

Appendix C

Results of Further Investigations

Appendix C1 – March 2023 PFAS ground investigation: Trial pit records

TRIAL PIT LOG

Trial Pit No.
TP403A
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 28/03/2023
Date Completed: 28/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 0.68m

062 deg.


Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark greyish brown very gravelly silty fine to coarse SAND (ash content increases with depth) with a low cobble content. Gravel is subangular fine to coarse of brick, sandstone, granite, clinker and basalt. Cobbles are subangular of brick and clinker. [MADE GROUND]		[0.68] 0.68		0.60	ES					
Trial Pit Terminated at 0.68m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	0.68	4.20	0.90	Stable	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks		Depth Top	Depth Base	Description
						0.00	0.68	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP405A
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 28/03/2023
Date Completed: 28/03/2023

Survey Grid: OSGB
Co-ordinates:
Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 0.60m
Ground Level:
Orientation of Logged Face: 052 deg.
052 deg.
052 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown gravelly silty fine to coarse SAND with a low cobble content. Gravel is subangular fine to coarse of brick, sandstone, basalt and concrete. Cobbles are angular of brick.	incorrect incorrect key key incorrect incorrect key key incorrect incorrect	[0.30]								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with a low cobble content. Gravel is subangular fine to coarse of brick, clinker, sandstone and basalt. Cobbles are angular of brick.	key key incorrect incorrect key key incorrect incorrect	0.30								
	key key incorrect incorrect key key incorrect incorrect	[0.30]								
Trial Pit Terminated at 0.60m	incorrect incorrect key key incorrect incorrect	0.60		0.55	ES					

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	0.60	4.30	0.90	Stable	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	Description
						0.00	0.60	Arisings

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TRIAL PIT LOG

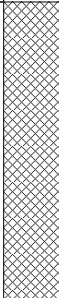
Trial Pit No.
TP410
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 27/03/2023
Date Completed: 27/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.30m

055 deg.

Stratum Description	Legend	Depth [Thick-ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Rare fine rootlets and roots up to 20mm. Gravel is sub angular fine and sub rounded fine to coarse of mixed lithology ncluding clinker, sandstone, concrete, clay pipe, and basalt. Rare angular cobbles of brick (150mmx100mm) [MADE GROUND]				0.40	ES					
				1.00	ES					
Trial Pit Terminated at 1.30m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant		
0.00	1.30	4.00	1.30	Stable	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
						0.00	1.30	Arisings

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP411
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 27/03/2023
Date Completed: 27/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.15m

020 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Grey brown very sandy silty sub angular fine to coarse GRAVEL of mixed lithology including sandstone, clinker, basalt, brick and concrete. Medium to high cobble content of half and whole bricks. [MADE GROUND]		[0.48]								
		0.48		0.40	ES					
MADE GROUND: Dark grey very gravelly fine to coarse SAND (predominantly of ash). Gravel is sub angular of clinker, sandstone, brick and basalt. [MADE GROUND]		[0.67]								
		1.00		1.00	ES					
		1.15								
Trial Pit Terminated at 1.15m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.15	4.00	0.70	Stable	None	Andy Bird		N	

Depth Related Remarks				Water Strikes			Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description
							0.00	1.15	Arisings

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP412
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 28/03/2023
Date Completed: 28/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

261 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND. Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with rare fine roots. Gravel is subangular fine to coarse of clinker, brick, basalt and sandstone. [MADE GROUND]		[1.10]		1.00	ES					
Trial Pit Terminated at 1.10m		1.10								

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	1.10	4.50	0.70	Stable	None	Andy Bird		W		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
								0.00	1.10	Arisings

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BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP413
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 27/03/2023
Date Completed: 27/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

Stratum Description	Legend	Depth [Thick-ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is sub angular fine to coarse of mixed lithology including sandstone concrete brick clinker and basalt. Cobbles are sub angular of concrete and brick. Rare fragments of timber. [MADE GROUND]		[0.55]								
0.00 - 0.15m : Very gravelly. Gravel is sub angular fine of limestone.		0.55		0.50	ES					
Firm orange brown slight gravelly very sandy CLAY with rare fine rootlets. Gravel is sub angular fine to coarse of sandstone. [MADE GROUND.]		[0.55]								
0.70 - 1.10m : Concrete along SW face		1.10		1.00	ES					
Trial Pit Terminated at 1.10m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	1.10	3.70	0.90	Stable	None	Andy Bird		NE		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
								0.00	1.10	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

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BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP414
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 27/03/2023
Date Completed: 27/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with low cobble content. Gravel is sub angular fine to coarse of mixed lithology including brick sandstone basalt and concrete. Rare fine rootlets. [MADE GROUND] 0.28 - 0.32m : Whole bricks trending Nth - Sth across with of excavation. Pit extended.		[0.60]		0.45	ES					
Stiff brown locally grey sandy gravelly CLAY. Gravel is sub angular fine to coarse of sandstone and rare brick and basalt. [MADE GROUND.]		0.60								
		[0.50]		1.00	ES					
Trial Pit Terminated at 1.10m		1.10								

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.10	4.20	0.90	Stable	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes			Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description
							0.00	1.10	Arisings

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP415
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 28/03/2023
Date Completed: 28/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

016 deg.


Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with a low to medium cobble content. Gravel is subangular fine to coarse of clinker, sandstone, brick, basalt and concrete with rare timber fragments. Cobbles are subangular of concrete paving slabs. [MADE GROUND] 0.45m : Becoming brown with fewer cobbles.		[1.10] 1.10		0.56	ES					
Trial Pit Terminated at 1.10m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.10	4.70	0.90	Stable	None	Andy Bird	N		

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks		Depth Top	Depth Base	Description
						0.00	1.10	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

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Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP416
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 28/03/2023
Date Completed: 28/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown very gravelly silty fine to coarse SAND with low to medium cobble content. Gravel is subangular to subrounded fine to coarse of clinker, brick, concrete, sandstone and basalt. Cobbles are angular to subangular of brick, concrete and clinker (150x150x150mm). [MADE GROUND]		[0.40]								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with low to medium cobble content. Gravel is subangular fine to coarse of clinker, brick, sandstone and basalt with rare timber sleepers. Cobbles are whole and half bricks. [MADE GROUND]		0.40								
		[0.69]								
		1.00		1.10	ES					
MADE GROUND: Stiff light brown locally grey gravelly CLAY. Gravel is subangular fine to coarse of concrete, basalt and brick. [MADE GROUND]										
Trial Pit Terminated at 1.10m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information								Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	
0.00	0.10	4.50	1.20	Stable	None	Andy Bird		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
						0.00	1.10	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP417
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 29/03/2023
Date Completed: 29/03/2023

Survey Grid: OSGB
Co-ordinates:
Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Orientation of Logged Face: 060 deg.
Print Date: 18/05/2023
Final Depth: 1.18m

Stratum Description	Legend	Depth [Thick-ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown gravelly silty fine to coarse SAND with low cobble content. Rare fine roots and timber fragments. Gravel is subangular fine to coarse of mixed lithology including sandstone, brick, basalt and concrete. [MADE GROUND]		0.10								
MADE GROUND: Dark greenish brown slightly sandy silty subangular fine to coarse GRAVEL of limestone. [MADE GROUND]		0.20								
MADE GROUND: Dark greyish brown gravelly silty fine to coarse SAND (predominantly of ash) with low cobble content and occasional soft clay pockets. Gravel is subangular fine to coarse of mixed lithology including sandstone, brick, concrete, clinker and basalt. [MADE GROUND]		[0.90]		0.50	ES					
MADE GROUND: Yellowish brown sandy gravelly CLAY with low cobble content. Gravel is subangular fine to coarse of sandstone, brick and clinker. Cobbles are angular of brick. [MADE GROUND]		1.10		1.00	ES					
Trial Pit Terminated at 1.18m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	1.18	4.50	0.90	Stable	None	Andy Bird		NE		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
								0.00	1.18	Arisings

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BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP418
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 29/03/2023
Date Completed: 29/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

Stratum Description	Legend	Depth [Thick- ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Reddish brown very gravelly silty CLAY with low cobble content. Gravel is angular to subangular fine to coarse of brick, concrete and sandstone. Cobbles are subangular of half and whole bricks. [MADE GROUND]		[0.30]		0.50	ES					
		0.30								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of clinker, sandstone, basalt and brick. [MADE GROUND]		[0.50]								
		0.80								
MADE GROUND: Light orange brown locally grey sandy gravelly CLAY. Gravel is subangular fine to coarse of brick, sandstone and basalt. [MADE GROUND]		[0.30]		1.00	ES					
		1.10								
Trial Pit Terminated at 1.10m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information								
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks
0.00	1.10	4.30	0.85	Stable	None	Andy Bird		NE

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	Description
						0.00	1.10	Arisings

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP419
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 29/03/2023
Date Completed: 29/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

074 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark greyish brown very gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse of mixed lithology including brick, sandstone, concrete and basalt. Cobbles are subangular of brick. [MADE GROUND]		0.10								
0.09 - 0.10m : Terram sheeting		[0.50]		0.40	ES					
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of clinker, sandstone, brick, granite and concrete with rare fragments of timber and plastic. [MADE GROUND]		0.60								
MADE GROUND: Light orangish brown locally grey slightly gravelly silty fine to medium SAND. Gravel is subangular fine to coarse of sandstone and rare brick. [MADE GROUND]		[0.50]		1.00	ES					
Trial Pit Terminated at 1.10m		1.10								

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.10	4.50	0.90	Stable	None	Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks		Depth Top	Depth Base	Description
						0.00	1.10	Arisings

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP420
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 29/03/2023
Date Completed: 29/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.10m

074 deg.

Stratum Description	Legend	Depth [Thick- ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark greyish brown very gravelly silty fine to coarse SAND with occasional soft clay pockets. Gravel is subangular fine to coarse of concrete, brick and basalt with rare timber fragments. [MADE GROUND]		0.15		0.75	ES					
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of clinker, slag, brick and sandstone. [MADE GROUND]		[0.95]								
Trial Pit Terminated at 1.10m		1.10								

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.10	4.50	0.90	Stable	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes			Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description
							0.00	1.10	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP421
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 30/03/2023
Date Completed: 30/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.05m

317 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Brown sandy gravelly CLAY with low to medium cobble content. Gravel is subangular fine to coarse of mixed lithology including brick, sandstone, concrete, basalt and clinker with rare fragments of timber, plastic, ceramic tile and steel. Cobbles are subangular of brick.		0.25	0.40	0.40	ES					
[MADE GROUND]		0.40								
MADE GROUND: Brown gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse of limestone and sandstone.		[0.65]								
[MADE GROUND]		1.05								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of mixed lithology including clinker, sandstone and brick.										
[MADE GROUND]										
Trial Pit Terminated at 1.05m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.05	4.30	0.90	Stable	None	Andy Bird		NW	

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks		Depth Top	Depth Base	Description
						0.00	1.05	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017



TRIAL PIT LOG

Trial Pit No.
TP422
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 30/03/2023
Date Completed: 30/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.20m

013 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey brown very gravelly silty fine to coarse SAND (partially of ash) with low to medium cobble content. Gravel is angular to subangular fine to coarse of mixed lithology including concrete, brick clinker, basalt and sandstone with rare fragments of steel, plastic and timber. Cobbles are angular to subangular of concrete and brick. [MADE GROUND]		1.20		1.00	ES					
Trial Pit Terminated at 1.20m		1.20								

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	1.20	4.00	0.90	Stable	None	Andy Bird		N		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
								0.00	1.20	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

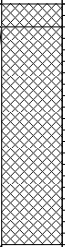
TRIAL PIT LOG

Trial Pit No.
TP423
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 30/03/2023
Date Completed: 30/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.05m

Stratum Description	Legend	Depth [Thick-ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Brown grey gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse of mixed lithology including brick, sandstone, and concrete with rare fragments of timber and plastic. Cobbles are subangular of bricks and sandstone. [MADE GROUND]		0.10		0.50	ES					
MADE GROUND: Dark greyish brown gravelly silty fine to coarse SAND (predominantly of ash) with low cobble content. Gravel is angular to subrounded fine to coarse of mixed lithology including basalt, slag, clinker and sandstone with rare angular fragments of ceramic. Cobbles are subangular of brick and sandstone. [MADE GROUND]		[0.95]								
0.10m : Fabric terram		1.05								
Trial Pit Terminated at 1.05m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.05	4.10	0.90	Stable	None	Andy Bird	NE		

Depth Related Remarks				Water Strikes			Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	
							0.00	1.05	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP424
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 30/03/2023
Date Completed: 30/03/2023

Survey Grid: OSGB
Co-ordinates:
Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Orientation of Logged Face: 040 deg.
Print Date: 18/05/2023
Final Depth: 1.00m

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown slightly sandy silty fine to coarse GRAVEL of sandstone and concrete with rare fine roots and timber fragments. [MADE GROUND]		0.10								
MADE GROUND: Dark brown very sandy silty GRAVEL with low to medium cobble content. Gravel is subangular fine to coarse of brick, slag, clinker, sandstone and concrete with rare fragments of timber, plastic and steel. Cobbles are subangular to angular of brick. [MADE GROUND]		0.30								
		[0.30]		0.50	ES					
		0.60								
		[0.40]								
0.15m : Redundant cable exposed / pulled. No signal on CAT. MADE GROUND: Dark grey gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of clinker, slag, ceramic, brick and basalt. [MADE GROUND]		1.00		1.00	ES					
0.30m : Top of half circular wall end exposed. Pit extended 0.40m : Redundant armoured cable end exposed. Pit extended.										
MADE GROUND: Light brown locally orange brown sandy slightly gravelly CLAY with occasional fine sand pockets. Gravel is subangular fine of sandstone and rare basalt. [MADE GROUND]										
Trial Pit Terminated at 1.00m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.00	7.55	0.70	Stable	None	Andy Bird		W	

Depth Related Remarks				Water Strikes			Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description
							0.00	1.00	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-EW01
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 31/03/2023
Date Completed: 31/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.00m

139 deg.

Stratum Description	Legend	Depth [Thick- ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well	
				Depth (m)	Type	Test	Test Result	Units			
MADE GROUND: Brown gravelly silty fine to coarse SAND with rare thick to fine roots and low cobble content. Gravel is fine to coarse subangular of mixed lithology including brick and concrete. Cobbles are subangular of brick and concrete. [MADE GROUND]		[0.30]		0.50	ES						
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash) with low to medium cobble content. Gravel is subangular fine to coarse of mixed lithology including brick, clinker, basalt, concrete, slag and sandstone. Cobbles are subangular of sandstone and brick. [MADE GROUND]		0.30									
		[0.70]									
Stiff brown locally grey gravelly CLAY. Gravel is subangular fine to coarse of sandstone. [SUPERFICIAL]		1.00		1.50	ES						
		[0.60]									
Loose becoming medium dense to dense orange brown gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse of sandstone. Cobbles are subrounded of sandstone. [SUPERFICIAL]		1.60		3.00	ES						
		[1.40]									
		3.00									
Trial Pit Terminated at 3.00m											

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	3.00					Andy Bird		S		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
					1.60	Slow seepage only		0.00	3.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-EW02
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 04/04/2023
Date Completed: 04/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.00m

006 deg.


Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown sandy gravelly CLAY with low cobble content and many thick to fine roots. Gravel is subangular fine to coarse of mixed lithology including brick, concrete, sandstone and basalt. Cobbles are subangular of brick. [MADE GROUND]		0.25								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular of clinker, basalt, slag, concrete and sandstone. [MADE GROUND]		[0.50]		0.50	ES					
MADE GROUND: Reddish brown slightly gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse of sandstone and granite. [MADE GROUND]		0.75		0.75	ES					
		[0.55]								
MADE GROUND: Brown locally light brown and grey slightly gravelly sandy CLAY with occasional sand lenses. Sand is fine to coarse. Gravel is subangular fine of claystone, sandstone and mudstone. [MADE GROUND]		1.30		1.50	ES					
		[1.70]								
Trial Pit Terminated at 3.00m		3.00		3.00	ES					

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	3.00	5.00	0.80	Stable	None	Andy Bird		N	

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks	Depth Top	Depth Base	Description	
			0.75	Slight seepage only	0.00	3.00	Arisings	

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-EW04
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 04/04/2023
Date Completed: 04/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.00m

069 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey brown sandy gravelly CLAY with low to medium cobble content and rare timber sleepers. Gravel is subangular fine to coarse of mixed lithology including brick, concrete, clinker, sandstone. Moderate hydrocarbon odour noted. [MADE GROUND]		[0.85]		0.50	ES					
MADE GROUND: Light brown locally grey gravelly sandy CLAY. Gravel is subangular fine to coarse of sandstone, clay pipe fragments and concrete. [MADE GROUND]		0.85								
1.10 - 1.20m : Clay pipe angled at 37 degrees NE		[0.45]								
MADE GROUND: Light brown gravelly clayey fine to coarse SAND. Gravel is subangular fine to coarse of sandstone and basalt. [MADE GROUND]		1.30		1.50	ES					
		[0.70]								
Trial Pit Terminated at 2.00m		2.00		2.00	ES					

Reason for Hole Termination: Exposed pipe

Depth Related Exploratory Hole Information									Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant		
0.00	2.00	5.00	0.80	Stable	None	Andy Bird		E	

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks		Depth Top	Depth Base	Description
						0.00	2.00	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

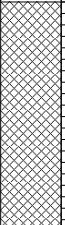
Trial Pit No.
TP-EW05
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 04/04/2023
Date Completed: 04/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.00m

305 deg.


Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey brown very gravelly silty fine to coarse SAND (partially of ash) with low cobble content and rare timber fragments. Gravel is subangular fine to coarse of mixed lithology including basalt, brick, clinker, sandstone and concrete. Cobbles are subangular of brick. [MADE GROUND]		[1.00]		0.50	ES					
				0.75	EW					
Trial Pit Terminated at 1.00m		1.00								

Reason for Hole Termination: Water ingress

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	1.00	4.00	0.80	Stable	None	Andy Bird		NW	

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
				1.00		0.00	1.00	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-EW06
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 30/03/2023
Date Completed: 30/03/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.10m

084 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Grey sandy silty subangular fine to coarse GRAVEL of sandstone and concrete with rare timber fragments. Sand is fine to coarse. [MADE GROUND]		[0.30]								
MADE GROUND: Grey slightly sandy slightly silty angular to subangular medium to coarse GRAVEL of limestone. [MADE GROUND]		0.30								
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of mixed lithology including clinker, slag, brick and basalt. [MADE GROUND]		0.45								
		[0.55]		0.75	ES					
		1.00								
Loose becoming medium dense light orange brown slightly gravelly silty fine to coarse SAND. Gravel is subangular fine to coarse of sandstone. [CLAYEY GRAVELLY SAND]				1.25	ES					
1.90 - 3.10m : Becoming reddish brown with clods of firm clay.		[2.10]								
				2.50	ES					
		3.10								
Trial Pit Terminated at 3.10m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	3.10	5.00	0.80	Stable	None	Andy Bird		E		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
					0.80	Seepage below ash		0.00	3.10	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

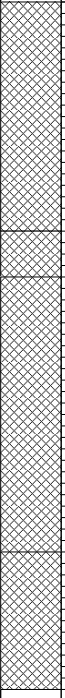
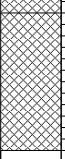
Trial Pit No.
TP-EW09
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 03/04/2023
Date Completed: 03/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.00m

020 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey brown very gravelly silty fine to coarse SAND with low to medium cobble content. Gravel is subangular fine to coarse of mixed lithology including sandstone, clinker, brick, slag and concrete. Cobbles are subangular of brick and sandstone. [MADE GROUND]		[1.00]		0.50	ES					
0.70 - 0.90m : Occasional bands of ballast.		1.00								
MADE GROUND: Reddish brown gravelly subangular to angular COBBLES of brick. Gravel is coarse of angular brick. [MADE GROUND]		1.20								
MADE GROUND: Brown gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse of sandstone, brick and concrete. Cobbles are subangular of brick, slag and sandstone. [MADE GROUND]		[1.20]		1.50	ES					
MADE GROUND: Brown slightly gravelly silty fine to coarse SAND with occasional stiff clay pockets. Gravel is subangular fine to coarse of sandstone. [MADE GROUND]		2.40								
		[0.60]								
Trial Pit Terminated at 3.00m		3.00		3.00	ES					

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	3.00	6.00	4.00	Stable	None	Andy Bird		N		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
								0.00	3.00	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

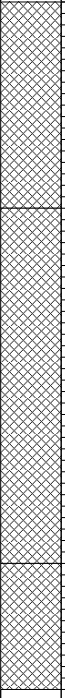
Trial Pit No.
TP-EW10
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 03/04/2023
Date Completed: 03/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.00m

342 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey brown very gravelly silty fine to coarse SAND (predominantly of ash). Gravel is subangular fine to coarse of mixed lithology including clinker, slag, brick, basalt and concrete. [MADE GROUND]		[0.90]		0.50	ES					
MADE GROUND: Light orange brown gravelly silty fine to coarse SAND with low cobble content. Gravel is subangular fine to coarse of sandstone and basalt. Cobbles are subangular of sandstone. [MADE GROUND]		0.90		1.50	ES					
MADE GROUND: Stiff brown locally grey slightly sandy slightly gravelly CLAY. Gravel is subangular fine to medium of sandstone and granite. [MADE GROUND]		[1.55]		2.45						
		[0.55]		3.00	ES					
Trial Pit Terminated at 3.00m										

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information								
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks
0.00	3.00	4.50	0.90	Stable	None	Andy Bird		N

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	Description
						0.00	3.00	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

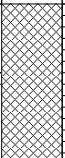
TRIAL PIT LOG

Trial Pit No.
TP-EW11
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 04/04/2023
Date Completed: 04/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.00m

Stratum Description	Legend	Depth [Thick- ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well	
				Depth (m)	Type	Test	Test Result	Units			
MADE GROUND: Dark grey brown sandy gravelly CLAY with low to medium cobble content and rare timber fragments. Gravel is subangular fine to coarse of mixed lithology including brick, concrete, sandstone slag and clinker. Cobbles are angular to sub angular of brick. [MADE GROUND] <div>0.30m : Rail Line</div> <div>0.35 - 1.00m : Brick wall p0.8m long</div>		[1.00]		0.50	ES						
Trial Pit Terminated at 1.00m		1.00		0.80 - 1.00 0.90 - 1.00	EW ES						

Reason for Hole Termination: Water ingress

Depth Related Exploratory Hole Information								Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	
0.00	1.00	7.00	0.80	Stable	None	Andy Bird		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
				1.00		0.00	1.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS2
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 05/04/2023
Date Completed: 05/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.00m

046 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND (partially of ash) with low to medium cobble content and occasional fine roots. Gravel is sub angular fine to coarse of mixed lithology including clinker, brick, concrete, sandstone and basalt. Cobbles are subangular of brick.		[0.35]								
[MADE GROUND]		0.35		0.40	ES					
MADE GROUND: Dark brown sandy gravelly CLAY with low cobble content and occasional fine roots. Gravel is subangular fine to coarse of brick, sandstone, and basalt. Cobbles are subangular of brick.		[0.55]								
[MADE GROUND]		0.90								
0.40 - 1.60m : Brick Wall trending along NW face										
MADE GROUND: Stiff slightly sandy gravelly CLAY with occasional sand lenses. Gravel is subangular fine to coarse of sandstone. Sand is fine to coarse.				1.00	ES					
[MADE GROUND]										
1.60 - 1.90m : Brick FND trending along NW face										
		[2.10]								
2.80 - 3.00m : Becoming reddish brown										
		3.00		3.00	ES					
Trial Pit Terminated at 3.00m										

Reason for Hole Termination: Base of FND located, trench extended 45m from GL to

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	3.00					Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
				1.80	Ingress from base of wall	0.00	3.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS3
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 11/04/2023
Date Completed: 11/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.00m

036 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND with medium to high cobble content. Gravel is angular and sub angular fine to coarse of mixed lithology including brick concrete sandstone slag and basalt. Cobbles are sub angular of brick sandstone and concrete (<0.3m). [MADE GROUND] 0.35 - 0.70m : Pockets of rubber plastic steel timber ceramic and glass fragments 0.45 - 2.00m : Brick wall exposed along NE face		[1.10]								
MADE GROUND: Light orange brown very gravelly silty fine to coarse SAND with medium to high cobble content. Gravel is sub angular fine to coarse of brick and sands. Cobbles are predominantly whole bricks. [MADE GROUND]		1.10								
		[0.90]		1.50	ES					
				1.70	EW					
Trial Pit Terminated at 2.00m		2.00								

Reason for Hole Termination:

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	2.00	4.80	0.80	Stable	None	Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	Description
				1.50	Slight seepage at 1.00m very slow flow	0.00	2.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS3A
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 11/04/2023
Date Completed: 11/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.30m

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND (partially of ash) with medium cobble content. Gravel is sub angular fine to coarse of mixed lithology including brick slag sandstone basalt and concrete. Rare timber fragments (<0?7mm) [MADE GROUND] 0.50 - 1.10m : Brick wall exposed along both long edges		[1.10]								
BRICK Base [MADE GROUND]		1.10								
MADE GROUND: Dark grey gravelly silty fine to coarse SAND. Gravel is sub angular fine of clinker. Slight oily sheen. [MADE GROUND]		1.20								
Trial Pit Terminated at 1.30m		1.30		1.20 - 1.30	ES					

Reason for Hole Termination: Brick base exposed

Depth Related Exploratory Hole Information								Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	
0.00	1.30	4.80	1.50	Stable	None	Andy Bird		

Depth Related Remarks			Water Strikes		Backfill Details		
From (m)	To (m)	Remarks	Depth (m)	Remarks	Depth Top	Depth Base	Description
					0.00	1.10	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS3B
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 11/04/2023
Date Completed: 11/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.00m

036 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND with medium cobble content. Gravel is sub angular fine to coarse of mixed lithology including brick sandstone concrete basalt and granite. Cobbles are sub angular predominantly of brick. Rare timber and plastic fragments (<0?45m [MADE GROUND] 0.45m : 100mm pipe exposed trending perpendicular to pit excavation 0.45 - 2.00m : Brick wall exposed along SE face		[0.60]								
MADE GROUND: Light orange brown very gravelly silty fine to coarse SAND with medium cobble content. Gravel is sub angular fine to coarse of mixed lithology including brick sandstone concrete and granite. [MADE GROUND] 0.60m : 200mm pipe exposed trending perpendicular to pit excavation 1.20 - 1.50m : Brick stantion base (1mx0.9m) with large sandstone block above		0.60 [1.40]								
Trial Pit Terminated at 2.00m		2.00								

Reason for Hole Termination: As requested by engineer

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	2.00	4.80	1.50	Stable	None	Andy Bird		NE		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
					1.80	Slow seepage only		0.00	2.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS4
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 11/04/2023
Date Completed: 11/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.00m

038 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND; Dark grey black very gravelly silty fine to coarse SAND (partially of ash) with low cobble content. Gravel is angular and sub angular fine to coarse of mixed lithology including sandstone brick slag and concrete. Cobbles are sub angular of predominantly brick including whole bricks. [MADE GROUND] 0.40 - 2.00m : Brick wall exposed along NE face.				0.00	ES					
				1.60 1.70	ES EW					
				1.80 - 2.00	ES					
Trial Pit Terminated at 2.00m		2.00								

Reason for Hole Termination: Water ingress

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	2.00	4.80	0.85	Stable	None	Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
				1.60		0.00	2.00	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

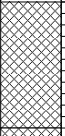
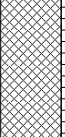
Trial Pit No.
TP-CS4A
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 12/04/2023
Date Completed: 12/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.50m

038 deg.


Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND (partially of ash) with low cobble content. Gravel is angular and sub angular fine to coarse of sandstone brick concrete basalt and clinker. Cobbles are sub angular of brick (up to whole bricks) . Rare fragments of fabric sheeting plastic and glass bottles. [MADE GROUND]		[0.55]								
MADE GROUND: Reddish brown very gravelly clayey fine to coarse SAND with low cobble content. Gravel is sub angular fine to coarse of brick and sandstone. Cobbles are sub angular of brick (up to whole bricks) and sandstone (<0.3m). [MADE GROUND]		0.55		0.50	ES					
0.55 - 1.60m : Brick wall exposed along NE face.		[1.15]								
1.60 - 1.80m : Wall FND stepped 100mm approx		1.70		1.50 1.50	ES EW					
Stiff reddish brown locally light grey slightly gravelly CLAY with rare lenses of light grey silt. Gravel is sub angular fine to coarse of mud. [GLACIAL TILL]		[0.80]		2.00	ES					
Trial Pit Terminated at 2.50m		2.50								

Reason for Hole Termination: Water ingress

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	2.50	5.00	1.00	Stable	None	Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	Description
				1.50	From behind wall	0.00	2.50	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS6
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 06/04/2023
Date Completed: 06/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 1.15m

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark grey very gravelly silty fine to coarse SAND with low to medium cobble content. Gravel is subangular fine to coarse of mixed lithology including sandstone, brick, concrete, slag and clinker. Cobbles are subangular of brick and concrete. [MADE GROUND] 0.15 - 1.00m : Brick wall trending NE towards Viaduct possible former service pit.		[0.60]		0.50	ES					
MADE GROUND: Dark brownish grey very sandy GRAVEL with medium cobble content. Gravel is angular to subangular fine to coarse of brick and concrete. Cobbles are angular of brick. [MADE GROUND]		0.60 [0.40]								
MADE GROUND: Reddish brown angular laid BRICK floor. [MADE GROUND]		1.00 1.10		1.10	ES					
MADE GROUND: Dark grey slightly gravelly silty fine to coarse SAND with black slightly viscous oily sheen. Gravel is subangular fine of mixed lithology. [MADE GROUND]										
Trial Pit Terminated at 1.15m										

Reason for Hole Termination:

Depth Related Exploratory Hole Information								Remarks
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	
0.00	1.15	4.50	1.40	Stable	None	Andy Bird		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
						0.00	1.15	Arisings

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

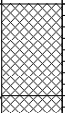
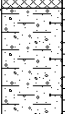
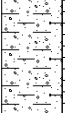
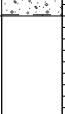
TRIAL PIT LOG

Trial Pit No.
TP-CS6A
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 06/04/2023
Date Completed: 06/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.40m

Stratum Description	Legend	Depth [Thick-ness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well	
				Depth (m)	Type	Test	Test Result	Units			
MADE GROUND: Grey brown very gravelly silty fine to coarse SAND with low cobble content and rare clay pockets. Gravel is subangular fine to coarse of mixed lithology including brick, sandstone, basalt and concrete. Cobbles are subangular of brick and concrete.		[0.40]									
[MADE GROUND]		0.40		0.35	ES						
MADE GROUND: Dark grey brown slightly sandy gravelly CLAY with low to medium cobble content. Gravel is subangular of brick, concrete and sandstone with rare plastic, glass, metal and rubber fragments.		[0.40]		0.45 - 0.75	ES						
[MADE GROUND]		0.80									
Stiff reddish brown slightly sandy slightly gravelly CLAY with rare silt lenses. Gravel is subangular fine of sandstone.											
[POSSIBLE GLACIAL TILL]		[1.60]									
		2.40		2.40	ES						
Trial Pit Terminated at 2.40m											

Reason for Hole Termination: Reached scheduled depth

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	2.40	5.00	0.90	Stable	None	Andy Bird				

Depth Related Remarks				Water Strikes			Backfill Details			
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description	
							0.00	2.40	Arisings	

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Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

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BAM R TP Log 17/10/2017

TRIAL PIT LOG

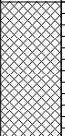
Trial Pit No.
TP-CS7
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 11/04/2023
Date Completed: 11/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.70m

047 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Light grey sandy slight silty sub angular fine to coarse GRAVEL of limestone. [TYPE 1 SUB BASE] 0.40 - 2.10m : Brick wall exposed along NE face stepped FND from 1.80 to 2.10m		[0.60]		0.50	ES					
MADE GROUND: Dark grey black very gravelly silty fine to coarse SAND (partially of ash) with low to medium cobble content. Gravel is angular and sub angular locally sub rounded fine to coarse of mixed lithology including brick sandstone concrete basalt and slag. Cobbles are sub angular predominantly of brick including whole bricks. Rare fragments of plastic [MADE GROUND] 1.50 - 2.10m : Brick wall exposed along SE face.		0.60 [1.30]								
Stiff reddish brown locally light grey slightly gravelly CLAY with localised lenses of light grey silt. Gravel is sub angular fine to coarse of mudstone. [GLACIAL TILL]		1.90 [0.80]		2.00	EW					
Trial Pit Terminated at 2.70m		2.70		2.65	ES					

Reason for Hole Termination: As requested by engineer

Depth Related Exploratory Hole Information										
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks		
0.00	2.70	4.80	0.80	Stable	None	Andy Bird		NE		
Depth Related Remarks					Water Strikes			Backfill Details		
From (m)	To (m)	Remarks			Depth (m)	Remarks		Depth Top	Depth Base	Description
					2.00			0.00	2.70	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

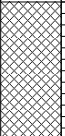
Trial Pit No.
TP-CS8
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 12/04/2023
Date Completed: 12/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 2.20m

030 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown very gravelly silty fine to coarse SAND with medium cobble content. Gravel is sub angular and angular fine to coarse f mixed lithology including brick sandstone concrete basalt and granite. Cobbles are angular and sub angular of predominantly brick. Rare fragments of plastic and rubber. [MADE GROUND] <i>0.40 - 1.80m : Brick wall trending 30degrees North East.</i>		[0.65]		0.50	ES					
MADE GROUND: Black dark grey very gravelly silty fine to coarse SAND (partially of ash) with high root and rootlet content and low cobble content. Gravel is sub angular fine to coarse of clinker slag brick and concrete. Cobbles are sub angular of brick. Roots are <30mm. [MADE GROUND]		0.65 0.80								
MADE GROUND: Orange brown slightly gravelly slightly silty fine to coarse SAND with low cobble content. Gravel is sub angular fine to coarse of sandstone. Cobbles are sub angular of sandstone (possible dense cemented sand). [MADE GROUND]		[1.40]		1.50 1.50	ES EW					
<i>1.80 - 2.10m : Wall FND stepped 100mm (approx) from wall.</i>		2.00		2.00	ES					
Trial Pit Terminated at 2.20m		2.20								

Reason for Hole Termination: Water ingress

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	2.20	5.00	0.90	SE face unstable 1.0-2.0m	None	Andy Bird		NE	

Depth Related Remarks				Water Strikes			Backfill Details		
From (m)	To (m)	Remarks		Depth (m)	Remarks		Depth Top	Depth Base	Description
				1.10	Seepage from behind brick wall		0.00	2.20	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

TRIAL PIT LOG

Trial Pit No.
TP-CS9
Sheet 1 of 1

Project Name: Victoria North HIF Infrastructure & Enabling Works
Phase 3 GI
Project No: 326R
Client: BAM Nuttall
Engineer: ARUP
Date Started: 06/04/2023
Date Completed: 06/04/2023

Survey Grid:
Co-ordinates:
Ground Level:
Orientation of Logged Face:

OSGB Hole Type: TP
Checked By:
Approved By:
Scale: 1:33
Status: PRELIM
Print Date: 18/05/2023
Final Depth: 3.70m

048 deg.

Stratum Description	Legend	Depth [Thickness] (m)	Level (m)	Sampling and In Situ Testing					Water Strikes	Well
				Depth (m)	Type	Test	Test Result	Units		
MADE GROUND: Dark brown very gravelly silty fine to coarse SAND with low cobble content and many timber fragments. Gravel is subangular fine to coarse of predominantly concrete and brick. Cobbles are subangular of brick. [MADE GROUND]		0.10 [0.30]								
MADE GROUND: Light grey very gravelly fine to coarse SAND. Gravel is subangular fine to coarse of limestone and concrete. [MADE GROUND]		0.40		0.50	ES					
MADE GROUND: Brown sandy slightly gravelly CLAY with low to medium cobble content. Gravel is subangular fine to coarse of mixed lithology including brick, sandstone, concrete, slag and basalt. Cobbles are subangular of brick and sandstone. [MADE GROUND]										
1.45 - 2.35m : Brick wall exposed trending 48 degrees NE				1.50	ES					
		[2.70]								
Stiff reddish brown slightly gravelly CLAY. Gravel is subangular of sandstone. [POSSIBLE ENGINEERING FILL]		3.10 [0.60]		3.10	EW					
				3.50	ES					
Trial Pit Terminated at 3.70m		3.70								

Reason for Hole Termination: Brick wall exposed

Depth Related Exploratory Hole Information									
From (m)	To (m)	Length (m)	Width (m)	Stability	Shoring	Logger	Plant	Remarks	
0.00	3.70					Andy Bird	NE		

Depth Related Remarks				Water Strikes		Backfill Details		Description
From (m)	To (m)	Remarks		Depth (m)	Remarks	Depth Top	Depth Base	
				3.40	Sampled	0.00	3.70	Arisings

Groundwater levels are subject to seasonal, tidal and other fluctuations and should not be taken as constant.

Explanation of symbols and abbreviations given in 'Key to Exploratory holes'

Please note this is a preliminary log and has yet to be checked.

Office: BAM Ritchies, Glasgow Road, Kilsyth, Glasgow G65 9BL

BAM R TP Log 17/10/2017

Appendix C2 – March 2023 PFAS ground investigation: Laboratory testing certificates



Unit 7-8 Hawarden Business Park

Manor Road (off Manor Lane)

Hawarden

Deeside

CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Andy Bird

CERTIFICATE OF ANALYSIS

Date of report Generation:	06 April 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230401-52
Your Reference:	326R
Location:	Victoria North
Report No:	684948
Order Number:	

We received 7 samples on Saturday April 01, 2023 and 2 of these samples were scheduled for analysis which was completed on Thursday April 06, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230401-52
Client Ref.: 326R

Report Number: 684948
Location: Victoria North

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27778591	TP417		0.50	29/03/2023
27778592	TP417		1.00	29/03/2023
27778595	TP418		0.40	29/03/2023
27778596	TP418		1.00	29/03/2023
27778597	TP419		0.40	29/03/2023
27778599	TP419		1.00	29/03/2023
27778600	TP420		0.75	29/03/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-52
Client Ref.: 326R

Report Number: 684948
Location: Victoria North

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)

27778592

27778600

Customer
Sample Reference

TP417

TP420

AGS Reference

Depth (m)

1.00

0.75

Container

Handle (ALE260)

1kg TUB with
Handle (ALE260)

Sample Type

S

S

PFAS Solids

All

NDPs: 0
Tests: 2

X

X

Sample description

All

NDPs: 0
Tests: 2

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-52
Client Ref.: 326R

Report Number: 684948
Location: Victoria North

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27778592	TP417	1.00	Dark Brown	Sandy Clay Loam	None	None
27778600	TP420	0.75	Dark Brown	Loamy Sand	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



Superseded Report:

Page 5 of 8



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-52
Client Ref.: 326R

Report Number: 684948
Location: Victoria North

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-52
Client Ref.: 326R

Report Number: 684948
Location: Victoria North

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27778592	27778600
Customer Sample Ref.	TP417	TP420
AGS Ref.		
Depth	1.00	0.75
Type	Soil/Solid (S)	Soil/Solid (S)
PFAS Solids	06-Apr-2023	06-Apr-2023
Sample description	05-Apr-2023	05-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230401-52
Client Ref: 326R

Report Number: 684948
Location: Victoria North

Superseded Report:

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230401-106
Your Reference:	326R
Location:	Victoria North
Report No:	699726
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 685729 in its entirety.

We received 8 samples on Saturday April 01, 2023 and 6 of these samples were scheduled for analysis which was completed on Friday April 14, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27781254	TO.EW06		2.50 - 2.50	30/03/2023
27781247	TP421		0.40 - 0.40	30/03/2023
27781248	TP422		1.00 - 1.00	30/03/2023
27781249	TP423		0.50 - 0.50	30/03/2023
27781250	TP424		0.50 - 0.50	30/03/2023
27781251	TP424		1.00 - 1.00	30/03/2023
27781252	TP.EW06		0.75 - 0.75	30/03/2023
27781253	TP.EW06		1.25 - 1.25	30/03/2023

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

SDG: 230401-106

Report Number: 699726

Superseded Report: 685729

Client Ref.: 326R

Location: Victoria North

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
- RE - Trade Effluent
- TS - Treated Sewage
- UE - 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
27781252	TP_EW06		0.75 - 0.75	1kg TUB with Handle (ALE260)	S
27781251	TP424		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
27781250	TP424		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
27781249	TP423		0.50 - 0.50	1kg TUB with Handle (ALE260)	S
27781248	TP422		1.00 - 1.00	1kg TUB with Handle (ALE260)	S
27781247	TP421		0.40 - 0.40	1kg TUB with Handle (ALE260)	S
All	NDPs: 0 Tests: 1		X		
All	NDPs: 0 Tests: 1		X		
All	NDPs: 0 Tests: 1		X		
All	NDPs: 0 Tests: 1		X		
All	NDPs: 0 Tests: 6		X	X	X
All	NDPs: 0 Tests: 1		X		
All	NDPs: 0 Tests: 6		X	X	X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27781247	TP421	0.40 - 0.40	Dark Brown	Loamy Sand	Glass & Stones	Vegetation
27781248	TP422	1.00 - 1.00	Black	Sand	Stones	N/A
27781249	TP423	0.50 - 0.50	Black	Sandy Loam	Stones	Vegetation
27781250	TP424	0.50 - 0.50	Dark Brown	Sandy Loam	Stones	Brick
27781251	TP424	1.00 - 1.00	Light Brown	Sandy Clay	Stones	None
27781252	TP.EW06	0.75 - 0.75	Dark Brown	Loamy Sand	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Results Legend			Customer Sample Ref.	TP421	TP422	TP423	TP424	TP424	TP.EW06
#	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								
1-4**@	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Moisture Content Ratio (% of as received sample)	%	PM024	15	13	20	12	9.9	23	
4:2 FTS (757124-72-4)	<2 µg/kg	TM338	<2	<2		<2	<2	<2	
8:2 FTS (39108-34-4)	<2 µg/kg	TM338	<2	<2		<2	<2	<2	
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338	<20	<20		<20	<20	<20	
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3	<3	<3	<3	<3	<3	
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3	<3	<3	<3	<3	<3	
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2	<2	<2	<2	<2	<2	
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1	4.39	<1	<1	<1	<1	
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1	5.42	<1	<1	<1	<1	
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1	7.46	<1	<1	<1	<1	
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1	6.28	<1	<1	<1	<1	
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	<1	<1	11.7	<1	<1	<1	
Branched PFOS	<1 µg/kg	TM338	<1	<1	2.51	<1	<1	<1	
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1	22.1	<1	<1	<1	<1	
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	1.03	1.48	<1	<1	<1	<1	
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFDS (335-73-3) Perfluoro-1-decanesulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
Total PFOS	<1 µg/kg	TM338	<1	<1	14.2	<1	<1	<1	
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428			<3				
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428			<3				
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428			<2				
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428			<1				
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428			<1				
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	<1 µg/kg	TM428			<1				
PFOA (Post Ox.) Perfluoro-n-octanoic acid	<1 µg/kg	TM428			<1				
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM428			<1				
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	<1 µg/kg	TM428			<1				
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM428			<1				



Superseded Report: 685729

Page 6 of 12



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326RReport Number: 699726
Location: Victoria North

Superseded Report: 685729

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.105	Natural Moisture Content (%)	16.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	85.9
Particle Size <4mm	>95%		

Case

SDG	230401-106
Lab Sample Number(s)	27781249
Sampled Date	30-Mar-2023
Customer Sample Ref.	TP423
Depth (m)	0.50 - 0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Branched PFOS	0.0000143	<0.0000065	0.000143	<0.0000065	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Linear PFOS (1763-23-1)	0.0000615	<0.0000065	0.000615	<0.0000065	-	-	-
PFBA (375-22-4)	<0.000009	<0.000002	<0.00009	<0.00002	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDA (335-76-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000673	<0.000001	0.0000673	<0.00001	-	-	-
PFHxA (307-24-4)	0.00000753	<0.000001	0.0000753	<0.00001	-	-	-
PFNA (375-95-1)	0.00000134	<0.000001	0.0000134	<0.00001	-	-	-
PFOA (335-67-1)	0.0000209	<0.0000065	0.000209	<0.0000065	-	-	-
PFPA (2706-90-3)	0.0000053	<0.000001	0.000053	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS (Post Ox.)	0.0000178	<0.000002	0.000178	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	0.0000787	<0.000002	0.000787	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.0000509	<0.000004	0.000509	<0.00004	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.0000116	<0.000002	0.000116	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	0.000017	<0.000002	0.00017	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.000028	<0.000002	0.00028	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.0000129	<0.000002	0.000129	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-

Leach Test Information

Date Prepared	05-Apr-2023
pH (pH Units)	8.22
Conductivity (µS/cm)	155
Volume Leachant (Litres)	0.885

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

10/08/2023 14:33:06

14:32:48 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Data Amendment

Sample No. : All Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	UNS solid	Soil



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Table of Results - Appendix

Method No	Description
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM337	Analysis of PFAS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-106
Client Ref.: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Test Completion Dates

Lab Sample No(s)	27781247	27781248	27781249	27781250	27781251	27781252
Customer Sample Ref.	TP421	TP422	TP423	TP424	TP424	TP.EW06
AGS Ref.						
Depth	0.40 - 0.40	1.00 - 1.00	0.50 - 0.50	0.50 - 0.50	1.00 - 1.00	0.75 - 0.75
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
CEN 10:1 Leachate (1 Stage)			06-Apr-2023			
CEN Readings			14-Apr-2023			
Moisture at 105C			05-Apr-2023			
PFAS (Post Ox.) Liquids			14-Apr-2023			
PFAS (Post Ox.) Solids			14-Apr-2023			
PFAS Liquids			14-Apr-2023			
PFAS Solids	14-Apr-2023	14-Apr-2023	11-Apr-2023	13-Apr-2023	13-Apr-2023	13-Apr-2023
pH Value of Filtered Water			14-Apr-2023			
Sample description	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230401-106
Client Ref: 326R

Report Number: 699726
Location: Victoria North

Superseded Report: 685729

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park

Manor Road (off Manor Lane)

Hawarden

Deeside

CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Andy Bird

CERTIFICATE OF ANALYSIS

Date of report Generation:	05 May 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230414-35
Your Reference:	326R
Location:	Victoria North
Report No:	687999
Order Number:	

We received 8 samples on Friday April 14, 2023 and 1 of these samples were scheduled for analysis which was completed on Friday May 05, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230414-35
Client Ref.: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27836402	TP - CS8		0.50	12/04/2023
27836403	TP - CS8		1.50	12/04/2023
27836406	TP - CS8		1.50	12/04/2023
27836405	TP - CS8		2.00	12/04/2023
27836395	TP - CS4A		0.50	12/04/2023
27836397	TP - CS4A		1.50	12/04/2023
27836401	TP - CS4A		1.50	12/04/2023
27836398	TP - CS4A		2.00	12/04/2023

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



CERTIFICATE OF ANALYSIS

SDG: 230414-35
Client Ref.: 326RReport Number: 687999
Location: Victoria North

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)

2736398

Customer
Sample Reference

TP - CS4A

AGS Reference

Depth (m)

2.00

Container

250g Amber Jar
(ALE210)
1kg TUB

Sample Type

S S

PFAS (Post Ox.) Solids

All

NDPs: 0
Tests: 1

X

PFAS Solids

All

NDPs: 0
Tests: 1

X

Sample description

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230414-35
Client Ref.: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27836398	TP - CS4A	2.00	Dark Brown	Sandy Clay Loam	None	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230414-35
Client Ref.: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Results Legend		Customer Sample Ref.	TP - CS4A				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00				
M	mCERTS accredited.		Soil/Solid (S)				
aq	Aqueous / settled sample.		12/04/2023				
diss.filt	Dissolved / filtered sample.						
tot.unfilt	Total / unfiltered sample.		14/04/2023				
*	Subcontracted - refer to subcontractor report for accreditation status.		230414-35				
**	% 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		27836398				
(F)	Trigger breach confirmed						
1-4**@	Sample deviation (see appendix)						
Component	LOD/Units	Method					
Moisture Content Ratio (% of as received sample)	%	PM024	11				
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3				
PFPa (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3				
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2				
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1				
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1				
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1				
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338	<1				
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1				
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338	<1				
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1				
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338	<1				
Branched PFOS	<1 µg/kg	TM338	<1				
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1				
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1				
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338	<1				
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1				
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338	<1				
PFPeS (2706-91-4) Perfluoro-1-pentanedisulfonate	<1 µg/kg	TM338	<1				
Total PFOS	<1 µg/kg	TM338	<1				
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428	<3				
PFPa (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428	<3				
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428	<2				
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428	<1				
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428	<1				
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	<1 µg/kg	TM428	<1				
PFOA (Post Ox.) Perfluoro-n-octanoic acid	<1 µg/kg	TM428	<1				
PFHxS (Post Ox.) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM428	<1				
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	<1 µg/kg	TM428	<1				
PFHpS (Post Ox.) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM428	<1				
PFDA (Post Ox.) Perfluoro-n-decanoic acid	<1 µg/kg	TM428	<1				
Linear PFOS (Post Ox.) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM428	<1				
Branched PFOS (Post Ox.)	<1 µg/kg	TM428	<1				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230414-35
Client Ref.: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230414-35
Client Ref.: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27836398
Customer Sample Ref.	TP - CS4A
AGS Ref.	
Depth	2.00
Type	Soil/Solid (S)

PFAS (Post Ox.) Solids	05-May-2023
PFAS Solids	04-May-2023
Sample description	27-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230414-35
Client Ref: 326R

Report Number: 687999
Location: Victoria North

Superseded Report:

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230405-47
Your Reference:	326R
Location:	Victoria North
Report No:	699719
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 685609 in its entirety.

We received 3 samples on Wednesday April 05, 2023 and 1 of these samples were scheduled for analysis which was completed on Friday April 14, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230405-47
Client Ref.: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27796961	TP-EW10	ES1	0.50	03/04/2023
27796962	TP-EW10	ES2	1.50	03/04/2023
27796963	TP-EW10	ES3	3.00	03/04/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-47

Report Number: 699719

Superseded Report: 685609

Client Ref.: 326R

Location: Victoria North

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)

27796963

Customer
Sample Reference

TP-EW10

AGS Reference

ES3

Depth (m)

3.00

Container

1 kg TUB with
Handle (ALE260)

Sample Type

S

PFAS solids

All

NDPs: 0
Tests: 1

X

Sample description

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-47
Client Ref.: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27796963	TP-EW10	3.00	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-47
Client Ref.: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Data Amendment

Sample No. : All Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	uns solid	Soil



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-47
Client Ref.: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-47
Client Ref.: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Test Completion Dates

Lab Sample No(s)	27796963
Customer Sample Ref.	TP-EW10
AGS Ref.	ES3
Depth	3.00
Type	Soil/Solid (S)

PFAS Solids	14-Apr-2023
Sample description	06-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230405-47
Client Ref: 326R

Report Number: 699719
Location: Victoria North

Superseded Report: 685609

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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BAM Ritchies
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Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230405-48
Your Reference:	326R
Location:	Victoria North
Report No:	699713
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 685709 in its entirety.

