolved Solids	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Total Metals by ICP-MS	05-Dec-2019	09-Dec-2019	04-Dec-2019	05-Dec-2019	04-Dec-2019	09-Dec-2019	04-Dec-2019	09-Dec-2019	09-Dec-2019	09-Dec-2019
Total Organic and Inorganic Carbon	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	05-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019	06-Dec-2019
TPH CWG (W)	09-Dec-2019	07-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	09-Dec-2019	07-Dec-2019	06-Dec-2019	09-Dec-2019	09-Dec-2019
Turbidity in waters	02-Dec-2019	02-Dec-2019	29-Nov-2019	02-Dec-2019	02-Dec-2019	02-Dec-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019	29-Nov-2019
VOC MS (W)	04-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	04-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019	05-Dec-2019



CERTIFICATE OF ANALYSIS

SDG:	191128-79	Client Reference:		Report Number:	533723
Location:	Llanwrn	Order Number:	LLA697	Superseded Report:	

Appendix

General

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

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

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

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

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

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

7. Results relate only to the items tested.

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

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

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

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

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

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

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

15. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. 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 using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

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.