We received 10 samples on Wednesday April 05, 2023 and 3 of these samples were scheduled for analysis which was completed on Friday April 14, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27797029	TP-EW07	ES1	0.50	03/04/2023
27797030	TP-EW07	ES2	1.50	03/04/2023
27797031	TP-EW07	ES3	3.00	03/04/2023
27797032	TP-EW08	ES1	0.50	03/04/2023
27797033	TP-EW08	ES2	1.50	03/04/2023
27797035	TP-EW08	ES4	2.30	03/04/2023
27797034	TP-EW08	ES3	3.00	03/04/2023
27797036	TP-EW09	ES1	0.50	03/04/2023
27797037	TP-EW09	ES2	1.50	03/04/2023
27797038	TP-EW09	ES3	3.00	03/04/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

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

27797037
27797032
27797029

TP-EW09
TP-EW08
TP-EW07

ES2
ES1
ES1

1.50
0.50
0.50

1 kg TUB with
Handle (ALE260)
1 kg TUB with
Handle (ALE260)
1 kg TUB with
Handle (ALE260)

S
S
S

CEN Readings

All

NDPs: 0
Tests: 1

X

PFAS (Post Ox.) Liquids

All

NDPs: 0
Tests: 1

X

PFAS (Post Ox.) Solids

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

PFAS Solids

All

NDPs: 0
Tests: 3

X

X

X

pH Value of Filtered Water

All

NDPs: 0
Tests: 1

X

Sample description

All

NDPs: 0
Tests: 3

X

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27797029	TP-EW07	0.50	Dark Brown	Stone/Soil	Stones	Stones
27797032	TP-EW08	0.50	Dark Brown	Sand	Stones	N/A
27797037	TP-EW09	1.50	Dark Brown	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Results Legend			Customer Sample Ref.					
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TP-EW07	TP-EW08	TP-EW09		
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							
1-4	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	22	27	19			
4:2 FTS (757124-72-4)	<2 µg/kg	TM338		<2	<2			
8:2 FTS (39108-34-4)	<2 µg/kg	TM338		<2	<2			
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338		<20	<20			
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3	<3	<3			
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3	<3	<3			
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2	<2	<2			
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1	<1	<1			
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1	<1	<1			
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1	<1	<1			
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1	<1	<1			
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
Branched PFOS	<1 µg/kg	TM338	<1	<1	<1			
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1	<1	<1			
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1	<1	<1			
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338	<1	<1	<1			
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1	<1	<1			
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
PFPeS (2706-91-4) Perfluoro-1-pentanedisulfonate	<1 µg/kg	TM338	<1	<1	<1			
Total PFOS	<1 µg/kg	TM338	<1	<1	<1			
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428	<3					
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428	<3					
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428	<2					
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428	<1					
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428	<1					
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	<1 µg/kg	TM428	<1					
PFOA (Post Ox.) Perfluoro-n-octanoic acid	<1 µg/kg	TM428	<1					
PFHxS (Post Ox.) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM428	<1					
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	<1 µg/kg	TM428	<1					
PFHpS (Post Ox.) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM428	<1					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326RReport Number: 699713
Location: Victoria North

Superseded Report: 685709

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.113	Natural Moisture Content (%)	25.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	79.9
Particle Size <4mm	>95%		

Case

SDG	230405-48
Lab Sample Number(s)	27797029
Sampled Date	03-Apr-2023
Customer Sample Ref.	TP-EW07 ES1
Depth (m)	0.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Branched PFOS	0.0000007	<0.00000065	0.000007	<0.0000065	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Linear PFOS (1763-23-1)	0.0000019	<0.00000065	0.000019	<0.0000065	-	-	-
PFBA (375-22-4)	<0.000006	<0.000002	<0.00006	<0.00002	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDA (335-76-2)	0.00000103	<0.000001	0.0000103	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000218	<0.000001	0.0000218	<0.00001	-	-	-
PFHxA (307-24-4)	0.00000219	<0.000001	0.0000219	<0.00001	-	-	-
PFNA (375-95-1)	0.00000174	<0.000001	0.0000174	<0.00001	-	-	-
PFOA (335-67-1)	0.00000457	<0.00000065	0.0000457	<0.0000065	-	-	-
PFPA (2706-90-3)	0.00000123	<0.000001	0.0000123	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	0.00000279	<0.000002	0.0000279	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.00000145	<0.000004	0.000145	<0.00004	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00000486	<0.000002	0.0000486	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	0.00000787	<0.000002	0.0000787	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	0.0000028	<0.000002	0.000028	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.0000056	<0.000002	0.000056	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00000743	<0.000002	0.0000743	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-

Leach Test Information

Date Prepared	06-Apr-2023
pH (pH Units)	8.07
Conductivity (µS/cm)	197
Volume Leachant (Litres)	0.878

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

10/08/2023 14:07:21

14:07:04 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Data Amendment

Sample No. : All Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	UNS solid	Soil

Sample No. : 27797035 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	unspecified liquied	ground water



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM337	Analysis of PFAS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230405-48
Client Ref.: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	27797029	27797032	27797037
	TP-EW07	TP-EW08	TP-EW09
	ES1	ES1	ES2
	0.50	0.50	1.50
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
CEN 10:1 Leachate (1 Stage)	11-Apr-2023		
CEN Readings	13-Apr-2023		
Moisture at 105C	06-Apr-2023		
PFAS (Post Ox.) Liquids	14-Apr-2023		
PFAS (Post Ox.) Solids	14-Apr-2023		
PFAS Liquids	14-Apr-2023		
PFAS Solids	14-Apr-2023	14-Apr-2023	14-Apr-2023
pH Value of Filtered Water	13-Apr-2023		
Sample description	06-Apr-2023	06-Apr-2023	06-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230405-48
Client Ref: 326R

Report Number: 699713
Location: Victoria North

Superseded Report: 685709

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230406-69
Your Reference: 326R
Location: Victoria North
Report No: 699722
Order Number: RIT 298 665 896

This report has been revised and directly supersedes 690052 in its entirety.

We received 12 samples on Thursday April 06, 2023 and 7 of these samples were scheduled for analysis which was completed on Wednesday May 24, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27806688	TP-EW02		0.50	04/04/2023
27806689	TP-EW02		0.75 - 1.25	04/04/2023
27806690	TP-EW02		1.50	04/04/2023
27806691	TP-EW02		3.00	04/04/2023
27806692	TP-EW04		0.50	04/04/2023
27806693	TP-EW04		1.50	04/04/2023
27806694	TP-EW04		2.00	04/04/2023
27806695	TP-EW05		0.50	04/04/2023
27806696	TP-EW05		0.75	04/04/2023
27806697	TP-EW11		0.50	04/04/2023
27806699	TP-EW11		0.80	04/04/2023
27806698	TP-EW11		0.90	04/04/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

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

27806694	27806695	27806697	27806698
TP-EW04	TP-EW05	TP-EW11	TP-EW11
2.00	0.50	0.50	0.90
1kg TUB	1kg TUB	1kg TUB	1kg TUB
S	S	S	S

Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 1					X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3	X	X	X		
Metals in solid samples by OES	All	NDPs: 0 Tests: 3	X	X	X		
PFAS (Post Ox.) Solids	All	NDPs: 0 Tests: 1					X
PFAS Solids	All	NDPs: 0 Tests: 1					X
pH	All	NDPs: 0 Tests: 3	X	X	X		
Phenols by HPLC (S)	All	NDPs: 0 Tests: 3	X	X	X		
Sample description	All	NDPs: 0 Tests: 4	X	X	X	X	
Total Organic Carbon	All	NDPs: 0 Tests: 3	X	X	X		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27806694	TP-EW04	2.00	Light Brown	Sandy Clay	Stones	None
27806695	TP-EW05	0.50	Dark Brown	Loamy Sand	Stones	Vegetation
27806697	TP-EW11	0.50	Dark Brown	Loamy Sand	Stones	None
27806698	TP-EW11	0.90	Red	N/A	Brick	Crushed Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Results Legend			Customer Sample Ref.		TP-EW04	TP-EW05	TP-EW11	TP-EW11		
# 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 1-4*§@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		2.00 Soil/Solid (S) 04/04/2023 06/04/2023 230406-69 27806694	0.50 Soil/Solid (S) 04/04/2023 06/04/2023 230406-69 27806695	0.50 Soil/Solid (S) 04/04/2023 06/04/2023 230406-69 27806697	0.90 Soil/Solid (S) 04/04/2023 06/04/2023 230406-69 27806698		
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024	12	19	21	14				
Phenol	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M					
Cresols	<0.01 mg/kg	TM062 (S)	<0.01 @ M	<0.01 @ M	<0.01 @ M					
Xylenols	<0.015 mg/kg	TM062 (S)	<0.015 @ M	<0.015 @ M	<0.015 @ M					
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)	<0.035 @ M	<0.035 @ M	<0.035 @ M					
Organic Carbon, Total	<0.2 %	TM132	0.308 @ M	33.5 @ M	30.6 @ M					
pH	1 pH Units	TM133	8.83 @ M	8.29 @ M	8.39 @ M					
Cyanide, Total	<1 mg/kg	TM153	<1 @ M	<1 @ M	<1 @ M					
Antimony	<0.6 mg/kg	TM181	<0.6 #	4.51 #	5.62 #					
Arsenic	<0.6 mg/kg	TM181	8.49 M	26.9 M	30.5 M					
Beryllium	<0.01 mg/kg	TM181	0.982 M	1.48 M	1.86 M					
Cadmium	<0.02 mg/kg	TM181	0.193 M	0.893 M	0.459 M					
Chromium	<0.9 mg/kg	TM181	17 M	1.28 M	2.69 M					
Copper	<1.4 mg/kg	TM181	19.1 M	209 M	180 M					
Lead	<0.7 mg/kg	TM181	13.3 M	116 M	196 M					
Mercury	<0.1 mg/kg	TM181	<0.1 @ M	<0.1 @ M	0.123 @ M					
Nickel	<0.2 mg/kg	TM181	28.8 M	40 M	47.6 M					
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #					
Vanadium	<0.2 mg/kg	TM181	26.1 #	60.7 #	63 #					
Zinc	<1.9 mg/kg	TM181	55.1 M	733 M	211 M					
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338				<3				
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338				<3				
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338				<2				
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338				<1				
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338				<1				
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338				<1				
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338				<1				
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338				<1				
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338				<1				
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338				<1				
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338				<1				
Branched PFOS	<1 µg/kg	TM338				<1				
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338				<1				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5&+@@ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref.	TP-EW11	28/04/2023	Emily Anderton	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Depth (m)	0.90										
Sample Type	SOLID										
Date Sampled	04/04/2023 00:00:00										
Date Received	06/04/2023 05:00:00										
SDG	230406-69										
Original Sample	27806698										
Method Number	TM048										



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Data Amendment

Sample No. : All Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	UNS solids	Soil
All	Matrix Change	unspecified liquid	ground water



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Table of Results - Appendix

Method No	Description
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM153	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-69
Client Ref.: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	27806694	27806695	27806697	27806698
	TP-EW04	TP-EW05	TP-EW11	TP-EW11
	2.00	0.50	0.50	0.90
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples				28-Apr-2023
Cyanide Comp/Free/Total/Thiocyanate	24-May-2023	24-May-2023	24-May-2023	
Metals in solid samples by OES	23-May-2023	23-May-2023	24-May-2023	
PFAS (Post Ox.) Solids				23-May-2023
PFAS Solids				22-May-2023
pH	22-May-2023	22-May-2023	22-May-2023	
Phenols by HPLC (S)	23-May-2023	23-May-2023	23-May-2023	
Sample description	19-May-2023	19-May-2023	19-May-2023	15-Apr-2023
Total Organic Carbon	23-May-2023	23-May-2023	24-May-2023	



CERTIFICATE OF ANALYSIS

SDG: 230406-69
Client Ref: 326R

Report Number: 699722
Location: Victoria North

Superseded Report: 690052

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230406-140
Your Reference: 326R
Location: Victoria North
Report No: 699672
Order Number: RIT 298 665 896

This report has been revised and directly supersedes 697560 in its entirety.

We received 9 samples on Thursday April 06, 2023 and 8 of these samples were scheduled for analysis which was completed on Tuesday July 11, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27810597	TP CS6		0.50	06/04/2023
27810598	TP CS6		1.00	06/04/2023
27810599	TP CS9		0.50	06/04/2023
27810600	TP CS9		1.50	06/04/2023
27810602	TP CS9		3.10	06/04/2023
27810601	TP CS9		3.50	06/04/2023
27810603	TP CS9(A)		0.35	06/04/2023
27810604	TP CS9(A)		0.45 - 0.75	06/04/2023
27810607	TP CS9(A)		2.50	06/04/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

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

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 2

X

X

EPH CWG GC (S)

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X

GRO by GC-FID (S)

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X

Metals in solid samples by OES

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X

PFAS Liquids (Full Suite)

All

NDPs: 0
Tests: 1

X

PFAS solids

All

NDPs: 0
Tests: 6

X

X

X

X

X

X

Sample description

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X

TPH CWG GC (S)

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X

VOC MS (S)

All

NDPs: 0
Tests: 7

X

X

X

X

X

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27810597	TP CS6	0.50	Dark Brown	Loamy Sand	Concrete/Aggregate	Vegetation
27810598	TP CS6	1.00	Dark Brown	Sand	Stones	Oil/Petroleum
27810599	TP CS9	0.50	Dark Brown	Sandy Loam	Stones	Concrete/Aggregate
27810600	TP CS9	1.50	Light Brown	Silty Clay	Stones	Vegetation
27810601	TP CS9	3.50	Dark Brown	Silty Clay	None	None
27810604	TP CS9(A)	0.45 - 0.75	Dark Brown	Sandy Silt Loam	Stones	Vegetation
27810607	TP CS9(A)	2.50	Light Brown	Clay	Vegetation	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Results Legend			Customer Sample Ref.	TP CS6	TP CS6	TP CS9	TP CS9	TP CS9	TP CS9
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50	1.00	0.50	1.50	3.10	3.50
M	mCERTS accredited.			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Ground Water (GW)	Soil/Solid (S)
aq	Aqueous / settled sample.			06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023
diss.filt	Dissolved / filtered sample.			06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023
tot.unfilt	Total / unfiltered sample.			230406-140	230406-140	230406-140	230406-140	230406-140	230406-140
* 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 1-4* Sample deviation (see appendix)				27810597	27810598	27810599	27810600	27810602	27810601
Component	LOD/Units	Method							
PFBA (375-22-4)	<0.000002 mg/l	TM434						0.000031 #	
PFMOPra (377-73-1)	<0.000001 mg/l	TM434						<0.00001 #	
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434						<0.00002 #	
PFPA (2706-90-3)	<0.000001 mg/l	TM434						0.000025 #	
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434						<0.00001 #	
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434						<0.00001 #	
NFDHA (151772-58-6)	<0.000003 mg/l	TM434						<0.00003 #	
PFBS (375-73-5)	<0.000001 mg/l	TM434						<0.00001 #	
PFHxA (307-24-4)	<0.000001 mg/l	TM434						0.000019 #	
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434						<0.00002 #	
PFEESA (113507-82-7)	<0.000001 mg/l	TM434						<0.00001 #	
PFHpA (375-85-9)	<0.000001 mg/l	TM434						0.000016 #	
PFPeS (2706-91-4)	<0.000001 mg/l	TM434						<0.00001 #	
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434						<0.00005 #	
ADONA (919005-14-4)	<0.000001 mg/l	TM434						<0.00001 #	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434						<0.00001 #	
FBSA (30334-69-1)	<0.000001 mg/l	TM434						<0.00001 #	
PFOA (335-67-1)	<0.000001 mg/l	TM434						0.000029 #	
PFHxS (355-46-4)	<0.000001 mg/l	TM434						<0.00001 #	
PFNA (375-95-1)	<0.000001 mg/l	TM434						<0.00001 #	
PFecHS (133201-07-7)	<0.000001 mg/l	TM434						<0.00001 #	
PFHpS (375-92-8)	<0.000001 mg/l	TM434						<0.00001 #	
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434						<0.00002 #	
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434						<0.00005 #	
PFDA (335-76-2)	<0.000002 mg/l	TM434						<0.00002 #	
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434						<0.00002 #	
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434						<0.00005 #	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434						0.000015 #	
Branched PFOS	<0.000001 mg/l	TM434						0.000007 #	
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434						<0.00002 #	
PFUnA (2058-94-8)	<0.000002 mg/l	TM434						<0.00002 #	
9CI-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434						<0.00001 #	
PFNS (68259-12-1)	<0.000001 mg/l	TM434						<0.00001 #	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Results Legend			Customer Sample Ref.	TP CS6	TP CS6	TP CS9	TP CS9	TP CS9	TP CS9
# 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 1-4# Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soil/Solid (S) 06/04/2023 06/04/2023 230406-140 27810597	1.00 Soil/Solid (S) 06/04/2023 06/04/2023 230406-140 27810598	0.50 Soil/Solid (S) 06/04/2023 06/04/2023 230406-140 27810599	1.50 Soil/Solid (S) 06/04/2023 06/04/2023 230406-140 27810600	3.10 Ground Water (GW) 06/04/2023 06/04/2023 230406-140 27810602	3.50 Soil/Solid (S) 06/04/2023 06/04/2023 230406-140 27810601
Component	LOD/Units	Method							
FHxSA (41997-13-1)	<0.000001 mg/l	TM434						<0.00001 #	
PFDaA (307-55-1)	<0.000002 mg/l	TM434						<0.00002 #	
PFDS (335-77-3)	<0.000002 mg/l	TM434						<0.00002 #	
PFTTrDA (72629-94-8)	<0.000003 mg/l	TM434						<0.00003 #	
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434						<0.00002 #	
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434						<0.00002 #	
PFTeA (376-06-7)	<0.000001 mg/l	TM434						<0.00001 #	
PFOSA (754-91-6)	<0.000002 mg/l	TM434						<0.00002 #	
PFDoS (79780-39-5)	<0.000002 mg/l	TM434						<0.00002 #	
PFTTrDS (174675-49-1)	<0.000001 mg/l	TM434						<0.00001 #	
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434						<0.00001 #	
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434						<0.0001 #	
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434						<0.00001 #	
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434						<0.0001 #	
PFODA (16517-11-6)	<0.000001 mg/l	TM434						<0.00001 #	
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434						<0.00001 #	
Total PFOS	<0.000001 mg/l	TM434						0.000022 #	
Moisture Content Ratio (% of as received sample)	%	PM024	22	40	7.4	8.9			9.1
Arsenic	<0.6 mg/kg	TM181	31.9 M	20.1 M	5.84 M	6.6 M			14.5 M
Cadmium	<0.02 mg/kg	TM181	1.39 M	2.86 M	2.22 M	0.0627 M			<0.02 M
Chromium	<0.9 mg/kg	TM181	<9 M	<0.9 M	6.15 M	8.1 M			4.77 M
Copper	<1.4 mg/kg	TM181	380 M	447 M	28.8 M	13.5 M			9.13 M
Lead	<0.7 mg/kg	TM181	339 M	373 M	53.4 M	11.7 M			15 M
Mercury	<0.1 mg/kg	TM181	<1 M	0.68 M	0.9 M	<0.1 M			<0.1 M
Nickel	<0.2 mg/kg	TM181	38 M	165 M	12 M	17 M			25.4 M
Selenium	<1 mg/kg	TM181	<10 #	5.82 #	1.17 #	<1 #			<1 #
Zinc	<1.9 mg/kg	TM181	264 M	1780 M	170 M	85.6 M			36.4 M
4:2 FTS (757124-72-4)	<2 µg/kg	TM338	<2	<2	<2				<2
8:2 FTS (39108-34-4)	<2 µg/kg	TM338	<2	<2	<2				<2
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338	<20	<20	<20				<20
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3	<3	<3				<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3	<3	<3				<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2	<2	<2				<2



CERTIFICATE OF ANALYSIS

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SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Results Legend			Customer Sample Ref.		TP CS9(A)	TP CS9(A)				
# 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 1-4* Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.45 - 0.75 Soil/Solid (S) 06/04/2023	2.50 Soil/Solid (S) 06/04/2023				
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024	15		19					
Arsenic	<0.6 mg/kg	TM181	10	M	6.18	M				
Cadmium	<0.02 mg/kg	TM181	<0.02	M	<0.02	M				
Chromium	<0.9 mg/kg	TM181	<0.9	M	11.9	M				
Copper	<1.4 mg/kg	TM181	101	M	6.8	M				
Lead	<0.7 mg/kg	TM181	97.7	M	8.41	M				
Mercury	<0.1 mg/kg	TM181	<0.1	M	<0.1	M				
Nickel	<0.2 mg/kg	TM181	26.2	M	42	M				
Selenium	<1 mg/kg	TM181	<1	#	1.31	#				
Zinc	<1.9 mg/kg	TM181	84	M	47	M				
4:2 FTS (757124-72-4)	<2 µg/kg	TM338	<2		<2					
8:2 FTS (39108-34-4)	<2 µg/kg	TM338	<2		<2					
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338	<20		<20					
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3		<3					
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3		<3					
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2		<2					
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1		<1					
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1		<1					
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1		<1					
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338	<1		<1					
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1		<1					
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338	<1		<1					
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1		<1					
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338	<1		<1					
Branched PFOS	<1 µg/kg	TM338	<1		<1					
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1		<1					
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1		<1					
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338	<1		<1					
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1		<1					
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338	<1		<1					
PFPeS (2706-91-4) Perfluoro-1-pentadecanedisulfonate	<1 µg/kg	TM338	<1		<1					
Total PFOS	<1 µg/kg	TM338	<1		<1					



Superseded Report: 697560



Superseded Report: 697560



CERTIFICATE OF ANALYSIS

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SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

VOC MS (S)

Results Legend			Customer Sample Ref.		TP CS6	TP CS6	TP CS9	TP CS9	TP CS9	TP CS9(A)
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 Soil/Solid (S) 06/04/2023	1.00 Soil/Solid (S) 06/04/2023	0.50 Soil/Solid (S) 06/04/2023	1.50 Soil/Solid (S) 06/04/2023	3.50 Soil/Solid (S) 06/04/2023	0.45 - 0.75 Soil/Solid (S) 06/04/2023
					06/04/2023 230406-140 27810597	06/04/2023 230406-140 27810598	06/04/2023 230406-140 27810599	06/04/2023 230406-140 27810600	06/04/2023 230406-140 27810601	06/04/2023 230406-140 27810604
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116	105	2	113	2	105	2	112	2
Toluene-d8**	%	TM116	95.7	2	98.9	2	102	2	101	2
4-Bromofluorobenzene**	%	TM116	79.3	2	79.6	2	91.8	2	76.4	2
Dichlorodifluoromethane	<0.5 µg/kg	TM116	<120	2 #						
Chloromethane	<2 µg/kg	TM116	<140	2 #						
Vinyl Chloride	<0.5 µg/kg	TM116	<120	2 M						
Bromomethane	<1 µg/kg	TM116	<200	2 M						
Chloroethane	<1 µg/kg	TM116	<200	2 M						
Trichlorofluoromethane	<0.5 µg/kg	TM116	<120	2 M						
1,1-Dichloroethene	<0.5 µg/kg	TM116	<200	2 #						
Carbon Disulphide	<1 µg/kg	TM116	<140	2 M						
Dichloromethane	<5 µg/kg	TM116	<200	2 #						
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116	<200	2 M	<200	M	<100	2 M	<200	M
trans-1,2-Dichloroethene	<1 µg/kg	TM116	<200	2 M						
1,1-Dichloroethane	<0.5 µg/kg	TM116	<160	2 M						
cis-1,2-Dichloroethene	<0.5 µg/kg	TM116	<120	2 M						
2,2-Dichloropropane	<1 µg/kg	TM116	<200	2						
Bromochloromethane	<2 µg/kg	TM116	<200	2 M						
Chloroform	<3 µg/kg	TM116	<160	2 M						
1,1,1-Trichloroethane	<0.5 µg/kg	TM116	<140	2 M						
1,1-Dichloropropene	<0.5 µg/kg	TM116	<200	2 M						
Carbontetrachloride	<0.5 µg/kg	TM116	<200	2 M						
1,2-Dichloroethane	<1 µg/kg	TM116	<100	2 M						
Benzene	<1 µg/kg	TM116	<180	2 M	<180	M	<90	2 M	<180	M
Trichloroethene	<1 µg/kg	TM116	<180	2 #						
1,2-Dichloropropane	<0.5 µg/kg	TM116	<200	2 M						
Dibromomethane	<1 µg/kg	TM116	<180	2 M						
Bromodichloromethane	<2 µg/kg	TM116	<140	2 M						
cis-1,3-Dichloropropene	<0.5 µg/kg	TM116	<200	2 M						
Toluene	<1 µg/kg	TM116	<140	2 M	<140	M	<70	2 M	<140	M
trans-1,3-Dichloropropene	<1 µg/kg	TM116	<200	2						
1,1,2-Trichloroethane	<1 µg/kg	TM116	<200	2 M						
1,3-Dichloropropane	<1 µg/kg	TM116	<140	2 M						



CERTIFICATE OF ANALYSIS

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SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

VOC MS (S)

Results Legend			Customer Sample Ref.	TP CS6	TP CS6	TP CS9	TP CS9	TP CS9	TP CS9(A)
#	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								
1-4	Sample deviation (see appendix)								
		Depth (m)	0.50	1.00	0.50	1.50	3.50	0.45 - 0.75	
		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
		Date Sampled	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	
		Sample Time	-	-	-	-	-	-	
		Date Received	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	06/04/2023	
		SDG Ref	230406-140	230406-140	230406-140	230406-140	230406-140	230406-140	
		Lab Sample No.(s)	27810597	27810598	27810599	27810600	27810601	27810604	
		AGS Reference							
Component	LOD/Units	Method							
Tetrachloroethene	<2 µg/kg	TM116	<100						
			2 M						
Dibromochloromethane	<2 µg/kg	TM116	<200						
			2 M						
1,2-Dibromoethane	<1 µg/kg	TM116	<200						
			2 M						
Chlorobenzene	<2 µg/kg	TM116	<100						
			2 M						
1,1,1,2-Tetrachloroethane	<1 µg/kg	TM116	<200						
			2 M						
Ethylbenzene	<1 µg/kg	TM116	<80	<80	<40	<80	<4	<80	
			2 M	M	2 M	M	2 M	2 M	
p/m-Xylene	<2 µg/kg	TM116	<200	<200	<100	<200	<10	<200	
			2 #	#	2 #	#	2 #	2 #	
o-Xylene	<2 µg/kg	TM116	<200	<200	<100	<200	<10	<200	
			2 M	M	2 M	M	2 M	2 M	
Styrene	<2 µg/kg	TM116	<200						
			2 #						
Bromoform	<2 µg/kg	TM116	<200						
			2 M						
Isopropylbenzene	<2 µg/kg	TM116	<100						
			2 #						
1,1,2,2-Tetrachloroethane	<2 µg/kg	TM116	<200						
			2 #						
1,2,3-Trichloropropane	<2 µg/kg	TM116	<320						
			2 M						
Bromobenzene	<2 µg/kg	TM116	<200						
			2 M						
Propylbenzene	<2 µg/kg	TM116	<200						
			2 M						
2-Chlorotoluene	<3 µg/kg	TM116	<180						
			2 M						
1,3,5-Trimethylbenzene	<2 µg/kg	TM116	<160						
			2 M						
4-Chlorotoluene	<3 µg/kg	TM116	<200						
			2 M						
tert-Butylbenzene	<2 µg/kg	TM116	<280						
			2 #						
1,2,4-Trimethylbenzene	<3 µg/kg	TM116	<180						
			2 #						
sec-Butylbenzene	<1 µg/kg	TM116	<200						
			2						
4-Isopropyltoluene	<2 µg/kg	TM116	<200						
			2						
1,3-Dichlorobenzene	<5 µg/kg	TM116	<160						
			2 M						
1,4-Dichlorobenzene	<5 µg/kg	TM116	<100						
			2 M						
n-Butylbenzene	<3 µg/kg	TM116	<220						
			2						
1,2-Dichlorobenzene	<5 µg/kg	TM116	<200						
			2 M						
1,2-Dibromo-3-chloropropane	<2 µg/kg	TM116	<280						
			2 M						
Tert-amyl methyl ether	<1 µg/kg	TM116	<200						
			2 #						
1,2,4-Trichlorobenzene	<7 µg/kg	TM116	<400						
			2						
Hexachlorobutadiene	<4 µg/kg	TM116	<400						
			2						
Naphthalene	<8 µg/kg	TM116	<260						
			2 M						
1,2,3-Trichlorobenzene	<10 µg/kg	TM116	<400						
			2 #						
1,3,5-Trichlorobenzene	<7 µg/kg	TM116	<400						
			2						



CERTIFICATE OF ANALYSIS

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SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP CS6 0.50 SOLID 06/04/2023 00:00:00 06/04/2023 14:10:00 230406-140 27810597 TM048	18/04/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP CS9 0.50 SOLID 06/04/2023 00:00:00 06/04/2023 14:10:00 230406-140 27810599 TM048	18/04/2023	Odhran McLernon	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Data Amendment

Sample No. : 27810597 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810598 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810599 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810600 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810601 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810602 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 27810603 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810604 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810607 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Solid	Solid

Sample No. : 27810602 Date of Amendment : 06/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
TP CS9	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	23.2	6.69
TP CS9	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	23.2	15.1
TP CS9	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	46.4	21.7



CERTIFICATE OF ANALYSIS

Validated

SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM434	Analysis of PFAS
TM048	Identification of Asbestos in Bulk Material

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 230406-140
Client Ref.: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	27810597	27810598	27810599	27810600	27810601	27810602	27810604	27810607
	TP CS6	TP CS6	TP CS9	TP CS9	TP CS9	TP CS9	TP CS9(A)	TP CS9(A)
	0.50	1.00	0.50	1.50	3.50	3.10	0.45 - 0.75	2.50
	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples	18-Apr-2023		18-Apr-2023					
EPH CWG GC (S)	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023		14-Apr-2023	14-Apr-2023
GRO by GC-FID (S)	18-Apr-2023	13-Apr-2023	13-Apr-2023	18-Apr-2023	13-Apr-2023		13-Apr-2023	18-Apr-2023
Metals in solid samples by OES	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023		14-Apr-2023	14-Apr-2023
PFAS Liquids (Full Suite)						11-Jul-2023		
PFAS Solids	25-Apr-2023	25-Apr-2023	25-Apr-2023		14-Apr-2023		25-Apr-2023	25-Apr-2023
Sample description	12-Apr-2023	12-Apr-2023	12-Apr-2023	12-Apr-2023	12-Apr-2023		12-Apr-2023	12-Apr-2023
TPH CWG GC (S)	18-Apr-2023	14-Apr-2023	14-Apr-2023	18-Apr-2023	14-Apr-2023		14-Apr-2023	18-Apr-2023
VOC MS (S)	18-Apr-2023	14-Apr-2023	18-Apr-2023	14-Apr-2023	14-Apr-2023		18-Apr-2023	13-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230406-140
Client Ref: 326R

Report Number: 699672
Location: Victoria North

Superseded Report: 697560

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park

Manor Road (off Manor Lane)

Hawarden

Deeside

CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Andy Bird

CERTIFICATE OF ANALYSIS

Date of report Generation:	26 April 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230401-74
Your Reference:	326R
Location:	Victoria North
Report No:	687078
Order Number:	

We received 6 samples on Friday March 31, 2023 and 2 of these samples were scheduled for analysis which was completed on Wednesday April 26, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230401-74
Client Ref.: 326R

Report Number: 687078
Location: Victoria North

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27779956	TP EW01		0.50	31/03/2023
27779957	TP EW01		1.50	31/03/2023
27779959	TP EW01		3.00	31/03/2023
27779953	TP EW03		0.50	31/03/2023
27779954	TP EW03		1.50	31/03/2023
27779955	TP EW03		3.00	31/03/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74

Report Number: 687078

Superseded Report:

Client Ref.: 326R

Location: Victoria North

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)

27779957
27779953

Customer
Sample Reference

TP EW01
TP EW03

AGS Reference

Depth (m)

1.50
0.50

Container

1kg TUB with
Handle (ALE260)
1kg TUB with
Handle (ALE260)

Sample Type

S
S

CEN Readings

All

NDPs: 0
Tests: 1

X

PFAS (Post Ox.) Liquids

All

NDPs: 0
Tests: 1

X

PFAS (Post Ox.) Solids

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

PFAS Solids

All

NDPs: 0
Tests: 2

X

X

pH Value of Filtered Water

All

NDPs: 0
Tests: 1

X

Sample description

All

NDPs: 0
Tests: 2

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326R

Report Number: 687078
Location: Victoria North

Superseded Report:

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27779957	TP EW01	1.50	Light Brown	Sandy Clay	Stones	None
27779953	TP EW03	0.50	Dark Brown	Sandy Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326RReport Number: 687078
Location: Victoria North

Superseded Report:

Results Legend		Customer Sample Ref.		TP EW01	TP EW03			
# ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.50 Soil/Solid (S) 31/03/2023	0.50 Soil/Solid (S) 31/03/2023				
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								
1-4*§@ Sample deviation (see appendix)								
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	6.5	28				
4:2 FTS (757124-72-4)	<2 µg/kg	TM338	<2					
8:2 FTS (39108-34-4)	<2 µg/kg	TM338	<2					
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338	<20					
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3	<3				
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3	<3				
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2	<2				
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1	<1				
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1	<1				
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1	<1				
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338	<1	<1				
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1	<1				
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338	<1	<1				
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1	<1				
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338	<1	<1				
Branched PFOS	<1 µg/kg	TM338	<1	<1				
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1	<1				
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1	<1				
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338	<1	<1				
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1	<1				
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338	<1	<1				
PFPeS (2706-91-4) Perfluoro-1-pentadecanedisulfonate	<1 µg/kg	TM338	<1	<1				
Total PFOS	<1 µg/kg	TM338	<1	<1				
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428		<3				
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428		<3				
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428		<2				
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428		<1				
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428		<1				
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	<1 µg/kg	TM428		<1				
PFOA (Post Ox.) Perfluoro-n-octanoic acid	<1 µg/kg	TM428		<1				
PFHxS (Post Ox.) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM428		<1				
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	<1 µg/kg	TM428		<1				
PFHpS (Post Ox.) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM428		<1				



Superseded Report:

Page 6 of 11



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326RReport Number: 687078
Location: Victoria North

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.110	Natural Moisture Content (%)	21.3
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	82.4
Particle Size <4mm	>95%		

Case

SDG	230401-74
Lab Sample Number(s)	27779953
Sampled Date	31-Mar-2023
Customer Sample Ref.	TP EW03
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Branched PFOS	0.000000779	<0.00000065	0.00000779	<0.0000065	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Linear PFOS (1763-23-1)	0.00000124	<0.00000065	0.0000124	<0.0000065	-	-	-
PFBA (375-22-4)	<0.0000075	<0.000002	<0.000075	<0.00002	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDA (335-76-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	0.00000169	<0.000001	0.0000169	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000229	<0.00000065	0.0000229	<0.0000065	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-

Leach Test Information

Date Prepared	05-Apr-2023
pH (pH Units)	8.33
Conductivity (µS/cm)	219
Volume Leachant (Litres)	0.880

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

26/04/2023 15:07:07

15:06:34 26/04/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326RReport Number: 687078
Location: Victoria North

Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.110

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location

Victoria North

Natural Moisture Content (%) 21.3

Dry Matter Content (%) 82.4

Case

SDG 230401-74

Lab Sample Number(s) 27779953

Sampled Date 31-Mar-2023

Customer Sample Ref. TP EW03

Depth (m) 0.50

Eluate Analysis

C₂ Concⁿ in 10:1 eluate (mg/l)A₂ 10:1 concⁿ leached (mg/kg)

	Result	Limit of Detection	Result	Limit of Detection			
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Total PFOS	0.00000201	<0.00000065	0.0000201	<0.0000065	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared 05-Apr-2023
pH (pH Units) 8.33
Conductivity (µS/cm) 219
Volume Leachant (Litres) 0.880

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326R

Report Number: 687078
Location: Victoria North

Superseded Report:

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM337	Analysis of PFAS
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-74
Client Ref.: 326R

Report Number: 687078
Location: Victoria North

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27779957	27779953
Customer Sample Ref.	TP EW01	TP EW03
AGS Ref.		
Depth	1.50	0.50
Type	Soil/Solid (S)	Soil/Solid (S)
CEN 10:1 Leachate (1 Stage)		06-Apr-2023
CEN Readings		21-Apr-2023
Moisture at 105C		05-Apr-2023
PFAS (Post Ox.) Liquids		26-Apr-2023
PFAS (Post Ox.) Solids		14-Apr-2023
PFAS Liquids		24-Apr-2023
PFAS Solids	14-Apr-2023	14-Apr-2023
pH Value of Filtered Water		21-Apr-2023
Sample description	05-Apr-2023	05-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230401-74
Client Ref: 326R

Report Number: 687078
Location: Victoria North

Superseded Report:

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park

Manor Road (off Manor Lane)

Hawarden

Deeside

CH5 3US

Tel: (01244) 528777

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Andy Bird

CERTIFICATE OF ANALYSIS

Date of report Generation: 25 April 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230415-37
Your Reference: 326R
Location: Victoria North
Report No: 686793
Order Number:

We received 3 samples on Saturday April 15, 2023 and 3 of these samples were scheduled for analysis which was completed on Tuesday April 25, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230415-37
Client Ref.: 326R

Report Number: 686793
Location: Victoria North

Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27841705	SWS01		0.00	13/04/2023
27841706	SWS02		0.00	13/04/2023
27841707	SWS03		0.00	13/04/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230415-37
Client Ref.: 326R

Report Number: 686793
Location: Victoria North

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)

27841705

27841706

27841707

Customer
Sample Reference

SWS01

SWS02

SWS03

AGS Reference

Depth (m)

0.00

0.00

0.00

Container

500ml Plastic
(ALE208)

500ml Plastic
(ALE208)

500ml Plastic
(ALE208)

Sample Type

GW

GW

GW

PFAS (Post Ox.) Liquids

All

NDPs: 0
Tests: 3

X

X

X

PFAS Liquids

All

NDPs: 0
Tests: 3

X

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230415-37
Client Ref.: 326R

Report Number: 686793
Location: Victoria North

Superseded Report:

Results Legend		Customer Sample Ref. Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	SWS01		SWS02		SWS03				
#	ISO17025 accredited.		0.00		0.00		0.00				
M	mCERTS accredited.		Ground Water (GW)		Ground Water (GW)		Ground Water (GW)				
aq	Aqueous / settled sample.		13/04/2023		13/04/2023		13/04/2023				
diss.filt	Dissolved / filtered sample.		.		.		.				
tot.unfilt	Total / unfiltered sample.		15/04/2023		15/04/2023		15/04/2023				
*	Subcontracted - refer to subcontractor report for accreditation status.		230415-37		230415-37		230415-37				
**	% 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		27841705		27841706		27841707				
(F)	Trigger breach confirmed										
1-4**@	Sample deviation (see appendix)										
Component	LOD/Units	Method									
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.000014 #	<0.000008 #	<0.000009 #						
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000005 #	0.000005 #	0.000003 #						
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.000007 #	0.000007 #	0.000007 #						
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000006 #	0.000006 #	0.000006 #						
PFHpA (375-85-9)	<0.000001 mg/l	TM337	0.000004 #	0.000004 #	0.000003 #						
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	0.000014 #	0.000016 #	0.000012 #						
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000007 #	0.000007 #	0.000007 #						
PFHxS (355-46-4)	<0.000001 mg/l	TM337	0.000002 #	0.000002 #	0.000002 #						
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000006 #	0.000007 #	0.000005 #						
Branched PFOS	<0.000001 mg/l	TM337	0.000005 #	0.000005 #	0.000004 #						
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.000002 #	<0.000002 #	<0.000002 #						
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000001 #	<0.000001 #	<0.000001 #						
Total PFOS	<0.000001 mg/l	TM337	0.000011 #	0.000012 #	0.000009 #						
PFBA (Post Ox.) (375-22-4)	<0.000004 mg/l	TM405	0.000015	0.000015	0.000011						
PFPA (Post Ox.) (2706-90-3)	<0.000002 mg/l	TM405	0.000009	0.000009	0.000005						
PFHxA (Post Ox.) (307-24-4)	<0.000002 mg/l	TM405	0.000011	0.000012	0.00001						
PFBS (Post Ox.) (375-73-5)	<0.000002 mg/l	TM405	0.000006	0.000006	0.000006						
PFHpA (Post Ox.) (375-85-9)	<0.000002 mg/l	TM405	0.000005	0.000004	0.000005						
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002 mg/l	TM405	<0.00001	<0.000002	<0.000002						
PFOA (Post Ox.) (335-67-1)	<0.000002 mg/l	TM405	0.000005	0.000004	0.000004						
PFHxS (Post Ox.) (355-46-4)	<0.000002 mg/l	TM405	<0.000002	<0.000002	<0.000002						
PFNA (Post Ox.) (375-95-1)	<0.000002 mg/l	TM405	0.000002	0.000002	0.000003						
PFHpS (Post Ox.) (375-92-8)	<0.000002 mg/l	TM405	<0.000002	<0.000002	<0.000002						
PFDA (Post Ox.) (335-76-2)	<0.000002 mg/l	TM405	<0.000002	<0.000002	<0.000002						
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002 mg/l	TM405	0.000005	0.000006	0.000005						
Branched PFOS (Post Ox.)	<0.000002 mg/l	TM405	0.000004	0.000004	0.000004						
PFUnA (Post Ox.) (2058-94-8)	<0.000002 mg/l	TM405	<0.000002	<0.000002	<0.000002						



Superseded Report:

Page 5 of 8



CERTIFICATE OF ANALYSIS

Validated

SDG: 230415-37
Client Ref.: 326R

Report Number: 686793
Location: Victoria North

Superseded Report:

Table of Results - Appendix

Method No	Description
TM337	Analysis of PFAS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230415-37
Client Ref.: 326R

Report Number: 686793
Location: Victoria North

Superseded Report:

Test Completion Dates

Lab Sample No(s)	27841705	27841706	27841707
Customer Sample Ref.	SWS01	SWS02	SWS03
AGS Ref.			
Depth	0.00	0.00	0.00
Type	Ground Water	Ground Water	Ground Water
PFAS (Post Ox.) Liquids	25-Apr-2023	25-Apr-2023	25-Apr-2023
PFAS Liquids	24-Apr-2023	24-Apr-2023	24-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230415-37
Client Ref: 326R

Report Number: 686793
Location: Victoria North

Superseded Report:

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury.

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230520-22
Your Reference: 326R
Location: Victoria North
Report No: 699680
Order Number: RIT 298 665 896

This report has been revised and directly supersedes 693517 in its entirety.

We received 11 samples on Friday May 19, 2023 and 11 of these samples were scheduled for analysis which was completed on Thursday June 22, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28025433	TP418	ES	0.50	19/05/2023
28025434	TP419	ES	1.00	19/05/2023
28025436	TP-EW02	ES	1.50	19/05/2023
28025437	TP-EW04	ES	2.00	19/05/2023
28025438	TP-EW05	ES	0.50	19/05/2023
28025439	TP-EW05	EW	0.75	19/05/2023
28025435	TP-EW08	EW	1.00	19/05/2023
28025440	TP-EW11	ES	0.50	19/05/2023
28025441	TP-EW11	EW	1.00	19/05/2023
28025442	TP-EWCS2	ES	0.40	19/05/2023
28025443	TP-EWCS2	ES	1.00	19/05/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Results Legend

X Test
N No Determination Possible

Sample Types -

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

Lab Sample No(s)	Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type
28025443	TP-EWCS2	ES	1.00	250g Amber jar (ALE210)	S
28025442	TP-EWCS2	ES	0.40	1kg TUB with Handle (ALE260)	S
28025441	TP-EW11	EW	1.00	1kg TUB with Handle (ALE260)	S
28025440	TP-EW11	ES	0.50	250g Amber jar (ALE208)	GW
28025435	TP-EW08	EW	1.00	500ml Plastic (ALE208)	GW
28025439	TP-EW05	EW	0.75	250ml BOD (ALE212)	GW
28025438	TP-EW05	ES	0.50	250g Amber jar (ALE210)	S
28025437	TP-EW04	ES	2.00	1kg TUB with Handle (ALE260)	S
28025436	TP-EW02	ES	1.50	1kg TUB with Handle (ALE260)	S
28025434	TP419	ES	1.00	250g Amber jar (ALE210)	S
28025433	TP418	ES	0.50	1kg TUB with Handle (ALE260)	S
CEN Readings	All	NDPs: 0 Tests: 2			
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 6			
Metals in solid samples by OES	All	NDPs: 0 Tests: 6			
PFAS (Post Ox.) Liquids	All	NDPs: 0 Tests: 2			
PFAS Liquids	All	NDPs: 0 Tests: 2			
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 3			
PFAS Solids	All	NDPs: 0 Tests: 6			
pH	All	NDPs: 0 Tests: 6			
pH Value of Filtered Water	All	NDPs: 0 Tests: 2			
Phenols by HPLC (S)	All	NDPs: 0 Tests: 6			
Sample description	All	NDPs: 0 Tests: 7			
Total Organic Carbon	All	NDPs: 0 Tests: 6			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
-----------	----------	------	-----------------	--------	-------------	--------	------------	-------------	-------

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28025433	TP418	0.50	Light Brown	Sand	Stones	Vegetation
28025434	TP419	1.00	Light Brown	Sandy Loam	Stones	Vegetation
28025436	TP-EW02	1.50	Light Brown	Clay	Stones	Vegetation
28025437	TP-EW04	2.00	Dark Brown	Sandy Clay	Stones	Vegetation
28025438	TP-EW05	0.50	Light Brown	Stone/Soil	Stones	Vegetation
28025440	TP-EW11	0.50	Dark Brown	Loamy Sand	Stones	Vegetation
28025442	TP-EWCS2	0.40	Dark Brown	Loamy Sand	Stones	Vegetation
28025443	TP-EWCS2	1.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Results Legend		Customer Sample Ref.	TP418	TP419	TP-EW02	TP-EW04	TP-EW05	TP-EW05
#	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							
1-4* Sample deviation (see appendix)								
Component	LOD/Units	Method						
PFBA (375-22-4)	<0.000002 mg/l	TM434						0.000006 #
PFMOPra (377-73-1)	<0.000001 mg/l	TM434						<0.000002 #
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434						<0.000004 #
PFPA (2706-90-3)	<0.000001 mg/l	TM434						<0.000002 #
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434						<0.000002 #
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434						<0.000002 #
NFDHA (151772-58-6)	<0.000003 mg/l	TM434						<0.000006 #
PFBS (375-73-5)	<0.000001 mg/l	TM434						0.000004 #
PFHxA (307-24-4)	<0.000001 mg/l	TM434						0.000003 #
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434						<0.000004 #
PFEESA (113507-82-7)	<0.000001 mg/l	TM434						<0.000002 #
PFHpA (375-85-9)	<0.000001 mg/l	TM434						0.000002 #
PFPeS (2706-91-4)	<0.000001 mg/l	TM434						<0.000002 #
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434						<0.00001 #
ADONA (919005-14-4)	<0.000001 mg/l	TM434						<0.000002 #
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434						<0.000002 #
FBSA (30334-69-1)	<0.000001 mg/l	TM434						<0.000002 #
PFOA (335-67-1)	<0.000001 mg/l	TM434						0.000005 #
PFHxS (355-46-4)	<0.000001 mg/l	TM434						<0.000002 #
PFNA (375-95-1)	<0.000001 mg/l	TM434						<0.000002 #
PFecHS (133201-07-7)	<0.000001 mg/l	TM434						<0.000002 #
PFHpS (375-92-8)	<0.000001 mg/l	TM434						<0.000002 #
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434						<0.000004 #
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434						<0.00001 #
PFDA (335-76-2)	<0.000002 mg/l	TM434						<0.000004 #
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434						<0.000004 #
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434						<0.00001 #
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434						0.000003 #
Branched PFOS	<0.000001 mg/l	TM434						0.000002 #
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434						<0.000004 #
PFUnA (2058-94-8)	<0.000002 mg/l	TM434						<0.000004 #
9CI-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434						<0.000002 #
PFNS (68259-12-1)	<0.000001 mg/l	TM434						<0.000002 #



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Results Legend			Customer Sample Ref.	TP418	TP419	TP-EW02	TP-EW04	TP-EW05	TP-EW05
#	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								
1-4	@ 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	0.50 Soil/Solid (S) 19/05/2023 230520-22 28025433 ES	1.00 Soil/Solid (S) 19/05/2023 230520-22 28025434 ES	1.50 Soil/Solid (S) 19/05/2023 230520-22 28025436 ES	2.00 Soil/Solid (S) 19/05/2023 230520-22 28025437 ES	0.50 Soil/Solid (S) 19/05/2023 230520-22 28025438 ES	0.75 Ground Water (GW) 19/05/2023 230520-22 28025439 EW
FHxSA (41997-13-1)	<0.000001 mg/l	TM434							<0.000002 #
PFD0A (307-55-1)	<0.000002 mg/l	TM434							<0.000004 #
PFDS (335-77-3)	<0.000002 mg/l	TM434							<0.000004 #
PFTTrDA (72629-94-8)	<0.000003 mg/l	TM434							<0.000006 #
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434							<0.000004 #
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434							<0.000004 #
PFTeA (376-06-7)	<0.000001 mg/l	TM434							<0.000002 #
PFOSA (754-91-6)	<0.000002 mg/l	TM434							<0.000004 #
PFD0S (79780-39-5)	<0.000002 mg/l	TM434							<0.000004 #
PFTTrDS (174675-49-1)	<0.000001 mg/l	TM434							<0.000002 #
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434							<0.000002 #
MeFOSE (24448-09-7)	<0.000001 mg/l	TM434							<0.000002 #
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434							<0.000002 #
EtFOSE (1691-99-2)	<0.000001 mg/l	TM434							<0.000002 #
PFODA (16517-11-6)	<0.000001 mg/l	TM434							<0.000002 #
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434							<0.000002 #
Total PFOS	<0.000001 mg/l	TM434							0.000005 #
Moisture Content Ratio (% of as received sample)	%	PM024		13	14	15	14	25	
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 @ M			<0.01 @ M	<0.01 @ M	
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 @ M			<0.01 @ M	<0.01 @ M	
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 @ M			<0.015 @ M	<0.015 @ M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 @ M			<0.035 @ M	<0.035 @ M	
Organic Carbon, Total	<0.2 %	TM132		0.308 M			0.81 M	21.3 M	
pH	1 pH Units	TM133		7.4 M			8.75 M	7.12 M	
Cyanide, Total	<1 mg/kg	TM153		<1 @ M			<1 @ M	<1 @ M	
Antimony	<0.6 mg/kg	TM181		<0.6 #			<0.6 #	<6 #	
Arsenic	<0.6 mg/kg	TM181		3.8 M			7.98 M	43.7 M	
Beryllium	<0.01 mg/kg	TM181		0.729 M			0.9 M	2.8 M	
Cadmium	<0.02 mg/kg	TM181		0.537 M			0.111 M	9.84 M	
Chromium	<0.9 mg/kg	TM181		2.96 M			13.7 M	<9 M	
Copper	<1.4 mg/kg	TM181		13.4 M			24.6 M	424 M	
Lead	<0.7 mg/kg	TM181		5.64 M			18.7 M	381 M	
Mercury	<0.1 mg/kg	TM181		<0.1 M			<0.1 M	<1 M	

13:16:47 10/08/2023



Superseded Report: 693517

Page 7 of 18



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Results Legend			Customer Sample Ref.		TP-EW08	TP-EW11	TP-EW11	TP-EWCS2	TP-EWCS2	
# 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 1-4*@\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		1.00 Ground Water (GW) 19/05/2023	0.50 Soil/Solid (S) 19/05/2023	1.00 Ground Water (GW) 19/05/2023	0.40 Soil/Solid (S) 19/05/2023	1.00 Soil/Solid (S) 19/05/2023	
Component	LOD/Units	Method								
PFBA (375-22-4)	<0.000002 mg/l	TM434			0.000016 #		<0.00013 #			
PFMOPra (377-73-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
PFPA (2706-90-3)	<0.000001 mg/l	TM434			<0.000002 #		0.000011 #			
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
NFDHA (151772-58-6)	<0.000003 mg/l	TM434			<0.000006 #		<0.000006 #			
PFBS (375-73-5)	<0.000001 mg/l	TM434			0.000008 #		0.000009 #			
PFHxA (307-24-4)	<0.000001 mg/l	TM434			0.000003 #		0.00001 #			
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
PFEESA (113507-82-7)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFHpA (375-85-9)	<0.000001 mg/l	TM434			0.000003 #		0.000009 #			
PFPeS (2706-91-4)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434			<0.00001 #		<0.00001 #			
ADONA (919005-14-4)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
FBSA (30334-69-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFOA (335-67-1)	<0.000001 mg/l	TM434			0.000011 #		0.000011 #			
PFHxS (355-46-4)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFNA (375-95-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFecHS (133201-07-7)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFHpS (375-92-8)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434			<0.00001 #		<0.00001 #			
PFDA (335-76-2)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434			<0.00001 #		<0.00001 #			
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434			0.000003 #		0.000001 #			
Branched PFOS	<0.000001 mg/l	TM434			0.000002 #		<0.000001 #			
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
PFUnA (2058-94-8)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #			
9Cl-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			
PFNS (68259-12-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Results Legend			Customer Sample Ref.	TP-EW08	TP-EW11	TP-EW11	TP-EWCS2	TP-EWCS2	
# 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 1-4* @ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.00 Ground Water (GW) 19/05/2023 19/05/2023 230520-22 28025435 EW	0.50 Soil/Solid (S) 19/05/2023 19/05/2023 230520-22 28025440 ES	1.00 Ground Water (GW) 19/05/2023 19/05/2023 230520-22 28025441 EW	0.40 Soil/Solid (S) 19/05/2023 19/05/2023 230520-22 28025442 ES	1.00 Soil/Solid (S) 19/05/2023 19/05/2023 230520-22 28025443 ES	
Component	LOD/Units	Method							
FHxSA (41997-13-1)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
PFDaA (307-55-1)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFDS (335-77-3)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFTrDA (72629-94-8)	<0.000003 mg/l	TM434		<0.000006 #		<0.000006 #			
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFTeA (376-06-7)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
PFOSA (754-91-6)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFDoS (79780-39-5)	<0.000002 mg/l	TM434		<0.000004 #		<0.000004 #			
PFTrDS (174675-49-1)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434		<0.00002 #		<0.00002 #			
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434		<0.00002 #		<0.00002 #			
PFODA (16517-11-6)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434		<0.000002 #		<0.000002 #			
Total PFOS	<0.000001 mg/l	TM434		0.000005 #		0.000001 #			
Moisture Content Ratio (% of as received sample)	%	PM024			20		13	17	
Phenol	<0.01 mg/kg	TM062 (S)			<0.01 @ M		<0.01 @ M	<0.01 @ M	
Cresols	<0.01 mg/kg	TM062 (S)			<0.01 @ M		<0.01 @ M	<0.01 @ M	
Xylenols	<0.015 mg/kg	TM062 (S)			<0.015 @ M		<0.015 @ M	<0.015 @ M	
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)			<0.035 @ M		<0.035 @ M	<0.035 @ M	
Organic Carbon, Total	<0.2 %	TM132			14.6 M		18.1 M	2.88 M	
pH	1 pH Units	TM133			7.76 M		8.23 M	8.56 M	
Cyanide, Total	<1 mg/kg	TM153			<1 @ M		<1 @ M	<1 @ M	
Antimony	<0.6 mg/kg	TM181			<6 #		6.04 #	<0.6 #	
Arsenic	<0.6 mg/kg	TM181			28 M		23.7 M	8.63 M	
Beryllium	<0.01 mg/kg	TM181			1.71 M		1.63 M	0.841 M	
Cadmium	<0.02 mg/kg	TM181			0.863 M		0.843 M	0.143 M	
Chromium	<0.9 mg/kg	TM181			15.2 M		<0.9 M	7.9 M	
Copper	<1.4 mg/kg	TM181			160 M		254 M	51.4 M	
Lead	<0.7 mg/kg	TM181			150 M		340 M	44.4 M	
Mercury	<0.1 mg/kg	TM181			<1 M		<0.1 M	<0.1 M	



Superseded Report: 693517

Page 10 of 18



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326RReport Number: 699680
Location: Victoria North

Superseded Report: 693517

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.105	Natural Moisture Content (%)	15.7
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	86.5
Particle Size <4mm	>95%		

Case

SDG	230520-22
Lab Sample Number(s)	28025434
Sampled Date	19-May-2023
Customer Sample Ref.	TP419 ESZ
Depth (m)	1.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Branched PFOS (Post Ox.)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-

Leach Test Information

Date Prepared	23-May-2023
pH (pH Units)	7.21
Conductivity (µS/cm)	46
Volume Leachant (Litres)	0.885

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

10/08/2023 13:17:05

13:16:47 10/08/2023

SDG: 230520-22
Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	
Mass Sample taken (kg)	0.105	Natural Moisture Content (%)	15.7
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	86.5
Particle Size <4mm	>95%		

Case

SDG	230520-22
Lab Sample Number(s)	28025434
Sampled Date	19-May-2023
Customer Sample Ref.	TP419 ESZ
Depth (m)	1.00

[illegible]

Leach Test Information

Date Prepared	23-May-2023
pH (pH Units)	7.21
Conductivity (µS/cm)	46
Volume Leachant (Litres)	0.885

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-22
Client Ref.: 326RReport Number: 699680
Location: Victoria North

Superseded Report: 693517

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.100	Natural Moisture Content (%)	11.6
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	89.6
Particle Size <4mm	>95%		

Case

SDG	230520-22
Lab Sample Number(s)	28025436
Sampled Date	19-May-2023
Customer Sample Ref.	TP-EW02 ESZ
Depth (m)	1.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Branched PFOS (Post Ox.)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-

Leach Test Information

Date Prepared	23-May-2023
pH (pH Units)	7.23
Conductivity (µS/cm)	62
Volume Leachant (Litres)	0.890

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

10/08/2023 13:17:05

13:16:47 10/08/2023



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Client Ref.: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Data Amendment

Sample No. : 28025435 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28025439 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28025441 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



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Table of Results - Appendix

Method No	Description
TM062 (S)	Determination of Phenols in Soils by HPLC
TM153	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM434	Analysis of PFAS
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM337	Analysis of PFAS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	28025433	28025434	28025436	28025437	28025438	28025439	28025435	28025440	28025441	28025442
	TP418	TP419	TP-EW02	TP-EW04	TP-EW05	TP-EW05	TP-EW08	TP-EW11	TP-EW11	TP-EWCS2
AGS Ref.	ES	ES	ES	ES	ES	EW	EW	ES	EW	ES
Depth	0.50	1.00	1.50	2.00	0.50	0.75	1.00	0.50	1.00	0.40
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Ground Water	Ground Water	Soil/Solid (S)	Ground Water	Soil/Solid (S)
CEN 10:1 Leachate (1 Stage)		24-May-2023	23-May-2023							
CEN Readings		26-May-2023	05-Jun-2023							
Cyanide Comp/Free/Total/Thiocyanate	12-Jun-2023			12-Jun-2023	12-Jun-2023			13-Jun-2023		13-Jun-2023
Metals in solid samples by OES	12-Jun-2023			12-Jun-2023	12-Jun-2023			12-Jun-2023		12-Jun-2023
Moisture at 105C		23-May-2023	23-May-2023							
PFAS (Post Ox.) Liquids		01-Jun-2023	07-Jun-2023							
PFAS Liquids		30-May-2023	06-Jun-2023							
PFAS Liquids (Full Suite)						22-Jun-2023	22-Jun-2023		22-Jun-2023	
PFAS Solids	25-May-2023			25-May-2023	25-May-2023			25-May-2023		25-May-2023
pH	12-Jun-2023			08-Jun-2023	12-Jun-2023			08-Jun-2023		08-Jun-2023
pH Value of Filtered Water		26-May-2023	05-Jun-2023							
Phenols by HPLC (S)	12-Jun-2023			12-Jun-2023	12-Jun-2023			12-Jun-2023		12-Jun-2023
Sample description	23-May-2023	23-May-2023	23-May-2023	23-May-2023	23-May-2023			23-May-2023		23-May-2023
Total Organic Carbon	13-Jun-2023			13-Jun-2023	13-Jun-2023			13-Jun-2023		12-Jun-2023

Lab Sample No(s) Customer Sample Ref.	28025443 TP-EWCS2
AGS Ref.	ES
Depth	1.00
Type	Soil/Solid (S)
Cyanide Comp/Free/Total/Thiocyanate	13-Jun-2023
Metals in solid samples by OES	12-Jun-2023
PFAS Solids	25-May-2023
pH	08-Jun-2023
Phenols by HPLC (S)	12-Jun-2023
Sample description	23-May-2023
Total Organic Carbon	12-Jun-2023



CERTIFICATE OF ANALYSIS

SDG: 230520-22
Client Ref: 326R

Report Number: 699680
Location: Victoria North

Superseded Report: 693517

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230518-22
Your Reference:	326R
Location:	Victoria North
Report No:	699677
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 694261 in its entirety.

We received 9 samples on Thursday May 18, 2023 and 9 of these samples were scheduled for analysis which was completed on Thursday June 29, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28010787	BH102		2.95	16/05/2023
28010793	BH203		12.42	17/05/2023
28010788	BH204		2.62	16/05/2023
28010789	BH207		12.70	16/05/2023
28010791	BH309		2.95	16/05/2023
28010790	BH310		4.42	16/05/2023
28010792	BH311(A)		7.87	16/05/2023
28010794	SHOWMANS GUILD			16/05/2023
28045559	SHOWMANS GUILD			22/05/2023

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



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SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

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

<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</div> <div>Non-regulatory</div> <div>UNL - Unspecified Liquid</div> <div>SL - Sludge</div> <div>G - Gas</div> <div>OTH - Other</div>	Lab Sample No(s)		Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

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	
	28010787	28010793	28010788	28010789	28010791	28010790	28010792	28010794	28045559	28010794	SHOWMANS GUILD	SHOWMANS GUILD
	BH102	BH203	BH204	BH207	BH309	BH310	BH311(A)					
	2.95	12.42	2.62	12.70	2.95	4.42	7.87					
	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	250ml BOD (ALE212)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	1000ml glass bottle (ALE220)
	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Neutralised Suspended Solids	All	NDPs: 1 Tests: 1										
Organotins in Aqueous Samples	All	NDPs: 0 Tests: 1										
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 1										
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 1										
PFAS Liquids	All	NDPs: 0 Tests: 7										
pH Value	All	NDPs: 0 Tests: 1										
pH Value of Filtered Water	All	NDPs: 0 Tests: 1										
Pharmaceuticals and Personal Care	All	NDPs: 0 Tests: 1										
Phenols and ethoxylates in Liquids	All	NDPs: 0 Tests: 1										
Settleable Solids	All	NDPs: 1 Tests: 1										
Settleable Solids 5 Mins	All	NDPs: 1 Tests: 1										
Sulphide	All	NDPs: 0 Tests: 1										
Suspended Solids	All	NDPs: 0 Tests: 1										
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1										
Total Metals by ICP-MS	All	NDPs: 0 Tests: 1										



SDG: 230518-22
Client Ref.: 326R

Superseded Report: 694261

Location: Victoria North

Lab Sample No(s)

X Test

N No Determination Possible

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

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

Total Nitrogen

Total Organic and Inorganic Carbon

TPH CWG (W)

Urea Herbicides (Suite 1)*

VOC MS (W)

NDPs: 0
Tests: 1NDPs: 0
Tests: 1NDPs: 0
Tests: 1NDPs: 1
Tests: 1NDPs: 0
Tests: 1

		X
--	--	---

X

X

X

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.		BH311(A)		SHOWMANS GUILD		SHOWMANS GUILD			
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792		Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794		Ground Water (GW) 22/05/2023 18/05/2023 230518-22 28045559			
Component	LOD/Units	Method										
Chloroxuron*	mg/l	SUB							<0.0005			
Faecal coliforms confirmed (M7M)*	CFU/100ml	SUB					0					
Chlortoluron*	mg/l	SUB							<0.0005			
Diflufenzuron*	mg/l	SUB							<0.0005			
Dimefuron*	mg/l	SUB							<0.0005			
Diuron*	mg/l	SUB							<0.0005			
Isoproturon*	mg/l	SUB							<0.0005			
Linuron*	mg/l	SUB							<0.0005			
Methabenzthiauron*	mg/l	SUB							0			
Metoxuron*	mg/l	SUB							<0.0005			
Monolinuron*	mg/l	SUB							<0.0005			
Monuron*	mg/l	SUB							<0.0005			
Pencycuron*	mg/l	SUB							<0.0005			
Suspended solids, Neut. 5 mins. non-settleable	<2 mg/l	TM022							54			
Suspended solids, Neutralised 1 hr non-settleable	<2 mg/l	TM022							40			
Suspended Solids, Total neutralised	<2 mg/l	TM022							62			
Suspended solids, Neutralised 1 hr settleable	<2 mg/l	TM022							22			
Suspended solids, Neutralised 5 mins. settleable	<2 mg/l	TM022							<9			
Suspended solids, Total	<2 mg/l	TM022					59.9		◆ #			
BOD, unfiltered	<1 mg/l	TM045					<2		#			
Organic Carbon, Total	<3 mg/l	TM090					6.43		#			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099					32		#			
Sulphide	<0.01 mg/l	TM101					0.167		#			
COD, unfiltered	<7 mg/l	TM107					22.6		◆ #			
Arsenic (diss.filt)	<0.0005 mg/l	TM152					0.00138		2 #			
Arsenic (tot.unfilt)	<0.002 mg/l	TM152					0.00306		#			
Cadmium (diss.filt)	<0.00008 mg/l	TM152					<0.00008		2 #			
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152					<0.0005		#			
Chromium (tot.unfilt)	<0.003 mg/l	TM152					<0.003		#			
Chromium (diss.filt)	<0.001 mg/l	TM152					<0.001		2 #			
Copper (tot.unfilt)	<0.001 mg/l	TM152					<0.001		#			
Lead (tot.unfilt)	<0.001 mg/l	TM152					0.00139		#			
Copper (diss.filt)	<0.0003 mg/l	TM152					<0.0003		2 #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD		
#	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							
1-4	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					
Lead (diss.filt)	<0.0002 mg/l	TM152	7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792		<0.0002			
					2 #			
Nickel (tot.unfilt)	<0.001 mg/l	TM152			0.00128			
					#			
Selenium (tot.unfilt)	<0.001 mg/l	TM152			<0.001			
					#			
Nickel (diss.filt)	<0.0004 mg/l	TM152			0.00102			
					2 #			
Selenium (diss.filt)	<0.001 mg/l	TM152			<0.001			
					2 #			
Zinc (tot.unfilt)	<0.005 mg/l	TM152			0.0561			
					#			
Zinc (diss.filt)	<0.001 mg/l	TM152			0.00251			
					2 #			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152			639			
Mercury (diss.filt)	<0.00001 mg/l	TM183			<0.00001			
					2 #			
Mercury (tot.unfilt)	<0.00002 mg/l	TM183			0.000021			
					#			
Sulphate (soluble) as S	<1 mg/l	TM184			3.73			
					#			
Nitrogen, Total	<1 mg/l	TM212			29.4			
					#			
Cyanide, Total	<0.05 mg/l	TM227			<0.05			
					#			
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249			0.08			
pH	<1 pH Units	TM256			7.35			
					◆ #			
pH (diss.filt)	<1 pH Units	TM256			7.53			
					◆			
Conductivity @ 20 deg.C (diss.filt)	<20 us/cm	TM256			1300			
Tributyl tin	<0.000001 mg/l	TM328			<0.00003			
Surrogate**	%	TM328			88.8			
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.000026 @ #					
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000003 @ #					
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.000002 @ #					
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000006 @ #					
PFHpA (375-85-9)	<0.000001 mg/l	TM337	<0.000002 @ #					
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.000002 @ #					
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000004 @ #					
PFHxS (355-46-4)	<0.000001 mg/l	TM337	<0.000002 @ #					
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000002 @ #					
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000002 @ #					
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000002 @ #					
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000002 @ #					
Branched PFOS	<0.000001 mg/l	TM337	0.000004 @ #					
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000002 @ #					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD		
#	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							
1-4	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					
PFD0A (307-55-1)	<0.000001 mg/l	TM337	7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792	<0.000002 @ #				
PFOSA (754-91-6)	<0.000002 mg/l	TM337		<0.000004 @ #				
PFDS (335-77-3)	<0.000001 mg/l	TM337		<0.000002				
PFPeS (2706-91-4)	<0.000001 mg/l	TM337		<0.000002 @ #				
Total PFOS	<0.000001 mg/l	TM337		0.000006 @ #				
Trifluralin	<0.00001 mg/l	TM343			<0.00002			
alpha-HCH	<0.00001 mg/l	TM343			<0.00002			
gamma-HCH (Lindane)	<0.00001 mg/l	TM343			<0.00002			
Heptachlor	<0.00001 mg/l	TM343			<0.00002			
Aldrin	<0.00001 mg/l	TM343			<0.00002			
beta-HCH	<0.00001 mg/l	TM343			<0.00002			
Isodrin	<0.00001 mg/l	TM343			<0.00002			
delta-HCH	<0.00001 mg/l	TM343			<0.00002			
Heptachlor epoxide	<0.00001 mg/l	TM343			<0.00002			
o,p'-DDE	<0.00001 mg/l	TM343			<0.00002			
Endosulphan I	<0.00001 mg/l	TM343			<0.00002			
trans-Chlordane	<0.00001 mg/l	TM343			<0.00002			
cis-Chlordane	<0.00001 mg/l	TM343			<0.00002			
p,p'-DDE	<0.00001 mg/l	TM343			<0.00002			
Dieldrin	<0.00001 mg/l	TM343			<0.00002			
o,p'-DDD (TDE)	<0.00001 mg/l	TM343			<0.00002			
Endrin	<0.00001 mg/l	TM343			<0.00002			
o,p'-DDT	<0.00001 mg/l	TM343			<0.00004			
p,p'-DDD (TDE)	<0.00001 mg/l	TM343			<0.00002			
Endosulphan II	<0.00002 mg/l	TM343			<0.00004			
p,p'-DDT	<0.00001 mg/l	TM343			<0.00004			
o,p'-Methoxychlor	<0.00001 mg/l	TM343			<0.00004			
p,p'-Methoxychlor	<0.00001 mg/l	TM343			<0.00004			
Endosulphan Sulphate	<0.00002 mg/l	TM343			<0.00008			
Permethrin I	<0.00001 mg/l	TM343			<0.00002			
Permethrin II	<0.00001 mg/l	TM343			<0.00002			
Fats, Oils, Greases	<1 mg/l	TM383			<1			
4-tert-Octylphenol	<0.000014 mg/l	TM426			0.000199			

13:01:27 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD		
#	ISO17025 accredited.							
M	mCERTS accredited.							
aq	Aqueous / settled sample.							
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**	% 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							
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1-4	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					
4-tert-Nonylphenol	<0.00004 mg/l	TM426	7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792		<0.0004			
4-n-Octylphenol	<0.000014 mg/l	TM426			<0.00014			
4-n-Nonylphenol	<0.00004 mg/l	TM426			<0.0004			
4-Nonylphenol monoethoxylate	<0.00004 mg/l	TM426			<0.0004			
4-Nonylphenol diethoxylate	<0.00004 mg/l	TM426			<0.0004			
4-Octylphenol (sum of isomers)	<0.000028 mg/l	TM426			<0.00028			
4-Nonylphenol (sum of isomers)	<0.00008 mg/l	TM426			<0.0008			
1,7-Dimethylxanthine	<0.00005 mg/l	TM432			<0.00005			
2,4-D	<0.00002 mg/l	TM432			<0.00005			
Acesulfame-K	<0.0002 mg/l	TM432			0.00106			
Acetaminophen	<0.00002 mg/l	TM432			<0.00005			
Albuterol	<0.000005 mg/l	TM432			<0.00001			
Amoxicillin	<0.0001 mg/l	TM432			<0.002			
Androstenedione	<0.00001 mg/l	TM432			<0.00001			
Atenolol	<0.000005 mg/l	TM432			<0.00001			
Atrazine	<0.000002 mg/l	TM432			<0.000005			
Bendroflumethiazide	<0.00001 mg/l	TM432			<0.00001			
Bezafibrate	<0.000005 mg/l	TM432			<0.000025			
BPA	<0.00001 mg/l	TM432			0.000384			
Bromacil	<0.00001 mg/l	TM432			<0.00001			
Butalbital	<0.00001 mg/l	TM432			<0.00001			
Butylparaben	<0.00001 mg/l	TM432			<0.00001			
Caffeine	<0.00001 mg/l	TM432			<0.00001			
Carbadox	<0.00002 mg/l	TM432			<0.00001			
Carbamazepine	<0.000002 mg/l	TM432			<0.000002			
Carisoprodol	<0.00002 mg/l	TM432			<0.00001			
Chloramphenicol	<0.000005 mg/l	TM432			<0.00005			
Chloridazon	<0.00001 mg/l	TM432			<0.00001			
Chlorotoluron	<0.00001 mg/l	TM432			<0.00001			
Cimetidine	<0.00002 mg/l	TM432			<0.00002			
Clofibric Acid	<0.00001 mg/l	TM432			<0.00005			
Cotinine	<0.00001 mg/l	TM432			<0.00002			
DACT	<0.00005 mg/l	TM432			<0.0001			

13:01:27 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD		
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794	Ground Water (GW) 22/05/2023 18/05/2023 230518-22 28045559		
Component	LOD/Units	Method						
DEA	<0.000005 mg/l	TM432			<0.00001			
DEET	<0.00001 mg/l	TM432			<0.00001			
Dehydronifedipine	<0.000005 mg/l	TM432			<0.000005			
DIA	<0.00005 mg/l	TM432			<0.00001			
Diclofenac	<0.00003 mg/l	TM432			<0.00005			
Dilantin	<0.00002 mg/l	TM432			<0.00002			
Diltiazem	<0.000005 mg/l	TM432			<0.00001			
Diuron	<0.000005 mg/l	TM432			<0.000005			
Erythromycin	<0.000025 mg/l	TM432			<0.00005			
Estradiol	<0.00005 mg/l	TM432			<0.00005			
Estriol	<0.00005 mg/l	TM432			<0.00005			
Estrone	<0.00001 mg/l	TM432			<0.00005			
Ethinyl Estradiol - 17 alpha	<0.0001 mg/l	TM432			<0.0001			
Ethylparaben	<0.000005 mg/l	TM432			<0.000005			
Flumequine	<0.00005 mg/l	TM432			<0.00005			
Fluoxetine	<0.00001 mg/l	TM432			<0.00005			
Gemfibrozil	<0.000005 mg/l	TM432			<0.00002			
Ibuprofen	<0.000025 mg/l	TM432			<0.00005			
Iohexol	<0.00005 mg/l	TM432			<0.0001			
Iopromide	<0.00001 mg/l	TM432			<0.00005			
Isobutylparaben	<0.00001 mg/l	TM432			<0.00001			
Isoproturon	<0.00002 mg/l	TM432			<0.00001			
Ketoprofen	<0.000005 mg/l	TM432			<0.00001			
Ketorolac	<0.000005 mg/l	TM432			<0.000005			
Lidocaine	<0.000005 mg/l	TM432			<0.000005			
Lincomycin	<0.00005 mg/l	TM432			<0.00005			
Linuron	<0.000005 mg/l	TM432			<0.00005			
Lopressor	<0.00002 mg/l	TM432			<0.0001			
Meclofenamic Acid	<0.00005 mg/l	TM432			<0.00025			
Metazachlor	<0.000005 mg/l	TM432			<0.000005			
Metformin	<0.0001 mg/l	TM432			<0.00003			
Methylparaben	<0.000005 mg/l	TM432			0.00002			
Metolachlor	<0.000005 mg/l	TM432			<0.000005			

13:01:27 10/08/2023



CERTIFICATE OF ANALYSIS

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SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Results Legend			Customer Sample Ref.	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD		
#	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							
1-4	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	7.87 Ground Water (GW) 16/05/2023 13:20:00 18/05/2023 230518-22 28010792	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794	Ground Water (GW) 22/05/2023 18/05/2023 230518-22 28045559		
Naproxen	<0.00002 mg/l	TM432			<0.00005			
Nifedipine	<0.00001 mg/l	TM432			0.000005			
Norethisterone	<0.00002 mg/l	TM432			<0.00002			
OUST (Sulfometuron.methyl)	<0.000005 mg/l	TM432			<0.000005			
Oxolinic acid	<0.00002 mg/l	TM432			<0.00005			
Pentoxifylline	<0.00001 mg/l	TM432			<0.000005			
Phenazone	<0.00002 mg/l	TM432			0.000045			
Primidone	<0.00001 mg/l	TM432			<0.00005			
Progesterone	<0.00002 mg/l	TM432			<0.00001			
Propazine	<0.000005 mg/l	TM432			<0.000005			
Propylparaben	<0.000005 mg/l	TM432			<0.000005			
Quinoline	<0.00002 mg/l	TM432			<0.0001			
Salicylic Acid	<0.0005 mg/l	TM432			<0.0005			
Simazine	<0.000005 mg/l	TM432			<0.000005			
Sucralose	<0.0001 mg/l	TM432			<0.0001			
Sulfachloropyridazine	<0.000005 mg/l	TM432			<0.00001			
Sulfadiazine	<0.000025 mg/l	TM432			<0.00005			
Sulfadimethoxine	<0.00001 mg/l	TM432			0.000012			
Sulfamerazine	<0.000005 mg/l	TM432			0.000045			
Sulfamethazine	<0.00002 mg/l	TM432			0.000493			
Sulfamethizole	<0.00001 mg/l	TM432			0.000025			
Sulfamethoxazole	<0.000005 mg/l	TM432			<0.00001			
Sulfathiazole	<0.0001 mg/l	TM432			0.000082			
TCEP	<0.001 mg/l	TM432			<0.00125			
TCP	<0.001 mg/l	TM432			<0.0015			
TDCPP	<0.0002 mg/l	TM432			<0.0005			
Testosterone	<0.00002 mg/l	TM432			<0.00001			
Theobromine	<0.00005 mg/l	TM432			<0.00025			
Theophylline	<0.0001 mg/l	TM432			<0.0001			
Thiabendazole	<0.000005 mg/l	TM432			<0.00001			
Triclocarban	<0.00005 mg/l	TM432			<0.0001			
Triclosan	<0.00005 mg/l	TM432			0.000779			
Trimethoprim	<0.00002 mg/l	TM432			<0.00001			

13:01:27 10/08/2023



CERTIFICATE OF ANALYSIS

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SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794				
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	#			
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.002	#			
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.004	#			
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			



CERTIFICATE OF ANALYSIS

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SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794				
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.002	#			
Carbazole (aq)	<0.001 mg/l	TM176	<0.002	#			
Chrysene (aq)	<0.001 mg/l	TM176	<0.002	#			
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.002	#			
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.01	#			
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Fluorene (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.002	#			
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.002				
Phenol (aq)	<0.001 mg/l	TM176	<0.002				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.002	#			
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Naphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
Isophorone (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.002				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			



Superseded Report: 694261

Location: Victoria North



CERTIFICATE OF ANALYSIS

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SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

VOC MS (W)

Results Legend		Customer Sample Ref.	SHOWMANS GUILD			
# 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 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794			
Component	LOD/Units	Method				
Dibromofluoromethane**	%	TM208	119			
Toluene-d8**	%	TM208	98.4			
4-Bromofluorobenzene**	%	TM208	96.5			
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	#		
Chloromethane	<0.001 mg/l	TM208	<0.001	#		
Vinyl chloride	<0.001 mg/l	TM208	<0.001	#		
Bromomethane	<0.001 mg/l	TM208	<0.001	#		
Chloroethane	<0.001 mg/l	TM208	<0.001	#		
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
Carbon disulphide	<0.001 mg/l	TM208	<0.001	#		
Dichloromethane	<0.003 mg/l	TM208	<0.003	#		
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	#		
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	#		
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001			
Bromochloromethane	<0.001 mg/l	TM208	<0.001	#		
Chloroform	<0.001 mg/l	TM208	<0.001	#		
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	#		
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	#		
Benzene	<0.001 mg/l	TM208	<0.001	#		
Trichloroethene	<0.001 mg/l	TM208	<0.001	#		
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	#		
Dibromomethane	<0.001 mg/l	TM208	<0.001	#		
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	#		
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
Toluene	<0.001 mg/l	TM208	<0.001	#		
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	#		
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001	#		



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SDG: 230518-22
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VOC MS (W)

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 16/05/2023 14:15:00 18/05/2023 230518-22 28010794				
Component	LOD/Units	Method						
Tetrachloroethene	<0.001 mg/l	TM208	<0.001	#				
Dibromochloromethane	<0.001 mg/l	TM208	<0.001	#				
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001	#				
Chlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#				
Ethylbenzene	<0.001 mg/l	TM208	<0.001	#				
m,p-Xylene	<0.001 mg/l	TM208	<0.001	#				
o-Xylene	<0.001 mg/l	TM208	<0.001	#				
Styrene	<0.001 mg/l	TM208	<0.001	#				
Bromoform	<0.001 mg/l	TM208	<0.001	#				
Isopropylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#				
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	#				
Bromobenzene	<0.001 mg/l	TM208	<0.001	#				
Propylbenzene	<0.001 mg/l	TM208	<0.001	#				
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#				
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#				
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#				
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#				
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001	#				
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
n-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001					
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001	#				
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001	#				
Naphthalene	<0.001 mg/l	TM208	<0.001	#				
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	<0.001					



CERTIFICATE OF ANALYSIS

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Superseded Report: 694261

Notification of NDPs (No determination possible)

Date Received : 18/05/2023 06:06:59

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
28010794	SHOWMANS GUILD		Neutralised Suspended Solids	Insufficient sample supplied
28010794	SHOWMANS GUILD		Settleable Solids	Insufficient sample supplied
28010794	SHOWMANS GUILD		Settleable Solids 5 Mins	Insufficient sample supplied
28010794	SHOWMANS GUILD		Urea Herbicides (Suite 1)*	Insufficient sample supplied
28010794	SHOWMANS GUILD		Determination of Dissolved Gases	Insufficient sample supplied



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Data Amendment

Sample No. : All Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Table of Results - Appendix

Method No	Description
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM328	
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM426	Determination of Specific Phenols and their Ethoxylates in Liquids by GC/MS/MS
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM337	Analysis of PFAS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM432	Pharmaceuticals and Personal Care Products

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230518-22
Client Ref.: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

	28010787	28010793	28010788	28010789	28010791	28010790	28010792	28010794	28045559
	BH102	BH203	BH204	BH207	BH309	BH310	BH311(A)	SHOWMANS GUILD	SHOWMANS GUILD
	2.95	12.42	2.62	12.70	2.95	4.42	7.87		
	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Ammoniacal Nitrogen								19-May-2023	
Anions by Kone (w)								01-Jun-2023	
BOD True Total								24-May-2023	
COD Unfiltered								31-May-2023	
Cyanide Comp/Free/Total/Thiocyanate								24-May-2023	
Dissolved Metals by ICP-MS								25-May-2023	
EPH CWG (Aliphatic) Aqueous GC (W)								01-Jun-2023	
EPH CWG (Aromatic) Aqueous GC (W)								01-Jun-2023	
Faecal Coliforms (W)*								12-Jun-2023	
Fats Oils and Greases.								24-May-2023	
GRO by GC-FID (W)								19-May-2023	
Mercury Dissolved								05-Jun-2023	
Mercury Unfiltered								02-Jun-2023	
Methylene blue active substances								20-May-2023	
Neutralised Suspended Solids									30-May-2023
Organotins in Aqueous Samples								26-May-2023	
PAH Spec MS - Aqueous (W)								01-Jun-2023	
Pesticides (Suite I) by GCMS								25-May-2023	
PFAS Liquids	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023	29-Jun-2023		
pH Value								31-May-2023	
pH Value of Filtered Water								31-May-2023	
Pharmaceuticals and Personal Care								06-Jun-2023	
Phenols and ethoxylates in Liquids								06-Jun-2023	
Settleable Solids									30-May-2023
Settleable Solids 5 Mins									30-May-2023
Sulphide								02-Jun-2023	
Suspended Solids								02-Jun-2023	
SVOC MS (W) - Aqueous								22-May-2023	
Total Metals by ICP-MS								02-Jun-2023	
Total Nitrogen								07-Jun-2023	
Total Organic and Inorganic Carbon								19-May-2023	
TPH CWG (W)								01-Jun-2023	
Urea Herbicides (Suite 1)*									20-Jun-2023
VOC MS (W)								19-May-2023	



ALS Laboratories (UK) Limited
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CV4 9GU

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F.A.O Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside CH5 3US

12 June 2023

Test Report: COV/2487559/2023

Dear F.A.O Quotes

Analysis of your sample(s) submitted on 01 June 2023 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Laboratories (UK) Limited and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Name:

S. Tharmaseelan

Title:

Legionella Team Leader



This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No.02391955.
Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

**F.A.O Hawarden Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside
CH5 3US**



Date of Issue: **02 June 2023**

Report Number: **COV/2487559/2023**

Issue **1**

This issue replaces
all previous issues

Job Description: Master Quote 2022 - 2023

Job Location: Victoris North

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

Job Received: **01 June 2023**

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

Analysis Commenced: **01 June 2023**

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **02 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No. 02391955. Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

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ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 1 of 5

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2487559/2023**
Laboratory Number: **22848532**
Sample Source: **ALS Laboratories (UK) Ltd**
Sample Point Description: **Water Analysis**
Sample Description: **Showmans Guild**
Sample Matrix: **Not In Project**
Sample Date/Time: **31 May 2023**
Sample Received: **01 June 2023**
Analysis Complete: **02 June 2023**

Issue **1**
Sample **1** of **1**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms presumptive	0	cfu/100ml	02/06/2023	N Cov	W57
Faecal coliforms confirmed	0	cfu/100ml	02/06/2023	N Cov	W57

Analyst Comments for 22848532:

This sample has been analysed for Faecal coliforms presumptive, Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **02 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 2 of 5



ANALYST COMMENTS FOR REPORT COV/2487559/2023

Issue **1**

This issue replaces all previous issues

Date of Issue: **02 June 2023**

Sample No	Analysis Comments
22848532	This sample has been analysed for Faecal coliforms presumptive, Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:

Name: **S. Tharmaseelan**

Date: **02 June 2023**

Title: **Legionella Team Leader**



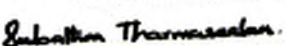
DETERMINAND COMMENTS FOR REPORT COV/2487559/2023

ISSUE 1

Date of Issue: 02 June 2023

This issue replaces
all previous issues

Sample No	Description	Determinand	Comments

Signed: 	Name: S. Tharmaseelan	Date: 02 June 2023
	Title: Legionella Team Leader	

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CERTIFICATE OF ANALYSIS

SDG: 230518-22
Client Ref: 326R

Report Number: 699677
Location: Victoria North

Superseded Report: 694261

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 (BTX). 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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230429-40
Your Reference:	326R
Location:	Victoria North
Report No:	699676
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 699674 in its entirety.

We received 12 samples on Saturday April 29, 2023 and 12 of these samples were scheduled for analysis which was completed on Friday May 26, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27921592	SWS01 LH			
27921594	SWS02 LH			
27921596	SWS03 LH			
27921591	SWS01 RH			
27921593	SWS02 RH			
27921595	SWS03 RH			
27940914	SWS02 RH A			
27940915	SWS02 RH B			
27940916	SWS02 RH C			
27921600	TFGM1			
27921599	VIADUCT PIPE			
27921597	VIADUCT SURROUNDING WATER			

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

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

<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</div> <div>Non-regulatory</div> <div>UNL - Unspecified Liquid</div> <div>SL - Sludge</div> <div>G - Gas</div> <div>OTH - Other</div>	Lab Sample No(s)		Customer Sample Reference	AGS Reference	Depth (m)	Container	Sample Type	27921599	27921600	27940916	27940915	27940914	27921595	27921593	27921591	27921596	27921594	27921592		
								VIADUCT PIPE	TFCM1											
								500ml Plastic (ALE208)	250ml BOD (ALE212)	250ml Amber Gl. PTFE/PE (ALE219)	ZnAc (ALE246)	Vial (ALE297)	NaOH (ALE245)	H2SO4 (ALE244)	500ml Plastic (ALE208)	250ml BOD (ALE212)	250ml Amber Gl. PTFE/PE (ALE219)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	
								GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW	GW
Ammoniacal Nitrogen	All	NDPs: 0 Tests: 3																		
Anions by Kone (w)	All	NDPs: 0 Tests: 3																		
BOD True Total	All	NDPs: 0 Tests: 3																		
COD Unfiltered	All	NDPs: 0 Tests: 3																		
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 3																		
Determination of Dissolved Gases	All	NDPs: 0 Tests: 3																		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3																		
EPH CWG (Aliphatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3																		
EPH CWG (Aromatic) Aqueous GC (W)	All	NDPs: 0 Tests: 3																		
Fats Oils and Greases.	All	NDPs: 0 Tests: 3																		
GRO by GC-FID (W)	All	NDPs: 0 Tests: 3																		
Mercury Dissolved	All	NDPs: 0 Tests: 3																		
Mercury Unfiltered	All	NDPs: 0 Tests: 3																		
Methylene blue active substances	All	NDPs: 0 Tests: 3																		
Neutralised Suspended Solids	All	NDPs: 0 Tests: 3																		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

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	
	27921599		VIADUCT PIPE						500ml Plastic (ALE208)	GW		
	27921600		TFCM1						250ml BOD (ALE212)	GW		
									250ml Amber Gl. PTFE/PE (ALE219)	GW		
									ZnAc (ALE246)	GW		
									Vial (ALE297)	GW		
	27940916		SWS02 RH C						NaOH (ALE245)	GW		
	27940915		SWS02 RH B						H2SO4 (ALE244)	GW		
	27940914		SWS02 RH A						500ml Plastic (ALE208)	GW		
	27921595		SWS03 RH						250ml BOD (ALE212)	GW		
	27921593		SWS02 RH						250ml Amber Gl. PTFE/PE (ALE219)	GW		
	27921591		SWS01 RH						500ml Plastic (ALE208)	GW		
	27921596		SWS03 LH						500ml Plastic (ALE208)	GW		
	27921594		SWS02 LH						500ml Plastic (ALE208)	GW		
	27921592		SWS01 LH						500ml Plastic (ALE208)	GW		
Organotins in Aqueous Samples	All	NDPs: 1 Tests: 2										
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3										
Pesticides (Suite I) by GCMS	All	NDPs: 0 Tests: 3										
PFAS Liquids	All	NDPs: 1 Tests: 11										
pH Value	All	NDPs: 0 Tests: 3										
Pharmaceuticals and Personal Care	All	NDPs: 0 Tests: 3										
Phenols and ethoxylates in Liquids	All	NDPs: 0 Tests: 3										
Settleable Solids	All	NDPs: 0 Tests: 3										
Settleable Solids 5 Mins	All	NDPs: 0 Tests: 3										
Sulphide	All	NDPs: 0 Tests: 3										
Suspended Solids	All	NDPs: 0 Tests: 3										
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 3										
Total Metals by ICP-MS	All	NDPs: 0 Tests: 3										
Total Nitrogen	All	NDPs: 0 Tests: 3										
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 3										



SDG: 230429-40
Client Ref.: 326R

Superseded Report: 699674

Location: Victoria North

Lab Sample No(s)

Test

No Determination Possible

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

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

TPH CWG (W)

All

NDPs: 0
Tests: 3

Urea Herbicides (Suite 1)*

All

NDPs: 2
Tests: 1

VOC MS (W)

All

NDPs: 0
Tests: 3

X

X

N

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend			Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)
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									
1-4* Sample deviation (see appendix)									
Component	LOD/Units	Method							
Chloroxuron*	mg/l	SUB							<0.00005
Chlortoluron*	mg/l	SUB							<0.00005
Diflufenzuron*	mg/l	SUB							<0.00005
Dimefuron*	mg/l	SUB							<0.00005
Diuron*	mg/l	SUB							<0.00005
Isoproturon*	mg/l	SUB							<0.00005
Linuron*	mg/l	SUB							<0.00005
Methabenzthiazuron*	mg/l	SUB							<0.00005
Metoxuron*	mg/l	SUB							<0.00005
Monolinuron*	mg/l	SUB							<0.00005
Monuron*	mg/l	SUB							<0.00005
Pencycuron*	mg/l	SUB							<0.00005
Suspended solids, Neut. 5 mins. non-settleable	<2 mg/l	TM022					10	41	1340
Suspended solids, Neutralised 1 hr non-settleable	<2 mg/l	TM022					<9	25	540
Suspended Solids, Total neutralised	<2 mg/l	TM022					30	41	6250
Suspended solids, Neutralised 1 hr settleable	<2 mg/l	TM022					21	16	5710
Suspended solids, Neutralised 5 mins. settleable	<2 mg/l	TM022					20	<6	4910
Suspended solids, Total	<2 mg/l	TM022					16.4	41.7	6440
BOD, unfiltered	<1 mg/l	TM045					<1	2.78	6.69
Organic Carbon, Total	<3 mg/l	TM090					8.59	8.52	7.53
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099					7.32	1.5	1.48
Sulphide	<0.01 mg/l	TM101					<0.01	<0.01	<0.01
COD, unfiltered	<7 mg/l	TM107					25.9	42.1	147
Arsenic (diss.filt)	<0.0005 mg/l	TM152					0.000584	0.00135	0.00232
Arsenic (tot.unfilt)	<0.002 mg/l	TM152					<0.002	0.00308	0.0227
Cadmium (diss.filt)	<0.00008 mg/l	TM152					<0.00008	0.000261	0.000243
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152					<0.0005	<0.0005	0.0039
Chromium (tot.unfilt)	<0.003 mg/l	TM152					<0.003	<0.003	0.024
Chromium (diss.filt)	<0.001 mg/l	TM152					<0.001	<0.001	<0.001
Copper (tot.unfilt)	<0.001 mg/l	TM152					0.00842	0.0134	0.184
Lead (tot.unfilt)	<0.001 mg/l	TM152					0.00365	0.0122	0.273
Copper (diss.filt)	<0.0003 mg/l	TM152					0.00264	0.00434	0.00402
Lead (diss.filt)	<0.0002 mg/l	TM152					<0.0002	<0.0002	0.000345



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend		Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
<div># 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 1-4*§@ Sample deviation (see appendix)</div>		<div>Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27940914</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27940915</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27940916</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27921600</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27921599</div>	<div>Ground Water (GW) 29/04/2023 230429-40 27921597</div>
Component	LOD/Units	Method						
Nickel (tot.unfilt)	<0.001 mg/l	TM152				0.00581 2 § #	0.0057 2 § #	0.0572 2 § #
Selenium (tot.unfilt)	<0.001 mg/l	TM152				<0.001 2 § #	<0.001 2 § #	0.00211 2 § #
Nickel (diss.filt)	<0.0004 mg/l	TM152				0.00278 2 § #	0.00415 2 § #	0.00635 2 § #
Selenium (diss.filt)	<0.001 mg/l	TM152				<0.001 2 § #	<0.001 2 § #	<0.001 2 § #
Zinc (tot.unfilt)	<0.005 mg/l	TM152				0.114 2 § #	0.146 2 § #	1.82 2 § #
Zinc (diss.filt)	<0.001 mg/l	TM152				0.0544 2 § #	0.0359 2 § #	0.0956 2 § #
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152				905 2 §	734 2 §	998 2 §
Mercury (diss.filt)	<0.00001 mg/l	TM183				<0.00001 2 § #	<0.00001 2 § #	<0.00001 2 § #
Mercury (tot.unfilt)	<0.00002 mg/l	TM183				<0.00002 2 § #	0.00002 2 § #	0.000905 2 § #
Sulphate (soluble) as S	<1 mg/l	TM184				35.7 § #	36.7 § #	37.3 § #
Nitrogen, Total	<1 mg/l	TM212				12.6 § #	6.14 § #	3.3 § #
Methane, dissolved	<0.001 mg/l	TM223				0.00155 2 §	0.00178 2 §	0.0193 3 §
Cyanide, Total	<0.05 mg/l	TM227				<0.05 § #	0.13 § #	0.1 § #
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249				0.16 §	0.12 §	0.05 §
pH	<1 pH Units	TM256				7.65 § #	7.66 § #	7.36 § #
Tributyl tin	<0.000001 mg/l	TM328					<0.000003 §	<0.000003 §
Surrogate**	%	TM328					87.8 §	62 §
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.000004 § #	0.000003 § #	0.000004 § #	0.000011 § #	0.000014 § #	
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000003 § #	0.000004 § #	0.000003 § #	0.000006 § #	0.000004 § #	
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.000006 § #	0.000005 § #	0.000006 § #	0.000006 § #	0.000004 § #	
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000007 § #	0.000005 § #	0.000005 § #	0.000002 § #	0.000002 § #	
PFHpA (375-85-9)	<0.000001 mg/l	TM337	0.000004 § #	0.000004 § #	0.000003 § #	0.000003 § #	0.00001 § #	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	0.000005 § #	0.000005 § #	0.000004 § #	<0.000001 § #	<0.000001 § #	
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000007 § #	0.000007 § #	0.000007 § #	0.000013 § #	0.000016 § #	
PFHxS (355-46-4)	<0.000001 mg/l	TM337	0.000002 § #	0.000001 § #	0.000002 § #	0.000002 § #	0.000003 § #	
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000004 § #	0.000003 § #	0.000003 § #	0.00001 § #	0.000009 § #	
Branched PFOS	<0.000001 mg/l	TM337	0.000003 § #	0.000003 § #	0.000002 § #	0.000008 § #	0.000006 § #	
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	<0.000001 § #	
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.000002 § #	<0.000002 § #	<0.000002 § #	<0.000002 § #	<0.000003 § #	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend			Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 29/04/2023 230429-40 27940914	Ground Water (GW) 29/04/2023 230429-40 27940915	Ground Water (GW) 29/04/2023 230429-40 27940916	Ground Water (GW) 29/04/2023 230429-40 27921600	Ground Water (GW) 29/04/2023 230429-40 27921599	Ground Water (GW) 29/04/2023 230429-40 27921597
Component	LOD/Units	Method							
PFDS (335-77-3)	<0.000001 mg/l	TM337		<0.000001 \$	<0.000001 \$	<0.000001 \$	<0.000001 \$	<0.000001 \$	
PFPeS (2706-91-4)	<0.000001 mg/l	TM337		<0.000001 \$ #	<0.000001 \$ #	<0.000001 \$ #	<0.000001 \$ #	<0.000001 \$ #	
Total PFOS	<0.000001 mg/l	TM337		0.000006 \$ #	0.000006 \$ #	0.000005 \$ #	0.000018 \$ #	0.000015 \$ #	
Trifluralin	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
alpha-HCH	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
gamma-HCH (Lindane)	<0.00001 mg/l	TM343					<0.00002 \$	<0.00001 \$	<0.00001 \$
Heptachlor	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Aldrin	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
beta-HCH	<0.00001 mg/l	TM343					<0.00001 \$	<0.00002 \$	<0.00002 \$
Isodrin	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
delta-HCH	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Heptachlor epoxide	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
o,p'-DDE	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Endosulphan I	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
trans-Chlordane	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
cis-Chlordane	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
p,p'-DDE	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Dieldrin	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
o,p'-DDD (TDE)	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Endrin	<0.00001 mg/l	TM343					<0.00001 \$	<0.00002 \$	<0.00002 \$
o,p'-DDT	<0.00001 mg/l	TM343					<0.00004 \$	<0.00002 \$	<0.00002 \$
p,p'-DDD (TDE)	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Endosulphan II	<0.00002 mg/l	TM343					<0.00004 \$	<0.00002 \$	<0.00002 \$
p,p'-DDT	<0.00001 mg/l	TM343					<0.00006 \$	<0.00002 \$	<0.00002 \$
o,p'-Methoxychlor	<0.00001 mg/l	TM343					<0.00002 \$	<0.00002 \$	<0.00002 \$
p,p'-Methoxychlor	<0.00001 mg/l	TM343					<0.00004 \$	<0.00002 \$	<0.00002 \$
Endosulphan Sulphate	<0.00002 mg/l	TM343					<0.00002 \$	<0.00002 \$	<0.00002 \$
Permethrin I	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Permethrin II	<0.00001 mg/l	TM343					<0.00001 \$	<0.00001 \$	<0.00001 \$
Fats, Oils, Greases	<1 mg/l	TM383					<1 \$	1.33 \$	<1 \$
4-tert-Octylphenol	<0.000014 mg/l	TM426					<0.000056 \$	<0.000056 \$	<0.000056 \$
4-tert-Nonylphenol	<0.00004 mg/l	TM426					<0.00016 \$	<0.00016 \$	<0.00016 \$
4-n-Octylphenol	<0.000014 mg/l	TM426					<0.000056 \$	<0.000056 \$	<0.000056 \$



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend			Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) . 29/04/2023 230429-40 27940914	Ground Water (GW) . 29/04/2023 230429-40 27940915	Ground Water (GW) . 29/04/2023 230429-40 27940916	Ground Water (GW) . 29/04/2023 230429-40 27921600	Ground Water (GW) . 29/04/2023 230429-40 27921599	Ground Water (GW) . 29/04/2023 230429-40 27921597
Component	LOD/Units	Method							
4-n-Nonylphenol	<0.00004 mg/l	TM426					<0.00016 \$	<0.00016 \$	<0.00016 \$
4-Nonylphenol monoethoxylate	<0.00004 mg/l	TM426					<0.00016 \$	<0.00016 \$	<0.00016 \$
4-Nonylphenol diethoxylate	<0.00004 mg/l	TM426					<0.00016 \$	<0.00016 \$	<0.00016 \$
4-Octylphenol (sum of isomers)	<0.000028 mg/l	TM426					<0.000112 \$	<0.000112 \$	<0.000112 \$
4-Nonylphenol (sum of isomers)	<0.00008 mg/l	TM426					<0.00032 \$	<0.00032 \$	<0.00032 \$
1,7-Dimethylxanthine	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
2,4-D	<0.00002 mg/l	TM432					<0.002 \$	<0.002 \$	<0.002 \$
Acesulfame-K	<0.0002 mg/l	TM432					<0.0004 \$	<0.0006 \$	<0.0006 \$
Acetaminophen	<0.00002 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Albuterol	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Amoxicillin	<0.0001 mg/l	TM432					0.000486 \$	<0.0002 \$	<0.0002 \$
Androstenedione	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Atenolol	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Atrazine	<0.000002 mg/l	TM432					0.000019 \$	0.000025 \$	0.000025 \$
Bendroflumethiazide	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Bezafibrate	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
BPA	<0.00001 mg/l	TM432					0.000088 \$	0.00011 \$	0.00002 \$
Bromacil	<0.00001 mg/l	TM432					0.000014 \$	<0.00001 \$	0.00002 \$
Butalbital	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Butylparaben	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Caffeine	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Carbadox	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Carbamazepine	<0.000002 mg/l	TM432					<0.000002 \$	<0.000002 \$	<0.000002 \$
Carisoprodol	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Chloramphenicol	<0.000005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Chloridazon	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Chlorotoluron	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Cimetidine	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Clofibric Acid	<0.00001 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Cotinine	<0.00001 mg/l	TM432					<0.00002 \$	<0.00002 \$	<0.00002 \$
DACT	<0.00005 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
DEA	<0.000005 mg/l	TM432					0.000059 \$	0.000104 \$	0.000102 \$
DEET	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$



CERTIFICATE OF ANALYSIS

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SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend			Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 29/04/2023 230429-40 27940914	Ground Water (GW) 29/04/2023 230429-40 27940915	Ground Water (GW) 29/04/2023 230429-40 27940916	Ground Water (GW) 29/04/2023 230429-40 27921600	Ground Water (GW) 29/04/2023 230429-40 27921599	Ground Water (GW) 29/04/2023 230429-40 27921597
Component	LOD/Units	Method							
Dehydronifedipine	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
DIA	<0.00005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Diclofenac	<0.00003 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Dilantin	<0.00002 mg/l	TM432					<0.00002 \$	<0.00002 \$	<0.00002 \$
Diltiazem	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Diuron	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Erythromycin	<0.000025 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Estradiol	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Estriol	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Estrone	<0.00001 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Ethinyl Estradiol - 17 alpha	<0.0001 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Ethylparaben	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Flumequine	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Fluoxetine	<0.00001 mg/l	TM432					<0.00025 \$	<0.00025 \$	<0.00025 \$
Gemfibrozil	<0.000005 mg/l	TM432					<0.00002 \$	<0.00002 \$	<0.00002 \$
Ibuprofen	<0.000025 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Iohexol	<0.00005 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Iopromide	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Isobutylparaben	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Isoproturon	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Ketoprofen	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Ketorolac	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Lidocaine	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Lincomycin	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Linuron	<0.000005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Lopressor	<0.0002 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Meclofenamic Acid	<0.00005 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Metazachlor	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Metformin	<0.0001 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Methylparaben	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Metolachlor	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Naproxen	<0.00002 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Nifedipine	<0.00001 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Results Legend			Customer Sample Ref.	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER
# 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 1-4* \$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) - 29/04/2023 230429-40 27940914	Ground Water (GW) - 29/04/2023 230429-40 27940915	Ground Water (GW) - 29/04/2023 230429-40 27940916	Ground Water (GW) - 29/04/2023 230429-40 27921600	Ground Water (GW) - 29/04/2023 230429-40 27921599	Ground Water (GW) - 29/04/2023 230429-40 27921597
Component	LOD/Units	Method							
Norethisterone	<0.00002 mg/l	TM432					<0.00002 \$	<0.00002 \$	<0.00002 \$
OUST (Sulfometuron.methyl)	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Oxolinic acid	<0.00002 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Pentoxifylline	<0.00001 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Phenazone	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Primidone	<0.00001 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Progesterone	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Propazine	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Propylparaben	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Quinoline	<0.00002 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Salicylic Acid	<0.0005 mg/l	TM432					<0.0005 \$	<0.0005 \$	<0.0005 \$
Simazine	<0.000005 mg/l	TM432					<0.000005 \$	<0.000005 \$	<0.000005 \$
Sucralose	<0.0001 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Sulfachloropyridazine	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Sulfadiazine	<0.000025 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
Sulfadimethoxine	<0.00001 mg/l	TM432					0.000014 \$	0.000013 \$	0.000014 \$
Sulfamerazine	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Sulfamethazine	<0.00002 mg/l	TM432					0.000125 \$	0.000026 \$	0.000038 \$
Sulfamethizole	<0.00001 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Sulfamethoxazole	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Sulfathiazole	<0.0001 mg/l	TM432					<0.00005 \$	<0.00005 \$	<0.00005 \$
TCEP	<0.001 mg/l	TM432					<0.002 \$	<0.002 \$	<0.002 \$
TCP	<0.001 mg/l	TM432					<0.001 \$	<0.001 \$	<0.001 \$
TDCEP	<0.0002 mg/l	TM432					<0.0002 \$	<0.0002 \$	<0.0002 \$
Testosterone	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Theobromine	<0.00005 mg/l	TM432					<0.00025 \$	<0.00025 \$	<0.00025 \$
Theophylline	<0.0001 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Thiabendazole	<0.000005 mg/l	TM432					<0.00001 \$	<0.00001 \$	0.00003 \$
Triclocarban	<0.00005 mg/l	TM432					<0.00002 \$	<0.00002 \$	<0.00002 \$
Triclosan	<0.00005 mg/l	TM432					<0.0001 \$	<0.0001 \$	<0.0001 \$
Trimethoprim	<0.00002 mg/l	TM432					<0.00001 \$	<0.00001 \$	<0.00001 \$
Warfarin	<0.000005 mg/l	TM432					0.000013 \$	<0.00001 \$	<0.00001 \$



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

PAH Spec MS - Aqueous (W)

Results Legend			Customer Sample Ref.		TFGM1		VIADUCT PIPE		VIADUCT SURROUNDING WATER						
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference			Ground Water (GW)		Ground Water (GW)		Ground Water (GW)					
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															
1-4* Sample deviation (see appendix)															
Component	LOD/Units	Method													
Naphthalene (aq)	<0.00001 mg/l	TM178	<0.00002 \$ #					<0.00001 \$ #			0.000014 \$ #				
Acenaphthene (aq)	<0.000005 mg/l	TM178	0.000017 \$ #					0.000017 \$ #			0.000021 \$ #				
Acenaphthylene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			<0.000005 \$ #				
Fluoranthene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			0.000089 \$ #				
Anthracene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			0.00001 \$ #				
Phenanthrene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					0.00001 \$ #			0.000041 \$ #				
Fluorene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			<0.000005 \$ #				
Chrysene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					0.000047 \$ #			0.000055 \$ #				
Pyrene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					0.000066 \$ #			0.000098 \$ #				
Benzo(a)anthracene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					0.000041 \$ #			0.000039 \$ #				
Benzo(b)fluoranthene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					0.000087 \$ #			0.000062 \$ #				
Benzo(k)fluoranthene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			0.00002 \$ #				
Benzo(a)pyrene (aq)	<0.000002 mg/l	TM178	<0.000004 \$ #					<0.000002 \$ #			<0.000002 \$ #				
Dibenzo(a,h)anthracene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			<0.000005 \$ #				
Benzo(g,h,i)perylene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			<0.000005 \$ #				
Indeno(1,2,3-cd)pyrene (aq)	<0.000005 mg/l	TM178	<0.00001 \$ #					<0.000005 \$ #			<0.000005 \$ #				
PAH, Total Detected USEPA 16 (aq)	<0.000082 mg/l	TM178	<0.000164 \$ #					0.000268 \$ #			0.000448 \$ #				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.			TFGM1			VIADUCT PIPE			VIADUCT SURROUNDING WATER					
#	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																
1-4	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							
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921600		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Chlorophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Methylphenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Nitroaniline (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
2-Nitrophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
3-Nitroaniline (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$	\$	\$				
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
4-Chloroaniline (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$	\$	\$				
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
4-Methylphenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
4-Nitroaniline (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
4-Nitrophenol (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$	\$	\$				
Azobenzene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
Acenaphthylene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
Acenaphthene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
Anthracene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176					29/04/2023	230429-40	27921599		<0.002	<0.002	<0.002				
											\$ #	\$ #	\$ #				
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176					29/04/2023	230429-40	27921599		<0.001	<0.001	<0.001				
											\$ #	\$ #	\$ #				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

SVOC MS (W) - Aqueous

Results Legend			Customer Sample Ref.	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER			
#	M	aq							
ISO17025 accredited.			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)			
mCERTS accredited.									
Aqueous / settled sample.									
Dissolved / filtered sample.									
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									
1-4* Sample deviation (see appendix)									
Component	LOD/Units	Method							
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Carbazole (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Chrysene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.005	<0.005	<0.005				
			\$ #	\$ #	\$ #				
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Fluorene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$	\$	\$				
Phenol (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$	\$	\$				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Naphthalene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Isophorone (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$	\$	\$				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				
Pyrene (aq)	<0.001 mg/l	TM176	<0.001	<0.001	<0.001				
			\$ #	\$ #	\$ #				

SDG: 230429-40

Report Number: 699676

Superseded Report: 699674

Client Ref.: 326R

Location: Victoria North

TPH CWG (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

VOC MS (W)

Results Legend			Customer Sample Ref.			TFGM1			VIADUCT PIPE			VIADUCT SURROUNDING WATER		
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference			Ground Water (GW) 29/04/2023 230429-40 27921600			Ground Water (GW) 29/04/2023 230429-40 27921599			Ground Water (GW) 29/04/2023 230429-40 27921597		
Component	LOD/Units	Method												
Dibromofluoromethane**	%	TM208	109			111			107					
			1 \$			\$			1 \$					
Toluene-d8**	%	TM208	99.3			98.8			98.8					
			1 \$			\$			1 \$					
4-Bromofluorobenzene**	%	TM208	98.6			101			99.2					
			1 \$			\$			1 \$					
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Chloromethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Vinyl chloride	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Bromomethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Chloroethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Carbon disulphide	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Dichloromethane	<0.003 mg/l	TM208	<0.004			<0.0045			<0.004					
			1 \$ #			\$ #			1 \$ #					
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$			\$			1 \$					
Bromochloromethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Chloroform	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Carbontetrachloride	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Benzene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Trichloroethene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Dibromomethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Bromodichloromethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
Toluene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001			<0.001			<0.001					
			1 \$ #			\$ #			1 \$ #					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

VOC MS (W)

Results Legend			Customer Sample Ref.	TFGM1	VIADUCT PIPE	VIADUCT SURROUNDING WATER		
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW)	Ground Water (GW)	Ground Water (GW)		
M	mCERTS accredited.							
AQ	Aqueous / settled sample.							
dis.s.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
* Subcontracted - refer to subcontractor report for accreditation status.				29/04/2023 230429-40 27921600	29/04/2023 230429-40 27921599	29/04/2023 230429-40 27921597		
** % 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								
1-4* Sample deviation (see appendix)								
Component	LOD/Units	Method						
Tetrachloroethene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Dibromochloromethane	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2-Dibromoethane	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Chlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Ethylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
m,p-Xylene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
o-Xylene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Styrene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Bromoform	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Isopropylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2,3-Trichloropropane	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Bromobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Propylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
2-Chlorotoluene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
4-Chlorotoluene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
tert-Butylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
sec-Butylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
4-iso-Propyltoluene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,3-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,4-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
n-Butylbenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208		<0.001 1 §	<0.001 §	<0.001 1 §		
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Hexachlorobutadiene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
Naphthalene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 1 § #	<0.001 § #	<0.001 1 § #		
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 1 §	<0.001 §	<0.001 1 §		

12:59:05 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Notification of NDPs (No determination possible)

Date Received : 29/04/2023 09:22:57

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
27921597	VIADUCT SURROUNDING WATER		PFAS Liquids	Sample contains oil / product
27921599	VIADUCT PIPE		Urea Herbicides (Suite 1)*	Insufficient sample supplied
27921600	TFGM1		Organotins in Aqueous Samples	Insufficient sample supplied
27921600	TFGM1		Urea Herbicides (Suite 1)*	Insufficient sample supplied



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Data Amendment

Sample No. : All Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



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Superseded Report: 699674

Table of Results - Appendix

Method No	Description
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM426	Determination of Specific Phenols and their Ethoxylates in Liquids by GC/MS/MS
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM328	
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM337	Analysis of PFAS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM432	Pharmaceuticals and Personal Care Products
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



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Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27921592	27921594	27921596	27921591	27921593	27921595	27940914	27940915	27940916	27921600
	SWS01 LH	SWS02 LH	SWS03 LH	SWS01 RH	SWS02 RH	SWS03 RH	SWS02 RH A	SWS02 RH B	SWS02 RH C	TFGM1
AGS Ref.										
Depth										
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Ammoniacal Nitrogen										09-May-2023
Anions by Kone (w)										05-May-2023
BOD True Total										06-May-2023
COD Unfiltered										10-May-2023
Cyanide Comp/Free/Total/Thiocyanate										05-May-2023
Determination of Dissolved Gases										05-May-2023
Dissolved Metals by ICP-MS										09-May-2023
EPH CWG (Aliphatic) Aqueous GC (W)										09-May-2023
EPH CWG (Aromatic) Aqueous GC (W)										09-May-2023
Fats Oils and Greases.										04-May-2023
GRO by GC-FID (W)										03-May-2023
Mercury Dissolved										04-May-2023
Mercury Unfiltered										04-May-2023
Methylene blue active substances										03-May-2023
Neutralised Suspended Solids										10-May-2023
PAH Spec MS - Aqueous (W)										05-May-2023
Pesticides (Suite I) by GCMS										05-May-2023
PFAS Liquids	11-May-2023	11-May-2023	11-May-2023	11-May-2023	17-May-2023	11-May-2023	09-May-2023	09-May-2023	09-May-2023	12-May-2023
pH Value										10-May-2023
Pharmaceuticals and Personal Care										16-May-2023
Phenols and ethoxylates in Liquids										12-May-2023
Settleable Solids										10-May-2023
Settleable Solids 5 Mins										10-May-2023
Sulphide										04-May-2023
Suspended Solids										10-May-2023
SVOC MS (W) - Aqueous										04-May-2023
Total Metals by ICP-MS										05-May-2023
Total Nitrogen										26-May-2023
Total Organic and Inorganic Carbon										04-May-2023
TPH CWG (W)										09-May-2023
VOC MS (W)										02-May-2023

Lab Sample No(s) Customer Sample Ref.	27921599	27921597
	VIADUCT PIPE	VIADUCT SURROUNDING WATER
AGS Ref.		
Depth		
Type	Ground Water	Ground Water
Ammoniacal Nitrogen	06-May-2023	06-May-2023
Anions by Kone (w)	05-May-2023	05-May-2023
BOD True Total	06-May-2023	07-May-2023
COD Unfiltered	10-May-2023	10-May-2023
Cyanide Comp/Free/Total/Thiocyanate	05-May-2023	05-May-2023
Determination of Dissolved Gases	05-May-2023	05-May-2023
Dissolved Metals by ICP-MS	05-May-2023	05-May-2023
EPH CWG (Aliphatic) Aqueous GC (W)	09-May-2023	05-May-2023
EPH CWG (Aromatic) Aqueous GC (W)	09-May-2023	05-May-2023
Fats Oils and Greases.	04-May-2023	04-May-2023
GRO by GC-FID (W)	03-May-2023	03-May-2023
Mercury Dissolved	04-May-2023	04-May-2023
Mercury Unfiltered	04-May-2023	04-May-2023
Methylene blue active substances	03-May-2023	03-May-2023
Neutralised Suspended Solids	10-May-2023	10-May-2023
Organotins in Aqueous Samples	10-May-2023	10-May-2023
PAH Spec MS - Aqueous (W)	09-May-2023	04-May-2023
Pesticides (Suite I) by GCMS	09-May-2023	09-May-2023
PFAS Liquids	11-May-2023	
pH Value	10-May-2023	10-May-2023
Pharmaceuticals and Personal Care	16-May-2023	16-May-2023
Phenols and ethoxylates in Liquids	12-May-2023	12-May-2023
Settleable Solids	10-May-2023	10-May-2023
Settleable Solids 5 Mins	10-May-2023	10-May-2023
Sulphide	04-May-2023	04-May-2023
Suspended Solids	10-May-2023	10-May-2023
SVOC MS (W) - Aqueous	04-May-2023	03-May-2023
Total Metals by ICP-MS	04-May-2023	04-May-2023
Total Nitrogen	26-May-2023	26-May-2023
Total Organic and Inorganic Carbon	03-May-2023	03-May-2023
TPH CWG (W)	09-May-2023	05-May-2023
Urea Herbicides (Suite 1)*		23-May-2023
VOC MS (W)	02-May-2023	02-May-2023

12:59:05 10/08/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230429-40
Client Ref.: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Certificate of Analysis

Report No.: 23-03090-1

Issue No.: 1

Date of Issue 23/05/2023

Customer Details: ALS Laboratories (UK) Ltd, Unit7-8, Hawarden Business Park, Manor Road, Hawarden, Deeside, Flintshire, CH5 3US, United Kingdom

Customer Contact: Results mailbox

Customer Order No.: 230429-40

Customer Reference: Not Supplied

Quotation Reference: Q23-00645 (Issue: 6)

Description: 1 water sample

Date Received: 05/05/2023

Date Started: 09/05/2023

Date Completed: 18/05/2023

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: Marco Lattughi, Operational Director

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

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13 St Martins Way, Bedford, Bedfordshire, MK42 0LF. T +44 1462 480 400

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Results Summary

Report No.: 23-03090-1

Customer Reference: Not Supplied

Customer Order No: 230429-40

Customer Sample No	27924501
Customer Sample ID	Viaduct Su
RPS Sample No	20491
Sample Type	WATER
Sample Matrix	W

Determinand	CAS No	Codes	SOP	RL	Units
chloroxuron	1982-47-4	N	L005	0.05	µg/L
chlorotoluron	15545-48-9	N	L005	0.05	µg/L
diflubenzuron	35367-38-5	N	L005	0.05	µg/L
dimefuron	34205-21-5	N	L005	0.05	µg/L
diuron	330-54-1	N	L005	0.05	µg/L
isoproturon	34123-59-6	N	L005	0.05	µg/L
linuron	330-55-2	N	L005	0.05	µg/L
methabenzthiazuron	18691-97-9	N	L005	0.05	µg/L
metoxuron	19937-59-8	N	L005	0.05	µg/L
monolinuron	1746-81-2	N	L005	0.05	µg/L
monuron	150-68-5	N	L005	0.05	µg/L
pencycuron	66063-05-6	N	L005	0.05	µg/L

Deviating Samples

Report No.: 23-03090-1

Customer Reference: Not Supplied

Customer Order No: 230429-40

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
20491	27924501	Viaduct Su	Not Provided	GAB1 1 L amber glass bottle	Yes	No sampling date provided.

Report No.: 23-03090-1

Type	Matrix Code	Description
Food	CEREALPROD	Cereals, grains & products
Food	DRIEDFRUIT	Dried fruits
Food	FRIEDBAKED	Fried or baked food
Food	LEGUME	Legumes
Food	MEAT	Meat
Food	POWDERED	Powdered food
Food	PULSE	Pulses (dried legumes)
Food	VEGETABLES	Vegetables
Gas	TDTUBE	TD Tube
Gas	TENAX	Tenax Tube
Gas	TUBE	Tube
Gas	VAPOUR	Gas
Geological	SED_MAR	Marine Sediment
Geological	SED_RIV	River Sediment
Geological	SLUDG_SOL	Sludge (solid only)
Geological	SOIL	Soil
Liquid	BEVERAGE	Beverage
Liquid	BLOOD	Blood
Liquid	FORMULATN	Formula
Liquid	LEACHATE	Leachate
Liquid	OIL/GREASE	Oil or grease
Liquid	SLUDG_LIQ	Sludge (liquid only)
Liquid	SOLVENT	Solvent
Liquid	URINE	Urine
Sludge	SLUDG_WHL	Sludge for bulk route
Solid	BADGE	Badge
Solid	BEDDING	Bedding
Solid	BIOTA	Biota
Solid	CONSTRCTN	Construction materials
Solid	FABRIC	Fabrics & furnishing materials
Solid	FEED	Animal feed
Solid	FERTILISER	Fertiliser
Solid	FILTER	Filter
Solid	FOAM	Solid foam material
Solid	PACKAGING	Packaging material
Solid	PLANT	Plant (vegetation)
Solid	SWAB	Swab
Water	DW	Drinking Water
Water	EFFLUENT	Effluent
Water	GW	Ground Water
Water	INFLUENT	Influent
Water	SALTW	Salt Water
Water	SW	Surface Water
Water	TW	Tap Water
Water	W	Water

Report No.: 23-03090-1

Key Code	Description
N	Not Accredited Test
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
UF	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
O	Marine Management Organisation (MMO) Validated
SN	Subcontracted to approved laboratory not accredited for the test
SU	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SIN	Subcontracted to internal RPS Group laboratory not accredited for the test
SIU	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
SIM	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
L (in results)	Result is outside normal limits
DW (in units)	Results are expressed on a dry weight basis

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

Dev code	Description
D	No sampling date provided.
T	No sampling time provided.
Z	Temperature of samples exceeded in transit/storage.
V	Excessive headspace for volatile determinands.
P	Sample submitted without required preservative(s).
C	Incorrect container.
H	Holding time exceeded (sampling to extraction).
X	Holding time exceeded (sampling to receipt).

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.



CERTIFICATE OF ANALYSIS

SDG: 230429-40
Client Ref: 326R

Report Number: 699676
Location: Victoria North

Superseded Report: 699674

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 24 July 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230524-55
Your Reference: 326R
Location: Victoria North
Report No: 697563
Order Number: RIT 298 665 896

This report has been revised and directly supersedes 697129 in its entirety.

We received 13 samples on Wednesday May 24, 2023 and 11 of these samples were scheduled for analysis which was completed on Wednesday July 12, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28045208	TP422	ES2	0.50	22/05/2023
28045209	TP422	ES3	1.00	22/05/2023
28045210	TP422	ES4	2.00	22/05/2023
28045211	TP423	ES2	0.50	22/05/2023
28045212	TP423	ES3	1.00	22/05/2023
28045213	TP423	ES4	2.00	22/05/2023
28045214	TP403A	ES2	0.50	22/05/2023
28045215	TP403A	ES3	1.00	22/05/2023
28045216	TP403A	ES4	2.00	22/05/2023
28045217	TP405A	ES2	0.50	22/05/2023
28045218	TP405A	ES3	1.25	22/05/2023
28045219	TP405A	ES4	1.50	22/05/2023
28045220	TP405A	ES5	2.00	22/05/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

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

CEN Readings	All	NDPs: 0 Tests: 11	28045208	28045209	28045210	28045212	28045213	28045214	28045215	28045216	28045217	28045219
			TP422	TP422	TP422	TP423	TP423	TP403A	TP403A	TP403A	TP405A	TP405A
			ES2	ES3	ES4	ES3	ES4	ES2	ES3	ES4	ES2	ES4
			0.50	1.00	2.00	1.00	2.00	0.50	1.00	2.00	0.50	1.50
			250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	250g Amber jar (ALE210) 1kg TUB	1kg TUB
			S	S	S	S	S	S	S	S	S	S
			X	X	X	X	X	X	X	X	X	X
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 5		X	X	X	X	X				
Metals in solid samples by OES	All	NDPs: 0 Tests: 5		X	X	X	X	X				
PFAS (Post Ox.) Liquids	All	NDPs: 0 Tests: 11	X	X	X	X	X	X	X	X	X	X
PFAS (Post Ox.) Solids	All	NDPs: 0 Tests: 5	X	X	X	X	X					
PFAS Liquids	All	NDPs: 0 Tests: 11	X	X	X	X	X	X	X	X	X	X
PFAS Liquids (Full Suite)	All	NDPs: 0 Tests: 11	X	X	X	X	X	X	X	X	X	X
PFAS Solids	All	NDPs: 0 Tests: 5	X	X	X	X	X					
pH	All	NDPs: 0 Tests: 5		X	X	X	X	X				
pH Value of Filtered Water	All	NDPs: 0 Tests: 11	X	X	X	X	X	X	X	X	X	X
Phenols by HPLC (S)	All	NDPs: 0 Tests: 5		X	X	X	X	X				
Sample description	All	NDPs: 0 Tests: 11		X	X	X	X	X	X	X	X	X
Total Organic Carbon	All	NDPs: 0 Tests: 5		X	X	X	X	X				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28045208	TP422	0.50	Black	Loamy Sand	Stones	Vegetation
28045209	TP422	1.00	Black	Loamy Sand	Stones	Vegetation
28045210	TP422	2.00	Dark Brown	Sandy Silt Loam	Stones	None
28045212	TP423	1.00	Dark Brown	Loamy Sand	Glass & Stones	None
28045213	TP423	2.00	Dark Brown	Sand	Stones	None
28045214	TP403A	0.50	Dark Brown	Loamy Sand	Stones	None
28045215	TP403A	1.00	Dark Brown	Sandy Clay Loam	Stones	Vegetation
28045216	TP403A	2.00	Dark Brown	Sand	Stones	None
28045217	TP405A	0.50	Dark Brown	Loamy Sand	Stones	Vegetation
28045219	TP405A	1.50	Dark Brown	Loamy Sand	Stones	Vegetation
28045220	TP405A	2.00	Dark Brown	Loamy Sand	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

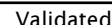
Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Results Legend			Customer Sample Ref.		TP422	TP422	TP422	TP423	TP423	TP403A
# 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 1-4*\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		0.50 Soil/Solid (S) 22/05/2023 10:45:00 24/05/2023 230524-55 28045208 ES2	1.00 Soil/Solid (S) 22/05/2023 10:48:00 24/05/2023 230524-55 28045209 ES3	2.00 Soil/Solid (S) 22/05/2023 10:52:00 24/05/2023 230524-55 28045210 ES4	1.00 Soil/Solid (S) 22/05/2023 11:25:00 24/05/2023 230524-55 28045212 ES3	2.00 Soil/Solid (S) 22/05/2023 11:29:00 24/05/2023 230524-55 28045213 ES4	0.50 Soil/Solid (S) 22/05/2023 13:00:00 24/05/2023 230524-55 28045214 ES2
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024	6.9		13		24		16	16
Phenol	<0.01 mg/kg	TM062 (S)	<0.01		<0.01		<0.01		<0.01	
Cresols	<0.01 mg/kg	TM062 (S)		M		M		M		M
Xylenols	<0.015 mg/kg	TM062 (S)		M		M		M		M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		M		M		M		M
Organic Carbon, Total	<0.2 %	TM132	9.29		12.4		8.42		35.2	
pH	1 pH Units	TM133		M		M		M		M
Cyanide, Total	<1 mg/kg	TM153	<1		4.42		<1		1.07	
Antimony	<0.6 mg/kg	TM181		#		#		#		#
Arsenic	<0.6 mg/kg	TM181	15.5		134		400		38.7	
Beryllium	<0.01 mg/kg	TM181		M		M		M		M
Cadmium	<0.02 mg/kg	TM181	1.82		2.21		2.6		3.26	
Chromium	<0.9 mg/kg	TM181		M		M		M		M
Copper	<0.02 mg/kg	TM181	0.262		<0.2		1.18		0.554	
Lead	<0.9 mg/kg	TM181		M		M		M		M
Copper	<1.4 mg/kg	TM181	<9		87.3		159		<9	
Lead	<1.4 mg/kg	TM181		M		M		M		M
Lead	<0.7 mg/kg	TM181	170		843		568		397	
Mercury	<0.7 mg/kg	TM181		M		M		M		M
Mercury	<0.1 mg/kg	TM181	195		509		2650		818	
Nickel	<0.1 mg/kg	TM181		M		M		M		M
Nickel	<0.2 mg/kg	TM181	<1		<1		<1		3.56	
Selenium	<0.2 mg/kg	TM181		M		M		M		M
Selenium	<0.2 mg/kg	TM181	44.4		78.7		93.4		44.9	
Vanadium	<1 mg/kg	TM181		M		M		M		M
Vanadium	<1 mg/kg	TM181	<10		<10		<10		<10	
Zinc	<0.2 mg/kg	TM181		#		#		#		#
Zinc	<0.2 mg/kg	TM181	45		1110		1240		41.5	
Zinc	<1.9 mg/kg	TM181		#		#		#		#
Zinc	<1.9 mg/kg	TM181	179		479		628		548	
PFBA (375-22-4) Perfluoro-n-butanoic acid	<1.9 mg/kg	TM181		M		M		M		M
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3		<3		<3		<3	
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3		<3		<3		<3	
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<3 µg/kg	TM338	<3		<3		<3		<3	
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	7.47		<2		<2		<2	
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<2 µg/kg	TM338	<1		<1		<1		<1	
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1		<1		<1		<1	
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	13.8		2.31		<1		<1	
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1		<1		<1		<1	
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	29.8		4.89		1.24		<1	
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM338	<1		<1		<1		<1	
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1		<1		<1		<1	
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	8.55		11		1.09		<1	
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM338	<1		<1		<1		<1	
PFDa (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1		<1		<1		<1	
PFDa (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	22.5		5.46		1.07		<1	
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	<1		<1		<1		<1	
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338	7.39		<1		<1		<1	
Branched PFOS	<1 µg/kg	TM338	<1		<1		<1		<1	
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1		<1		<1		<1	
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	3.04		21		2.77		<1	



Superseded Report: 697129

Page 7 of 45



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.099	Natural Moisture Content (%)	10.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	90.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045208
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
4:2 FTS (757124-72-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-DA (13252-13-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
NFDHA (151772-58-6)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFBA (375-22-4)	0.0000705	<0.00002	0.000705	<0.0002	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFEESA (113507-82-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	0.000685	<0.00001	0.00685	<0.0001	-	-	-
PfMOBA (863090-89-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PfMOPrA (377-73-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (2706-90-3)	0.000399	<0.00001	0.00399	<0.0001	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000005	<0.000001	<0.00005	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFBA (375-22-4)	0.000116	<0.000002	0.00116	<0.00002	-	-	-
PFDA (335-76-2)	0.00037	<0.000005	0.0037	<0.00005	-	-	-
PFHpA (375-85-9)	0.00153	<0.000005	0.0153	<0.00005	-	-	-
PFHxA (307-24-4)	0.000846	<0.000005	0.00846	<0.00005	-	-	-
PFNA (375-95-1)	0.000438	<0.000005	0.00438	<0.00005	-	-	-
PFOA (335-67-1)	0.00323	<0.00000325	0.0323	<0.0000325	-	-	-
PFPA (2706-90-3)	0.000349	<0.000005	0.00349	<0.00005	-	-	-
6:2 FTS (27619-97-2)	0.0000157	<0.000001	0.000157	<0.00001	-	-	-
Branched PFOS (Post Ox.)	0.000039	<0.000002	0.00039	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	0.0000336	<0.000002	0.000336	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.000243	<0.000004	0.00243	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	0.000413	<0.00001	0.00413	<0.0001	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00196	<0.00001	0.0196	<0.0001	-	-	-
PFHxA (Post Ox.) (307-24-4)	0.00122	<0.00001	0.0122	<0.0001	-	-	-
PFNA (Post Ox.) (375-95-1)	0.000582	<0.00001	0.00582	<0.0001	-	-	-
PFOA (Post Ox.) (335-67-1)	0.00338	<0.00001	0.0338	<0.0001	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00041	<0.00001	0.0041	<0.0001	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.20
Conductivity (µS/cm)	167
Volume Leachant (Litres)	0.891

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.099	Natural Moisture Content (%)	10.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	90.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045208
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
7:3 FTCA (812-70-4)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
8:2 FTS (39108-34-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
ADONA (919005-14-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
EtFOSAA (2991-50-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
FBSA (30334-69-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-TA (13252-14-7)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Linear PFOS (1763-23-1)	0.00000956	<0.0000065	0.0000956	<0.000065	-	-	-
MeFOSAA (2355-31-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	0.000223	<0.00002	0.00223	<0.0002	-	-	-
PFecHS (133201-07-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	0.00154	<0.00001	0.0154	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	0.00036	<0.00001	0.0036	<0.0001	-	-	-
PFOA (335-67-1)	0.00251	<0.0000065	0.0251	<0.000065	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Branched PFOS	0.0000143	<0.0000065	0.000143	<0.000065	-	-	-
Linear PFOS (1763-23-1)	0.0000375	<0.0000065	0.000375	<0.000065	-	-	-
PFDS (335-77-3)	<0.000008	<0.000001	<0.00008	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000005	<0.000001	<0.00005	<0.00001	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000009	<0.000001	<0.00009	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.0000519	<0.0000065	0.000519	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	0.00000969	<0.000002	0.0000969	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	0.0000195	<0.000002	0.000195	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	0.0000727	<0.000002	0.000727	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.20
Conductivity (µS/cm)	167
Volume Leachant (Litres)	0.891

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.099	Natural Moisture Content (%)	10.2
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	90.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045208
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
EtFOSE (1691-99-2)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
FHxSA (41997-13-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
MeFOSE (24448-09-7)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
N-EtFOSA (4151-50-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-MeFOSA (31506-32-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDaA (307-55-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDaS (79780-39-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDs (335-77-3)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFHxDA (67905-19-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNS (68259-12-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFODA (16517-11-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFTeA (376-06-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFTrDA (72629-94-8)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFTrDS (174675-49-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnDS (749786-16-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	0.00000956	<0.0000065	0.0000956	<0.000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.20
Conductivity (µS/cm)	167
Volume Leachant (Litres)	0.891

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

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CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.103	Natural Moisture Content (%)	13.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	87.9
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045209
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
4:2 FTS (757124-72-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-DA (13252-13-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
NFDHA (151772-58-6)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFBA (375-22-4)	0.0000747	<0.00002	0.000747	<0.0002	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFEESA (113507-82-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	0.00287	<0.00005	0.0287	<0.0005	-	-	-
PfMOBA (863090-89-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PfMOPrA (377-73-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (2706-90-3)	0.000916	<0.00001	0.00916	<0.0001	-	-	-
PFBS (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (375-92-8)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFHxS (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (375-22-4)	0.000105	<0.000004	0.00105	<0.00004	-	-	-
PFDA (335-76-2)	0.0000384	<0.000002	0.000384	<0.00002	-	-	-
PFHpA (375-85-9)	0.00174	<0.00001	0.0174	<0.0001	-	-	-
PFHxA (307-24-4)	0.0045	<0.00001	0.045	<0.0001	-	-	-
PFNA (375-95-1)	0.000128	<0.000002	0.00128	<0.00002	-	-	-
PFOA (335-67-1)	0.00193	<0.0000065	0.0193	<0.000065	-	-	-
PFPA (2706-90-3)	0.00102	<0.00001	0.0102	<0.0001	-	-	-
6:2 FTS (27619-97-2)	0.0000987	<0.000002	0.000987	<0.00002	-	-	-
Branched PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBA (Post Ox.) (375-22-4)	0.00134	<0.00005	0.0134	<0.0005	-	-	-
PFDA (Post Ox.) (335-76-2)	0.000548	<0.000005	0.00548	<0.00005	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00377	<0.000025	0.0377	<0.00025	-	-	-
PFHxA (Post Ox.) (307-24-4)	0.00769	<0.000025	0.0769	<0.00025	-	-	-
PFNA (Post Ox.) (375-95-1)	0.000732	<0.000005	0.00732	<0.00005	-	-	-
PFOA (Post Ox.) (335-67-1)	0.00379	<0.000025	0.0379	<0.00025	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00221	<0.000025	0.0221	<0.00025	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	25-May-2023
pH (pH Units)	7.57
Conductivity (µS/cm)	86
Volume Leachant (Litres)	0.888

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.103	Natural Moisture Content (%)	13.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	87.9
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045209
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	0.000147	<0.00005	0.00147	<0.0005	-	-	-
6:2 FTS (27619-97-2)	0.0000502	<0.00001	0.000502	<0.0001	-	-	-
7:3 FTCA (812-70-4)	0.000245	<0.00005	0.00245	<0.0005	-	-	-
8:2 FTS (39108-34-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
ADONA (919005-14-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
EtFOSAA (2991-50-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
FBFA (30334-69-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-TA (13252-14-7)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
MeFOSAA (2355-31-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFecHS (133201-07-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	0.000958	<0.00001	0.00958	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	0.000148	<0.00001	0.00148	<0.0001	-	-	-
PFOA (335-67-1)	0.00159	<0.0000065	0.0159	<0.000065	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Branched PFOS	<0.0000065	<0.0000013	<0.000065	<0.000013	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000013	<0.000065	<0.000013	-	-	-
PFDS (335-77-3)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFDoA (307-55-1)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFPeS (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFOSA (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFDoA (Post Ox.) (307-55-1)	0.000267	<0.000005	0.00267	<0.00005	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFUnA (Post Ox.) (2058-94-8)	0.000206	<0.000005	0.00206	<0.00005	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	25-May-2023
pH (pH Units)	7.57
Conductivity (µS/cm)	86
Volume Leachant (Litres)	0.888

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.103	Natural Moisture Content (%)	13.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	87.9
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045209
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
EtFOSE (1691-99-2)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
FHxSA (41997-13-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
MeFOSE (24448-09-7)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
N-EtFOSA (4151-50-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-MeFOSA (31506-32-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDaA (307-55-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDaS (79780-39-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDs (335-77-3)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFHxDA (67905-19-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNS (68259-12-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFODA (16517-11-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFTeA (376-06-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFTrDA (72629-94-8)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFTrDS (174675-49-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnDS (749786-16-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-

Leach Test Information

Date Prepared	25-May-2023
pH (pH Units)	7.57
Conductivity (µS/cm)	86
Volume Leachant (Litres)	0.888

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.109	Natural Moisture Content (%)	22.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	81.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045210
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES4
Depth (m)	2.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.00000513	<0.000002	0.0000513	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	0.000018	<0.000001	0.00018	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	0.0000158	<0.000001	0.000158	<0.00001	-	-	-
PFBS (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (375-92-8)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFHxS (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (375-22-4)	0.0000101	<0.000004	0.000101	<0.00004	-	-	-
PFDA (335-76-2)	0.0000117	<0.000002	0.000117	<0.00002	-	-	-
PFHpA (375-85-9)	0.0000459	<0.000002	0.000459	<0.00002	-	-	-
PFHxA (307-24-4)	0.0000214	<0.000002	0.000214	<0.00002	-	-	-
PFNA (375-95-1)	0.0000209	<0.000002	0.000209	<0.00002	-	-	-
PFOA (335-67-1)	0.000118	<0.0000013	0.00118	<0.000013	-	-	-
PFPA (2706-90-3)	0.0000162	<0.000002	0.000162	<0.00002	-	-	-
6:2 FTS (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBA (Post Ox.) (375-22-4)	0.0000136	<0.00001	0.000136	<0.0001	-	-	-
PFDA (Post Ox.) (335-76-2)	0.0000105	<0.000005	0.000105	<0.00005	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.0000611	<0.000005	0.000611	<0.00005	-	-	-
PFHxA (Post Ox.) (307-24-4)	0.0000549	<0.000005	0.000549	<0.00005	-	-	-
PFNA (Post Ox.) (375-95-1)	0.0000251	<0.000005	0.000251	<0.00005	-	-	-
PFOA (Post Ox.) (335-67-1)	0.000128	<0.000005	0.00128	<0.00005	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.0000304	<0.000005	0.000304	<0.00005	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.64
Conductivity (µS/cm)	113
Volume Leachant (Litres)	0.880

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.109	Natural Moisture Content (%)	22.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	81.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045210
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES4
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	0.00000109	<0.00000065	0.0000109	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	0.000000963	<0.00000065	0.00000963	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.0000395	<0.000001	0.000395	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	0.0000194	<0.000001	0.000194	<0.00001	-	-	-
PFOA (335-67-1)	0.0000899	<0.00000065	0.000899	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000005	<0.000002	<0.00005	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000013	<0.000065	<0.000013	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000013	<0.000065	<0.000013	-	-	-
PFDS (335-77-3)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFDoA (307-55-1)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFPeS (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.000002	<0.0001	<0.00002	-	-	-
PFOSA (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFUnA (Post Ox.) (2058-94-8)	0.0000124	<0.000005	0.000124	<0.00005	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.64
Conductivity (µS/cm)	113
Volume Leachant (Litres)	0.880

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.109	Natural Moisture Content (%)	22.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	81.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045210
Sampled Date	22-May-2023
Customer Sample Ref.	TP422 ES4
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.00000206	<0.00000065	0.0000206	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.64
Conductivity (µS/cm)	113
Volume Leachant (Litres)	0.880

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.118	Natural Moisture Content (%)	30.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.4
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045212
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.00000599	<0.000002	0.0000599	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	0.00000294	<0.000001	0.0000294	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	0.00000303	<0.000001	0.0000303	<0.00001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	0.0000133	<0.0000065	0.000133	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.00000525	<0.000004	0.0000525	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00000328	<0.000002	0.0000328	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.00000773	<0.000002	0.0000773	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00000405	<0.000002	0.0000405	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.03
Conductivity (µS/cm)	146
Volume Leachant (Litres)	0.872

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.118	Natural Moisture Content (%)	30.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.4
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045212
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES3
Depth (m)	1.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	0.00000149	<0.00000065	0.0000149	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	0.00000149	<0.00000065	0.0000149	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000301	<0.000001	0.0000301	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	0.00000113	<0.000001	0.0000113	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000733	<0.00000065	0.0000733	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.03
Conductivity (µS/cm)	146
Volume Leachant (Litres)	0.872

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.118	Natural Moisture Content (%)	30.8
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.4
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045212
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.00000297	<0.00000065	0.0000297	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.03
Conductivity (µS/cm)	146
Volume Leachant (Litres)	0.872

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.107	Natural Moisture Content (%)	18.9
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045213
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES4
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.0000258	<0.000002	0.0000258	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	0.0000102	<0.000001	0.0000102	<0.00001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	0.0000102	<0.0000065	0.000102	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.33
Conductivity (µS/cm)	100
Volume Leachant (Litres)	0.883

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.107	Natural Moisture Content (%)	18.9
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045213
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES4
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	0.00000105	<0.00000065	0.0000105	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	0.0000011	<0.00000065	0.000011	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000122	<0.000001	0.0000122	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000297	<0.00000065	0.0000297	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Total PFOS (Post Ox.)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.33
Conductivity (µS/cm)	100
Volume Leachant (Litres)	0.883

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.107	Natural Moisture Content (%)	18.9
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045213
Sampled Date	22-May-2023
Customer Sample Ref.	TP423 ES4
Depth (m)	2.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.00000215	<0.00000065	0.0000215	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.33
Conductivity (µS/cm)	100
Volume Leachant (Litres)	0.883

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.108	Natural Moisture Content (%)	20.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	83.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045214
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES2
Depth (m)	0.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	0.00000225	<0.000001	0.0000225	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	0.00000206	<0.000001	0.0000206	<0.00001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	0.0000156	<0.0000065	0.000156	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.00000562	<0.000004	0.0000562	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00000293	<0.000002	0.0000293	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.0000103	<0.000002	0.000103	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00000298	<0.000002	0.0000298	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	67
Volume Leachant (Litres)	0.882

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.108	Natural Moisture Content (%)	20.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	83.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045214
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	0.00000107	<0.0000065	0.0000107	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	0.00000103	<0.0000065	0.0000103	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000279	<0.000001	0.0000279	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000101	<0.0000065	0.0000101	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	67
Volume Leachant (Litres)	0.882

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.108	Natural Moisture Content (%)	20.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	83.1
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045214
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES2
Depth (m)	0.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.0000021	<0.0000065	0.000021	<0.000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	67
Volume Leachant (Litres)	0.882

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.106	Natural Moisture Content (%)	18
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045215
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
4:2 FTS (757124-72-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-DA (13252-13-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
NFDHA (151772-58-6)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFEESA (113507-82-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFMOBA (863090-89-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFMOPrA (377-73-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS (Post Ox.)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.76
Conductivity (µS/cm)	24
Volume Leachant (Litres)	0.884

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.106	Natural Moisture Content (%)	18
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045215
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
7:3 FTCA (812-70-4)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
8:2 FTS (39108-34-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
ADONA (919005-14-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
Branched PFOS	0.00000768	<0.0000065	0.0000768	<0.000065	-	-	-
EtFOSAA (2991-50-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
FBSA (30334-69-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
HFPO-TA (13252-14-7)	<0.00005	<0.00005	<0.0005	<0.0005	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
MeFOSAA (2355-31-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFecHS (133201-07-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	0.000019	<0.0000065	0.00019	<0.000065	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS (Post Ox.)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.76
Conductivity (µS/cm)	24
Volume Leachant (Litres)	0.884

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.106	Natural Moisture Content (%)	18
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	84.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045215
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES3
Depth (m)	1.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
EtFOSE (1691-99-2)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
FHxSA (41997-13-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
MeFOSE (24448-09-7)	<0.0001	<0.0001	<0.001	<0.001	-	-	-
N-EtFOSA (4151-50-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-MeFOSA (31506-32-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDaA (307-55-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDaS (79780-39-5)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDs (335-77-3)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFHxDA (67905-19-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNS (68259-12-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFODA (16517-11-6)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFTeA (376-06-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFTrDA (72629-94-8)	<0.00003	<0.00003	<0.0003	<0.0003	-	-	-
PFTrDS (174675-49-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnDS (749786-16-1)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	0.00000768	<0.0000065	0.0000768	<0.000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.76
Conductivity (µS/cm)	24
Volume Leachant (Litres)	0.884

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.117	Natural Moisture Content (%)	30.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045216
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES4
Depth (m)	2.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.0000122	<0.000002	0.000122	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	0.0000114	<0.00001	0.000114	<0.0001	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.81
Conductivity (µS/cm)	74
Volume Leachant (Litres)	0.873

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.117	Natural Moisture Content (%)	30.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045216
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES4
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000291	<0.00000065	0.0000291	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.81
Conductivity (µS/cm)	74
Volume Leachant (Litres)	0.873

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

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CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.117	Natural Moisture Content (%)	30.4
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	76.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045216
Sampled Date	22-May-2023
Customer Sample Ref.	TP403A ES4
Depth (m)	2.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	6.81
Conductivity (µS/cm)	74
Volume Leachant (Litres)	0.873

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

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CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.090	Natural Moisture Content (%)	0.3
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045217
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.00000665	<0.000002	0.0000665	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	0.0000021	<0.000001	0.000021	<0.00001	-	-	-
PFBS (375-73-5)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpS (375-92-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxS (355-46-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBA (375-22-4)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
PFDA (335-76-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHpA (375-85-9)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFHxA (307-24-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFNA (375-95-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOA (335-67-1)	0.0000158	<0.0000065	0.000158	<0.000065	-	-	-
PFPA (2706-90-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
6:2 FTS (27619-97-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	0.0000109	<0.000002	0.000109	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	0.00000704	<0.000004	0.0000704	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	0.00000221	<0.000002	0.0000221	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	0.00000258	<0.000002	0.0000258	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	0.00000358	<0.000002	0.0000358	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.0000117	<0.000002	0.000117	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	0.00000691	<0.000002	0.0000691	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.78
Conductivity (µS/cm)	166
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.090	Natural Moisture Content (%)	0.3
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045217
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	0.00000287	<0.0000065	0.0000287	<0.000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	0.00000886	<0.0000065	0.0000886	<0.000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000278	<0.000001	0.0000278	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	0.0000041	<0.000001	0.000041	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000845	<0.0000065	0.0000845	<0.000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	0.0000112	<0.0000065	0.000112	<0.000065	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.0000112	<0.0000065	0.000112	<0.000065	-	-	-
Branched PFOS (Post Ox.)	0.00000388	<0.000002	0.0000388	<0.00002	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	0.0000148	<0.000002	0.000148	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.78
Conductivity (µS/cm)	166
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.090	Natural Moisture Content (%)	0.3
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045217
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES2
Depth (m)	0.50

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDS (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	0.0000117	<0.00000065	0.000117	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.78
Conductivity (µS/cm)	166
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.32
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045219
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES4
Depth (m)	1.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	0.00000696	<0.000002	0.0000696	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFBA (375-22-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	0.00000291	<0.000002	0.0000291	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.26
Conductivity (µS/cm)	173
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.32
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045219
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES4
Depth (m)	1.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	0.00000173	<0.000001	0.0000173	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000251	<0.00000065	0.0000251	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
Linear PFOS (1763-23-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (335-77-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDoA (307-55-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.26
Conductivity (µS/cm)	173
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.32
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.7
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045219
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES4
Depth (m)	1.50

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	8.26
Conductivity (µS/cm)	173
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.53
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.5
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045220
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES5
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
3:3 FTCA (356-02-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
4:2 FTS (757124-72-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-DA (13252-13-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
NFDHA (151772-58-6)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFBA (375-22-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFEESA (113507-82-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOBA (863090-89-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFMOPrA (377-73-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFBS (375-73-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	0.0000498	<0.000001	0.000498	<0.00001	-	-	-
PFBA (375-22-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxA (307-24-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	<0.0000065	<0.0000065	<0.000065	<0.000065	-	-	-
PFPA (2706-90-3)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBS (Post Ox.) (375-73-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpS (Post Ox.) (375-92-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxS (Post Ox.) (355-46-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFBA (Post Ox.) (375-22-4)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
PFDA (Post Ox.) (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHpA (Post Ox.) (375-85-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxA (Post Ox.) (307-24-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFNA (Post Ox.) (375-95-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOA (Post Ox.) (335-67-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPA (Post Ox.) (2706-90-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	72
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.53
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.5
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045220
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES5
Depth (m)	2.00

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
5:3 FTCA (914637-49-3)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
6:2 FTS (27619-97-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
7:3 FTCA (812-70-4)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
8:2 FTS (39108-34-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
9CI-PF3ONS (756426-58-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
ADONA (919005-14-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
Branched PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
EtFOSAA (2991-50-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
FBSA (30334-69-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
HFPO-TA (13252-14-7)	<0.000005	<0.000005	<0.00005	<0.00005	-	-	-
Linear PFOS (1763-23-1)	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-
MeFOSAA (2355-31-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDA (335-76-2)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFecHS (133201-07-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpA (375-85-9)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHpS (375-92-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFHxS (355-46-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNA (375-95-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOA (335-67-1)	0.00000163	<0.00000065	0.0000163	<0.0000065	-	-	-
PFPeS (2706-91-4)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnA (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Branched PFOS	0.00005	<0.0000065	0.0005	<0.000065	-	-	-
Linear PFOS (1763-23-1)	0.0000422	<0.0000065	0.000422	<0.000065	-	-	-
PFDS (335-77-3)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFDoA (307-55-1)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFPeS (2706-91-4)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFUnA (2058-94-8)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
PFOSA (754-91-6)	<0.00002	<0.00002	<0.0002	<0.0002	-	-	-
Total PFOS	0.0000922	<0.0000065	0.000922	<0.000065	-	-	-
PFDS (Post Ox.) (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDoA (Post Ox.) (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFPeS (Post Ox.) (2706-91-4)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFUnA (Post Ox.) (2058-94-8)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFOSA (Post Ox.) (754-91-6)	<0.000004	<0.000004	<0.00004	<0.00004	-	-	-
Total PFOS (Post Ox.)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	72
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326RReport Number: 697563
Location: Victoria North

Superseded Report: 697129

CEN 10:1 SINGLE STAGE LEACHATE TEST

CEN ANALYTICAL RESULTS

REF : BS EN 12457/2

Client Reference		Site Location	Victoria North
Mass Sample taken (kg)	0.091	Natural Moisture Content (%)	0.53
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	99.5
Particle Size <4mm	>95%		

Case

SDG	230524-55
Lab Sample Number(s)	28045220
Sampled Date	22-May-2023
Customer Sample Ref.	TP405A ES5
Depth (m)	2.00

Eluate Analysis

	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)				
	Result	Limit of Detection	Result	Limit of Detection			
11CI-PF3OUdS (763051-92-9)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
EtFOSE (1691-99-2)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
FHxSA (41997-13-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
MeFOSE (24448-09-7)	<0.00001	<0.00001	<0.0001	<0.0001	-	-	-
N-EtFOSA (4151-50-2)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
N-MeFOSA (31506-32-8)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFDaA (307-55-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDaS (79780-39-5)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFDs (335-77-3)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFHxDA (67905-19-5)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFNS (68259-12-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFODA (16517-11-6)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFOSA (754-91-6)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
PFTeA (376-06-7)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFTrDA (72629-94-8)	<0.000003	<0.000003	<0.00003	<0.00003	-	-	-
PFTrDS (174675-49-1)	<0.000001	<0.000001	<0.00001	<0.00001	-	-	-
PFUnDS (749786-16-1)	<0.000002	<0.000002	<0.00002	<0.00002	-	-	-
Total PFOS	<0.00000065	<0.00000065	<0.0000065	<0.0000065	-	-	-

Leach Test Information

Date Prepared	24-May-2023
pH (pH Units)	7.27
Conductivity (µS/cm)	72
Volume Leachant (Litres)	0.900

Leachates prepared in accordance with BS EN 12457 will be carried out at room temperature (20±5°C)

24/07/2023 11:05:58

11:05:39 24/07/2023



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Data Amendment

Sample No. : 28045208 Date of Amendment : 10/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
TP422	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	17.3	< 6.5
TP422	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	15.3	9.56
TP422	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	32.6	9.56

Sample No. : 28045217 Date of Amendment : 10/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
TP405A	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	10.7	2.87
TP405A	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	9.94	8.86
TP405A	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	20.6	11.7



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM062 (S)	Determination of Phenols in Soils by HPLC
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM153	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM337	Analysis of PFAS
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM434	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230524-55
Client Ref.: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Test Completion Dates

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth Type	28045208	28045209	28045210	28045212	28045213	28045214	28045215	28045216	28045217	28045219
	TP422	TP422	TP422	TP423	TP423	TP403A	TP403A	TP403A	TP405A	TP405A
	ES2	ES3	ES4	ES3	ES4	ES2	ES3	ES4	ES2	ES4
	0.50	1.00	2.00	1.00	2.00	0.50	1.00	2.00	0.50	1.50
CEN 10:1 Leachate (1 Stage)	03-Jun-2023	03-Jun-2023	25-May-2023	03-Jun-2023	07-Jun-2023	07-Jun-2023	03-Jun-2023	07-Jun-2023	07-Jun-2023	07-Jun-2023
CEN Readings	04-Jun-2023	04-Jun-2023	31-May-2023	03-Jun-2023	06-Jun-2023	06-Jun-2023	04-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023
Cyanide Comp/Free/Total/Thiocyanate	31-May-2023	31-May-2023	31-May-2023	31-May-2023	31-May-2023					
Metals in solid samples by OES	30-May-2023	30-May-2023	30-May-2023	30-May-2023	30-May-2023					
Moisture at 105C	24-May-2023	25-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023
PFAS (Post Ox.) Liquids	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023	02-Jun-2023
PFAS (Post Ox.) Solids	05-Jun-2023	30-May-2023	30-May-2023	30-May-2023	30-May-2023					
PFAS Liquids	02-Jun-2023	02-Jun-2023	01-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023
PFAS Liquids (Full Suite)	12-Jul-2023	08-Jun-2023	01-Jun-2023	08-Jun-2023	09-Jun-2023	09-Jun-2023	08-Jun-2023	09-Jun-2023	12-Jul-2023	09-Jun-2023
PFAS Solids	26-May-2023	26-May-2023	26-May-2023	26-May-2023	26-May-2023					
pH	31-May-2023	31-May-2023	31-May-2023	31-May-2023	31-May-2023					
pH Value of Filtered Water	07-Jun-2023	06-Jun-2023	31-May-2023	06-Jun-2023	06-Jun-2023	06-Jun-2023	08-Jun-2023	31-May-2023	15-Jun-2023	06-Jun-2023
Phenols by HPLC (S)	30-May-2023	30-May-2023	30-May-2023	30-May-2023	30-May-2023					
Sample description	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023	24-May-2023
Total Organic Carbon	31-May-2023	31-May-2023	31-May-2023	31-May-2023	31-May-2023					

Lab Sample No(s) Customer Sample Ref. AGS Ref. Depth Type	28045220
	TP405A
	ES5
	2.00
CEN 10:1 Leachate (1 Stage)	07-Jun-2023
CEN Readings	06-Jun-2023
Moisture at 105C	24-May-2023
PFAS (Post Ox.) Liquids	02-Jun-2023
PFAS Liquids	06-Jun-2023
PFAS Liquids (Full Suite)	09-Jun-2023
pH Value of Filtered Water	31-May-2023
Sample description	24-May-2023



CERTIFICATE OF ANALYSIS

SDG: 230524-55
Client Ref: 326R

Report Number: 697563
Location: Victoria North

Superseded Report: 697129

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
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Hawarden
Deeside
CH5 3US

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Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230520-23
Your Reference: 326R
Location: Victoria North
Report No: 699679
Order Number: RIT298665896

This report has been revised and directly supersedes 693518 in its entirety.

We received 15 samples on Friday May 19, 2023 and 15 of these samples were scheduled for analysis which was completed on Thursday June 22, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28025796	TP-CS3	ES1A	1.50	18/05/2023
28025797	TP-CS3	EW2A	1.70	18/05/2023
28025799	TP-CS4	ES2A	1.60	18/05/2023
28025800	TP-CS4	EW4A	1.70	18/05/2023
28025801	TP-CS4	ES3A	1.80	18/05/2023
28025804	TP-CS7	ES1A	0.50	18/05/2023
28025805	TP-CS7	EW3A	2.00	18/05/2023
28025806	TP-CS7	ES2A	2.65	18/05/2023
28025807	TP-CS8	ES1A	0.50	18/05/2023
28025808	TP-CS8	EW4A	1.50	18/05/2023
28025809	TP-CS8	ES2A	1.50	18/05/2023
28025810	TP-CS8	ES3A	2.00	18/05/2023
28025798	TP-CS3A	EW3A	1.20	18/05/2023
28025802	TP-CS4A	ES1A	0.50	18/05/2023
28025803	TP-CS4A	ES2A	1.50	18/05/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

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

Asbestos ID in Solid Samples

All

NDPs: 0
Tests: 2

Cyanide Comp/Free/Total/Thiocyanate

All

NDPs: 0
Tests: 9

EPH CWG GC (S)

All

NDPs: 0
Tests: 6

GRO by GC-FID (S)

All

NDPs: 0
Tests: 6

Metals in solid samples by OES

All

NDPs: 0
Tests: 11

PFAS (Post Ox.) Liquids

All

NDPs: 0
Tests: 4

PFAS (Post Ox.) Solids

All

NDPs: 0
Tests: 4

PFAS Liquids

All

NDPs: 0
Tests: 4

PFAS Liquids (Full Suite)

All

NDPs: 0
Tests: 4

PFAS Solids

All

NDPs: 0
Tests: 9

pH

All

NDPs: 0
Tests: 9

Phenols by HPLC (S)

All

NDPs: 0
Tests: 9

Sample description

All

NDPs: 0
Tests: 11

Total Organic Carbon

All

NDPs: 0
Tests: 9

TPH CWG GC (S)

All

NDPs: 0
Tests: 6

28025803	TP-CS4A	ES2A	1.50	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
				1kg TUB with Handle (ALE260)	S			
				250g Amber Jar (ALE210)	S			
28025802	TP-CS4A	ES1A	0.50	1kg TUB with Handle (ALE260)	S			
				250g Amber Jar (ALE210)	S			
				60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
28025798	TP-CS3A	EW3A	1.20	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
				60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
28025810	TP-CS8	ES3A	2.00	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
				1kg TUB with Handle (ALE260)	S			
				250g Amber Jar (ALE210)	S			
28025809	TP-CS8	ES2A	1.50	60g VOC (ALE215)	S			
				250g Amber Jar (ALE210)	S			
				1kg TUB with Handle (ALE260)	S			
				250g Amber Jar (ALE210)	S			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
28025796	TP-CS3	1.50	Dark Brown	Loamy Sand	Stones	Vegetation
28025799	TP-CS4	1.60	Dark Brown	Sandy Clay Loam	Stones	Vegetation
28025801	TP-CS4	1.80	Dark Brown	Sandy Clay Loam	Stones	Vegetation
28025804	TP-CS7	0.50	Dark Brown	Loamy Sand	Stones	Brick
28025806	TP-CS7	2.65	Dark Brown	Clay	Stones	None
28025807	TP-CS8	0.50	Dark Brown	Loamy Sand	Stones	None
28025809	TP-CS8	1.50	Dark Brown	Sand	Stones	None
28025810	TP-CS8	2.00	Dark Brown	Sand	None	None
28025798	TP-CS3A	1.20	Dark Brown	Sand	Stones	N/A
28025802	TP-CS4A	0.50	Dark Brown	Sand	Stones	Brick
28025803	TP-CS4A	1.50	Dark Brown	Sandy Clay Loam	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS3	TP-CS3	TP-CS4	TP-CS4	TP-CS4	TP-CS7
# 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 1-4*@\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025796 ES1A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025797 EW2A	1.60 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025799 ES2A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025800 EW4A	1.80 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025801 ES3A	0.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025804 ES1A
Component	LOD/Units	Method							
PFBA (375-22-4)	<0.000002 mg/l	TM337			0.000046 #		0.000055 #		
PFPA (2706-90-3)	<0.000001 mg/l	TM337			0.000023 #		0.000023 #		
PFHxA (307-24-4)	<0.000001 mg/l	TM337			0.000016 #		0.000021 #		
PFBS (375-73-5)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFHpA (375-85-9)	<0.000001 mg/l	TM337			0.00001 #		0.000013 #		
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFOA (335-67-1)	<0.000001 mg/l	TM337			0.000041 #		0.00005 #		
PFHxS (355-46-4)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFNA (375-95-1)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFHpS (375-92-8)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFDA (335-76-2)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337			0.000033 #		0.000021 #		
Branched PFOS	<0.000001 mg/l	TM337			0.000017 #		0.000012 #		
PFUnA (2058-94-8)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFDoA (307-55-1)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFOSA (754-91-6)	<0.000002 mg/l	TM337			<0.00002 #		<0.00002 #		
PFDS (335-77-3)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
PFPeS (2706-91-4)	<0.000001 mg/l	TM337			<0.00001 #		<0.00001 #		
Total PFOS	<0.000001 mg/l	TM337			0.00005 #		0.000033 #		
PFBA (Post Ox.) (375-22-4)	<0.000004 mg/l	TM405			<0.00002 #		0.000024 #		
PFPA (Post Ox.) (2706-90-3)	<0.000002 mg/l	TM405			<0.00001 #		0.000015 #		
PFHxA (Post Ox.) (307-24-4)	<0.000002 mg/l	TM405			<0.00001 #		0.000017 #		
PFBS (Post Ox.) (375-73-5)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
PFHpA (Post Ox.) (375-85-9)	<0.000002 mg/l	TM405			0.000014 #		0.000015 #		
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
PFOA (Post Ox.) (335-67-1)	<0.000002 mg/l	TM405			0.000044 #		0.000047 #		
PFHxS (Post Ox.) (355-46-4)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
PFNA (Post Ox.) (375-95-1)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
PFHpS (Post Ox.) (375-92-8)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
PFDA (Post Ox.) (335-76-2)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002 mg/l	TM405			0.000037 #		0.000027 #		
Branched PFOS (Post Ox.)	<0.000002 mg/l	TM405			0.000022 #		0.000014 #		
PFUnA (Post Ox.) (2058-94-8)	<0.000002 mg/l	TM405			<0.00001 #		<0.00001 #		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS3	TP-CS3	TP-CS4	TP-CS4	TP-CS4	TP-CS7
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.50	1.70	1.60	1.70	1.80	0.50
M	mCERTS accredited.			Soil/Solid (S)	Ground Water (GW)	Soil/Solid (S)	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.			18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
diss.filt	Dissolved / filtered sample.			19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
tot.unfilt	Total / unfiltered sample.			230520-23	230520-23	230520-23	230520-23	230520-23	230520-23
	* Subcontracted - refer to subcontractor report for accreditation status.			28025796	28025797	28025799	28025800	28025801	28025804
**	% 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			ES1A	EW2A	ES2A	EW4A	ES3A	ES1A
(F)	Trigger breach confirmed								
1-4	@ Sample deviation (see appendix)								
Component	LOD/Units	Method							
PfDoA (Post Ox.) (307-55-1)	<0.000002 mg/l	TM405			<0.00001		<0.00001		
PFOSA (Post Ox.) (754-91-6)	<0.000004 mg/l	TM405			<0.00002		<0.00002		
PFDS (Post Ox.) (335-77-3)	<0.000002 mg/l	TM405			<0.00001		<0.00001		
PFPeS (Post Ox.) (2706-91-4)	<0.000002 mg/l	TM405			<0.00001		<0.00001		
Total PFOS (Post Ox.)	<0.000002 mg/l	TM405			0.000059		0.00004		
PFBA (375-22-4)	<0.000002 mg/l	TM434			0.000027	#	0.000017	#	
PFMOPra (377-73-1)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434			<0.000004	#	<0.000004	#	
PFPA (2706-90-3)	<0.000001 mg/l	TM434			0.000015	#	0.000016	#	
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
NFDHA (151772-58-6)	<0.000003 mg/l	TM434			<0.000006	#	<0.000006	#	
PFBS (375-73-5)	<0.000001 mg/l	TM434			0.000006	#	0.000008	#	
PFHxA (307-24-4)	<0.000001 mg/l	TM434			0.000009	#	0.000007	#	
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434			<0.000004	#	<0.000004	#	
PFEESA (113507-82-7)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
PFHpA (375-85-9)	<0.000001 mg/l	TM434			0.000008	#	0.000009	#	
PFPeS (2706-91-4)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434			<0.00001	#	<0.00001	#	
ADONA (919005-14-4)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
FBSA (30334-69-1)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
PFOA (335-67-1)	<0.000001 mg/l	TM434			0.000023	#	0.000021	#	
PFHxS (355-46-4)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
PFNA (375-95-1)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
PFecHS (133201-07-7)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
PFHpS (375-92-8)	<0.000001 mg/l	TM434			<0.000002	#	<0.000002	#	
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434			<0.000004	#	<0.000004	#	
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434			<0.00001	#	<0.00001	#	
PFDA (335-76-2)	<0.000002 mg/l	TM434			<0.000004	#	<0.000004	#	
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434			<0.000004	#	<0.000004	#	
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434			<0.00001	#	<0.00001	#	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434			0.000017	#	0.000008	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS3	TP-CS3	TP-CS4	TP-CS4	TP-CS4	TP-CS7
# 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 1-4# Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025796 ES1A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025797 EW2A	1.60 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025799 ES2A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025800 EW4A	1.80 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025801 ES3A	0.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025804 ES1A
Component	LOD/Units	Method							
Branched PFOS	<0.000001 mg/l	TM434			0.000009 #		0.000003 #		
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFUnA (2058-94-8)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
9CI-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
PFNS (68259-12-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
FHxSA (41997-13-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
PFDaA (307-55-1)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFDS (335-77-3)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFTrDA (72629-94-8)	<0.000003 mg/l	TM434			<0.000006 #		<0.000006 #		
11CI-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFTeA (376-06-7)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
PFOSA (754-91-6)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFDoS (79780-39-5)	<0.000002 mg/l	TM434			<0.000004 #		<0.000004 #		
PFTrDS (174675-49-1)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434			<0.00002 #		<0.00002 #		
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434			<0.00002 #		<0.00002 #		
PFODA (16517-11-6)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434			<0.000002 #		<0.000002 #		
Total PFOS	<0.000001 mg/l	TM434			0.000026 #		0.000012 #		
Moisture Content Ratio (% of as received sample)	%	PM024		14		19		18	18
Phenol	<0.01 mg/kg	TM062 (S)		<0.01 M		<0.01 M		<0.01 M	<0.01 M
Cresols	<0.01 mg/kg	TM062 (S)		<0.01 M		<0.01 M		<0.01 M	<0.01 M
Xylenols	<0.015 mg/kg	TM062 (S)		<0.015 M		<0.015 M		<0.015 M	<0.015 M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)		<0.035 M		<0.035 M		<0.035 M	<0.035 M
Organic Carbon, Total	<0.2 %	TM132		2.36 M		2.24 M		1.82 M	8.41 M
pH	1 pH Units	TM133		8.19 M		8.65 M		8.77 M	8.04 M
Cyanide, Total	<1 mg/kg	TM153		<1 M		<1 M		<1 M	<1 M
Antimony	<0.6 mg/kg	TM181		<0.6 #		<0.6 #		3.73 #	3.46 #
Arsenic	<0.6 mg/kg	TM181		<0.6 M		8.45 M		9.73 M	19.4 M
Beryllium	<0.01 mg/kg	TM181		0.015 M		1.12 M		1.23 M	0.928 M



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS3	TP-CS3	TP-CS4	TP-CS4	TP-CS4	TP-CS7
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025796 ES1A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025797 EW2A	1.60 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025799 ES2A	1.70 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025800 EW4A	1.80 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025801 ES3A	0.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025804 ES1A
Component	LOD/Units	Method							
Cadmium	<0.02 mg/kg	TM181	<0.02	M		0.199		0.258	0.953
Chromium	<0.9 mg/kg	TM181	<0.9	M		9.33		9.06	13.7
Copper	<1.4 mg/kg	TM181	<1.4	M		69.3		76.4	124
Lead	<0.7 mg/kg	TM181	0.836	M		390		277	121
Mercury	<0.1 mg/kg	TM181	<0.1	M		<0.1		<0.1	<0.1
Nickel	<0.2 mg/kg	TM181	0.372	M		29.6		29.8	31.6
Selenium	<1 mg/kg	TM181	<1	#		<1		<1	1.41
Vanadium	<0.2 mg/kg	TM181	0.414	#		26.1		27	26.8
Zinc	<1.9 mg/kg	TM181	<1.9	M		92.9		76.4	238
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3			<3		<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3			<3		<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2			<2		<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
Branched PFOS	<1 µg/kg	TM338	<1			<1		<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338	<1			<1		<1	<1
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338	<1			<1		<1	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338	<1			<1		<1	<1
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanedisulfonate	<1 µg/kg	TM338	<1			<1		<1	<1
Total PFOS	<1 µg/kg	TM338	<1			<1		<1	<1
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428	<3						
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428	<3						
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428	<2						
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428	<1						
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428	<1						



Superseded Report: 693518

Page 12 of 28



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend		Customer Sample Ref.	TP-CS7	TP-CS7	TP-CS8	TP-CS8	TP-CS8	TP-CS8
#	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							
1-4*\$\$	Sample deviation (see appendix)							
		Depth (m)						
		Sample Type						
		Date Sampled						
		Sample Time						
		Date Received						
		SDG Ref						
		Lab Sample No.(s)						
		AGS Reference						
Component	LOD/Units	Method						
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.00001	#		0.000048	#	
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000023	#		0.00002	#	
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.00002	#		0.000019	#	
PFBS (375-73-5)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFHpA (375-85-9)	<0.000001 mg/l	TM337	0.000017	#		0.000014	#	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	0.000008	#		<0.00001	#	
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000035	#		0.00005	#	
PFHxS (355-46-4)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000012	#		0.000028	#	
Branched PFOS	<0.000001 mg/l	TM337	0.000007	#		0.000015	#	
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00001	#		<0.00002	#	
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000005			<0.00001		
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000005	#		<0.00001	#	
Total PFOS	<0.000001 mg/l	TM337	0.000019	#		0.000043	#	
PFBA (Post Ox.) (375-22-4)	<0.000004 mg/l	TM405	0.000018			0.000042		
PFPA (Post Ox.) (2706-90-3)	<0.000002 mg/l	TM405	0.000027			0.00002		
PFHxA (Post Ox.) (307-24-4)	<0.000002 mg/l	TM405	0.000019			0.000028		
PFBS (Post Ox.) (375-73-5)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
PFHpA (Post Ox.) (375-85-9)	<0.000002 mg/l	TM405	0.000018			0.000018		
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
PFOA (Post Ox.) (335-67-1)	<0.000002 mg/l	TM405	0.00003			0.000056		
PFHxS (Post Ox.) (355-46-4)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
PFNA (Post Ox.) (375-95-1)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
PFHpS (Post Ox.) (375-92-8)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
PFDA (Post Ox.) (335-76-2)	<0.000002 mg/l	TM405	<0.000005			<0.00001		
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002 mg/l	TM405	0.000016			0.000037		
Branched PFOS (Post Ox.)	<0.000002 mg/l	TM405	0.000007			0.000019		
PFUnA (Post Ox.) (2058-94-8)	<0.000002 mg/l	TM405	<0.000005			<0.00001		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS7	TP-CS7	TP-CS8	TP-CS8	TP-CS8	TP-CS8
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00	2.65	0.50	1.50	1.50	2.00
M	mCERTS accredited.			Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.			18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
diss.filt	Dissolved / filtered sample.								
tot.unfilt	Total / unfiltered sample.			19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
	* Subcontracted - refer to subcontractor report for accreditation status.			230520-23	230520-23	230520-23	230520-23	230520-23	230520-23
**	% 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			28025805	28025806	28025807	28025808	28025809	28025810
(F)	Trigger breach confirmed			EW3A	ES2A	ES1A	EW4A	ES2A	ES3A
1-4	Sample deviation (see appendix)								
Component	LOD/Units	Method							
PfDoA (Post Ox.) (307-55-1)	<0.000002 mg/l	TM405		<0.000005			<0.00001		
PFOSA (Post Ox.) (754-91-6)	<0.000004 mg/l	TM405		<0.00001			<0.00002		
PFDS (Post Ox.) (335-77-3)	<0.000002 mg/l	TM405		<0.000005			<0.00001		
PFPeS (Post Ox.) (2706-91-4)	<0.000002 mg/l	TM405		<0.000005			<0.00001		
Total PFOS (Post Ox.)	<0.000002 mg/l	TM405		0.000023			0.000056		
PFBA (375-22-4)	<0.000002 mg/l	TM434		0.000013	#		0.000013	#	
PFMOPra (377-73-1)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434		<0.000004	#		<0.000004	#	
PFPA (2706-90-3)	<0.000001 mg/l	TM434		0.000024	#		0.00001	#	
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
NFDHA (151772-58-6)	<0.000003 mg/l	TM434		<0.000006	#		<0.000006	#	
PFBS (375-73-5)	<0.000001 mg/l	TM434		0.000006	#		0.000008	#	
PFHxA (307-24-4)	<0.000001 mg/l	TM434		0.000023	#		0.000006	#	
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434		<0.000004	#		<0.000004	#	
PFEESA (113507-82-7)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
PFHpA (375-85-9)	<0.000001 mg/l	TM434		0.000014	#		0.000008	#	
PFPeS (2706-91-4)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434		<0.00001	#		<0.00001	#	
ADONA (919005-14-4)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434		0.000005	#		<0.000002	#	
FBSA (30334-69-1)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
PFOA (335-67-1)	<0.000001 mg/l	TM434		0.000024	#		0.00002	#	
PFHxS (355-46-4)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
PFNA (375-95-1)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
PFecHS (133201-07-7)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
PFHpS (375-92-8)	<0.000001 mg/l	TM434		<0.000002	#		<0.000002	#	
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434		<0.000004	#		<0.000004	#	
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434		<0.00001	#		<0.00001	#	
PFDA (335-76-2)	<0.000002 mg/l	TM434		<0.000004	#		<0.000004	#	
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434		0.000006	#		<0.000004	#	
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434		<0.00001	#		<0.00001	#	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434		0.000013	#		0.000011	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.	TP-CS7	TP-CS7	TP-CS8	TP-CS8	TP-CS8	TP-CS8
# 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 1-4# Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.00 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025805 EW3A	2.65 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025806 ES2A	0.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025807 ES1A	1.50 Ground Water (GW) 18/05/2023 19/05/2023 230520-23 28025808 EW4A	1.50 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025809 ES2A	2.00 Soil/Solid (S) 18/05/2023 19/05/2023 230520-23 28025810 ES3A
Component	LOD/Units	Method							
Branched PFOS	<0.000001 mg/l	TM434	0.000006	#			0.000004	#	
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFUnA (2058-94-8)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
9CI-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
PFNS (68259-12-1)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
FHxSA (41997-13-1)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
PFDaA (307-55-1)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFDS (335-77-3)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFTrDA (72629-94-8)	<0.000003 mg/l	TM434	<0.000006	#			<0.000006	#	
11CI-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFTeA (376-06-7)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
PFOSA (754-91-6)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFDoS (79780-39-5)	<0.000002 mg/l	TM434	<0.000004	#			<0.000004	#	
PFTrDS (174675-49-1)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434	<0.00002	#			<0.00002	#	
N-MeFOSE (31506-32-8)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434	<0.00002	#			<0.00002	#	
PFODA (16517-11-6)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
N-EtFOSE (4151-50-2)	<0.000001 mg/l	TM434	<0.000002	#			<0.000002	#	
Total PFOS	<0.000001 mg/l	TM434	0.000019	#			0.000015	#	
Moisture Content Ratio (% of as received sample)	%	PM024			10	15		14	17
Phenol	<0.01 mg/kg	TM062 (S)				<0.01		<0.01	<0.01
						M		M	M
Cresols	<0.01 mg/kg	TM062 (S)				<0.01		<0.01	<0.01
						M		M	M
Xylenols	<0.015 mg/kg	TM062 (S)				<0.015		<0.015	<0.015
						M		M	M
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)				<0.035		<0.035	<0.035
						M		M	M
Organic Carbon, Total	<0.2 %	TM132				27.4		0.258	0.336
						M		M	M
pH	1 pH Units	TM133				7.78		8.92	9.02
						M		M	M
Cyanide, Total	<1 mg/kg	TM153				<1		<1	<1
						M		M	M
Antimony	<0.6 mg/kg	TM181			<0.6	3.91		<0.6	<0.6
					#	#		#	#
Arsenic	<0.6 mg/kg	TM181			8.77	18.8		4.18	<0.6
					M	M		M	M
Barium	<0.6 mg/kg	TM181			31.1			97.5	
					#			#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.		TP-CS7	TP-CS7	TP-CS8	TP-CS8	TP-CS8	TP-CS8
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		2.00	2.65	0.50	1.50	1.50	2.00
M	mCERTS accredited.				Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)	Ground Water (GW)	Soil/Solid (S)	Soil/Solid (S)
aq	Aqueous / settled sample.				18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023	18/05/2023
diss.filt	Dissolved / filtered sample.									
tot.unfilt	Total / unfiltered sample.									
* Subcontracted - refer to subcontractor report for accreditation status.					19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023	19/05/2023
** % 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					230520-23	230520-23	230520-23	230520-23	230520-23	230520-23
(F) Trigger breach confirmed					28025805	28025806	28025807	28025808	28025809	28025810
1-4* Sample deviation (see appendix)					EW3A	ES2A	ES1A	EW4A	ES2A	ES3A
Component	LOD/Units	Method								
Beryllium	<0.01 mg/kg	TM181				1.02		1.57	0.282	<0.01
						M	M		M	M
Cadmium	<0.02 mg/kg	TM181				0.23		2.88	0.0908	<0.02
						M	M		M	M
Chromium	<0.9 mg/kg	TM181				10.6		1.6	1.65	<0.9
						M	M		M	M
Copper	<1.4 mg/kg	TM181				5.11		320	8.95	<1.4
						M	M		M	M
Lead	<0.7 mg/kg	TM181				9.59		233	7.21	<0.7
						M	M		M	M
Mercury	<0.1 mg/kg	TM181				<0.1		0.42	<0.1	<0.1
						M	M		M	M
Nickel	<0.2 mg/kg	TM181				34		47.4	7.39	<0.2
						M	M		M	M
Selenium	<1 mg/kg	TM181				<1		1.64	<1	<1
						#	#		#	#
Vanadium	<0.2 mg/kg	TM181				31.5		32.3	9.31	<0.2
						#	#		#	#
Zinc	<1.9 mg/kg	TM181				38.5		854	36.1	<1.9
						M	M		M	M
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338						<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338						<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338						<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338						<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338						<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338						<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexadisulfonate	<1 µg/kg	TM338						<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338						<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptadisulfonate	<1 µg/kg	TM338						<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338						<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octadisulfonate	<1 µg/kg	TM338						<1	<1	<1
Branched PFOS	<1 µg/kg	TM338						<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338						<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338						<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338						<1	<1	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338						<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decadisulfonate	<1 µg/kg	TM338						<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentadisulfonate	<1 µg/kg	TM338						<1	<1	<1
Total PFOS	<1 µg/kg	TM338						<1	<1	<1
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428						<3	<3	<3
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428						<3	<3	<3
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428						<2	<2	<2
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428						<1	<1	<1



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Results Legend			Customer Sample Ref.		TP-CS3A	TP-CS4A	TP-CS4A			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		1.20 Soil/Solid (S) 18/05/2023	0.50 Soil/Solid (S) 18/05/2023	1.50 Soil/Solid (S) 18/05/2023			
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										
1-4*§@ Sample deviation (see appendix)										
Component	LOD/Units	Method								
Moisture Content Ratio (% of as received sample)	%	PM024			27	8.3	16			
Phenol	<0.01 mg/kg	TM062 (S)				<0.01	<0.01			
						M	M			
Cresols	<0.01 mg/kg	TM062 (S)				<0.01	<0.01			
						M	M			
Xylenols	<0.015 mg/kg	TM062 (S)				<0.015	<0.015			
						M	M			
Phenols, Total Detected monohydric	<0.035 mg/kg	TM062 (S)				<0.035	<0.035			
						M	M			
Organic Carbon, Total	<0.2 %	TM132				16.5	0.313			
						M	M			
pH	1 pH Units	TM133				8.43	8.96			
						M	M			
Cyanide, Total	<1 mg/kg	TM153				<1	<1			
						M	M			
Antimony	<0.6 mg/kg	TM181			3.31	4	<0.6			
					#	#	#			
Arsenic	<0.6 mg/kg	TM181			23	19.7	15.4			
					M	M	M			
Beryllium	<0.01 mg/kg	TM181			2.12	1.24	0.889			
					M	M	M			
Cadmium	<0.02 mg/kg	TM181			0.433	0.554	0.2			
					M	M	M			
Chromium	<0.9 mg/kg	TM181			2.46	10.4	10.6			
					M	M	M			
Copper	<1.4 mg/kg	TM181			237	138	11.5			
					M	M	M			
Lead	<0.7 mg/kg	TM181			277	218	44.3			
					M	M	M			
Mercury	<0.1 mg/kg	TM181			0.116	0.1	<0.1			
					M	M	M			
Nickel	<0.2 mg/kg	TM181			45.5	30	33.9			
					M	M	M			
Selenium	<1 mg/kg	TM181			<1	<1	<1			
					#	#	#			
Vanadium	<0.2 mg/kg	TM181			47.9	36.5	21.7			
					#	#	#			
Zinc	<1.9 mg/kg	TM181			251	164	36.8			
					M	M	M			
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338				<3	<3			
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338				<3	<3			
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338				<2	<2			
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338				<1	<1			
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338				<1	<1			
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338				<1	<1			
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	<1 µg/kg	TM338				<1	<1			
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338				<1	<1			
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	<1 µg/kg	TM338				<1	<1			
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338				<1	<1			
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338				3.01	<1			
Branched PFOS	<1 µg/kg	TM338				<1	<1			
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338				<1	<1			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

VOC MS (S)

Results Legend			Customer Sample Ref.		TP-CS3	TP-CS4	TP-CS7	TP-CS8	TP-CS3A	TP-CS4A
# ISO17025 accredited.	M mCERTS accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		1.50 Soil/Solid (S) 18/05/2023	1.80 Soil/Solid (S) 18/05/2023	2.65 Soil/Solid (S) 18/05/2023	2.00 Soil/Solid (S) 18/05/2023	1.20 Soil/Solid (S) 18/05/2023	1.50 Soil/Solid (S) 18/05/2023
aq Aqueous / settled sample.					19/05/2023 230520-23 28025796 ES1A	19/05/2023 230520-23 28025801 ES3A	19/05/2023 230520-23 28025806 ES2A	19/05/2023 230520-23 28025810 ES3A	19/05/2023 230520-23 28025798 EW3A	19/05/2023 230520-23 28025803 ES2A
diss.filt Dissolved / filtered sample.										
tot.unfiltTotal / 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										
1-4*§@ Sample deviation (see appendix)										
Component	LOD/Units	Method								
Dibromofluoromethane**	%	TM116			105	115	106	112	111	97.7
Toluene-d8**	%	TM116			94.8	97.7	98.6	92.9	97.1	91.7
4-Bromofluorobenzene**	%	TM116			85	85.6	97.9	81.8	88.9	76.8
Dichlorodifluoromethane	<0.5 µg/kg	TM116			<6	<6	<6	<6	<6	<6
					#	#	#	#	#	#
Chloromethane	<2 µg/kg	TM116			<7	<7	<7	<7	<7	<7
					#	#	#	#	#	#
Vinyl Chloride	<0.5 µg/kg	TM116			<6	<6	<6	<6	<6	<6
					M	M	M	M	M	M
Bromomethane	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Chloroethane	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Trichlorofluoromethane	<0.5 µg/kg	TM116			<6	<6	<6	<6	<6	<6
					M	M	M	M	M	M
1,1-Dichloroethene	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					#	#	#	#	#	#
Carbon Disulphide	<1 µg/kg	TM116			<7	<7	<7	<7	<7	<7
					M	M	M	M	M	M
Dichloromethane	<5 µg/kg	TM116			<10	35.3	<10	<10	<10	30.5
					#	#	#	#	#	#
Methyl Tertiary Butyl Ether	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
trans-1,2-Dichloroethene	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
1,1-Dichloroethane	<0.5 µg/kg	TM116			<8	<8	<8	<8	<8	<8
					M	M	M	M	M	M
cis-1,2-Dichloroethene	<0.5 µg/kg	TM116			<6	<6	<6	<6	<6	<6
					M	M	M	M	M	M
2,2-Dichloropropane	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
Bromochloromethane	<2 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Chloroform	<3 µg/kg	TM116			<8	<8	<8	<8	<8	<8
					M	M	M	M	M	M
1,1,1-Trichloroethane	<0.5 µg/kg	TM116			<7	<7	<7	<7	<7	<7
					M	M	M	M	M	M
1,1-Dichloropropene	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Carbontetrachloride	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
1,2-Dichloroethane	<1 µg/kg	TM116			<5	<5	<5	<5	<5	<5
					M	M	M	M	M	M
Benzene	<1 µg/kg	TM116			<9	26.4	95.3	<9	<9	<9
					M	M	M	M	M	M
Trichloroethene	<1 µg/kg	TM116			<9	<9	<9	<9	<9	<9
					#	#	#	#	#	#
1,2-Dichloropropane	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Dibromomethane	<1 µg/kg	TM116			<9	<9	<9	<9	<9	<9
					M	M	M	M	M	M
Bromodichloromethane	<2 µg/kg	TM116			<7	<7	<7	<7	<7	<7
					M	M	M	M	M	M
cis-1,3-Dichloropropene	<0.5 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
Toluene	<1 µg/kg	TM116			<7	<7	9.95	<7	<7	<7
					M	M	M	M	M	M
trans-1,3-Dichloropropene	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
1,1,2-Trichloroethane	<1 µg/kg	TM116			<10	<10	<10	<10	<10	<10
					M	M	M	M	M	M
1,3-Dichloropropane	<1 µg/kg	TM116			<7	<7	<7	<7	<7	<7
					M	M	M	M	M	M



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

VOC MS (S)

Results Legend			Customer Sample Ref.	TP-CS3	TP-CS4	TP-CS7	TP-CS8	TP-CS3A	TP-CS4A
#	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								
1-4**	Sample deviation (see appendix)								
Component	LOD/Units	Method	1.50 Soil/Solid (S) 18/05/2023	1.80 Soil/Solid (S) 18/05/2023	2.65 Soil/Solid (S) 18/05/2023	2.00 Soil/Solid (S) 18/05/2023	1.20 Soil/Solid (S) 18/05/2023	1.50 Soil/Solid (S) 18/05/2023	
Tetrachloroethene	<2 µg/kg	TM116	19/05/2023 230520-23 28025796 ES1A	19/05/2023 230520-23 28025801 ES3A	19/05/2023 230520-23 28025806 ES2A	19/05/2023 230520-23 28025810 ES3A	19/05/2023 230520-23 28025798 EW3A	19/05/2023 230520-23 28025803 ES2A	



CERTIFICATE OF ANALYSIS

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SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
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Superseded Report: 693518

Asbestos Identification - Solid Samples

Results Legend

ISO17025 accredited.
M mCERTS accredited.
* Subcontracted test.
(F) Trigger breach confirmed
1-5$ Sample deviation (see appendix)

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Asbestos Actinolite	Asbestos Anthophyllite	Asbestos Tremolite	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP-CS7ES1A 0.50 SOLID 18/05/2023 00:00:00 19/05/2023 15:40:00 230520-23 28025804 TM048	30/05/2023	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP-CS4AES1A 0.50 SOLID 18/05/2023 00:00:00 19/05/2023 15:40:00 230520-23 28025802 TM048	30/05/2023	Paul Poynton	N/A	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Data Amendment

Sample No. : 28025797 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28025800 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28025805 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28025809 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Table of Results - Appendix

Method No	Description
TM048	Identification of Asbestos in Bulk Material
TM062 (S)	Determination of Phenols in Soils by HPLC
TM153	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM089	Determination of Gasoline Range Hydrocarbons (GRO) by Headspace GC-FID (C4-C12)
TM181	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM414	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GCxGC-FID
TM434	Analysis of PFAS
TM116	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM132	ELTRA CS800 Operators Guide
TM133	Determination of pH in Soil and Water using the GLpH pH Meter
TM337	Analysis of PFAS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

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SDG: 230520-23
Client Ref.: 326R

Report Number: 699679
Location: Victoria North

Superseded Report: 693518

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	28025796	28025797	28025799	28025800	28025801	28025804	28025805	28025806	28025807	28025808
	TP-CS3	TP-CS3	TP-CS4	TP-CS4	TP-CS4	TP-CS7	TP-CS7	TP-CS7	TP-CS8	TP-CS8
AGS Ref.	ES1A	EW2A	ES2A	EW4A	ES3A	ES1A	EW3A	ES2A	ES1A	EW4A
Depth	1.50	1.70	1.60	1.70	1.80	0.50	2.00	2.65	0.50	1.50
Type	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Soil/Solid (S)	Ground Water	Soil/Solid (S)	Soil/Solid (S)	Ground Water
Asbestos ID in Solid Samples						30-May-2023				
Cyanide Comp/Free/Total/Thiocyanate	25-May-2023		23-May-2023		25-May-2023	25-May-2023			25-May-2023	
EPH CWG GC (S)	25-May-2023				25-May-2023			25-May-2023		
GRO by GC-FID (S)	23-May-2023				23-May-2023			23-May-2023		
Metals in solid samples by OES	26-May-2023		09-Jun-2023		26-May-2023	09-Jun-2023		26-May-2023	09-Jun-2023	
PFAS (Post Ox.) Liquids		02-Jun-2023		02-Jun-2023			05-Jun-2023			02-Jun-2023
PFAS (Post Ox.) Solids	30-May-2023								30-May-2023	
PFAS Liquids		30-May-2023		30-May-2023			02-Jun-2023			30-May-2023
PFAS Liquids (Full Suite)		22-Jun-2023		22-Jun-2023			22-Jun-2023			22-Jun-2023
PFAS Solids	26-May-2023		25-May-2023		25-May-2023	25-May-2023			26-May-2023	
pH	23-May-2023		23-May-2023		23-May-2023	23-May-2023			23-May-2023	
Phenols by HPLC (S)	25-May-2023		26-May-2023		25-May-2023	26-May-2023			25-May-2023	
Sample description	22-May-2023		22-May-2023		22-May-2023	22-May-2023		22-May-2023	22-May-2023	
Total Organic Carbon	30-May-2023		26-May-2023		30-May-2023	26-May-2023			30-May-2023	
TPH CWG GC (S)	24-May-2023				24-May-2023			01-Jun-2023		
VOC MS (S)	25-May-2023				25-May-2023			25-May-2023		

Lab Sample No(s) Customer Sample Ref.	28025809	28025810	28025798	28025802	28025803
	TP-CS8	TP-CS8	TP-CS3A	TP-CS4A	TP-CS4A
AGS Ref.	ES2A	ES3A	EW3A	ES1A	ES2A
Depth	1.50	2.00	1.20	0.50	1.50
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Asbestos ID in Solid Samples				30-May-2023	
Cyanide Comp/Free/Total/Thiocyanate	25-May-2023	25-May-2023		25-May-2023	25-May-2023
EPH CWG GC (S)		25-May-2023	25-May-2023		25-May-2023
GRO by GC-FID (S)		23-May-2023	25-May-2023		25-May-2023
Metals in solid samples by OES	25-May-2023	26-May-2023	12-Jun-2023	25-May-2023	09-Jun-2023
PFAS (Post Ox.) Solids	30-May-2023	30-May-2023			
PFAS Solids	26-May-2023	26-May-2023		25-May-2023	25-May-2023
pH	23-May-2023	23-May-2023		23-May-2023	23-May-2023
Phenols by HPLC (S)	26-May-2023	26-May-2023		26-May-2023	26-May-2023
Sample description	22-May-2023	22-May-2023	22-May-2023	22-May-2023	22-May-2023
Total Organic Carbon	30-May-2023	30-May-2023		26-May-2023	30-May-2023
TPH CWG GC (S)		24-May-2023	01-Jun-2023		01-Jun-2023
VOC MS (S)		25-May-2023	25-May-2023		25-May-2023



CERTIFICATE OF ANALYSIS

SDG: 230520-23
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Report Number: 699679
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Superseded Report: 693518

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230527-31
Your Reference: 326R
Location: Victoria North
Report No: 699682
Order Number: RIT 298 665 596

This report has been revised and directly supersedes 691460 in its entirety.

We received 3 samples on Saturday May 20, 2023 and 3 of these samples were scheduled for analysis which was completed on Tuesday June 06, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230527-31
Client Ref.: 326R

Report Number: 699682
Location: Victoria North

Superseded Report: 691460

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28065054	BH103		2.10	25/05/2023
28065055	BH210		12.80	25/05/2023
28065053	BH315		10.85	25/05/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230527-31

Report Number: 699682

Superseded Report: 691460

Client Ref.: 326R

Location: Victoria North

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)

28065053
28065055
28065054

Customer
Sample Reference

BH315
BH210
BH103

AGS Reference

Depth (m)

10.85
12.80
2.10

Container

500ml Plastic
(ALE208)
500ml Plastic
(ALE208)
500ml Plastic
(ALE208)

Sample Type

GW
GW
GW

PFAS Liquids

All

NDPs: 0
Tests: 3

X X X

SDG: 230527-31
Client Ref.: 326R

Report Number: 699682
Location: Victoria North

Superseded Report: 691460

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230527-31
Client Ref.: 326R

Report Number: 699682
Location: Victoria North

Superseded Report: 691460

Data Amendment

Sample No. : All Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230527-31

Report Number: 699682

Superseded Report: 691460

Client Ref.: 326R

Location: Victoria North

Table of Results - Appendix

Method No	Description
TM337	Analysis of PFAS

NA = not applicable.
Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230527-31
Client Ref.: 326R

Report Number: 699682
Location: Victoria North

Superseded Report: 691460

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

28065054	28065055	28065053
BH103	BH210	BH315
2.10	12.80	10.85
Ground Water	Ground Water	Ground Water
31-May-2023	06-Jun-2023	31-May-2023

PFAS Liquids



CERTIFICATE OF ANALYSIS

SDG: 230527-31
Client Ref: 326R

Report Number: 699682
Location: Victoria North

Superseded Report: 691460

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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Website: www.alsenvironmental.co.uk

BAM Ritchies
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Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230621-51
Your Reference:	326R
Location:	Victoria North
Report No:	699705
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 694019 in its entirety.

We received 3 samples on Wednesday June 21, 2023 and 3 of these samples were scheduled for analysis which was completed on Tuesday June 27, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28186701	BH 306			20/06/2023
28186699	Showmans Guild			20/06/2023
28186700	SWS A			20/06/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

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

Results Legend	Lab Sample No(s)		28186701							28186699	28186700
	Customer Sample Reference		BH 306	Showmans Guild						SWS A	
AGS Reference											
Depth (m)											
Container				11plastic (ALE221)	11plastic (ALE221)	500ml Plastic (ALE208)	HNO3 Filtered (ALE204)	HNO3 Unfiltered (ALE204)	Vial (ALE297)	ZnAc (ALE246)	11plastic (ALE221)
Sample Type				GW	GW	GW	GW	GW	GW	GW	GW
Anions by Kone (w)	All	NDPs: 0 Tests: 1			X						
Determination of Dissolved Gases	All	NDPs: 0 Tests: 1							X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1				X					
PFAS Liquids	All	NDPs: 0 Tests: 3	X	X							X
pH Value	All	NDPs: 0 Tests: 1			X						
Sulphide	All	NDPs: 0 Tests: 1								X	
Suspended Solids	All	NDPs: 0 Tests: 1			X						
Total Metals by ICP-MS	All	NDPs: 0 Tests: 1						X			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Results Legend			Customer Sample Ref.			
# 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 1-4*@\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference			
			BH 306	Showmans Guild	SWS A	
			Ground Water (GW)	Ground Water (GW)	Ground Water (GW)	
			20/06/2023	20/06/2023	20/06/2023	
			21/06/2023	21/06/2023	21/06/2023	
			230621-51	230621-51	230621-51	
			28186701	28186699	28186700	
Component	LOD/Units	Method				
Suspended solids, Total	<2 mg/l	TM022		58.6		
				#		
Sulphide	<0.01 mg/l	TM101		0.0945		
				#		
Manganese (diss.filt)	<0.003 mg/l	TM152		0.682		
				#		
Calcium (Dis.Filt)	<0.2 mg/l	TM152		212		
				#		
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152		24.1		
				#		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152		671		
Sulphate	<2 mg/l	TM184		10.8		
				#		
Methane, dissolved	<0.001 mg/l	TM223		3.1		
pH	<1 pH Units	TM256		7.28		
				#		
Alkalinity, Total as CaCO3	<3 mg/l	TM256		817		
				#		
PFBA (375-22-4)	<0.000002 mg/l	TM337	0.000036	<0.000018	<0.000011	
			#	#	#	
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000015	<0.000005	<0.000009	
			#	#	#	
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.000019	<0.000005	0.000007	
			#	#	#	
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000038	0.000006	0.000004	
			#	#	#	
PFHpA (375-85-9)	<0.000001 mg/l	TM337	0.000014	<0.000005	0.000004	
			#	#	#	
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.00001	<0.000005	0.000005	
			#	#	#	
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000028	0.000013	0.000008	
			#	#	#	
PFHxS (355-46-4)	<0.000001 mg/l	TM337	<0.00001	0.000006	0.000001	
			#	#	#	
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	<0.000007	0.000006	0.000003	
			#	#	#	
Branched PFOS	<0.000001 mg/l	TM337	<0.000007	0.000008	0.000002	
			#	#	#	
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00002	<0.00001	<0.000002	
			#	#	#	
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.00001	<0.000005	<0.000001	
			#	#	#	
Total PFOS	<0.000001 mg/l	TM337	<0.000007	0.000014	0.000005	
			#	#	#	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Data Amendment

Sample No. : All Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28186699 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Sample ID Change	Showmons	Showmans

Sample No. : 28186702 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Client Request	No ID	removed from report



CERTIFICATE OF ANALYSIS

Validated

SDG: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Table of Results - Appendix

Method No	Description
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM022	Determination of total suspended solids in waters
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM337	Analysis of PFAS
TM152	Analysis of Aqueous Samples by ICP-MS
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230621-51
Client Ref.: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

AGS Ref.
Depth
Type

28186701	28186699	28186700
BH 306	Showmans Guild	SWS A
Ground Water	Ground Water	Ground Water

Anions by Kone (w)		27-Jun-2023	
Determination of Dissolved Gases		26-Jun-2023	
Dissolved Metals by ICP-MS		23-Jun-2023	
PFAS Liquids	27-Jun-2023	27-Jun-2023	27-Jun-2023
pH Value		27-Jun-2023	
Sulphide		27-Jun-2023	
Suspended Solids		26-Jun-2023	
Total Metals by ICP-MS		27-Jun-2023	



CERTIFICATE OF ANALYSIS

SDG: 230621-51
Client Ref: 326R

Report Number: 699705
Location: Victoria North

Superseded Report: 694019

Appendix

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.

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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.

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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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 12 July 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230607-44
Your Reference: 326R
Location: Victoria North
Report No: 695790
Order Number: RIT 298665896

This report has been revised and directly supersedes 694431 in its entirety.

We received 1 sample on Wednesday June 07, 2023 and 1 of these samples were scheduled for analysis which was completed on Tuesday July 11, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28110715	Showmans Guild			06/06/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

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

28110715

Showmans Guild

ZnAc (ALE246)

SW

Vial (ALE297)

SW

NaOH (ALE245)

SW

HNO3 Filtered (ALE204)

SW

H2SO4 (ALE244)

SW

500ml Plastic (ALE208)

SW

250ml BOD (ALE212)

SW

250ml Amber Cl. PTFE/PE (ALE219)

SW

1000ml glass bottle (ALE220)

SW

Neutralised Suspended Solids

All

NDPs: 0
Tests: 1

X

Organotins in Aqueous Samples

All

NDPs: 0
Tests: 1

X

PAH Spec MS - Aqueous (W)

All

NDPs: 0
Tests: 1

X

Pesticides (Suite I) by GCMS

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

pH Value of Filtered Water

All

NDPs: 0
Tests: 1

X

Pharmaceuticals and Personal Care

All

NDPs: 0
Tests: 1

X

Phenols and ethoxylates in Liquids

All

NDPs: 0
Tests: 1

X

Settleable Solids

All

NDPs: 1
Tests: 0

N

Settleable Solids 5 Mins

All

NDPs: 1
Tests: 0

N

Sulphide

All

NDPs: 0
Tests: 1

X

Suspended Solids

All

NDPs: 0
Tests: 1

X

SVOC MS (W) - Aqueous

All

NDPs: 0
Tests: 1

X

Total Metals by ICP-MS

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

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SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

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)

28110715

Customer
Sample Reference

Showmans Guild

AGS Reference

Depth (m)

Container

Sample Type

ZnAc (ALE246)
Vial (ALE297)
NaOH (ALE245)
HNO3 Filtered (ALE204)
H2SO4 (ALE244)
500ml Plastic (ALE208)
250ml BOD (ALE212)
250ml Amber Gl. PTFE/PE (ALE219)
1000ml glass bottle (ALE220)

SW SW SW SW SW SW SW SW SW SW

Total Nitrogen	All	NDPs: 0 Tests: 1				X														
Total Organic and Inorganic Carbon	All	NDPs: 0 Tests: 1						X												
TPH CWG (W)	All	NDPs: 0 Tests: 1																		
Urea Herbicides (Suite 1)*	All	NDPs: 0 Tests: 1																		
VOC MS (W)	All	NDPs: 0 Tests: 2																		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Results Legend		Customer Sample Ref.	Showmans Guild				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW)				
M	mCERTS accredited.		06/06/2023				
aq	Aqueous / settled sample.		07/06/2023				
diss.filt	Dissolved / filtered sample.		230607-44				
tot.unfilt	Total / unfiltered sample.		28110715				
* 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							
1-4*§@ Sample deviation (see appendix)							
Component	LOD/Units	Method					
pH	pH Units	PM115	7.11				
Conductivity @ 20 deg.C	µS/cm	PM115	1420				
Chloroxuron*	mg/l	SUB	<0.00005				
Chlortoluron*	mg/l	SUB	<0.00005				
Diflufenzuron*	mg/l	SUB	<0.00005				
Dimefuron*	mg/l	SUB	<0.00005				
Diuron*	mg/l	SUB	<0.00005				
Isoproturon*	mg/l	SUB	<0.00005				
Linuron*	mg/l	SUB	<0.00005				
Methabenzthiauron*	mg/l	SUB	<0.00005				
Metoxuron*	mg/l	SUB	<0.00005				
Monolinuron*	mg/l	SUB	<0.00005				
Monuron*	mg/l	SUB	<0.00005				
Pencycuron*	mg/l	SUB	<0.00005				
Suspended Solids, Total neutralised	<2 mg/l	TM022	72				
Suspended solids, Total	<2 mg/l	TM022	72.2				
BOD, unfiltered	<1 mg/l	TM045	<10	#			
Organic Carbon, Total	<3 mg/l	TM090	9.61	#			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	35.3	#			
Sulphide	<0.01 mg/l	TM101	0.0461	#			
COD, unfiltered	<7 mg/l	TM107	18.5	#			
Arsenic (diss.filt)	<0.0005 mg/l	TM152	0.0028	#			
Arsenic (tot.unfilt)	<0.002 mg/l	TM152	0.00309	2 #			
Cadmium (diss.filt)	<0.00008 mg/l	TM152	<0.00008	#			
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152	<0.0005	2 #			
Chromium (tot.unfilt)	<0.003 mg/l	TM152	<0.003	2 #			
Chromium (diss.filt)	<0.001 mg/l	TM152	<0.001	#			
Copper (tot.unfilt)	<0.001 mg/l	TM152	<0.001	2 #			
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	2 #			
Copper (diss.filt)	<0.0003 mg/l	TM152	0.000756	#			
Lead (diss.filt)	<0.0002 mg/l	TM152	0.000438	#			
Nickel (tot.unfilt)	<0.001 mg/l	TM152	<0.001	2 #			
Selenium (tot.unfilt)	<0.001 mg/l	TM152	<0.001	2 #			



CERTIFICATE OF ANALYSIS

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SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Results Legend		Customer Sample Ref.	Showmans Guild				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
Nickel (diss.filt)	<0.0004 mg/l	TM152	0.00121	#			
Selenium (diss.filt)	<0.001 mg/l	TM152	<0.001	#			
Zinc (tot.unfilt)	<0.005 mg/l	TM152	0.00667	2 #			
Zinc (diss.filt)	<0.001 mg/l	TM152	0.0138	#			
Calcium Hardness Unfiltered	<0.14 mg/l	TM152	578	2			
Mercury (diss.filt)	<0.00001 mg/l	TM183	<0.00001				
Mercury (tot.unfilt)	<0.00002 mg/l	TM183	<0.00002	2			
Sulphate (soluble) as S	<1 mg/l	TM184	4.87	#			
Nitrogen, Total	<1 mg/l	TM212	33.4	#			
Methane, dissolved	<0.001 mg/l	TM223	<0.001				
Cyanide, Total	<0.05 mg/l	TM227	<0.05				
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249	0.21				
pH	<1 pH Units	TM256	7.13	#			
pH (diss.filt)	<1 pH Units	TM256	7.11				
Conductivity @ 20 deg.C (diss.filt)	<20 us/cm	TM256	1420				
Tributyl tin	<0.000001 mg/l	TM328	<0.000001				
Surrogate**	%	TM328	98				
Trifluralin	<0.00001 mg/l	TM343	<0.0001				
alpha-HCH	<0.00001 mg/l	TM343	<0.0001				
gamma-HCH (Lindane)	<0.00001 mg/l	TM343	<0.0001				
Heptachlor	<0.00001 mg/l	TM343	<0.0001				
Aldrin	<0.00001 mg/l	TM343	<0.0001				
beta-HCH	<0.00001 mg/l	TM343	<0.0001				
Isodrin	<0.00001 mg/l	TM343	<0.0001				
delta-HCH	<0.00001 mg/l	TM343	<0.0001				
Heptachlor epoxide	<0.00001 mg/l	TM343	<0.0001				
o,p'-DDE	<0.00001 mg/l	TM343	<0.0001				
Endosulphan I	<0.00001 mg/l	TM343	<0.0001				
trans-Chlordane	<0.00001 mg/l	TM343	<0.0001				
cis-Chlordane	<0.00001 mg/l	TM343	<0.0001				
p,p'-DDE	<0.00001 mg/l	TM343	<0.0001				
Dieldrin	<0.00001 mg/l	TM343	<0.0001				
o,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.0001				



CERTIFICATE OF ANALYSIS

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SDG: 230607-44
Client Ref.: 326R

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Location: Victoria North

Superseded Report: 694431

Results Legend			Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method						
Endrin	<0.00001 mg/l	TM343	<0.0001					
o,p'-DDT	<0.00001 mg/l	TM343	<0.0001					
p,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.0001					
Endosulphan II	<0.00002 mg/l	TM343	<0.0002					
p,p'-DDT	<0.00001 mg/l	TM343	<0.0001					
o,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.0001					
p,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.0001					
Endosulphan Sulphate	<0.00002 mg/l	TM343	<0.0002					
Permethrin I	<0.00001 mg/l	TM343	<0.0001					
Permethrin II	<0.00001 mg/l	TM343	<0.0001					
Fats, Oils, Greases	<1 mg/l	TM383	<1					
4-tert-Octylphenol	<0.000014 mg/l	TM426	0.000177					
4-tert-Nonylphenol	<0.00004 mg/l	TM426	0.000074					
4-n-Octylphenol	<0.000014 mg/l	TM426	<0.000014					
4-n-Nonylphenol	<0.00004 mg/l	TM426	<0.00004					
4-Nonylphenol monoethoxylate	<0.00004 mg/l	TM426	<0.00008					
4-Nonylphenol diethoxylate	<0.00004 mg/l	TM426	<0.00008					
4-Octylphenol (sum of isomers)	<0.000028 mg/l	TM426	<0.000028					
4-Nonylphenol (sum of isomers)	<0.00008 mg/l	TM426	<0.00008					
1,7-Dimethylxanthine	<0.00005 mg/l	TM432	<0.00005					
2,4-D	<0.00002 mg/l	TM432	<0.00005					
Acesulfame-K	<0.0002 mg/l	TM432	0.000809					
Acetaminophen	<0.00002 mg/l	TM432	<0.00005					
Albuterol	<0.000005 mg/l	TM432	<0.00001					
Amoxicillin	<0.0001 mg/l	TM432	<0.0001					
Androstenedione	<0.00001 mg/l	TM432	<0.00001					
Atenolol	<0.000005 mg/l	TM432	<0.00001					
Atrazine	<0.000002 mg/l	TM432	<0.000002					
Bendroflumethiazide	<0.00001 mg/l	TM432	<0.00001					
Bezafibrate	<0.000005 mg/l	TM432	<0.00001					
BPA	<0.00001 mg/l	TM432	<0.0003					
Bromacil	<0.00001 mg/l	TM432	<0.00001					
Butalbital	<0.00001 mg/l	TM432	<0.00001					



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SDG: 230607-44
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Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
Butylparaben	<0.00001 mg/l	TM432	<0.00001				
Caffeine	<0.00001 mg/l	TM432	<0.00001				
Carbadox	<0.00002 mg/l	TM432	<0.00001				
Carbamazepine	<0.000002 mg/l	TM432	<0.000002				
Carisoprodol	<0.00002 mg/l	TM432	<0.00001				
Chloramphenicol	<0.000005 mg/l	TM432	<0.00005				
Chloridazon	<0.00001 mg/l	TM432	<0.00001				
Chlorotoluron	<0.00001 mg/l	TM432	<0.00001				
Cimetidine	<0.00002 mg/l	TM432	<0.00001				
Clofibric Acid	<0.00001 mg/l	TM432	<0.00005				
Cotinine	<0.00001 mg/l	TM432	<0.00002				
DACT	<0.00005 mg/l	TM432	<0.0001				
DEA	<0.000005 mg/l	TM432	<0.00001				
DEET	<0.00001 mg/l	TM432	<0.00001				
Dehydronifedipine	<0.000005 mg/l	TM432	<0.000005				
DIA	<0.00005 mg/l	TM432	<0.00001				
Diclofenac	<0.00003 mg/l	TM432	<0.00005				
Dilantin	<0.00002 mg/l	TM432	<0.00002				
Diltiazem	<0.000005 mg/l	TM432	<0.00001				
Diuron	<0.000005 mg/l	TM432	<0.000005				
Erythromycin	<0.000025 mg/l	TM432	<0.00005				
Estradiol	<0.00005 mg/l	TM432	<0.00005				
Estriol	<0.00005 mg/l	TM432	<0.00005				
Estrone	<0.00001 mg/l	TM432	<0.00005				
Ethinyl Estradiol - 17 alpha	<0.0001 mg/l	TM432	<0.0001				
Ethylparaben	<0.000005 mg/l	TM432	<0.000005				
Flumequine	<0.00005 mg/l	TM432	<0.00005				
Fluoxetine	<0.00001 mg/l	TM432	<0.00005				
Gemfibrozil	<0.000005 mg/l	TM432	<0.00002				
Ibuprofen	<0.000025 mg/l	TM432	<0.00005				
Iohexol	<0.00005 mg/l	TM432	<0.0001				
Iopromide	<0.00001 mg/l	TM432	<0.00001				
Isobutylparaben	<0.00001 mg/l	TM432	<0.00001				



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Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
Isoproturon	<0.00002 mg/l	TM432	<0.00001				
Ketoprofen	<0.000005 mg/l	TM432	<0.00001				
Ketorolac	<0.000005 mg/l	TM432	<0.000005				
Lidocaine	<0.000005 mg/l	TM432	<0.000005				
Lincomycin	<0.00005 mg/l	TM432	<0.00005				
Linuron	<0.000005 mg/l	TM432	<0.00005				
Lopressor	<0.0002 mg/l	TM432	<0.0001				
Meclofenamic Acid	<0.00005 mg/l	TM432	<0.00005				
Metazachlor	<0.000005 mg/l	TM432	<0.000005				
Metformin	<0.0001 mg/l	TM432	<0.00003				
Methylparaben	<0.000005 mg/l	TM432	<0.00001				
Metolachlor	<0.000005 mg/l	TM432	<0.000005				
Naproxen	<0.00002 mg/l	TM432	<0.00005				
Nifedipine	<0.00001 mg/l	TM432	<0.000005				
Norethisterone	<0.00002 mg/l	TM432	<0.00002				
OUST (Sulfometuron.methyl)	<0.000005 mg/l	TM432	<0.000005				
Oxolinic acid	<0.00002 mg/l	TM432	<0.00005				
Pentoxifylline	<0.00001 mg/l	TM432	<0.000005				
Phenazone	<0.00002 mg/l	TM432	0.000038				
Primidone	<0.00001 mg/l	TM432	<0.00005				
Progesterone	<0.00002 mg/l	TM432	<0.00001				
Propazine	<0.000005 mg/l	TM432	<0.000005				
Propylparaben	<0.000005 mg/l	TM432	<0.000005				
Quinoline	<0.00002 mg/l	TM432	<0.0001				
Salicylic Acid	<0.0005 mg/l	TM432	<0.0005				
Simazine	<0.000005 mg/l	TM432	<0.000005				
Sucralose	<0.0001 mg/l	TM432	0.000537				
Sulfachloropyridazine	<0.000005 mg/l	TM432	<0.00001				
Sulfadiazine	<0.000025 mg/l	TM432	<0.00005				
Sulfadimethoxine	<0.00001 mg/l	TM432	<0.00001				
Sulfamerazine	<0.000005 mg/l	TM432	0.000011				
Sulfamethazine	<0.00002 mg/l	TM432	0.000113				
Sulfamethizole	<0.00001 mg/l	TM432	<0.00001				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
Sulfamethoxazole	<0.000005 mg/l	TM432	<0.00001				
Sulfathiazole	<0.0001 mg/l	TM432	0.000068				
TCEP	<0.001 mg/l	TM432	<0.001				
TCPP	<0.001 mg/l	TM432	<0.001				
TDCPP	<0.0002 mg/l	TM432	<0.0002				
Testosterone	<0.00002 mg/l	TM432	<0.00001				
Theobromine	<0.00005 mg/l	TM432	<0.00025				
Theophylline	<0.0001 mg/l	TM432	<0.0001				
Thiabendazole	<0.000005 mg/l	TM432	<0.00001				
Triclocarban	<0.00005 mg/l	TM432	<0.0005				
Triclosan	<0.00005 mg/l	TM432	<0.0001				
Trimethoprim	<0.00002 mg/l	TM432	<0.00001				
Warfarin	<0.000005 mg/l	TM432	<0.00001				
PFBA (375-22-4)	<0.000002 mg/l	TM434	<0.00001	#			
PFMOPra (377-73-1)	<0.000001 mg/l	TM434	<0.000005	#			
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434	<0.00001	#			
PFPA (2706-90-3)	<0.000001 mg/l	TM434	<0.000005	#			
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434	<0.000005	#			
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434	<0.000005	#			
NFDHA (151772-58-6)	<0.000003 mg/l	TM434	<0.000015	#			
PFBS (375-73-5)	<0.000001 mg/l	TM434	<0.000005	#			
PFHxA (307-24-4)	<0.000001 mg/l	TM434	<0.000005	#			
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434	<0.00001	#			
PFEESA (113507-82-7)	<0.000001 mg/l	TM434	<0.000005	#			
PFHpA (375-85-9)	<0.000001 mg/l	TM434	<0.000005	#			
PFPeS (2706-91-4)	<0.000001 mg/l	TM434	<0.000005	#			
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434	<0.000025	#			
ADONA (919005-14-4)	<0.000001 mg/l	TM434	<0.000005	#			
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434	<0.000005	#			
FBSA (30334-69-1)	<0.000001 mg/l	TM434	<0.000005	#			
PFOA (335-67-1)	<0.000001 mg/l	TM434	0.000003	#			
PFHxS (355-46-4)	<0.000001 mg/l	TM434	<0.000005	#			
PFNA (375-95-1)	<0.000001 mg/l	TM434	<0.000005	#			



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Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4* \$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
PFechS (133201-07-7)	<0.000001 mg/l	TM434	<0.000005 #				
PFHpS (375-92-8)	<0.000001 mg/l	TM434	<0.000005 #				
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434	<0.00001 #				
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434	<0.000025 #				
PFDA (335-76-2)	<0.000002 mg/l	TM434	<0.00001 #				
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434	<0.00001 #				
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434	<0.000025 #				
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434	<0.000003 #				
Branched PFOS	<0.000001 mg/l	TM434	<0.000003 #				
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434	<0.00001 #				
PFUnA (2058-94-8)	<0.000002 mg/l	TM434	<0.00001 #				
9Cl-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434	<0.000005 #				
PFNS (68259-12-1)	<0.000001 mg/l	TM434	<0.000005 #				
FHxSA (41997-13-1)	<0.000001 mg/l	TM434	<0.000005 #				
PFDoA (307-55-1)	<0.000002 mg/l	TM434	<0.00001 #				
PFDS (335-77-3)	<0.000002 mg/l	TM434	<0.00001 #				
PFTTrDA (72629-94-8)	<0.000003 mg/l	TM434	<0.000015 #				
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434	<0.00001 #				
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434	<0.00001 #				
PFTeA (376-06-7)	<0.000001 mg/l	TM434	<0.000005 #				
PFOSA (754-91-6)	<0.000002 mg/l	TM434	<0.00001 #				
PFDoS (79780-39-5)	<0.000002 mg/l	TM434	<0.00001 #				
PFTTrDS (174675-49-1)	<0.000001 mg/l	TM434	<0.000005 #				
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434	<0.000005 #				
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434	<0.00005 #				
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434	<0.000005 #				
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434	<0.00005 #				
PFODA (16517-11-6)	<0.000001 mg/l	TM434	<0.000005 #				
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434	<0.000005 #				
Total PFOS	<0.000001 mg/l	TM434	<0.000003 #				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
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							
1-4**@ Sample deviation (see appendix)							
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#			
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.004	#			
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.008	#			
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4* @ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715				
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.004	#			
Carbazole (aq)	<0.001 mg/l	TM176	<0.004	#			
Chrysene (aq)	<0.001 mg/l	TM176	<0.004	#			
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.004	#			
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.02	#			
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Fluorene (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.004	#			
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.004				
Phenol (aq)	<0.001 mg/l	TM176	<0.004				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.004	#			
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Naphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
Isophorone (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.004				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			



Superseded Report: 694431

Location: Victoria North



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

VOC MS (W)

Results Legend		Customer Sample Ref.	Showmans Guild					
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715					
Component	LOD/Units	Method						
Dibromofluoromethane**	%	TM208	112	2				
Toluene-d8**	%	TM208	101	2				
4-Bromofluorobenzene**	%	TM208	104	2				
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	2 #				
Chloromethane	<0.001 mg/l	TM208	<0.001	2 #				
Vinyl chloride	<0.001 mg/l	TM208	<0.001	2 #				
Bromomethane	<0.001 mg/l	TM208	<0.001	2 #				
Chloroethane	<0.001 mg/l	TM208	<0.001	2 #				
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	2 #				
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	2 #				
Carbon disulphide	<0.001 mg/l	TM208	<0.001	2 #				
Dichloromethane	<0.003 mg/l	TM208	<0.003	2 #				
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	1 #				
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	2 #				
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	2 #				
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	2 #				
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	2				
Bromochloromethane	<0.001 mg/l	TM208	<0.001	2 #				
Chloroform	<0.001 mg/l	TM208	<0.001	2 #				
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	2 #				
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	2 #				
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	2 #				
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	2 #				
Benzene	<0.001 mg/l	TM208	<0.001	1 #				
Trichloroethene	<0.001 mg/l	TM208	<0.001	2 #				
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	2 #				
Dibromomethane	<0.001 mg/l	TM208	<0.001	2 #				
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	2 #				
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	2 #				
Toluene	<0.001 mg/l	TM208	<0.001	1 #				
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	2 #				
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	2 #				
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001	2 #				



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VOC MS (W)

Results Legend		Customer Sample Ref.	Showmans Guild				
#	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						
1-4	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	Surface Water (SW) 06/06/2023 07/06/2023 230607-44 28110715			
Tetrachloroethene	<0.001 mg/l	TM208	<0.001	2 #			
Dibromochloromethane	<0.001 mg/l	TM208	<0.001	2 #			
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001	2 #			
Chlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	2 #			
Ethylbenzene	<0.001 mg/l	TM208	<0.001	1 #			
m,p-Xylene	<0.001 mg/l	TM208	<0.001	1 #			
o-Xylene	<0.001 mg/l	TM208	<0.001	1 #			
Styrene	<0.001 mg/l	TM208	<0.001	2 #			
Bromoform	<0.001 mg/l	TM208	<0.001	2 #			
Isopropylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	2 #			
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	2 #			
Bromobenzene	<0.001 mg/l	TM208	<0.001	2 #			
Propylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001	2 #			
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001	2 #			
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001	2 #			
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
n-Butylbenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001	2			
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001	2 #			
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001	2 #			
Naphthalene	<0.001 mg/l	TM208	<0.001	2 #			
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	2 #			
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	2			



CERTIFICATE OF ANALYSIS

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SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Notification of NDPs (No determination possible)

Date Received : 07/06/2023 07:44:55

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
28110715	Showmans Guild		Settleable Solids	Insufficient Sample
28110715	Showmans Guild		Settleable Solids	Insufficient Sample
28110715	Showmans Guild		Settleable Solids 5 Mins	Insufficient Sample
28110715	Showmans Guild		Settleable Solids 5 Mins	Insufficient Sample



CERTIFICATE OF ANALYSIS

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Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Table of Results - Appendix

Method No	Description
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM426	Determination of Specific Phenols and their Ethoxylates in Liquids by GC/MS/MS
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM328	
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM434	Analysis of PFAS
PM115	Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM432	Pharmaceuticals and Personal Care Products
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230607-44
Client Ref.: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Test Completion Dates

Lab Sample No(s)	28110715
Customer Sample Ref.	Showmans Guild
AGS Ref.	
Depth	
Type	Surface Water

Ammoniacal Nitrogen	09-Jun-2023
Anions by Kone (w)	09-Jun-2023
BOD True Total	14-Jun-2023
CEN Readings	09-Jun-2023
COD Unfiltered	13-Jun-2023
Cyanide Comp/Free/Total/Thiocyanate	09-Jun-2023
Determination of Dissolved Gases	14-Jun-2023
Dissolved Metals by ICP-MS	09-Jun-2023
EPH CWG (Aliphatic) Aqueous GC (W)	13-Jun-2023
EPH CWG (Aromatic) Aqueous GC (W)	13-Jun-2023
Fats Oils and Greases.	09-Jun-2023
GRO by GC-FID (W)	12-Jun-2023
Mercury Dissolved	13-Jun-2023
Mercury Unfiltered	14-Jun-2023
Methylene blue active substances	13-Jun-2023
Neutralised Suspended Solids	13-Jun-2023
Organotins in Aqueous Samples	16-Jun-2023
PAH Spec MS - Aqueous (W)	12-Jun-2023
Pesticides (Suite I) by GCMS	15-Jun-2023
PFAS Liquids	12-Jun-2023
pH Value	09-Jun-2023
pH Value of Filtered Water	09-Jun-2023
Pharmaceuticals and Personal Care	14-Jun-2023
Phenols and ethoxylates in Liquids	11-Jul-2023
Sulphide	13-Jun-2023
Suspended Solids	13-Jun-2023
SVOC MS (W) - Aqueous	14-Jun-2023
Total Metals by ICP-MS	12-Jun-2023
Total Nitrogen	12-Jun-2023
Total Organic and Inorganic Carbon	09-Jun-2023
TPH CWG (W)	13-Jun-2023
Urea Herbicides (Suite 1)*	29-Jun-2023
VOC MS (W)	13-Jun-2023

Certificate of Analysis

Report No.: 23-04094-1

Issue No.: 1

Date of Issue 29/06/2023

Customer Details: ALS Laboratories (UK) Ltd, Unit7-8, Hawarden Business Park, Manor Road, Hawarden, Deeside, Flintshire, CH5 3US, United Kingdom

Customer Contact: Results mailbox

Customer Order No.: 230607-44

Customer Reference: Not Supplied

Quotation Reference: Q23-00645 (Issue: 7)

Description: 1 water sample

Date Received: 09/06/2023

Date Started: 13/06/2023

Date Completed: 28/06/2023

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: Grace Lau, Study Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

rpsgroup.com

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13 St Martins Way, Bedford, Bedfordshire, MK42 0LF. T +44 1462 480 400

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Results Summary

Report No.: 23-04094-1

Customer Reference: Not Supplied

Customer Order No: 230607-44

Customer Sample No	28119420 SHOWMNA NS GUILD
RPS Sample No	24579
Sample Type	WATER
Sample Matrix	SW
Sampling Date	06/06/2023

Determinand	CAS No	Codes	SOP	RL	Units	
chloroxuron	1982-47-4	N	L005	0.05	µg/L	< 0.05 (T)
chlorotoluron	15545-48-9	N	L005	0.05	µg/L	< 0.05 (T)
diflubenzuron	35367-38-5	N	L005	0.05	µg/L	< 0.05 (T)
dimefuron	34205-21-5	N	L005	0.05	µg/L	< 0.05 (T)
diuron	330-54-1	N	L005	0.05	µg/L	< 0.05 (T)
isoproturon	34123-59-6	N	L005	0.05	µg/L	< 0.05 (T)
linuron	330-55-2	N	L005	0.05	µg/L	< 0.05 (T)
methabenzthiazuron	18691-97-9	N	L005	0.05	µg/L	< 0.05 (T)
metoxuron	19937-59-8	N	L005	0.05	µg/L	< 0.05 (T)
monolinuron	1746-81-2	N	L005	0.05	µg/L	< 0.05 (T)
monuron	150-68-5	N	L005	0.05	µg/L	< 0.05 (T)
penicicuron	66063-05-6	N	L005	0.05	µg/L	< 0.05 (T)

Deviating Samples

Report No.: 23-04094-1

Customer Reference: Not Supplied

Customer Order No: 230607-44

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
24579	28119420 SHOWMNANS GUILD		06/06/2023	GAB500 500 mL amber glass bottle	Yes	No sampling time provided.

Report No.: 23-04094-1

Type	Matrix Code	Description
Food	CEREALPROD	Cereals, grains & products
Food	DRIEDFRUIT	Dried fruits
Food	FRIEDBAKED	Fried or baked food
Food	LEGUME	Legumes
Food	MEAT	Meat
Food	POWDERED	Powdered food
Food	PULSE	Pulses (dried legumes)
Food	VEGETABLES	Vegetables
Gas	TDTUBE	TD Tube
Gas	TENAX	Tenax Tube
Gas	TUBE	Tube
Gas	VAPOUR	Gas
Geological	SED_MAR	Marine Sediment
Geological	SED_RIV	River Sediment
Geological	SLUDG_SOL	Sludge (solid only)
Geological	SOIL	Soil
Liquid	BEVERAGE	Beverage
Liquid	BLOOD	Blood
Liquid	FORMULATN	Formula
Liquid	LEACHATE	Leachate
Liquid	OIL/GREASE	Oil or grease
Liquid	SLUDG_LIQ	Sludge (liquid only)
Liquid	SOLVENT	Solvent
Liquid	URINE	Urine
Sludge	SLUDG_WHL	Sludge for bulk route
Solid	BADGE	Badge
Solid	BEDDING	Bedding
Solid	BIOTA	Biota (general)
Solid	BIOTA_F	Biota (fish)
Solid	BIOTA_SF	Biota (shellfish)
Solid	CONSTRCTN	Construction materials
Solid	FABRIC	Fabrics & furnishing materials
Solid	FEED	Animal feed
Solid	FERTILISER	Fertiliser
Solid	FILTER	Filter
Solid	FOAM	Solid foam material
Solid	PACKAGING	Packaging material
Solid	PLANT	Plant (vegetation)
Solid	SWAB	Swab
Water	DW	Drinking Water
Water	EFFLUENT	Effluent
Water	GW	Ground Water
Water	INFLUENT	Influent
Water	SALTW	Salt Water
Water	SW	Surface Water
Water	TW	Tap Water
Water	W	Water

Report No.: 23-04094-1

Key Code	Description
N	Not Accredited Test
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
UF	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
O	Marine Management Organisation (MMO) Validated
SN	Subcontracted to approved laboratory not accredited for the test
SU	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SIN	Subcontracted to internal RPS Group laboratory not accredited for the test
SIU	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
SIM	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
L (in results)	Result is outside normal limits
DW (in units)	Results are expressed on a dry weight basis

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

Dev code	Description
D	No sampling date provided.
T	No sampling time provided.
Z	Temperature of samples exceeded in transit/storage.
V	Excessive headspace for volatile determinands.
P	Sample submitted without required preservative(s).
C	Incorrect container.
H	Holding time exceeded (sampling to extraction).
X	Holding time exceeded (sampling to receipt).

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.



CERTIFICATE OF ANALYSIS

SDG: 230607-44
Client Ref: 326R

Report Number: 695790
Location: Victoria North

Superseded Report: 694431

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230602-42
Your Reference: 326R
Location: Victoria North
Report No: 699683
Order Number: RIT 298665896

This report has been revised and directly supersedes 697571 in its entirety.

We received 1 sample on Friday June 02, 2023 and 1 of these samples were scheduled for analysis which was completed on Wednesday July 12, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28089275	SHOWMANS GUILD			31/05/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend

- X** Test
- N** No Determination Possible

Sample Types -

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

Lab Sample No(s)

Customer Sample Reference

AGS Reference

Depth (m)

Container

Sample Type

28089275

SHOWMANS GUILD

ZnAc (ALE246)

GW

Vial (ALE297)

GW

NaOH (ALE245)

GW

HNO3 Unfiltered (ALE204)

GW

HNO3 Filtered (ALE204)

GW

H2SO4 (ALE244)

GW

500ml Plastic (ALE208)

GW

250ml BOD (ALE212)

GW

250ml Amber Gl. PTFE/PE (ALE219)

GW

1000ml glass bottle (ALE220)

GW

Ammoniacal Nitrogen

All

NDPs: 0
Tests: 1

X

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

BOD True Total

All

NDPs: 0
Tests: 1

X

COD Unfiltered

All

NDPs: 0
Tests: 1

X

Cyanide Comp/Free/Total/Thiocyanate

All

NDPs: 0
Tests: 1

X

Determination of Dissolved Gases

All

NDPs: 0
Tests: 1

X

Dissolved Metals by ICP-MS

All

NDPs: 0
Tests: 1

X

EPH CWG (Aliphatic) Aqueous GC (W)

All

NDPs: 0
Tests: 1

X

EPH CWG (Aromatic) Aqueous GC (W)

All

NDPs: 0
Tests: 1

X

Faecal Coliforms (W)*

All

NDPs: 0
Tests: 1

X

Fats Oils and Greases.

All

NDPs: 0
Tests: 1

X

GRO by GC-FID (W)

All

NDPs: 0
Tests: 1

X

Mercury Dissolved

All

NDPs: 0
Tests: 1

X

Mercury Unfiltered

All

NDPs: 0
Tests: 1

X

Methylene blue active substances

All

NDPs: 0
Tests: 1

X



SDG: 230602-42
Client Ref.: 326R

Superseded Report: 697571

Location: Victoria North

Lab Sample No(s)

Test

No Determination Possible

- 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

**Customer
Sample Reference**

AGS Reference

Depth (m)

Container

Sample Type

28089275

SHOWMANS GUILD

ZnAc (ALE246)

GM

Total Nitrogen

All

NDPs: 0
Tests: 1

X

Total Organic and Inorganic Carbon

All

NDPs: 0
Tests: 1

X

TPH CWG (W)

All

NDPs: 0
Tests: 1

X

Urea Herbicides (Suite 1)*

All

NDPs: 0
Tests: 1

X

VOC MS (W)

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4*\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method					
Chloroxuron*	mg/l	SUB	<0.00005				
Faecal coliforms confirmed (M7M)*		SUB	0				
Chlortoluron*	mg/l	SUB	<0.00005				
Diflufenzuron*	mg/l	SUB	<0.00005				
Dimefuron*	mg/l	SUB	<0.00005				
Diuron*	mg/l	SUB	<0.00005				
Isoproturon*	mg/l	SUB	<0.00005				
Linuron*	mg/l	SUB	<0.00005				
Methabenzthiauron*	mg/l	SUB	<0.00005				
Metoxuron*	mg/l	SUB	<0.00005				
Monolinuron*	mg/l	SUB	<0.00005				
Monuron*	mg/l	SUB	<0.00005				
Pencycuron*	mg/l	SUB	<0.00005				
Suspended Solids, Total neutralised	<2 mg/l	TM022	58.5				
Suspended solids, Total	<2 mg/l	TM022	42.4	#			
BOD, unfiltered	<1 mg/l	TM045	<1	#			
Organic Carbon, Total	<3 mg/l	TM090	5.94	#			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	34	#			
Sulphide	<0.01 mg/l	TM101	0.133	#			
COD, unfiltered	<7 mg/l	TM107	23.8	#			
Arsenic (diss.filt)	<0.0005 mg/l	TM152	0.00285	#			
Arsenic (tot.unfilt)	<0.002 mg/l	TM152	0.00319	#			
Cadmium (diss.filt)	<0.00008 mg/l	TM152	<0.00008	#			
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152	<0.0005	#			
Chromium (tot.unfilt)	<0.003 mg/l	TM152	<0.003	#			
Chromium (diss.filt)	<0.001 mg/l	TM152	<0.001	#			
Copper (tot.unfilt)	<0.001 mg/l	TM152	<0.001	#			
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001	#			
Copper (diss.filt)	<0.0003 mg/l	TM152	0.000321	#			
Lead (diss.filt)	<0.0002 mg/l	TM152	0.00044	#			
Nickel (tot.unfilt)	<0.001 mg/l	TM152	<0.001	#			
Selenium (tot.unfilt)	<0.001 mg/l	TM152	<0.001	#			
Nickel (diss.filt)	<0.0004 mg/l	TM152	0.000613	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
Selenium (diss.filt)	<0.001 mg/l	TM152	<0.001	#				
Zinc (tot.unfilt)	<0.005 mg/l	TM152	<0.005	#				
Zinc (diss.filt)	<0.001 mg/l	TM152	0.00727	#				
Hardness, Total as CaCO3	<0.65 mg/l	TM152	673					
Mercury (diss.filt)	<0.00001 mg/l	TM183	<0.00001	#				
Mercury (tot.unfilt)	<0.00002 mg/l	TM183	<0.00002	#				
Sulphate (soluble) as S	<1 mg/l	TM184	5.07	#				
Nitrogen, Total	<1 mg/l	TM212	32.1	#				
Methane, dissolved	<0.001 mg/l	TM223	3.3					
Cyanide, Total	<0.05 mg/l	TM227	<0.05	#				
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249	0.08					
pH	<1 pH Units	TM256	7.04	#				
pH (diss.filt)	<1 pH Units	TM256	7.09					
Conductivity @ 20 deg.C (diss.filt)	<20 us/cm	TM256	1480					
Tributyl tin	<0.000001 mg/l	TM328	<0.00001					
Surrogate**	%	TM328	99					
Trifluralin	<0.00001 mg/l	TM343	<0.00005					
alpha-HCH	<0.00001 mg/l	TM343	<0.00005					
gamma-HCH (Lindane)	<0.00001 mg/l	TM343	<0.00005					
Heptachlor	<0.00001 mg/l	TM343	<0.00005					
Aldrin	<0.00001 mg/l	TM343	<0.00005					
beta-HCH	<0.00001 mg/l	TM343	<0.00005					
Isodrin	<0.00001 mg/l	TM343	<0.00005					
delta-HCH	<0.00001 mg/l	TM343	<0.00005					
Heptachlor epoxide	<0.00001 mg/l	TM343	<0.00005					
o,p'-DDE	<0.00001 mg/l	TM343	<0.00005					
Endosulphan I	<0.00001 mg/l	TM343	<0.0001					
trans-Chlordane	<0.00001 mg/l	TM343	<0.00005					
cis-Chlordane	<0.00001 mg/l	TM343	<0.00005					
p,p'-DDE	<0.00001 mg/l	TM343	<0.00005					
Dieldrin	<0.00001 mg/l	TM343	<0.00005					
o,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00005					
Endrin	<0.00001 mg/l	TM343	<0.00005					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
o,p'-DDT	<0.00001 mg/l	TM343	<0.00005					
p,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00005					
Endosulphan II	<0.00002 mg/l	TM343	<0.0001					
p,p'-DDT	<0.00001 mg/l	TM343	<0.00005					
o,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.00005					
p,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.00005					
Endosulphan Sulphate	<0.00002 mg/l	TM343	<0.0001					
Permethrin I	<0.00001 mg/l	TM343	<0.00005					
Permethrin II	<0.00001 mg/l	TM343	<0.00005					
Fats, Oils, Greases	<1 mg/l	TM383	<1					
4-tert-Octylphenol	<0.000014 mg/l	TM426	0.000214					
4-tert-Nonylphenol	<0.00004 mg/l	TM426	0.0001					
4-n-Octylphenol	<0.000014 mg/l	TM426	<0.000028					
4-n-Nonylphenol	<0.00004 mg/l	TM426	<0.00008					
4-Nonylphenol monoethoxylate	<0.00004 mg/l	TM426	<0.00008					
4-Nonylphenol diethoxylate	<0.00004 mg/l	TM426	<0.00008					
4-Octylphenol (sum of isomers)	<0.000028 mg/l	TM426	<0.00014					
4-Nonylphenol (sum of isomers)	<0.00008 mg/l	TM426	<0.00016					
1,7-Dimethylxanthine	<0.00005 mg/l	TM432	<0.00005					
2,4-D	<0.00002 mg/l	TM432	<0.00005					
Acesulfame-K	<0.00002 mg/l	TM432	0.00133					
Acetaminophen	<0.00002 mg/l	TM432	<0.00005					
Albuterol	<0.000005 mg/l	TM432	<0.00001					
Amoxicillin	<0.00001 mg/l	TM432	<0.00002					
Androstenedione	<0.00001 mg/l	TM432	<0.00001					
Atenolol	<0.000005 mg/l	TM432	<0.00001					
Atrazine	<0.000002 mg/l	TM432	<0.000002					
Bendroflumethiazide	<0.00001 mg/l	TM432	0.000011					
Bezafibrate	<0.000005 mg/l	TM432	<0.00001					
BPA	<0.00001 mg/l	TM432	0.000366					
Bromacil	<0.00001 mg/l	TM432	0.000013					
Butalbital	<0.00001 mg/l	TM432	<0.00001					
Butylparaben	<0.00001 mg/l	TM432	<0.00001					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

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# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
Caffeine	<0.00001 mg/l	TM432	<0.00001					
Carbadox	<0.00002 mg/l	TM432	<0.00001					
Carbamazepine	<0.000002 mg/l	TM432	<0.000002					
Carisoprodol	<0.00002 mg/l	TM432	<0.00001					
Chloramphenicol	<0.000005 mg/l	TM432	<0.00005					
Chloridazon	<0.00001 mg/l	TM432	<0.00001					
Chlorotoluron	<0.00001 mg/l	TM432	<0.00001					
Cimetidine	<0.00002 mg/l	TM432	<0.00001					
Clofibric Acid	<0.00001 mg/l	TM432	<0.00005					
Cotinine	<0.00001 mg/l	TM432	<0.00002					
DACT	<0.00005 mg/l	TM432	<0.0001					
DEA	<0.000005 mg/l	TM432	<0.00001					
DEET	<0.00001 mg/l	TM432	<0.00001					
Dehydronifedipine	<0.000005 mg/l	TM432	<0.000005					
DIA	<0.00005 mg/l	TM432	<0.00001					
Diclofenac	<0.00003 mg/l	TM432	<0.0001					
Dilantin	<0.00002 mg/l	TM432	<0.00002					
Diltiazem	<0.000005 mg/l	TM432	<0.00002					
Diuron	<0.000005 mg/l	TM432	<0.000005					
Erythromycin	<0.000025 mg/l	TM432	<0.0001					
Estradiol	<0.00005 mg/l	TM432	<0.0001					
Estriol	<0.00005 mg/l	TM432	<0.00005					
Estrone	<0.00001 mg/l	TM432	<0.00005					
Ethinyl Estradiol - 17 alpha	<0.0001 mg/l	TM432	<0.0001					
Ethylparaben	<0.000005 mg/l	TM432	<0.000005					
Flumequine	<0.00005 mg/l	TM432	<0.00005					
Fluoxetine	<0.00001 mg/l	TM432	<0.00025					
Gemfibrozil	<0.000005 mg/l	TM432	<0.00002					
Ibuprofen	<0.000025 mg/l	TM432	<0.00005					
Iohexol	<0.00005 mg/l	TM432	<0.0001					
Iopromide	<0.00001 mg/l	TM432	<0.00005					
Isobutylparaben	<0.00001 mg/l	TM432	<0.00001					
Isoproturon	<0.00002 mg/l	TM432	<0.00001					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
Ketoprofen	<0.000005 mg/l	TM432	<0.00001					
Ketorolac	<0.000005 mg/l	TM432	<0.000005					
Lidocaine	<0.000005 mg/l	TM432	<0.000005					
Lincomycin	<0.00005 mg/l	TM432	<0.00005					
Linuron	<0.000005 mg/l	TM432	<0.00005					
Lopressor	<0.0002 mg/l	TM432	<0.0001					
Meclofenamic Acid	<0.00005 mg/l	TM432	<0.00005					
Metazachlor	<0.000005 mg/l	TM432	<0.000005					
Metformin	<0.0001 mg/l	TM432	<0.00003					
Methylparaben	<0.000005 mg/l	TM432	<0.00001					
Metolachlor	<0.000005 mg/l	TM432	<0.000005					
Naproxen	<0.00002 mg/l	TM432	<0.00005					
Nifedipine	<0.00001 mg/l	TM432	<0.000005					
Norethisterone	<0.00002 mg/l	TM432	<0.00002					
OUST (Sulfometuron.methyl)	<0.000005 mg/l	TM432	<0.000005					
Oxolinic acid	<0.00002 mg/l	TM432	<0.00005					
Pentoxifylline	<0.00001 mg/l	TM432	<0.000005					
Phenazone	<0.00002 mg/l	TM432	0.000048					
Primidone	<0.00001 mg/l	TM432	<0.00005					
Progesterone	<0.00002 mg/l	TM432	<0.00004					
Propazine	<0.000005 mg/l	TM432	<0.000005					
Propylparaben	<0.000005 mg/l	TM432	<0.000005					
Quinoline	<0.00002 mg/l	TM432	<0.0001					
Salicylic Acid	<0.0005 mg/l	TM432	<0.0005					
Simazine	<0.000005 mg/l	TM432	<0.000005					
Sucralose	<0.0001 mg/l	TM432	0.000339					
Sulfachloropyridazine	<0.000005 mg/l	TM432	<0.00001					
Sulfadiazine	<0.000025 mg/l	TM432	<0.00005					
Sulfadimethoxine	<0.00001 mg/l	TM432	<0.00001					
Sulfamerazine	<0.000005 mg/l	TM432	0.00004					
Sulfamethazine	<0.00002 mg/l	TM432	0.000226					
Sulfamethizole	<0.00001 mg/l	TM432	<0.00001					
Sulfamethoxazole	<0.000005 mg/l	TM432	<0.00001					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
Sulfathiazole	<0.0001 mg/l	TM432	0.000062					
TCEP	<0.001 mg/l	TM432	<0.001					
TCPP	<0.001 mg/l	TM432	<0.001					
TDCPP	<0.0002 mg/l	TM432	<0.0002					
Testosterone	<0.00002 mg/l	TM432	<0.00001					
Theobromine	<0.00005 mg/l	TM432	<0.00025					
Theophylline	<0.0001 mg/l	TM432	<0.0001					
Thiabendazole	<0.000005 mg/l	TM432	<0.00001					
Triclocarban	<0.00005 mg/l	TM432	<0.00005					
Triclosan	<0.00005 mg/l	TM432	<0.0002					
Trimethoprim	<0.00002 mg/l	TM432	<0.00001					
Warfarin	<0.000005 mg/l	TM432	<0.00001					
PFBA (375-22-4)	<0.000002 mg/l	TM434	0.000009	#				
PFMOPra (377-73-1)	<0.000001 mg/l	TM434	<0.000001	#				
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434	<0.000002	#				
PFPA (2706-90-3)	<0.000001 mg/l	TM434	0.000004	#				
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434	<0.000001	#				
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434	<0.000001	#				
NFDHA (151772-58-6)	<0.000003 mg/l	TM434	<0.000003	#				
PFBS (375-73-5)	<0.000001 mg/l	TM434	0.000003	#				
PFHxA (307-24-4)	<0.000001 mg/l	TM434	0.000003	#				
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434	<0.000002	#				
PFEESA (113507-82-7)	<0.000001 mg/l	TM434	<0.000001	#				
PFHpA (375-85-9)	<0.000001 mg/l	TM434	<0.000001	#				
PFPeS (2706-91-4)	<0.000001 mg/l	TM434	<0.000001	#				
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434	<0.000005	#				
ADONA (919005-14-4)	<0.000001 mg/l	TM434	<0.000001	#				
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434	<0.000001	#				
FBSA (30334-69-1)	<0.000001 mg/l	TM434	0.000002	#				
PFOA (335-67-1)	<0.000001 mg/l	TM434	0.000007	#				
PFHxS (355-46-4)	<0.000001 mg/l	TM434	0.000004	#				
PFNA (375-95-1)	<0.000001 mg/l	TM434	<0.000001	#				
PFecHS (133201-07-7)	<0.000001 mg/l	TM434	<0.000001	#				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

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# ISO17025 accredited. m mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4* Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method						
PFHpS (375-92-8)	<0.000001 mg/l	TM434	<0.000001	#				
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434	<0.000002	#				
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434	<0.000005	#				
PFDA (335-76-2)	<0.000002 mg/l	TM434	<0.000002	#				
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434	<0.000002	#				
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434	<0.000005	#				
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434	0.000001	#				
Branched PFOS	<0.000001 mg/l	TM434	0.000003	#				
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434	<0.000002	#				
PFUnA (2058-94-8)	<0.000002 mg/l	TM434	<0.000002	#				
9Cl-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434	<0.000001	#				
PFNS (68259-12-1)	<0.000001 mg/l	TM434	<0.000001	#				
FHxSA (41997-13-1)	<0.000001 mg/l	TM434	<0.000001	#				
PFDoA (307-55-1)	<0.000002 mg/l	TM434	<0.000002	#				
PFDS (335-77-3)	<0.000002 mg/l	TM434	<0.000002	#				
PFTTrDA (72629-94-8)	<0.000003 mg/l	TM434	<0.000003	#				
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434	<0.000002	#				
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434	<0.000002	#				
PFTeA (376-06-7)	<0.000001 mg/l	TM434	<0.000001	#				
PFOSA (754-91-6)	<0.000002 mg/l	TM434	<0.000002	#				
PFDoS (79780-39-5)	<0.000002 mg/l	TM434	<0.000002	#				
PFTTrDS (174675-49-1)	<0.000001 mg/l	TM434	<0.000001	#				
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434	<0.000001	#				
MeFOSE (24448-09-7)	<0.000001 mg/l	TM434	<0.000001	#				
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434	<0.000001	#				
EtFOSE (1691-99-2)	<0.000001 mg/l	TM434	<0.000001	#				
PFODA (16517-11-6)	<0.000001 mg/l	TM434	<0.000001	#				
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434	<0.000001	#				
Total PFOS	<0.000001 mg/l	TM434	0.000005	#				



Superseded Report: 697571



CERTIFICATE OF ANALYSIS

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SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#			
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.004	#			
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.004	#			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.004	#			
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.004	#			
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.008	#			
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
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Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.004	#			
Carbazole (aq)	<0.001 mg/l	TM176	<0.004	#			
Chrysene (aq)	<0.001 mg/l	TM176	<0.004	#			
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.004	#			
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.004	#			
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.004	#			
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.02	#			
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.004	#			
Fluorene (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.004	#			
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.004				
Phenol (aq)	<0.001 mg/l	TM176	<0.004				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.004	#			
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.004	#			
Naphthalene (aq)	<0.001 mg/l	TM176	<0.004	#			
Isophorone (aq)	<0.001 mg/l	TM176	<0.004	#			
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.004				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			
Pyrene (aq)	<0.001 mg/l	TM176	<0.004	#			



Superseded Report: 697571



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

VOC MS (W)

Results Legend		Customer Sample Ref.	SHOWMANS GUILD			
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275			
Component	LOD/Units	Method				
Dibromofluoromethane**	%	TM208	95.2			
Toluene-d8**	%	TM208	96.4			
4-Bromofluorobenzene**	%	TM208	102			
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	#		
Chloromethane	<0.001 mg/l	TM208	<0.001	#		
Vinyl chloride	<0.001 mg/l	TM208	<0.001	#		
Bromomethane	<0.001 mg/l	TM208	<0.001	#		
Chloroethane	<0.001 mg/l	TM208	<0.001	#		
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
Carbon disulphide	<0.001 mg/l	TM208	<0.001	#		
Dichloromethane	<0.003 mg/l	TM208	<0.003	#		
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	#		
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	#		
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#		
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001			
Bromochloromethane	<0.001 mg/l	TM208	<0.001	#		
Chloroform	<0.001 mg/l	TM208	<0.001	#		
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	#		
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	#		
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	#		
Benzene	<0.001 mg/l	TM208	<0.001	#		
Trichloroethene	<0.001 mg/l	TM208	<0.001	#		
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	#		
Dibromomethane	<0.001 mg/l	TM208	<0.001	#		
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	#		
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
Toluene	<0.001 mg/l	TM208	<0.001	#		
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#		
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	#		
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

VOC MS (W)

Results Legend			Customer Sample Ref.	SHOWMANS GUILD				
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 31/05/2023 02/06/2023 230602-42 28089275				
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								
1-4* Sample deviation (see appendix)								
Component	LOD/Units	Method						
Tetrachloroethene	<0.001 mg/l	TM208	<0.001	#				
Dibromochloromethane	<0.001 mg/l	TM208	<0.001	#				
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001	#				
Chlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#				
Ethylbenzene	<0.001 mg/l	TM208	<0.001	#				
m,p-Xylene	<0.001 mg/l	TM208	<0.001	#				
o-Xylene	<0.001 mg/l	TM208	<0.001	#				
Styrene	<0.001 mg/l	TM208	<0.001	#				
Bromoform	<0.001 mg/l	TM208	<0.001	#				
Isopropylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#				
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	#				
Bromobenzene	<0.001 mg/l	TM208	<0.001	#				
Propylbenzene	<0.001 mg/l	TM208	<0.001	#				
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#				
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#				
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#				
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#				
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001	#				
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
n-Butylbenzene	<0.001 mg/l	TM208	<0.001	#				
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001					
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001	#				
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001	#				
Naphthalene	<0.001 mg/l	TM208	<0.001	#				
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#				
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	<0.001					



Superseded Report: 697571



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Notification of NDPs (No determination possible)

Date Received : 02/06/2023 08:43:19

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
28089275	SHOWMANS GUILD		Settleable Solids	Insufficient Sample
28089275	SHOWMANS GUILD		Settleable Solids 5 Mins	Insufficient Sample



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Data Amendment

Sample No. : 28089275 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 28089275 Date of Amendment : 10/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
SHOWMANS GUILD	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	5.32	3.42
SHOWMANS GUILD	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	5.30	1.46
SHOWMANS GUILD	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	10.6	4.88



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Table of Results - Appendix

Method No	Description
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM426	Determination of Specific Phenols and their Ethoxylates in Liquids by GC/MS/MS
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM328	
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM434	Analysis of PFAS
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM432	Pharmaceuticals and Personal Care Products
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230602-42
Client Ref.: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Test Completion Dates

Lab Sample No(s)	28089275
Customer Sample Ref.	SHOWMANS GUILD
AGS Ref.	
Depth	
Type	Ground Water

Ammoniacal Nitrogen	06-Jun-2023
Anions by Kone (w)	06-Jun-2023
BOD True Total	08-Jun-2023
COD Unfiltered	08-Jun-2023
Cyanide Comp/Free/Total/Thiocyanate	06-Jun-2023
Determination of Dissolved Gases	05-Jun-2023
Dissolved Metals by ICP-MS	06-Jun-2023
EPH CWG (Aliphatic) Aqueous GC (W)	08-Jun-2023
EPH CWG (Aromatic) Aqueous GC (W)	08-Jun-2023
Faecal Coliforms (W)*	12-Jun-2023
Fats Oils and Greases.	08-Jun-2023
GRO by GC-FID (W)	07-Jun-2023
Mercury Dissolved	06-Jun-2023
Mercury Unfiltered	06-Jun-2023
Methylene blue active substances	07-Jun-2023
Neutralised Suspended Solids	08-Jun-2023
Organotins in Aqueous Samples	06-Jun-2023
PAH Spec MS - Aqueous (W)	08-Jun-2023
Pesticides (Suite I) by GCMS	06-Jun-2023
PFAS Liquids (Full Suite)	12-Jul-2023
pH Value	06-Jun-2023
pH Value of Filtered Water	06-Jun-2023
Pharmaceuticals and Personal Care	20-Jun-2023
Phenols and ethoxylates in Liquids	11-Jul-2023
Sulphide	09-Jun-2023
Suspended Solids	07-Jun-2023
SVOC MS (W) - Aqueous	07-Jun-2023
Total Metals by ICP-MS	06-Jun-2023
Total Nitrogen	07-Jun-2023
Total Organic and Inorganic Carbon	04-Jun-2023
TPH CWG (W)	08-Jun-2023
Urea Herbicides (Suite 1)*	16-Jun-2023
VOC MS (W)	09-Jun-2023



ALS Laboratories (UK) Limited
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Coventry
CV4 9GU

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F.A.O Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside CH5 3US

08 June 2023

Test Report: COV/2489967/2023

Dear F.A.O Quotes

Analysis of your sample(s) submitted on 07 June 2023 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Laboratories (UK) Limited and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

Subathin Tharmaseelan.

Name:

S. Tharmaseelan

Title:

Legionella Team Leader



This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No.02391955. Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

**F.A.O Hawarden Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside
CH5 3US**



Date of Issue: **08 June 2023**

Report Number: **COV/2489967/2023**

Issue **1**

This issue replaces
all previous issues

Job Description: Master Quote 2022 - 2023

Job Location: BAM RITCHIES - 230602-42

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

Job Received: **07 June 2023**

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

Analysis Commenced: **07 June 2023**

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **08 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No. 02391955. Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

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ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 1 of 5

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2489967/2023**
Laboratory Number: **22866084**
Sample Source: **ALS Laboratories (UK) Ltd**
Sample Point Description:
Sample Description: **Showmans Guild**
Sample Matrix: **Not In Project**
Sample Date/Time:
Sample Received: **07 June 2023**
Analysis Complete: **08 June 2023**

Issue **1**
Sample **1** of **1**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms presumptive	0	cfu/100ml	08/06/2023	N Cov	W57
Faecal coliforms confirmed	0	cfu/100ml	08/06/2023	N Cov	W57

Analyst Comments for 22866084:

The date of sampling has not been provided and therefore sample stability times cannot be assessed. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **08 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 2 of 5



ANALYST COMMENTS FOR REPORT COV/2489967/2023

Issue **1**

This issue replaces all previous issues

Date of Issue: **08 June 2023**

Sample No	Analysis Comments
22866084	The date of sampling has not been provided and therefore sample stability times cannot be assessed. It is therefore possible that the results provided may be compromised.

Signed:

Name: **S. Tharmaseelan**

Date: **08 June 2023**

Title: **Legionella Team Leader**



DETERMINAND COMMENTS FOR REPORT COV/2489967/2023

ISSUE 1

Date of Issue: 08 June 2023

This issue replaces
all previous issues

Sample No	Description	Determinand	Comments

Signed: 	Name: S. Tharmaseelan	Date: 08 June 2023
	Title: Legionella Team Leader	

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Certificate of Analysis

Report No.: 23-03984-1

Issue No.: 1

Date of Issue 16/06/2023

Customer Details: ALS Laboratories (UK) Ltd, Unit7-8, Hawarden Business Park, Manor Road, Hawarden, Deeside, Flintshire, CH5 3US, United Kingdom

Customer Contact: Results mailbox

Customer Order No.: 230602-42

Customer Reference: Not Supplied

Quotation Reference: Q23-00645 (Issue: 7)

Description: 1 liquid sample

Date Received: 07/06/2023

Date Started: 07/06/2023

Date Completed: 14/06/2023

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: David Long, LIMS Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

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Results Summary

Report No.: 23-03984-1

Customer Reference: Not Supplied

Customer Order No: 230602-42

Customer Sample No	28094433 SHOWMAN GUILD
RPS Sample No	24029
Sample Type	LIQUID
Sample Matrix	FORMULATN
Sampling Date	31/05/2023

Determinand	CAS No	Codes	SOP	RL	Units	
chloroxuron	1982-47-4	N	L005	0.05	µg/L	< 0.05 (T)
chlorotoluron	15545-48-9	N	L005	0.05	µg/L	< 0.05 (T)
diflubenzuron	35367-38-5	N	L005	0.05	µg/L	< 0.05 (T)
dimefuron	34205-21-5	N	L005	0.05	µg/L	< 0.05 (T)
diuron	330-54-1	N	L005	0.05	µg/L	< 0.05 (T)
isoproturon	34123-59-6	N	L005	0.05	µg/L	< 0.05 (T)
linuron	330-55-2	N	L005	0.05	µg/L	< 0.05 (T)
methabenzthiazuron	18691-97-9	N	L005	0.05	µg/L	< 0.05 (T)
metoxuron	19937-59-8	N	L005	0.05	µg/L	< 0.05 (T)
monolinuron	1746-81-2	N	L005	0.05	µg/L	< 0.05 (T)
monuron	150-68-5	N	L005	0.05	µg/L	< 0.05 (T)
penicycuron	66063-05-6	N	L005	0.05	µg/L	< 0.05 (T)

Deviating Samples

Report No.: 23-03984-1

Customer Reference: Not Supplied

Customer Order No: 230602-42

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
24029	28094433 SHOWMAN GUILD		31/05/2023	GAB500 500 mL amber glass bottle	Yes	No sampling time provided.

Report No.: 23-03984-1

Type	Matrix Code	Description
Food	CEREALPROD	Cereals, grains & products
Food	DRIEDFRUIT	Dried fruits
Food	FRIEDBAKED	Fried or baked food
Food	LEGUME	Legumes
Food	MEAT	Meat
Food	POWDERED	Powdered food
Food	PULSE	Pulses (dried legumes)
Food	VEGETABLES	Vegetables
Gas	TDTUBE	TD Tube
Gas	TENAX	Tenax Tube
Gas	TUBE	Tube
Gas	VAPOUR	Gas
Geological	SED_MAR	Marine Sediment
Geological	SED_RIV	River Sediment
Geological	SLUDG_SOL	Sludge (solid only)
Geological	SOIL	Soil
Liquid	BEVERAGE	Beverage
Liquid	BLOOD	Blood
Liquid	FORMULATN	Formula
Liquid	LEACHATE	Leachate
Liquid	OIL/GREASE	Oil or grease
Liquid	SLUDG_LIQ	Sludge (liquid only)
Liquid	SOLVENT	Solvent
Liquid	URINE	Urine
Sludge	SLUDG_WHL	Sludge for bulk route
Solid	BADGE	Badge
Solid	BEDDING	Bedding
Solid	BIOTA	Biota (general)
Solid	BIOTA_F	Biota (fish)
Solid	BIOTA_SF	Biota (shellfish)
Solid	CONSTRCTN	Construction materials
Solid	FABRIC	Fabrics & furnishing materials
Solid	FEED	Animal feed
Solid	FERTILISER	Fertiliser
Solid	FILTER	Filter
Solid	FOAM	Solid foam material
Solid	PACKAGING	Packaging material
Solid	PLANT	Plant (vegetation)
Solid	SWAB	Swab
Water	DW	Drinking Water
Water	EFFLUENT	Effluent
Water	GW	Ground Water
Water	INFLUENT	Influent
Water	SALTW	Salt Water
Water	SW	Surface Water
Water	TW	Tap Water
Water	W	Water

Report No.: 23-03984-1

Key Code	Description
N	Not Accredited Test
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
UF	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
O	Marine Management Organisation (MMO) Validated
SN	Subcontracted to approved laboratory not accredited for the test
SU	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SIN	Subcontracted to internal RPS Group laboratory not accredited for the test
SIU	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
SIM	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
L (in results)	Result is outside normal limits
DW (in units)	Results are expressed on a dry weight basis

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

Dev code	Description
D	No sampling date provided.
T	No sampling time provided.
Z	Temperature of samples exceeded in transit/storage.
V	Excessive headspace for volatile determinands.
P	Sample submitted without required preservative(s).
C	Incorrect container.
H	Holding time exceeded (sampling to extraction).
X	Holding time exceeded (sampling to receipt).

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.



CERTIFICATE OF ANALYSIS

SDG: 230602-42
Client Ref: 326R

Report Number: 699683
Location: Victoria North

Superseded Report: 697571

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230614-31
Your Reference:	326R
Location:	Victoria North
Report No:	699699
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 695793 in its entirety.

We received 1 sample on Wednesday June 14, 2023 and 1 of these samples were scheduled for analysis which was completed on Tuesday July 11, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28146572	Showmans Guild			13/06/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

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

28146572

Showmans Guild

ZnAc (ALE246)

GW

Vial (ALE297)

GW

NaOH (ALE245)

GW

HNO3 Unfiltered (ALE204)

GW

HNO3 Filtered (ALE204)

GW

H2SO4 (ALE244)

GW

500ml Plastic (ALE208)

GW

250ml BOD (ALE212)

GW

250ml Amber GL. PTFE/PE (ALE219)

GW

1l plastic (ALE221)

GW

1000ml glass bottle (ALE220)

GW

Ammoniacal Nitrogen

All

NDPs: 0
Tests: 1

X

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

BOD True Total

All

NDPs: 0
Tests: 1

X

COD Unfiltered

All

NDPs: 0
Tests: 1

X

Cyanide Comp/Free/Total/Thiocyanate

All

NDPs: 0
Tests: 1

X

Determination of Dissolved Gases

All

NDPs: 0
Tests: 1

X

Dissolved Metals by ICP-MS

All

NDPs: 0
Tests: 1

X

EPH CWG (Aliphatic) Aqueous GC (W)

All

NDPs: 0
Tests: 1

X

EPH CWG (Aromatic) Aqueous GC (W)

All

NDPs: 0
Tests: 1

X

Faecal Coliforms (W)*

All

NDPs: 0
Tests: 1

X

Fats Oils and Greases.

All

NDPs: 0
Tests: 1

X

GRO by GC-FID (W)

All

NDPs: 0
Tests: 1

X

Mercury Dissolved

All

NDPs: 0
Tests: 1

X

Mercury Unfiltered

All

NDPs: 0
Tests: 1

X

Methylene blue active substances

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend



Test



No Determination Possible

Sample Types -

S - Soil/Solid
UNS - Unspecified Solid
GW - Ground Water
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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

28146572

Showmans Guild

ZnAc (ALE246)
Vial (ALE297)
NaOH (ALE245)
HNO3 Unfiltered (ALE204)
HNO3 Filtered (ALE204)
H2SO4 (ALE244)
500ml Plastic (ALE208)
250ml BOD (ALE212)
250ml Amber GL. PTFE/PE (ALE219)
1l plastic (ALE221)
1000ml glass bottle (ALE220)

GW

Neutralised Suspended Solids

All

NDPs: 0
Tests: 1

X

Organotins in Aqueous Samples

All

NDPs: 0
Tests: 1

X

PAH Spec MS - Aqueous (W)

All

NDPs: 0
Tests: 1

X

Pesticides (Suite I) by GCMS

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

pH Value of Filtered Water

All

NDPs: 0
Tests: 1

X

Pharmaceuticals and Personal Care

All

NDPs: 0
Tests: 1

X

Phenols and ethoxylates in Liquids

All

NDPs: 0
Tests: 1

X

Settleable Solids

All

NDPs: 0
Tests: 1

X

Settleable Solids 5 Mins

All

NDPs: 0
Tests: 1

X

Sulphide

All

NDPs: 0
Tests: 1

X

Suspended Solids

All

NDPs: 0
Tests: 1

X

SVOC MS (W) - Aqueous

All

NDPs: 0
Tests: 1

X

Total Metals by ICP-MS

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

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
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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

28146572

Showmans Guild

ZnAc (ALE246)

GW

Vial (ALE297)

GW

NaOH (ALE245)

GW

HNO3 Unfiltered (ALE204)

GW

HNO3 Filtered (ALE204)

GW

H2SO4 (ALE244)

GW

500ml Plastic (ALE208)

GW

250ml BOD (ALE212)

GW

250ml Amber GL. PTFE/PE (ALE219)

GW

1l plastic (ALE221)

GW

1000ml glass bottle (ALE220)

GW

Total Nitrogen

All

NDPs: 0
Tests: 1

X

Total Organic and Inorganic Carbon

All

NDPs: 0
Tests: 1

X

TPH CWG (W)

All

NDPs: 0
Tests: 1

X

Urea Herbicides (Suite 1)*

All

NDPs: 0
Tests: 1

X

VOC MS (W)

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend		Customer Sample Ref.	Showmans Guild				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
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							
1-4* Sample deviation (see appendix)							
Component	LOD/Units	Method					
Chloroxuron*	mg/l	SUB	<0.00005				
Faecal coliforms confirmed (M7M)*		SUB	50				
Chlortoluron*	mg/l	SUB	<0.00005				
Diflufenzuron*	mg/l	SUB	<0.00005				
Dimefuron*	mg/l	SUB	<0.00005				
Diuron*	mg/l	SUB	0.00007				
Isoproturon*	mg/l	SUB	<0.00005				
Linuron*	mg/l	SUB	<0.00005				
Methabenzthiauron*	mg/l	SUB	<0.00005				
Metoxuron*	mg/l	SUB	<0.00005				
Monolinuron*	mg/l	SUB	<0.00005				
Monuron*	mg/l	SUB	<0.001				
Pencycuron*	mg/l	SUB	<0.00005				
Suspended solids, Neut. 5 mins. non-settleable	<2 mg/l	TM022	68				
Suspended solids, Neutralised 1 hr non-settleable	<2 mg/l	TM022	56.7				
Suspended Solids, Total neutralised	<2 mg/l	TM022	57				
Suspended solids, Neutralised 1 hr settleable	<2 mg/l	TM022	<9				
Suspended solids, Neutralised 5 mins. settleable	<2 mg/l	TM022	<6				
Suspended solids, Total	<2 mg/l	TM022	25.3				
BOD, unfiltered	<1 mg/l	TM045	2.21				
Organic Carbon, Total	<3 mg/l	TM090	6.15				
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	34.9				
Sulphide	<0.01 mg/l	TM101	0.0202				
COD, unfiltered	<7 mg/l	TM107	25				
Arsenic (diss.filt)	<0.0005 mg/l	TM152	0.00283				
Arsenic (tot.unfilt)	<0.002 mg/l	TM152	0.00293				
Cadmium (diss.filt)	<0.00008 mg/l	TM152	<0.00008				
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152	<0.0005				
Chromium (tot.unfilt)	<0.003 mg/l	TM152	<0.003				
Chromium (diss.filt)	<0.001 mg/l	TM152	<0.001				
Copper (tot.unfilt)	<0.001 mg/l	TM152	<0.001				
Lead (tot.unfilt)	<0.001 mg/l	TM152	<0.001				
Copper (diss.filt)	<0.0003 mg/l	TM152	<0.0003				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend			Customer Sample Ref.	Showmans Guild				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method						
Lead (diss.filt)	<0.0002 mg/l	TM152	<0.0002	#				
Nickel (tot.unfilt)	<0.001 mg/l	TM152	0.00102	#				
Selenium (tot.unfilt)	<0.001 mg/l	TM152	<0.001	#				
Nickel (diss.filt)	<0.0004 mg/l	TM152	0.000739	#				
Selenium (diss.filt)	<0.001 mg/l	TM152	<0.001	#				
Zinc (tot.unfilt)	<0.005 mg/l	TM152	0.00798	#				
Zinc (diss.filt)	<0.001 mg/l	TM152	0.00898	#				
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	689					
Mercury (diss.filt)	<0.00001 mg/l	TM183	<0.00001	#				
Mercury (tot.unfilt)	<0.00002 mg/l	TM183	<0.00002	#				
Sulphate (soluble) as S	<1 mg/l	TM184	1.87	#				
Nitrogen, Total	<1 mg/l	TM212	31.7	#				
Methane, dissolved	<0.001 mg/l	TM223	2.1					
Cyanide, Total	<0.05 mg/l	TM227	<0.05	#				
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249	0.11					
pH	<1 pH Units	TM256	6.99	#				
pH (diss.filt)	<1 pH Units	TM256	7.04					
Conductivity @ 20 deg.C (diss.filt)	<20 us/cm	TM256	1460					
Tributyl tin	<0.000001 mg/l	TM328	<0.000001					
Surrogate**	%	TM328	77.3					
PFBA (375-22-4)	<0.000002 mg/l	TM337	0.000013	#				
PFPA (2706-90-3)	<0.000001 mg/l	TM337	<0.000007	#				
PFHxA (307-24-4)	<0.000001 mg/l	TM337	0.000004	#				
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000008	#				
PFHpA (375-85-9)	<0.000001 mg/l	TM337	0.000003	#				
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.000002	#				
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.00001	#				
PFHxS (355-46-4)	<0.000001 mg/l	TM337	0.000004	#				
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000002	#				
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000002	#				
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000002	#				
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000003	#				
Branched PFOS	<0.000001 mg/l	TM337	0.000005	#				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend		Customer Sample Ref.	Showmans Guild				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method					
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000002 #				
PFDaA (307-55-1)	<0.000001 mg/l	TM337	<0.000002 #				
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.000004 #				
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000002				
PPPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000002 #				
Total PFOS	<0.000001 mg/l	TM337	0.000008 #				
Trifluralin	<0.00001 mg/l	TM343	<0.00002				
alpha-HCH	<0.00001 mg/l	TM343	<0.00002				
gamma-HCH (Lindane)	<0.00001 mg/l	TM343	<0.00002				
Heptachlor	<0.00001 mg/l	TM343	<0.00002				
Aldrin	<0.00001 mg/l	TM343	<0.00002				
beta-HCH	<0.00001 mg/l	TM343	<0.00002				
Isodrin	<0.00001 mg/l	TM343	<0.00002				
delta-HCH	<0.00001 mg/l	TM343	<0.00002				
Heptachlor epoxide	<0.00001 mg/l	TM343	<0.00002				
o,p'-DDE	<0.00001 mg/l	TM343	<0.00002				
Endosulphan I	<0.00001 mg/l	TM343	<0.00002				
trans-Chlordane	<0.00001 mg/l	TM343	<0.00002				
cis-Chlordane	<0.00001 mg/l	TM343	<0.00002				
p,p'-DDE	<0.00001 mg/l	TM343	<0.00002				
Dieldrin	<0.00001 mg/l	TM343	<0.00002				
o,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00002				
Endrin	<0.00001 mg/l	TM343	<0.00002				
o,p'-DDT	<0.00001 mg/l	TM343	<0.00002				
p,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00002				
Endosulphan II	<0.00002 mg/l	TM343	<0.00004				
p,p'-DDT	<0.00001 mg/l	TM343	<0.00002				
o,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.00002				
p,p'-Methoxychlor	<0.00001 mg/l	TM343	<0.00002				
Endosulphan Sulphate	<0.00002 mg/l	TM343	<0.00012				
Permethrin I	<0.00001 mg/l	TM343	<0.00002				
Permethrin II	<0.00001 mg/l	TM343	<0.00002				
Fats, Oils, Greases	<1 mg/l	TM383	1.38				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend			Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method						
4-tert-Octylphenol	<0.000014 mg/l	TM426	0.000217					
4-tert-Nonylphenol	<0.00004 mg/l	TM426	<0.0004					
4-n-Octylphenol	<0.000014 mg/l	TM426	<0.00014					
4-n-Nonylphenol	<0.00004 mg/l	TM426	<0.0004					
4-Nonylphenol monoethoxylate	<0.00004 mg/l	TM426	<0.0004					
4-Nonylphenol diethoxylate	<0.00004 mg/l	TM426	<0.0004					
4-Octylphenol (sum of isomers)	<0.000028 mg/l	TM426	<0.00028					
4-Nonylphenol (sum of isomers)	<0.00008 mg/l	TM426	<0.0008					
1,7-Dimethylxanthine	<0.00005 mg/l	TM432	<0.00005					
2,4-D	<0.00002 mg/l	TM432	<0.00005					
Acesulfame-K	<0.0002 mg/l	TM432	0.000805					
Acetaminophen	<0.00002 mg/l	TM432	<0.00005					
Albuterol	<0.000005 mg/l	TM432	<0.00001					
Amoxicillin	<0.0001 mg/l	TM432	<0.0001					
Androstenedione	<0.00001 mg/l	TM432	<0.00001					
Atenolol	<0.000005 mg/l	TM432	<0.00001					
Atrazine	<0.000002 mg/l	TM432	<0.000002					
Bendroflumethiazide	<0.00001 mg/l	TM432	<0.00001					
Bezafibrate	<0.000005 mg/l	TM432	<0.00001					
BPA	<0.00001 mg/l	TM432	0.000177					
Bromacil	<0.00001 mg/l	TM432	<0.00001					
Butalbital	<0.00001 mg/l	TM432	<0.00001					
Butylparaben	<0.00001 mg/l	TM432	<0.00001					
Caffeine	<0.00001 mg/l	TM432	0.000021					
Carbadox	<0.00002 mg/l	TM432	<0.00001					
Carbamazepine	<0.000002 mg/l	TM432	<0.000002					
Carisoprodol	<0.00002 mg/l	TM432	<0.00001					
Chloramphenicol	<0.000005 mg/l	TM432	<0.00005					
Chloridazon	<0.00001 mg/l	TM432	<0.00001					
Chlorotoluron	<0.00001 mg/l	TM432	<0.00001					
Cimetidine	<0.00002 mg/l	TM432	<0.00001					
Clofibric Acid	<0.00001 mg/l	TM432	<0.00005					
Cotinine	<0.00001 mg/l	TM432	<0.00002					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method					
DACT	<0.00005 mg/l	TM432	<0.0001				
DEA	<0.000005 mg/l	TM432	<0.00001				
DEET	<0.00001 mg/l	TM432	<0.00001				
Dehydronifedipine	<0.000005 mg/l	TM432	<0.000005				
DIA	<0.00005 mg/l	TM432	<0.00001				
Diclofenac	<0.00003 mg/l	TM432	<0.00005				
Dilantin	<0.00002 mg/l	TM432	<0.00002				
Diltiazem	<0.000005 mg/l	TM432	<0.00002				
Diuron	<0.000005 mg/l	TM432	<0.000005				
Erythromycin	<0.000025 mg/l	TM432	<0.00015				
Estradiol	<0.00005 mg/l	TM432	<0.00005				
Estriol	<0.00005 mg/l	TM432	<0.00005				
Estrone	<0.00001 mg/l	TM432	<0.00005				
Ethinyl Estradiol - 17 alpha	<0.0001 mg/l	TM432	<0.0001				
Ethylparaben	<0.000005 mg/l	TM432	<0.000005				
Flumequine	<0.00005 mg/l	TM432	<0.00005				
Fluoxetine	<0.00001 mg/l	TM432	<0.00005				
Gemfibrozil	<0.000005 mg/l	TM432	<0.00002				
Ibuprofen	<0.000025 mg/l	TM432	<0.00005				
Iohexol	<0.00005 mg/l	TM432	<0.0001				
Iopromide	<0.00001 mg/l	TM432	<0.00001				
Isobutylparaben	<0.00001 mg/l	TM432	<0.00001				
Isoproturon	<0.00002 mg/l	TM432	<0.00001				
Ketoprofen	<0.000005 mg/l	TM432	<0.00001				
Ketorolac	<0.000005 mg/l	TM432	<0.000005				
Lidocaine	<0.000005 mg/l	TM432	0.000006				
Lincomycin	<0.00005 mg/l	TM432	<0.00005				
Linuron	<0.000005 mg/l	TM432	<0.00005				
Lopressor	<0.0002 mg/l	TM432	<0.0001				
Meclofenamic Acid	<0.00005 mg/l	TM432	<0.00005				
Metazachlor	<0.000005 mg/l	TM432	<0.000005				
Metformin	<0.0001 mg/l	TM432	<0.00003				
Methylparaben	<0.000005 mg/l	TM432	<0.00005				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Results Legend			Customer Sample Ref.	Showmans Guild				
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method						
Metolachlor	<0.00005 mg/l	TM432	<0.00005					
Naproxen	<0.00002 mg/l	TM432	<0.00005					
Nifedipine	<0.00001 mg/l	TM432	<0.00005					
Norethisterone	<0.00002 mg/l	TM432	<0.00002					
OUST (Sulfometuron.methyl)	<0.00005 mg/l	TM432	<0.00005					
Oxolinic acid	<0.00002 mg/l	TM432	<0.00005					
Pentoxifylline	<0.00001 mg/l	TM432	<0.00005					
Phenazone	<0.00002 mg/l	TM432	0.00004					
Primidone	<0.00001 mg/l	TM432	0.000055					
Progesterone	<0.00002 mg/l	TM432	<0.00001					
Propazine	<0.00005 mg/l	TM432	<0.00005					
Propylparaben	<0.00005 mg/l	TM432	<0.00005					
Quinoline	<0.00002 mg/l	TM432	<0.0001					
Salicylic Acid	<0.0005 mg/l	TM432	<0.0005					
Simazine	<0.00005 mg/l	TM432	<0.00005					
Sucralose	<0.0001 mg/l	TM432	0.000444					
Sulfachloropyridazine	<0.00005 mg/l	TM432	<0.00001					
Sulfadiazine	<0.000025 mg/l	TM432	<0.00005					
Sulfadimethoxine	<0.00001 mg/l	TM432	<0.00001					
Sulfamerazine	<0.00005 mg/l	TM432	0.000015					
Sulfamethazine	<0.00002 mg/l	TM432	0.000151					
Sulfamethizole	<0.00001 mg/l	TM432	<0.00001					
Sulfamethoxazole	<0.00005 mg/l	TM432	<0.00001					
Sulfathiazole	<0.0001 mg/l	TM432	0.000105					
TCEP	<0.001 mg/l	TM432	<0.001					
TCP	<0.001 mg/l	TM432	<0.0015					
TD	<0.0002 mg/l	TM432	<0.0002					
Testosterone	<0.00002 mg/l	TM432	<0.00001					
Theobromine	<0.00005 mg/l	TM432	<0.0005					
Theophylline	<0.0001 mg/l	TM432	<0.0001					
Thiabendazole	<0.00005 mg/l	TM432	<0.00001					
Triclocarban	<0.00005 mg/l	TM432	<0.00005					
Triclosan	<0.00005 mg/l	TM432	0.000107					



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	#			
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	#			
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	#			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.002	#			
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.002	#			
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.004	#			
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4* @ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.002	#			
Carbazole (aq)	<0.001 mg/l	TM176	<0.002	#			
Chrysene (aq)	<0.001 mg/l	TM176	<0.002	#			
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.002	#			
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.002	#			
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	#			
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.01	#			
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	#			
Fluorene (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.002	#			
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.002				
Phenol (aq)	<0.001 mg/l	TM176	<0.002				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.002	#			
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.002	#			
Naphthalene (aq)	<0.001 mg/l	TM176	<0.002	#			
Isophorone (aq)	<0.001 mg/l	TM176	<0.002	#			
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.002				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			
Pyrene (aq)	<0.001 mg/l	TM176	<0.002	#			



Superseded Report: 695793

Location: Victoria North



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

VOC MS (W)

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572				
Component	LOD/Units	Method					
Dibromofluoromethane**	%	TM208	120				
Toluene-d8**	%	TM208	106				
4-Bromofluorobenzene**	%	TM208	96.8				
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001	#			
Chloromethane	<0.001 mg/l	TM208	<0.001	#			
Vinyl chloride	<0.001 mg/l	TM208	<0.001	#			
Bromomethane	<0.001 mg/l	TM208	<0.001	#			
Chloroethane	<0.001 mg/l	TM208	<0.001	#			
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001	#			
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001	#			
Carbon disulphide	<0.001 mg/l	TM208	<0.001	#			
Dichloromethane	<0.003 mg/l	TM208	<0.003	#			
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001	#			
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#			
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001	#			
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001	#			
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001				
Bromochloromethane	<0.001 mg/l	TM208	<0.001	#			
Chloroform	<0.001 mg/l	TM208	<0.001	#			
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001	#			
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001	#			
Carbontetrachloride	<0.001 mg/l	TM208	<0.001	#			
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001	#			
Benzene	<0.001 mg/l	TM208	<0.001	#			
Trichloroethene	<0.001 mg/l	TM208	<0.001	#			
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	#			
Dibromomethane	<0.001 mg/l	TM208	<0.001	#			
Bromodichloromethane	<0.001 mg/l	TM208	<0.001	#			
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#			
Toluene	<0.001 mg/l	TM208	<0.001	#			
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001	#			
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001	#			
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

VOC MS (W)

Results Legend		Customer Sample Ref.	Showmans Guild				
#	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						
1-4	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	Ground Water (GW) 13/06/2023 14/06/2023 230614-31 28146572			
Tetrachloroethene	<0.001 mg/l	TM208	<0.001	#			
Dibromochloromethane	<0.001 mg/l	TM208	<0.001	#			
1,2-Dibromoethane	<0.001 mg/l	TM208	<0.001	#			
Chlorobenzene	<0.001 mg/l	TM208	<0.001	#			
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#			
Ethylbenzene	<0.001 mg/l	TM208	<0.001	#			
m,p-Xylene	<0.001 mg/l	TM208	<0.001	#			
o-Xylene	<0.001 mg/l	TM208	<0.001	#			
Styrene	<0.001 mg/l	TM208	<0.001	#			
Bromoform	<0.001 mg/l	TM208	<0.001	#			
Isopropylbenzene	<0.001 mg/l	TM208	<0.001	#			
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208	<0.001	#			
1,2,3-Trichloropropane	<0.001 mg/l	TM208	<0.001	#			
Bromobenzene	<0.001 mg/l	TM208	<0.001	#			
Propylbenzene	<0.001 mg/l	TM208	<0.001	#			
2-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#			
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#			
4-Chlorotoluene	<0.001 mg/l	TM208	<0.001	#			
tert-Butylbenzene	<0.001 mg/l	TM208	<0.001	#			
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208	<0.001	#			
sec-Butylbenzene	<0.001 mg/l	TM208	<0.001	#			
4-iso-Propyltoluene	<0.001 mg/l	TM208	<0.001	#			
1,3-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#			
1,4-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#			
n-Butylbenzene	<0.001 mg/l	TM208	<0.001	#			
1,2-Dichlorobenzene	<0.001 mg/l	TM208	<0.001	#			
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208	<0.001				
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#			
Hexachlorobutadiene	<0.001 mg/l	TM208	<0.001	#			
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208	<0.001	#			
Naphthalene	<0.001 mg/l	TM208	<0.001	#			
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208	<0.001	#			
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208	<0.001				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Data Amendment

Sample No. : 28146572 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Table of Results - Appendix

Method No	Description
SUB	Subcontracted Test
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
TM426	Determination of Specific Phenols and their Ethoxylates in Liquids by GC/MS/MS
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM328	
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM022	Determination of total suspended solids in waters
TM045	Determination of BOD5 (ATU) Filtered by Oxygen Meter on liquids
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM337	Analysis of PFAS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM432	Pharmaceuticals and Personal Care Products

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230614-31
Client Ref.: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Test Completion Dates

Lab Sample No(s)
Customer Sample Ref.

28146572
Showmans Guild

AGS Ref.
Depth
Type

Ground Water

Ammoniacal Nitrogen	17-Jun-2023
Anions by Kone (w)	15-Jun-2023
BOD True Total	20-Jun-2023
COD Unfiltered	21-Jun-2023
Cyanide Comp/Free/Total/Thiocyanate	19-Jun-2023
Determination of Dissolved Gases	16-Jun-2023
Dissolved Metals by ICP-MS	16-Jun-2023
EPH CWG (Aliphatic) Aqueous GC (W)	21-Jun-2023
EPH CWG (Aromatic) Aqueous GC (W)	21-Jun-2023
Faecal Coliforms (W)*	20-Jun-2023
Fats Oils and Greases.	16-Jun-2023
GRO by GC-FID (W)	15-Jun-2023
Mercury Dissolved	20-Jun-2023
Mercury Unfiltered	20-Jun-2023
Methylene blue active substances	16-Jun-2023
Neutralised Suspended Solids	20-Jun-2023
Organotins in Aqueous Samples	20-Jun-2023
PAH Spec MS - Aqueous (W)	19-Jun-2023
Pesticides (Suite I) by GCMS	16-Jun-2023
PFAS Liquids	19-Jun-2023
pH Value	15-Jun-2023
pH Value of Filtered Water	15-Jun-2023
Pharmaceuticals and Personal Care	29-Jun-2023
Phenols and ethoxylates in Liquids	11-Jul-2023
Settleable Solids	20-Jun-2023
Settleable Solids 5 Mins	20-Jun-2023
Sulphide	21-Jun-2023
Suspended Solids	20-Jun-2023
SVOC MS (W) - Aqueous	22-Jun-2023
Total Metals by ICP-MS	16-Jun-2023
Total Nitrogen	20-Jun-2023
Total Organic and Inorganic Carbon	15-Jun-2023
TPH CWG (W)	21-Jun-2023
Urea Herbicides (Suite 1)*	10-Jul-2023
VOC MS (W)	15-Jun-2023



ALS Laboratories (UK) Limited
Torrington Avenue
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F.A.O Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside CH5 3US

17 June 2023

Test Report: COV/2493303/2023

Dear F.A.O Quotes

Analysis of your sample(s) submitted on 14 June 2023 is now complete and we have pleasure in enclosing the appropriate test report(s).

An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Laboratories (UK) Limited and we look forward to receiving your next samples.

Yours Sincerely,

Signed:

S. Tharmaseelan

Name:

S. Tharmaseelan

Title:

Legionella Team Leader



This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No.02391955.
Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary

ANALYSED BY

**F.A.O Hawarden Quotes
ALS Laboratories (UK) Ltd
Units 7 & 8 Hawarden Business
Park
Manor Road
Hawarden
Deeside
CH5 3US**



Date of Issue: **17 June 2023**

Report Number: **COV/2493303/2023**

Issue **1**

This issue replaces
all previous issues

Job Description: Master Quote 2022 - 2023

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

Job Received: **14 June 2023**

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

Analysis Commenced: **14 June 2023**

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **17 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited was not responsible for sampling unless otherwise stated.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested and where relevant sampled.

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

This test report is not a statement of conformity to any specification or standard.

This communication has been sent to you by ALS Laboratories (UK) Limited. Registered in England and Wales. Registration No. 02391955. Registered Office: ALS Laboratories (UK) Limited, Torrington Avenue, Coventry, CV4 9GU.

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ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 1 of 5

Certificate of Analysis

ANALYSED BY



Report Number: **COV/2493303/2023**
Laboratory Number: **22890233**
Sample Source: **ALS Laboratories (UK) Ltd**
Sample Point Description:
Sample Description: **Showmans Guild**
Sample Matrix: **Not In Project**
Sample Date/Time: **13 June 2023**
Sample Received: **14 June 2023**
Analysis Complete: **17 June 2023**

Issue **1**
Sample **1** of **1**

Test Description	Result	Units	Analysis Date	Accreditation	Method
Faecal coliforms presumptive	50	cfu/100ml	15/06/2023	N Cov	W57
Faecal coliforms confirmed	50	cfu/100ml	15/06/2023	N Cov	W57

Analyst Comments for 22890233:

This sample has been analysed for Faecal coliforms presumptive, Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

This issue replaces all previous issues

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.

Analysed at: CHE = Chester(CH5 3US), COV = Coventry(CV4 9GU), OTT = Otterbourne(SO21 2RU), S = Subcontracted, TRB = Subcontracted to Trowbridge(BA14 0XD), WAK = Wakefield(WF5 9TG), F = Data supplied by customer.

For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered.

I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: *S. Tharmaseelan*

Name: **S. Tharmaseelan**

Date: **17 June 2023**

Title: **Legionella Team Leader**

ALS Laboratories (UK) Limited

Torrington Avenue, Coventry, CV4 9GU
Tel:+44 (0)24 7642 1213 Fax:+44 (0)24 7685 6575

Page 2 of 5



ANALYST COMMENTS FOR REPORT COV/2493303/2023

Issue 1

This issue replaces all previous issues

Date of Issue: **17 June 2023**

Sample No	Analysis Comments
22890233	This sample has been analysed for Faecal coliforms presumptive, Faecal coliforms confirmed outside recommended stability times. It is therefore possible that the results provided may be compromised.

Signed:

Name: **S. Tharmaseelan**

Date: **17 June 2023**

Title: **Legionella Team Leader**



DETERMINAND COMMENTS FOR REPORT COV/2493303/2023

ISSUE 1

Date of Issue: 17 June 2023

This issue replaces
all previous issues

Sample No	Description	Determinand	Comments

Signed: 	Name: S. Tharmaseelan	Date: 17 June 2023
	Title: Legionella Team Leader	

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Certificate of Analysis

Report No.: 23-04249-1

Issue No.: 1

Date of Issue 06/07/2023

Customer Details: ALS Laboratories (UK) Ltd, Unit7-8, Hawarden Business Park, Manor Road, Hawarden, Deeside, Flintshire, CH5 3US, United Kingdom

Customer Contact: Results mailbox

Customer Order No.: 230614-31

Customer Reference: Not Supplied

Quotation Reference: Q23-00645 (Issue: 7)

Description: 1 water sample

Date Received: 19/06/2023

Date Started: 22/06/2023

Date Completed: 05/07/2023

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None



Approved By: Grace Lau, Study Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

This certificate shall not be reproduced except in full without the prior written approval of the laboratory.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

Results on an Interim Report are not dry-weight corrected.

Where the laboratory is not responsible for the sampling, results apply to the sample(s) as they were received.

The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.

rpsgroup.com

RPS Environmental Management Limited trading as RPS Mountainheath. Registered in England No. 01756175.

13 St Martins Way, Bedford, Bedfordshire, MK42 0LF. T +44 1462 480 400

A member of the RPS Group plc. Terms and conditions apply - copy on request

Results Summary

Report No.: 23-04249-1

Customer Reference: Not Supplied

Customer Order No: 230614-31

Customer Sample No	28151419 SHOWMAN S GUILD
RPS Sample No	25411
Sample Type	WATER
Sample Matrix	GW
Sampling Date	13/06/2023

Determinand	CAS No	Codes	SOP	RL	Units	
chloroxuron	1982-47-4	N	L005	0.05	µg/L	< 0.05 (T)
chlorotoluron	15545-48-9	N	L005	0.05	µg/L	< 0.05 (T)
diflufenzuron	35367-38-5	N	L005	0.05	µg/L	< 0.05 (T)
dimefuron	34205-21-5	N	L005	0.05	µg/L	< 0.05 (T)
diuron	330-54-1	N	L005	0.05	µg/L	0.07 (T)
isoproturon	34123-59-6	N	L005	0.05	µg/L	< 0.05 (T)
linuron	330-55-2	N	L005	0.05	µg/L	< 0.05 (T)
methabenzthiazuron	18691-97-9	N	L005	0.05	µg/L	< 0.05 (T)
metoxuron	19937-59-8	N	L005	0.05	µg/L	< 0.05 (T)
monolinuron	1746-81-2	N	L005	0.05	µg/L	< 0.05 (T)
monuron	150-68-5	N	L005	0.05	µg/L	< 1.00 (T)
pencycuron	66063-05-6	N	L005	0.05	µg/L	< 0.05 (T)

Comments

Report No.: 23-04249-1

Customer Reference: Not Supplied

Customer Order No: 230614-31

RPS Sample Number	Customer Number	Sample Comments
25411	28151419 SHOWMANS GUILD	Reporting limit for Monuron has been raised where necessary due to matrix interference.

Deviating Samples

Report No.: 23-04249-1

Customer Reference: Not Supplied

Customer Order No: 230614-31

Our policy on Deviating Samples has been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling. Samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be compromised.

Where no sampling date was supplied, samples have been declared to be deviating. If the date can be supplied, results may be reissued if assessed not deviating.

Where the sample container used was unsuitable or broken, the sample is flagged as deviating and re-sampling/re-submission may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating	Reason for Deviation
25411	28151419 SHOWMANS GUILD		13/06/2023	GAB500 500 mL amber glass bottle	Yes	No sampling time provided.

Report No.: 23-04249-1

Type	Matrix Code	Description
Food	CEREALPROD	Cereals, grains & products
Food	DRIEDFRUIT	Dried fruits
Food	FRIEDBAKED	Fried or baked food
Food	LEGUME	Legumes
Food	MEAT	Meat
Food	POWDERED	Powdered food
Food	PULSE	Pulses (dried legumes)
Food	VEGETABLES	Vegetables
Gas	TDTUBE	TD Tube
Gas	TENAX	Tenax Tube
Gas	TUBE	Tube
Gas	VAPOUR	Gas
Geological	SED_MAR	Marine Sediment
Geological	SED_RIV	River Sediment
Geological	SLUDG_SOL	Sludge (solid only)
Geological	SOIL	Soil
Liquid	BEVERAGE	Beverage
Liquid	BLOOD	Blood
Liquid	FORMULATN	Formula
Liquid	LEACHATE	Leachate
Liquid	OIL/GREASE	Oil or grease
Liquid	SLUDG_LIQ	Sludge (liquid only)
Liquid	SOLVENT	Solvent
Liquid	URINE	Urine
Sludge	SLUDG_WHL	Sludge for bulk route
Solid	BADGE	Badge
Solid	BEDDING	Bedding
Solid	BIOTA	Biota (general)
Solid	BIOTA_F	Biota (fish)
Solid	BIOTA_SF	Biota (shellfish)
Solid	CONSTRCTN	Construction materials
Solid	FABRIC	Fabrics & furnishing materials
Solid	FEED	Animal feed
Solid	FERTILISER	Fertiliser
Solid	FILTER	Filter
Solid	FOAM	Solid foam material
Solid	PACKAGING	Packaging material
Solid	PLANT	Plant (vegetation)
Solid	SWAB	Swab
Water	DW	Drinking Water
Water	EFFLUENT	Effluent
Water	GW	Ground Water
Water	INFLUENT	Influent
Water	SALTW	Salt Water
Water	SW	Surface Water
Water	TW	Tap Water
Water	W	Water

Report No.: 23-04249-1

Key Code	Description
N	Not Accredited Test
U	UKAS Accredited Test - UKAS accreditation is only implied if the report carries the UKAS logo
UF	UKAS Flexible Scope Test
M	MCERTS Accredited Test - MCERTS accreditation is only implied if the report carries the MCERTS logo
O	Marine Management Organisation (MMO) Validated
SN	Subcontracted to approved laboratory not accredited for the test
SU	Subcontracted to approved laboratory UKAS Accredited for the test
SM	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SIN	Subcontracted to internal RPS Group laboratory not accredited for the test
SIU	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
SIM	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
ND (in results)	Not Detected
L (in results)	Result is outside normal limits
DW (in units)	Results are expressed on a dry weight basis

Sample Type	Sample Retention and Disposal Period
Foodstuff	1 month (if frozen) from the issue date of this report
Waters	2 weeks from the issue date of this report
Other Liquids	1 month from the issue date of this report
Solids / Soils	1 month from the issue date of this report
Sediments	1 month from the issue date of this report

Note: Sample retention may be subject to agreement with the customer for particular projects

Dev code	Description
D	No sampling date provided.
T	No sampling time provided.
Z	Temperature of samples exceeded in transit/storage.
V	Excessive headspace for volatile determinands.
P	Sample submitted without required preservative(s).
C	Incorrect container.
H	Holding time exceeded (sampling to extraction).
X	Holding time exceeded (sampling to receipt).

Note: Where the following information is included in this certificate, it has usually been supplied by the customer: Customer Sample ID, Sample Location, Sample Depth, Sampling Date and Sampling Time. The laboratory shall not be responsible for any information that is supplied by the customer that may affect the validity of results.



CERTIFICATE OF ANALYSIS

SDG: 230614-31
Client Ref: 326R

Report Number: 699699
Location: Victoria North

Superseded Report: 695793

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 (BTX). 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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230629-21
Your Reference:	326R
Location:	Victoria North
Report No:	699707
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 695678 in its entirety.

We received 1 sample on Thursday June 29, 2023 and 1 of these samples were scheduled for analysis which was completed on Tuesday July 11, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28236254	SHOWMANS GUILD			27/06/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

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)

28236254

Customer Sample Reference

SHOWMANS GUILD

AGS Reference

Depth (m)

Container

ZnAc (ALE246)
Vial (ALE297)
HNO3 Unfiltered (ALE204)
HNO3 Filtered (ALE204)
500ml Plastic (ALE208)
1plastic (ALE221)
GW

Sample Type

GW

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

Determination of Dissolved Gases

All

NDPs: 0
Tests: 1

X

Dissolved Metals by ICP-MS

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

Sulphide

All

NDPs: 0
Tests: 1

X

Suspended Solids

All

NDPs: 0
Tests: 1

X

Total Metals by ICP-MS

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4* Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 27/06/2023 29/06/2023 230629-21 28236254				
Component	LOD/Units	Method					
Suspended solids, Total	<2 mg/l	TM022	55.2	#			
Sulphide	<0.01 mg/l	TM101	0.145	#			
Manganese (tot.unfilt)	<0.001 mg/l	TM152	0.728	#			
Manganese (diss.filt)	<0.003 mg/l	TM152	0.695	#			
Calcium (Dis.Filt)	<0.2 mg/l	TM152	206	#			
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	213	#			
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	25.2	#			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	666				
Sulphate	<2 mg/l	TM184	9.6	#			
Methane, dissolved	<0.001 mg/l	TM223	5.92				
pH	<1 pH Units	TM256	7.43	#			
Alkalinity, Total as CaCO3	<3 mg/l	TM256	842	#			
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.000014	#			
PFPA (2706-90-3)	<0.000001 mg/l	TM337	<0.000005	#			
PFHxA (307-24-4)	<0.000001 mg/l	TM337	<0.000005	#			
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000007	#			
PFHpA (375-85-9)	<0.000001 mg/l	TM337	<0.000005	#			
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	0.000008	#			
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000009	#			
PFHxS (355-46-4)	<0.000001 mg/l	TM337	<0.000005	#			
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000005	#			
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000005	#			
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000005	#			
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000005	#			
Branched PFOS	<0.000001 mg/l	TM337	0.000004	#			
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000005	#			
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000005	#			
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00001	#			
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000005	#			
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000005	#			
Total PFOS	<0.000001 mg/l	TM337	0.000009	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Data Amendment

Sample No. : 28236254 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Table of Results - Appendix

Method No	Description
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM152	Analysis of Aqueous Samples by ICP-MS
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM022	Determination of total suspended solids in waters
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM337	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230629-21
Client Ref.: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Test Completion Dates

Lab Sample No(s) 28236254
Customer Sample Ref. SHOWMANS GUILD
AGS Ref.
Depth
Type Ground Water

Anions by Kone (w)	30-Jun-2023
Determination of Dissolved Gases	30-Jun-2023
Dissolved Metals by ICP-MS	06-Jul-2023
PFAS Liquids	11-Jul-2023
pH Value	06-Jul-2023
Sulphide	06-Jul-2023
Suspended Solids	03-Jul-2023
Total Metals by ICP-MS	06-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230629-21
Client Ref: 326R

Report Number: 699707
Location: Victoria North

Superseded Report: 695678

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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BAM Ritchies
Unit 5
Taurus Park
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Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230718-32
Your Reference:	326R
Location:	Victoria North
Report No:	699708
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 697664 in its entirety.

We received 1 sample on Tuesday July 18, 2023 and 1 of these samples were scheduled for analysis which was completed on Monday July 24, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28343064	SHOWMANS GUILD			17/07/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

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)

28343064

Customer Sample Reference

SHOWMANS GUILD

AGS Reference

Depth (m)

Container

ZnAc (ALE246)
Vial (ALE297)
HNO3 Unfiltered (ALE204)
Digitube for PFAS analysis.
500ml Plastic (ALE208)

Sample Type

GW GW GW GW GW

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

Determination of Dissolved Gases

All

NDPs: 0
Tests: 1

X

PFAS Liquids (Full Suite)

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

Sulphide

All

NDPs: 0
Tests: 1

X

Suspended Solids

All

NDPs: 0
Tests: 1

X

Total Metals by ICP-MS

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Results Legend		Customer Sample Ref.	SHOWMANS GUILD			
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 17/07/2023 12:30:00 18/07/2023 230718-32 28343064			
Component	LOD/Units	Method				
Suspended solids, Total	<2 mg/l	TM022	54.8	#		
Sulphide	<0.01 mg/l	TM101	0.0868	#		
Manganese (tot.unfilt)	<0.001 mg/l	TM152	0.667	#		
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	212	#		
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	23.6	#		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	662			
Sulphate (soluble) as S	<1 mg/l	TM184	4.7	#		
Methane, dissolved	<0.001 mg/l	TM223	7.77			
pH	<1 pH Units	TM256	7.33	#		
Alkalinity, Total as CaCO3	<3 mg/l	TM256	806	#		
PFBA (375-22-4)	<0.000002 mg/l	TM434	0.000012	#		
PFMOPrA (377-73-1)	<0.000001 mg/l	TM434	<0.000001	#		
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434	<0.000002	#		
PFPA (2706-90-3)	<0.000001 mg/l	TM434	0.000003	#		
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434	<0.000001	#		
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434	<0.000001	#		
NFDHA (151772-58-6)	<0.000003 mg/l	TM434	<0.000003	#		
PFBS (375-73-5)	<0.000001 mg/l	TM434	0.000003	#		
PFHxA (307-24-4)	<0.000001 mg/l	TM434	0.000005	#		
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434	<0.000002	#		
PFEESA (113507-82-7)	<0.000001 mg/l	TM434	<0.000001	#		
PFHpA (375-85-9)	<0.000001 mg/l	TM434	0.000003	#		
PFPeS (2706-91-4)	<0.000001 mg/l	TM434	0.000002	#		
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434	<0.000005	#		
ADONA (919005-14-4)	<0.000001 mg/l	TM434	<0.000001	#		
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434	<0.000001	#		
FBSA (30334-69-1)	<0.000001 mg/l	TM434	0.000002	#		
PFOA (335-67-1)	<0.000001 mg/l	TM434	0.000009	#		
PFHxS (355-46-4)	<0.000001 mg/l	TM434	0.000004	#		
PFNA (375-95-1)	<0.000001 mg/l	TM434	<0.000001	#		
PFecHS (133201-07-7)	<0.000001 mg/l	TM434	<0.000001	#		
PFHpS (375-92-8)	<0.000001 mg/l	TM434	<0.000001	#		
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434	<0.000002	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfiltTotal / 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 17/07/2023 12:30:00 18/07/2023 230718-32 28343064				
Component	LOD/Units	Method					
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434	<0.000005 #				
PFDA (335-76-2)	<0.000002 mg/l	TM434	<0.000002 #				
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434	<0.000002 #				
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434	<0.000005 #				
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434	0.000001 #				
Branched PFOS	<0.000001 mg/l	TM434	0.000002 #				
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434	<0.000002 #				
PFUnA (2058-94-8)	<0.000002 mg/l	TM434	<0.000002 #				
9Cl-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434	<0.000001 #				
PFNS (68259-12-1)	<0.000001 mg/l	TM434	<0.000001 #				
FHxSA (41997-13-1)	<0.000001 mg/l	TM434	<0.000001 #				
PFDoA (307-55-1)	<0.000002 mg/l	TM434	<0.000002 #				
PFDS (335-77-3)	<0.000002 mg/l	TM434	<0.000002 #				
PFTrDA (72629-94-8)	<0.000003 mg/l	TM434	<0.000003 #				
11Cl-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434	<0.000002 #				
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434	<0.000002 #				
PFTeA (376-06-7)	<0.000001 mg/l	TM434	<0.000001 #				
PFOSA (754-91-6)	<0.000002 mg/l	TM434	<0.000002 #				
PFDoS (79780-39-5)	<0.000002 mg/l	TM434	<0.000002 #				
PFTrDS (174675-49-1)	<0.000001 mg/l	TM434	<0.000001 #				
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434	<0.000001 #				
MeFOSE (24448-09-7)	<0.000001 mg/l	TM434	<0.000001 #				
N-MeFOSA (31506-32-8)	<0.000001 mg/l	TM434	<0.000001 #				
EtFOSE (1691-99-2)	<0.000001 mg/l	TM434	<0.000001 #				
PFODA (16517-11-6)	<0.000001 mg/l	TM434	<0.000001 #				
N-EtFOSA (4151-50-2)	<0.000001 mg/l	TM434	<0.000001 #				
Total PFOS	<0.000001 mg/l	TM434	0.000003 #				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Data Amendment

Sample No. : 28343064 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Table of Results - Appendix

Method No	Description
TM152	Analysis of Aqueous Samples by ICP-MS
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM434	Analysis of PFAS
TM022	Determination of total suspended solids in waters
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230718-32
Client Ref.: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Test Completion Dates

Lab Sample No(s) 28343064
Customer Sample Ref. SHOWMANS GUILD
AGS Ref.
Depth
Type Ground Water

Anions by Kone (w)	19-Jul-2023
Determination of Dissolved Gases	21-Jul-2023
PFAS Liquids (Full Suite)	24-Jul-2023
pH Value	24-Jul-2023
Sulphide	21-Jul-2023
Suspended Solids	24-Jul-2023
Total Metals by ICP-MS	24-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230718-32
Client Ref: 326R

Report Number: 699708
Location: Victoria North

Superseded Report: 697664

Appendix

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 15 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.

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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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230729-47
Your Reference:	326R
Location:	Victoria North
Report No:	699714
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 699665 in its entirety.

We received 8 samples on Saturday July 29, 2023 and 7 of these samples were scheduled for analysis which was completed on Wednesday August 02, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230729-47
Client Ref.: 326R

Report Number: 699714
Location: Victoria North

Superseded Report: 699665

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28404382	BH102		2.30	27/07/2023
28404384	BH204		6.82	27/07/2023
28404385	BH207		12.50	27/07/2023
28404383	BH301		14.00	27/07/2023
28404386	BH309		2.80	27/07/2023
28404387	BH310		4.02	27/07/2023
28404388	BH311		7.20	27/07/2023
28404381	SHOWMANS GUILD			27/07/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230729-47
Client Ref.: 326R

Report Number: 699714
Location: Victoria North

Superseded Report: 699665

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

Results Legend												
<div><div>X</div>Test</div>	<div>Lab Sample No(s)</div> <div>Customer Sample Reference</div> <div>AGS Reference</div> <div>Depth (m)</div> <div>Container</div> <div>Sample Type</div>		SHOWMANS GUILD									
<div><div>N</div>No Determination Possible</div>												
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												
			ZnAc (ALE246)	Vial (ALE297)	HN03 Unfiltered (ALE204)	Digitube fo PFAS analysis.	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	500ml Plastic (ALE208)	
			GW	GW	GW	GW	GW	GW	GW	GW	GW	
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Superseded Report: 699665

Page 4 of 9



CERTIFICATE OF ANALYSIS

Validated

SDG: 230729-47
Client Ref.: 326R

Report Number: 699714
Location: Victoria North

Superseded Report: 699665

Results Legend		Customer Sample Ref.	SHOWMANS GUILD			
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 27/07/2023 12:10:00 29/07/2023 230729-47 28404381			
Component	LOD/Units	Method				
Suspended solids, Total	<2 mg/l	TM022	47.9	#		
Sulphide	<0.01 mg/l	TM101	0.0323	#		
Manganese (tot.unfilt)	<0.001 mg/l	TM152	0.632	#		
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	194	#		
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	20.6	#		
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	600			
Sulphate	<2 mg/l	TM184	18.3	#		
Methane, dissolved	<0.001 mg/l	TM223	7.14			
pH	<1 pH Units	TM256	7.29	#		
Alkalinity, Total as CaCO3	<3 mg/l	TM256	702	#		
PFBA (375-22-4)	<0.000002 mg/l	TM337	0.000012	#		
PFPA (2706-90-3)	<0.000001 mg/l	TM337	0.000005	#		
PFHxA (307-24-4)	<0.000001 mg/l	TM337	<0.000005	#		
PFBS (375-73-5)	<0.000001 mg/l	TM337	0.000005	#		
PFHpA (375-85-9)	<0.000001 mg/l	TM337	<0.000005	#		
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.000005	#		
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000008	#		
PFHxS (355-46-4)	<0.000001 mg/l	TM337	<0.000005	#		
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000005	#		
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000005	#		
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000005	#		
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	<0.000003	#		
Branched PFOS	<0.000001 mg/l	TM337	0.000004	#		
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000005	#		
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000005	#		
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00001	#		
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000005			
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000005	#		
Total PFOS	<0.000001 mg/l	TM337	0.000004	#		



CERTIFICATE OF ANALYSIS

Validated

SDG: 230729-47
Client Ref.: 326R

Report Number: 699714
Location: Victoria North

Superseded Report: 699665

Data Amendment

Sample No. : All Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Land leachate	Ground water

Sample No. : 28404383 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Result Removal	PFAS result	no PFAS result



CERTIFICATE OF ANALYSIS

Validated

SDG: 230729-47
Client Ref.: 326R

Report Number: 699714
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Superseded Report: 699665

Table of Results - Appendix

Method No	Description
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM022	Determination of total suspended solids in waters
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM337	Analysis of PFAS
TM152	Analysis of Aqueous Samples by ICP-MS
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230729-47
Client Ref.: 326R

Report Number: 699714
Location: Victoria North

Superseded Report: 699665

Test Completion Dates

Lab Sample No(s)	28404382	28404384	28404385	28404383	28404386	28404387	28404388	28404381
Customer Sample Ref.	BH102	BH204	BH207	BH301	BH309	BH310	BH311	SHOWMANS GUILD
AGS Ref.								
Depth	2.30	6.82	12.50	14.00	2.80	4.02	7.20	
Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water
Anions by Kone (w)								01-Aug-2023
Determination of Dissolved Gases								02-Aug-2023
PFAS Liquids	01-Aug-2023	01-Aug-2023	01-Aug-2023	01-Aug-2023	01-Aug-2023	01-Aug-2023	01-Aug-2023	01-Aug-2023
pH Value								01-Aug-2023
Sulphide								01-Aug-2023
Suspended Solids								01-Aug-2023
Total Metals by ICP-MS								01-Aug-2023



CERTIFICATE OF ANALYSIS

SDG: 230729-47
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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.

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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.

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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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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.

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General

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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
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♦	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to late arrival of instructions or samples
§	Sampled on date not provided

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



Unit 7-8 Hawarden Business Park
Manor Road (off Manor Lane)
Hawarden
Deeside
CH5 3US

Tel: (01244) 528777
email: hawardencustomerservices@alsglobal.com
Website: www.alsenvironmental.co.uk

BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT
Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation: 10 August 2023
Customer: BAM Ritchies
Sample Delivery Group (SDG): 230401-54
Your Reference: 326R
Location: Victoria North
Report No: 699666
Order Number: RIT 298 665 896

This report has been revised and directly supersedes 697559 in its entirety.

We received 12 samples on Saturday April 01, 2023 and 12 of these samples were scheduled for analysis which was completed on Tuesday July 11, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
27763405	Showmans Guild			28/03/2023
27763404	SW08 DOWN			28/03/2023
27763406	SW08 UPPER			28/03/2023
27778683	TP410		0.40	29/03/2023
27778686	TP411		0.40	29/03/2023
27778689	TP412		1.00	29/03/2023
27778691	TP413		0.50	29/03/2023
27778693	TP414		0.45	29/03/2023
27778695	TP415		0.50	29/03/2023
27778697	TP416		0.75	29/03/2023
27778698	TP403A		0.60	29/03/2023
27778700	TP405A		0.55	29/03/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

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</div> <div>Non-regulatory</div> <div>UNL - Unspecified Liquid</div> <div>SL - Sludge</div> <div>G - Gas</div> <div>OTH - Other</div>	Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
	27778697		TP416				0.75		1kg TUB with Handle (ALE260)		S	
	27778695		TP415				0.50		1kg TUB with Handle (ALE260)		S	
	27778693		TP414				0.45		1kg TUB with Handle (ALE260)		S	
	27778691		TP413				0.50		1kg TUB with Handle (ALE260)		S	
	27778689		TP412				1.00		1kg TUB with Handle (ALE260)		S	
	27778686		TP411				0.40		1kg TUB with Handle (ALE260)		S	
27778683		TP410				0.40		1kg TUB with Handle (ALE260)		S		
27763406		SW08 UPPER						Vial (ALE297)		GW		
27763404		SW08 DOWN						H2SO4 (ALE244)		GW		
27763404								500ml Plastic (ALE208)		GW		
27763404								250ml BOD (ALE212)		GW		
27763404								Vial (ALE297)		GW		
27763405		Showmans Guild						H2SO4 (ALE244)		GW		
27763405								500ml Plastic (ALE208)		GW		
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27763405								250ml BOD (ALE212)				



Superseded Report: 697559

Page 5 of 31



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

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
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<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</div> <div>Non-regulatory</div> <div>UNL - Unspecified Liquid</div> <div>SL - Sludge</div> <div>G - Gas</div> <div>OTH - Other</div>			Lab Sample No(s)		Customer Sample Reference		AGS Reference		Depth (m)		Container		Sample Type	
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			27778693	TP414		0.45	1kg TUB with Handle (ALE260)	S						
			27778691	TP413		0.50	1kg TUB with Handle (ALE260)	S						
			27778689	TP412		1.00	1kg TUB with Handle (ALE260)	S						
			27778686	TP411		0.40	1kg TUB with Handle (ALE260)	S						
27778683	TP410		0.40	1kg TUB with Handle (ALE260)	S									
27763406	SW08 UPPER			Vial (ALE297)	GW									
				H2SO4 (ALE244)	GW									
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27763404	SW08 DOWN			Vial (ALE297)	GW									
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27763405	Showmans Guild			Vial (ALE297)	GW									
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				250ml BOD (ALE212)	GW									



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
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Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
27778683	TP410	0.40	Black	Loamy Sand	Stones	N/A
27778686	TP411	0.40	Black	Loamy Sand	Stones	N/A
27778689	TP412	1.00	Black	Sand	Stones	N/A
27778691	TP413	0.50	Grey	Sand	Stones	None
27778693	TP414	0.45	Dark Brown	Loamy Sand	Stones	None
27778695	TP415	0.50	Black	Loamy Sand	Stones	Vegetation
27778697	TP416	0.75	Black	Loamy Sand	Stones	None
27778698	TP403A	0.60	Black	Sand	Stones	N/A
27778700	TP405A	0.55	Black	Sand	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

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 materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.		Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4*\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778683	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778686	1.00 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778689
Component	LOD/Units	Method								
Suspended solids, Total	<2 mg/l	TM022			55.3	38.9	14.6			
					@ #	@ #	@ #			
Organic Carbon, Total	<3 mg/l	TM090			6.57	6.73	6.05			
					@ #	@ #	@ #			
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099			30.3	28.3	0.583			
					#	#	#			
Sulphide	<0.01 mg/l	TM101				<0.01				
						2 #				
COD, unfiltered	<7 mg/l	TM107			15.1	33.7	20.2			
					@ #	@ #	@ #			
Arsenic (diss.filt)	<0.0005 mg/l	TM152			<0.0005	0.000503	0.000806			
					2 #	2 #	2 #			
Arsenic (tot.unfilt)	<0.002 mg/l	TM152			0.0028	0.00232	<0.002			
					2 #	2 #	2 #			
Cadmium (diss.filt)	<0.00008 mg/l	TM152			<0.00008	<0.00008	0.000255			
					2 #	2 #	2 #			
Cadmium (tot.unfilt)	<0.0005 mg/l	TM152			<0.0005	<0.0005	<0.0005			
					2 #	2 #	2 #			
Chromium (tot.unfilt)	<0.003 mg/l	TM152			<0.003	<0.003	<0.003			
					2 #	2 #	2 #			
Chromium (diss.filt)	<0.001 mg/l	TM152			<0.001	<0.001	<0.001			
					2 #	2 #	2 #			
Copper (tot.unfilt)	<0.001 mg/l	TM152			0.00115	0.00383	0.00818			
					2 #	2 #	2 #			
Lead (tot.unfilt)	<0.001 mg/l	TM152			<0.001	0.00498	0.00457			
					2 #	2 #	2 #			
Copper (diss.filt)	<0.0003 mg/l	TM152			<0.0003	0.00111	0.00429			
					2 #	2 #	2 #			
Lead (diss.filt)	<0.0002 mg/l	TM152			<0.0002	<0.0002	<0.0002			
					2 #	2 #	2 #			
Nickel (tot.unfilt)	<0.001 mg/l	TM152			0.002	<0.001	0.00358			
					2 #	2 #	2 #			
Selenium (tot.unfilt)	<0.001 mg/l	TM152			<0.001	<0.001	0.00105			
					2 #	2 #	2 #			
Nickel (diss.filt)	<0.0004 mg/l	TM152			<0.0004	<0.0004	0.0029			
					2 #	2 #	2 #			
Selenium (diss.filt)	<0.001 mg/l	TM152			<0.001	<0.001	<0.001			
					2 #	2 #	2 #			
Zinc (tot.unfilt)	<0.005 mg/l	TM152			0.011	0.0372	0.0938			
					2 #	2 #	2 #			
Zinc (diss.filt)	<0.001 mg/l	TM152			0.00689	0.0189	0.0591			
					2 #	2 #	2 #			
Mercury (diss.filt)	<0.00001 mg/l	TM183				<0.00001				
						2 #				
Mercury (tot.unfilt)	<0.00002 mg/l	TM183				<0.00002				
						2 #				
Sulphate (soluble) as S	<1 mg/l	TM184				11.9				
						@ #				
Nitrogen, Total	<1 mg/l	TM212			28.9	27.3				
					@ #	@ #				
Cyanide, Total	<0.05 mg/l	TM227				<0.05				
						2 #				
Surfactants, Anionic (MBAS)	<0.05 mg/l	TM249			<0.05	<0.05	0.05			
pH	<1 pH Units	TM256				7.18				
						@ #				
PFBA (375-22-4)	<0.000002 mg/l	TM337			<0.00003	<0.000017	<0.00001			
					#	#	#			
PFPA (2706-90-3)	<0.000001 mg/l	TM337			<0.000005	<0.000002	<0.000001			
					#	#	#			
PFHxA (307-24-4)	<0.000001 mg/l	TM337			0.000007	0.000005	0.000003			
					#	#	#			
PFBS (375-73-5)	<0.000001 mg/l	TM337			0.000005	0.000005	0.000001			
					#	#	#			
PFHpA (375-85-9)	<0.000001 mg/l	TM337			<0.000005	0.000004	0.000003			
					#	#	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4# Sample deviation (see appendix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference								
Component	LOD/Units	Method							
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000012 #	0.00001 #	0.000011 #				
PFHxS (355-46-4)	<0.000001 mg/l	TM337	0.000005 #	0.000004 #	0.000002 #				
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000007 #	0.000004 #	0.000012 #				
Branched PFOS	<0.000001 mg/l	TM337	0.000009 #	0.000005 #	0.000006 #				
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00001 #	<0.000004 #	<0.000002 #				
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000005 #	<0.000002 #	<0.000001 #				
Total PFOS	<0.000001 mg/l	TM337	0.000016 #	0.00001 #	0.000018 #				
Trifluralin	<0.00001 mg/l	TM343	<0.00001						
alpha-HCH	<0.00001 mg/l	TM343	<0.00001						
gamma-HCH (Lindane)	<0.00001 mg/l	TM343	<0.00001						
Heptachlor	<0.00001 mg/l	TM343	<0.00001						
Aldrin	<0.00001 mg/l	TM343	<0.00001						
beta-HCH	<0.00001 mg/l	TM343	<0.00001						
Isodrin	<0.00001 mg/l	TM343	<0.00001						
delta-HCH	<0.00001 mg/l	TM343	<0.00001						
Heptachlor epoxide	<0.00001 mg/l	TM343	<0.00001						
o,p'-DDE	<0.00001 mg/l	TM343	<0.00001						
Endosulphan I	<0.00001 mg/l	TM343	<0.00001						
trans-Chlordane	<0.00001 mg/l	TM343	<0.00001						
cis-Chlordane	<0.00001 mg/l	TM343	<0.00001						
p,p'-DDE	<0.00001 mg/l	TM343	<0.00001						
Dieldrin	<0.00001 mg/l	TM343	<0.00001						
o,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00001						
Endrin	<0.00001 mg/l	TM343	<0.00001						
o,p'-DDT	<0.00001 mg/l	TM343	<0.00002						
p,p'-DDD (TDE)	<0.00001 mg/l	TM343	<0.00001						



CERTIFICATE OF ANALYSIS

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SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.		Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4# @ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference		Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778683	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778686	1.00 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778689
Component	LOD/Units	Method								
Endosulphan II	<0.00002 mg/l	TM343			<0.00002					
p,p'-DDT	<0.00001 mg/l	TM343			<0.0001					
o,p'-Methoxychlor	<0.00001 mg/l	TM343			<0.00002					
p,p'-Methoxychlor	<0.00001 mg/l	TM343			<0.00003					
Endosulphan Sulphate	<0.00002 mg/l	TM343			<0.00002					
Permethrin I	<0.00001 mg/l	TM343			<0.00001					
Permethrin II	<0.00001 mg/l	TM343			<0.00001					
Fats, Oils, Greases	<1 mg/l	TM383			1					
PFBA (Post Ox.) (375-22-4)	<0.000004 mg/l	TM405			0.00005	0.000026	0.000021			
PFPA (Post Ox.) (2706-90-3)	<0.000002 mg/l	TM405			0.000038	0.000019	0.00001			
PFHxA (Post Ox.) (307-24-4)	<0.000002 mg/l	TM405			0.000045	0.000014	0.000023			
PFBS (Post Ox.) (375-73-5)	<0.000002 mg/l	TM405			0.000008	0.000006	0.000003			
PFHpA (Post Ox.) (375-85-9)	<0.000002 mg/l	TM405			<0.000005	0.000003	0.000005			
6:2 FTS (Post Ox.) (27619-97-2)	<0.000002 mg/l	TM405			<0.000005	<0.000002	0.000003			
PFOA (Post Ox.) (335-67-1)	<0.000002 mg/l	TM405			0.000012	0.000009	0.000013			
PFHxS (Post Ox.) (355-46-4)	<0.000002 mg/l	TM405			<0.000005	0.000004	0.000003			
PFNA (Post Ox.) (375-95-1)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
PFHpS (Post Ox.) (375-92-8)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
PFDA (Post Ox.) (335-76-2)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
Linear PFOS (Post Ox.) (1763-23-1)	<0.000002 mg/l	TM405			0.000008	0.000004	0.000012			
Branched PFOS (Post Ox.)	<0.000002 mg/l	TM405			0.000011	0.000005	0.000006			
PFUnA (Post Ox.) (2058-94-8)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
PFDoA (Post Ox.) (307-55-1)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
PFOSA (Post Ox.) (754-91-6)	<0.000004 mg/l	TM405			<0.00001	<0.000004	<0.000004			
PFDS (Post Ox.) (335-77-3)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
PFPeS (Post Ox.) (2706-91-4)	<0.000002 mg/l	TM405			<0.000005	<0.000002	<0.000002			
Total PFOS (Post Ox.)	<0.000002 mg/l	TM405			0.000018	0.000009	0.000018			
PFBA (375-22-4)	<0.000002 mg/l	TM434				<0.00001 @ #	0.000007 @ #			
PFMOPra (377-73-1)	<0.000001 mg/l	TM434				<0.000005 @ #	<0.000001 @ #			
3:3 FTCA (356-02-5)	<0.000002 mg/l	TM434				<0.00001 @ #	<0.000002 @ #			
PFPA (2706-90-3)	<0.000001 mg/l	TM434				0.000007 @ #	0.000003 @ #			
PFMOBA (863090-89-5)	<0.000001 mg/l	TM434				<0.000005 @ #	<0.000001 @ #			
4:2 FTS (757124-72-4)	<0.000001 mg/l	TM434				<0.000005 @ #	<0.000001 @ #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4\$@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778683	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778686	1.00 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778689
Component	LOD/Units	Method							
NFDHA (151772-58-6)	<0.000003 mg/l	TM434			<0.000015 @ #	<0.000003 @ #			
PFBS (375-73-5)	<0.000001 mg/l	TM434			0.000007 @ #	0.000003 @ #			
PFHxA (307-24-4)	<0.000001 mg/l	TM434			0.000007 @ #	0.000003 @ #			
HFPO-DA (13252-13-6)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFEESA (113507-82-7)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFHpA (375-85-9)	<0.000001 mg/l	TM434			<0.000005 @ #	0.000002 @ #			
PFPeS (2706-91-4)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
5:3 FTCA (914637-49-3)	<0.000005 mg/l	TM434			<0.000025 @ #	<0.000005 @ #			
ADONA (919005-14-4)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
FBSA (30334-69-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFOA (335-67-1)	<0.000001 mg/l	TM434			0.000011 @ #	0.000011 @ #			
PFHxS (355-46-4)	<0.000001 mg/l	TM434			0.000007 @ #	0.000003 @ #			
PFNA (375-95-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFecHS (133201-07-7)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFHpS (375-92-8)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
8:2 FTS (39108-34-4)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
HFPO-TA (13252-14-7)	<0.000005 mg/l	TM434			<0.000025 @ #	<0.000005 @ #			
PFDA (335-76-2)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
MeFOSAA (2355-31-9)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
7:3 FTCA (812-70-4)	<0.000005 mg/l	TM434			<0.000025 @ #	<0.000005 @ #			
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM434			0.000004 @ #	0.000005 @ #			
Branched PFOS	<0.000001 mg/l	TM434			<0.000003 @ #	0.00001 @ #			
EtFOSAA (2991-50-6)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFUnA (2058-94-8)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
9CI-PF3ONS (756426-58-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFNS (68259-12-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
FHxSA (41997-13-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFDoA (307-55-1)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFDS (335-77-3)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFTTrDA (72629-94-8)	<0.000003 mg/l	TM434			<0.000015 @ #	<0.000003 @ #			
11CI-PF3OUdS (763051-92-9)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFUnDS (749786-16-1)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4* Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778683	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778686	1.00 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778689
Component	LOD/Units	Method							
PFTeA (376-06-7)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFOSA (754-91-6)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFDoS (79780-39-5)	<0.000002 mg/l	TM434			<0.00001 @ #	<0.000002 @ #			
PFTrDS (174675-49-1)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
PFHxDA (67905-19-5)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
MeFOSE (24448-09-7)	<0.00001 mg/l	TM434			<0.00005 @ #	<0.00001 @ #			
N-MeFOSE (31506-32-8)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
EtFOSE (1691-99-2)	<0.00001 mg/l	TM434			<0.00005 @ #	<0.00001 @ #			
PFODA (16517-11-6)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
N-EtFOSE (4151-50-2)	<0.000001 mg/l	TM434			<0.000005 @ #	<0.000001 @ #			
Total PFOS	<0.000001 mg/l	TM434			0.000004 @ #	0.000016 @ #			
Moisture Content Ratio (% of as received sample)	%	PM024					19	27	22
PFBA (375-22-4) NRA leach	<0.000002 mg/l	TM337					<0.000015		
PFPA (2706-90-3) NRA leach	<0.000001 mg/l	TM337					0.000003		
PFHxA (307-24-4) NRA leach	<0.000001 mg/l	TM337					0.000006		
PFBS (375-73-5) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFHpA (375-85-9) NRA leach	<0.000001 mg/l	TM337					0.000005		
6:2 FTS (27619-97-2) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFOA (335-67-1) NRA leach	<0.000001 mg/l	TM337					0.000026		
PFHxS (355-46-4) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFNA (375-95-1) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFHpS (375-92-8) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFDA (335-76-2) NRA leach	<0.000001 mg/l	TM337					<0.000001		
Linear PFOS (1763-23-1) NRA leach	<0.000001 mg/l	TM337					0.000002		
Branched PFOS NRA leach	<0.000001 mg/l	TM337					0.000002		
PFUnA (2058-94-8) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFDoA (307-55-1) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFOSA (754-91-6) NRA leach	<0.000002 mg/l	TM337					<0.000002		
PFDS (335-77-3) NRA leach	<0.000001 mg/l	TM337					<0.000001		
PFPeS (2706-91-4) NRA leach	<0.000001 mg/l	TM337					<0.000001		
Total PFOS NRA leach	<0.000001 mg/l	TM337					0.000003		
4:2 FTS (757124-72-4)	<2 µg/kg	TM338					<2	<2	<2
8:2 FTS (39108-34-4)	<2 µg/kg	TM338					<2	<2	<2



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412
# 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 1-4 @@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778683	0.40 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778686	1.00 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778689
Component	LOD/Units	Method							
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338					<20	<20	<20
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338					<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338					<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338					<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338					<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338					<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338					<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanedisulfonate	<1 µg/kg	TM338					<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338					<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanedisulfonate	<1 µg/kg	TM338					<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338					<1	<1	<1
Linear PFOS (1763-23-1) Perfluoro-1-octanedisulfonate	<1 µg/kg	TM338					<1	2.13	<1
Branched PFOS	<1 µg/kg	TM338					<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338					<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338					<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanedisulfonamide	<1 µg/kg	TM338					<1	<1	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338					<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanedisulfonate	<1 µg/kg	TM338					<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanedisulfonate	<1 µg/kg	TM338					<1	<1	<1
Total PFOS	<1 µg/kg	TM338					<1	2.13	<1
PFBA (Post Ox.) (375-22-4) NRA leach	<0.000004 mg/l	TM405					0.000023		
PFPA (Post Ox.) (2706-90-3) NRA leach	<0.000002 mg/l	TM405					0.000021		
PFHxA (Post Ox.) (307-24-4) NRA leach	<0.000002 mg/l	TM405					0.000015		
PFBS (Post Ox.) (375-73-5) NRA leach	<0.000002 mg/l	TM405					<0.000002		
PFHpA (Post Ox.) (375-85-9) NRA leach	<0.000002 mg/l	TM405					0.000008		
6:2 FTS (Post Ox.) (27619-97-2) NRA leach	<0.000002 mg/l	TM405					<0.000002		
PFOA (Post Ox.) (335-67-1) NRA leach	<0.000002 mg/l	TM405					0.000033		
PFHxS (Post Ox.) (355-46-4) NRA leach	<0.000002 mg/l	TM405					<0.000002		
PFNA (Post Ox.) (375-95-1) NRA leach	<0.000002 mg/l	TM405					0.000003		
PFHpS (Post Ox.) (375-92-8) NRA leach	<0.000002 mg/l	TM405					<0.000002		
PFDA (Post Ox.) (335-76-2) NRA leach	<0.000002 mg/l	TM405					<0.000002		
Linear PFOS (Post Ox.) (1763-23-1) NRA leach	<0.000002 mg/l	TM405					0.000002		
Branched PFOS (Post Ox.) NRA leach	<0.000002 mg/l	TM405					0.000002		



Superseded Report: 697559

Page 16 of 31



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	TP413	TP414	TP415	TP416	TP403A	TP405A
#	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								
1-4*\$@	Sample deviation (see appendix)								
Component	LOD/Units		Method						
Moisture Content Ratio (% of as received sample)	%	PM024	7.1	24	21	20	20	15	
PFBA (375-22-4) NRA leach	<0.000002 mg/l	TM337		<0.00001					
PFPA (2706-90-3) NRA leach	<0.000001 mg/l	TM337		0.000005					
PFHxA (307-24-4) NRA leach	<0.000001 mg/l	TM337		0.000008					
PFBS (375-73-5) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFHpA (375-85-9) NRA leach	<0.000001 mg/l	TM337		<0.000005					
6:2 FTS (27619-97-2) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFOA (335-67-1) NRA leach	<0.000001 mg/l	TM337		0.00002					
PFHxS (355-46-4) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFNA (375-95-1) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFHpS (375-92-8) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFDA (335-76-2) NRA leach	<0.000001 mg/l	TM337		<0.000005					
Linear PFOS (1763-23-1) NRA leach	<0.000001 mg/l	TM337		0.000004					
Branched PFOS NRA leach	<0.000001 mg/l	TM337		<0.000003					
PFUnA (2058-94-8) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFDoA (307-55-1) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFOSA (754-91-6) NRA leach	<0.000002 mg/l	TM337		<0.00001					
PFDS (335-77-3) NRA leach	<0.000001 mg/l	TM337		<0.000005					
PFPeS (2706-91-4) NRA leach	<0.000001 mg/l	TM337		<0.000005					
Total PFOS NRA leach	<0.000001 mg/l	TM337		0.000004					
4:2 FTS (757124-72-4)	<2 µg/kg	TM338	<2	<2	<2	<2			
8:2 FTS (39108-34-4)	<2 µg/kg	TM338	<2	<2	<2	<2			
5:3 FTCA (914637-49-3)	<20 µg/kg	TM338	<20	<20	<20	<20			
PFBA (375-22-4) Perfluoro-n-butanoic acid	<3 µg/kg	TM338	<3	<3	<3	<3	<3	<3	
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	<3 µg/kg	TM338	<3	<3	<3	<3	<3	<3	
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	<2 µg/kg	TM338	<2	<2	<2	<2	<2	<2	
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFOA (335-67-1) Perfluoro-n-octanoic acid	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFHxS (355-46-4) Perfluoro-1-hexadisulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFNA (375-95-1) Perfluoro-n-nonanoic acid	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFHpS (375-92-8) Perfluoro-1-heptadisulfonate	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	
PFDA (335-76-2) Perfluoro-n-decanoic acid	<1 µg/kg	TM338	<1	<1	<1	<1	<1	<1	



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Results Legend			Customer Sample Ref.	TP413	TP414	TP415	TP416	TP403A	TP405A
# 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 1-4# Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778691	0.45 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778693	0.50 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778695	0.75 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778697	0.60 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778698	0.55 Soil/Solid (S) 29/03/2023 01/04/2023 230401-54 27778700
Component	LOD/Units	Method							
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
Branched PFOS	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
Total PFOS	<1 µg/kg	TM338		<1	<1	<1	<1	<1	<1
PFBA (Post Ox.) (375-22-4) NRA leach	<0.000004 mg/l	TM405			<0.00001				
PFPA (Post Ox.) (2706-90-3) NRA leach	<0.000002 mg/l	TM405			0.000023				
PFHxA (Post Ox.) (307-24-4) NRA leach	<0.000002 mg/l	TM405			0.000025				
PFBS (Post Ox.) (375-73-5) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFHpA (Post Ox.) (375-85-9) NRA leach	<0.000002 mg/l	TM405			0.00001				
6:2 FTS (Post Ox.) (27619-97-2) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFOA (Post Ox.) (335-67-1) NRA leach	<0.000002 mg/l	TM405			0.000023				
PFHxS (Post Ox.) (355-46-4) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFNA (Post Ox.) (375-95-1) NRA leach	<0.000002 mg/l	TM405			0.000006				
PFHpS (Post Ox.) (375-92-8) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFDA (Post Ox.) (335-76-2) NRA leach	<0.000002 mg/l	TM405			<0.000005				
Linear PFOS (Post Ox.) (1763-23-1) NRA leach	<0.000002 mg/l	TM405			<0.000005				
Branched PFOS (Post Ox.) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFUnA (Post Ox.) (2058-94-8) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFDoA (Post Ox.) (307-55-1) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFOSA (Post Ox.) (754-91-6) NRA leach	<0.000004 mg/l	TM405			<0.00001				
PFDS (Post Ox.) (335-77-3) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFPeS (Post Ox.) (2706-91-4) NRA leach	<0.000002 mg/l	TM405			<0.000005				
Total PFOS (Post Ox.) NRA leach	<0.000002 mg/l	TM405			<0.000005				
PFBA (Post Ox.) Perfluoro-n-butanoic acid	<3 µg/kg	TM428			<3			<3	<3
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	<3 µg/kg	TM428			<3			<3	<3
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	<2 µg/kg	TM428			<2			<2	<2
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	<1 µg/kg	TM428			<1			<1	<1
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	<1 µg/kg	TM428			<1			<1	<1

12:26:30 10/08/2023



Superseded Report: 697559

Page 19 of 31



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405				
Component	LOD/Units	Method					
1,2,4-Trichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
1,2-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
1,3-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
1,4-Dichlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,4,5-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,4,6-Trichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,4-Dichlorophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,4-Dimethylphenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,4-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2,6-Dinitrotoluene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Chloronaphthalene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Chlorophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Methylnaphthalene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	@ #			
2-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
3-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Bromophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Chloro-3-methylphenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Chloroaniline (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Chlorophenylphenylether (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Methylphenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Nitroaniline (aq)	<0.001 mg/l	TM176	<0.002	@ #			
4-Nitrophenol (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Azobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Acenaphthylene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Acenaphthene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Anthracene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
bis(2-Chloroethyl)ether (aq)	<0.001 mg/l	TM176	<0.002	@ #			
bis(2-Chloroethoxy)methane (aq)	<0.001 mg/l	TM176	<0.002	@ #			
bis(2-Ethylhexyl) phthalate (aq)	<0.002 mg/l	TM176	<0.004	@ #			
Butylbenzyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Benzo(a)anthracene (aq)	<0.001 mg/l	TM176	<0.002	@ #			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

SVOC MS (W) - Aqueous

Results Legend		Customer Sample Ref.	Showmans Guild				
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405				
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							
1-4* Sample deviation (see appendix)							
Component	LOD/Units	Method					
Benzo(b)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Benzo(k)fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Benzo(a)pyrene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Benzo(g,h,i)perylene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Carbazole (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Chrysene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Dibenzofuran (aq)	<0.001 mg/l	TM176	<0.002	@ #			
n-Dibutyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Diethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Dibenzo(a,h)anthracene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Dimethyl phthalate (aq)	<0.001 mg/l	TM176	<0.002	@ #			
n-Dioctyl phthalate (aq)	<0.005 mg/l	TM176	<0.01	@ #			
Fluoranthene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Fluorene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Hexachlorobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Hexachlorobutadiene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Pentachlorophenol (aq)	<0.001 mg/l	TM176	<0.002				
Phenol (aq)	<0.001 mg/l	TM176	<0.002				
n-Nitroso-n-dipropylamine (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Hexachloroethane (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Nitrobenzene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Naphthalene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Isophorone (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Hexachlorocyclopentadiene (aq)	<0.001 mg/l	TM176	<0.002				
Phenanthrene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Indeno(1,2,3-cd)pyrene (aq)	<0.001 mg/l	TM176	<0.002	@ #			
Pyrene (aq)	<0.001 mg/l	TM176	<0.002	@ #			

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

TPH CWG (W)[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

VOC MS (W)

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER			
# 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 1-4*§@ Sample deviation (see appendix)			Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763405	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763404	Ground Water (GW) 28/03/2023 01/04/2023 230401-54 27763406			
Component	LOD/Units	Method							
Dibromofluoromethane**	%	TM208	108	109	105				
Toluene-d8**	%	TM208	99.6	99.2	100				
4-Bromofluorobenzene**	%	TM208	99.2	103	99.4				
Dichlorodifluoromethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Chloromethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Vinyl chloride	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Bromomethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Chloroethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Trichlorofluoromethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,1-Dichloroethene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Carbon disulphide	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Dichloromethane	<0.003 mg/l	TM208	<0.0045 @ #	<0.004 @ #	<0.004 @ #				
Methyl tertiary butyl ether (MTBE)	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
trans-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,1-Dichloroethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
cis-1,2-Dichloroethene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
2,2-Dichloropropane	<0.001 mg/l	TM208	<0.001	<0.001	<0.001				
Bromochloromethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Chloroform	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,1,1-Trichloroethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,1-Dichloropropene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Carbontetrachloride	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,2-Dichloroethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Benzene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Trichloroethene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,2-Dichloropropane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Dibromomethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Bromodichloromethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
cis-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
Toluene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
trans-1,3-Dichloropropene	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,1,2-Trichloroethane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				
1,3-Dichloropropane	<0.001 mg/l	TM208	<0.001 @ #	<0.001 @ #	<0.001 @ #				



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

VOC MS (W)

Results Legend			Customer Sample Ref.	Showmans Guild	SW08 DOWN	SW08 UPPER			
#	ISO17025 accredited.		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 28/03/2023	Ground Water (GW) 28/03/2023	Ground Water (GW) 28/03/2023			
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			01/04/2023 230401-54 27763405	01/04/2023 230401-54 27763404	01/04/2023 230401-54 27763406			
(F)	Trigger breach confirmed								
1-4	Sample deviation (see appendix)								
Component	LOD/Units	Method							
Tetrachloroethene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Dibromochloromethane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2-Dibromoethane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Chlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,1,1,2-Tetrachloroethane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Ethylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
m,p-Xylene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
o-Xylene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Styrene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Bromoform	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Isopropylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,1,2,2-Tetrachloroethane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2,3-Trichloropropane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Bromobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Propylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
2-Chlorotoluene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,3,5-Trimethylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
4-Chlorotoluene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
tert-Butylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2,4-Trimethylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
sec-Butylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
4-iso-Propyltoluene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,3-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,4-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
n-Butylbenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2-Dichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2-Dibromo-3-chloropropane	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2,4-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Hexachlorobutadiene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
tert-Amyl methyl ether (TAME)	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
Naphthalene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,2,3-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			
1,3,5-Trichlorobenzene	<0.001 mg/l	TM208		<0.001 @ #	<0.001 @ #	<0.001 @ #			

12:26:30 10/08/2023

SDG: 230401-54

Report Number: 699666

Superseded Report: 697559

Client Ref.: 326R

Location: Victoria North

VOC MS (W)

[illegible]



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Notification of NDPs (No determination possible)

Date Received : 01/04/2023 10:04:22

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
27763404	SW08 DOWN		Fats Oils and Greases.	Insufficient sample supplied
27763404	SW08 DOWN		Neutralised Suspended Solids	Insufficient sample supplied
27763404	SW08 DOWN		Settleable Solids	Insufficient sample supplied
27763404	SW08 DOWN		Settleable Solids 5 Mins	Insufficient sample supplied
27763404	SW08 DOWN		Determination of Dissolved Gases	Insufficient Sample
27763405	Showmans Guild		Organotins in Aqueous Samples	Insufficient sample supplied
27763405	Showmans Guild		Phenols and ethoxylates in Liquids	Insufficient sample supplied
27763405	Showmans Guild		Pharmaceuticals and Personal Care	Insufficient sample supplied
27763405	Showmans Guild		Urea Herbicides (Suite 1)*	Insufficient Sample
27763405	Showmans Guild		Faecal Coliforms (W)*	Insufficient Sample
27763405	Showmans Guild		Settleable Solids	Insufficient sample supplied
27763405	Showmans Guild		Settleable Solids 5 Mins	Insufficient sample supplied
27763405	Showmans Guild		TPH CWG (W)	Insufficient Sample
27763405	Showmans Guild		Determination of Dissolved Gases	Insufficient Sample
27763406	SW08 UPPER		Faecal Coliforms (W)*	Insufficient Sample
27763406	SW08 UPPER		TPH CWG (W)	Insufficient Sample
27763406	SW08 UPPER		Determination of Dissolved Gases	Insufficient Sample
27763405	Showmans Guild		Mercury Unfiltered	Insufficient Sample
27763406	SW08 UPPER		Mercury Unfiltered	Insufficient Sample
27763406	SW08 UPPER		Mercury Dissolved	Insufficient Sample
27763405	Showmans Guild		Mercury Dissolved	Insufficient Sample
27763406	SW08 UPPER		Anions by Kone (w)	Insufficient Sample
27763405	Showmans Guild		Anions by Kone (w)	Insufficient Sample
27763406	SW08 UPPER		Sulphide	Insufficient Sample
27763405	Showmans Guild		Sulphide	Insufficient Sample
27763405	Showmans Guild		pH Value	Insufficient Sample
27763406	SW08 UPPER		pH Value	Insufficient Sample
27763405	Showmans Guild		Cyanide Comp/Free/Total/Thiocyanate	Insufficient Sample
27763406	SW08 UPPER		Cyanide Comp/Free/Total/Thiocyanate	Insufficient Sample



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Data Amendment

Sample No. : 27763404 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 27763405 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 27763406 Date of Amendment : 09/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Unspecified Liquid	Groundwater

Sample No. : 27763404 Date of Amendment : 06/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
SW08 DOWN	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	9.55	< 3.25
SW08 DOWN	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	9.29	4.42
SW08 DOWN	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	18.84	4.42

Sample No. : 27763406 Date of Amendment : 06/07/2023 Authorised: Geraint Pumford

Sample Ref.	Reason	Test Name	Result Name	Units	Previous	Amended
SW08 UPPER	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Branched PFOS	ng/l	16.6	10.2
SW08 UPPER	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Linear PFOS (1763-23-1)	ng/l	15.6	5.23
SW08 UPPER	Analytical/Quality Issue	PFAS Liquids (Full Suite)	Total PFOS	ng/l	32.2	15.5



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Table of Results - Appendix

Method No	Description
PM024	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
TM107	Determination of Chemical Oxygen Demand using COD Dr Lange Kit
TM178	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters
PM023	Leaching Procedure for NRA Leachates
TM152	Analysis of Aqueous Samples by ICP-MS
TM208	Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters
TM227	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples
TM428	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM022	Determination of total suspended solids in waters
TM090	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM099	Determination of Ammonium in Water Samples using the Kone Analyser
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM176	Determination of SVOCs in Water by GCMS
TM337	Analysis of PFAS
TM343	Determination of Selected Pesticides (Suite I) in Liquids by GCMS
TM405	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids - Total Oxidizable Precursor Assay
TM174	Determination of Speciated Extractable Petroleum Hydrocarbons in Waters by GC-FID
TM183	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM212	Determination of Total Nitrogen by High Temperature Catalytic Oxidation followed by Chemiluminescence Detection
TM245	Determination of GRO by Headspace in waters
TM249	The Determination of Methylene Blue Active Substances in Waters
TM338	Analysis of perfluoroalkylsulfonates and perfluorocarboxylic acids in Solids
TM383	Gravimetric Determination of Fats, Oils and Greases in Liquids by Cyclohexane Extraction
TM434	Analysis of PFAS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230401-54
Client Ref.: 326R

Report Number: 699666
Location: Victoria North

Superseded Report: 697559

Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	27763405	27763404	27763406	27778683	27778686	27778689	27778691	27778693	27778695	27778697
	Showmans Guild	SW08 DOWN	SW08 UPPER	TP410	TP411	TP412	TP413	TP414	TP415	TP416
AGS Ref.										
Depth				0.40	0.40	1.00	0.50	0.45	0.50	0.75
Type	Ground Water	Ground Water	Ground Water	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
Ammoniacal Nitrogen	27-Apr-2023	27-Apr-2023	27-Apr-2023							
Anions by Kone (w)		02-May-2023								
COD Unfiltered	03-May-2023	03-May-2023	03-May-2023							
Cyanide Comp/Free/Total/Thiocyanate		04-May-2023								
Dissolved Metals by ICP-MS	02-May-2023	02-May-2023	03-May-2023							
EPH CWG (Aliphatic) Aqueous GC (W)	04-May-2023	03-May-2023	04-May-2023							
EPH CWG (Aromatic) Aqueous GC (W)	04-May-2023	03-May-2023	04-May-2023							
Fats Oils and Greases.	04-May-2023									
GRO by GC-FID (W)	26-Apr-2023	26-Apr-2023	26-Apr-2023							
Mercury Dissolved		02-May-2023								
Mercury Unfiltered		02-May-2023								
Methylene blue active substances	03-May-2023	03-May-2023	03-May-2023							
NRA Leachate				12-Apr-2023				12-Apr-2023		
PAH Spec MS - Aqueous (W)	04-May-2023									
Pesticides (Suite I) by GCMS	03-May-2023									
PFAS (Post Ox.) Liquids	21-Apr-2023	21-Apr-2023	21-Apr-2023	25-Apr-2023				25-Apr-2023		
PFAS (Post Ox.) Solids				14-Apr-2023				14-Apr-2023		
PFAS Liquids	21-Apr-2023	21-Apr-2023	21-Apr-2023	21-Apr-2023				21-Apr-2023		
PFAS Liquids (Full Suite)		11-Jul-2023	11-Jul-2023							
PFAS Solids				14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023	14-Apr-2023
pH Value		02-May-2023								
Sample description				05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023	05-Apr-2023
Sulphide		02-May-2023								
Suspended Solids	04-May-2023	02-May-2023	04-May-2023							
SVOC MS (W) - Aqueous	03-May-2023									
Total Metals by ICP-MS	03-May-2023	02-May-2023	03-May-2023							
Total Nitrogen	22-May-2023	25-May-2023								
Total Organic and Inorganic Carbon	27-Apr-2023	27-Apr-2023	27-Apr-2023							
TPH CWG (W)	04-May-2023	03-May-2023	04-May-2023							
VOC MS (W)	27-Apr-2023	27-Apr-2023	27-Apr-2023							

Lab Sample No(s) Customer Sample Ref.	27778698	27778700
	TP403A	TP405A
AGS Ref.		
Depth	0.60	0.55
Type	Soil/Solid (S)	Soil/Solid (S)
PFAS (Post Ox.) Solids	14-Apr-2023	14-Apr-2023
PFAS Solids	14-Apr-2023	14-Apr-2023
Sample description	05-Apr-2023	05-Apr-2023



CERTIFICATE OF ANALYSIS

SDG: 230401-54
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Location: Victoria North

Superseded Report: 697559

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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

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



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Hawarden
Deeside
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BAM Ritchies
Unit 5
Taurus Park
Europa Boulevard
Gemini Business Park
Warrington
WA5 7ZT

Attention: Seb Morrell

CERTIFICATE OF ANALYSIS

Date of report Generation:	10 August 2023
Customer:	BAM Ritchies
Sample Delivery Group (SDG):	230707-48
Your Reference:	326R
Location:	Victoria North
Report No:	699721
Order Number:	RIT 298 665 896

This report has been revised and directly supersedes 696226 in its entirety.

We received 1 sample on Friday July 07, 2023 and 1 of these samples were scheduled for analysis which was completed on Thursday July 13, 2023. 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 Laboratories (UK) Limited Hawarden.

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: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
28289456	SHOWMANS GUILD			06/07/2023

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



CERTIFICATE OF ANALYSIS

Validated

SDG: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

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)

28289456

Customer Sample Reference

SHOWMANS GUILD

AGS Reference

Depth (m)

Container

ZnAc (ALE246)
Vial (ALE297)
HNO3 Unfiltered (ALE204)
Digitube for PFAS analysis.
500ml Plastic (ALE208)

Sample Type

GW GW GW GW GW

Anions by Kone (w)

All

NDPs: 0
Tests: 1

X

Determination of Dissolved Gases

All

NDPs: 0
Tests: 1

X

PFAS Liquids

All

NDPs: 0
Tests: 1

X

pH Value

All

NDPs: 0
Tests: 1

X

Sulphide

All

NDPs: 0
Tests: 1

X

Suspended Solids

All

NDPs: 0
Tests: 1

X

Total Metals by ICP-MS

All

NDPs: 0
Tests: 1

X



CERTIFICATE OF ANALYSIS

Validated

SDG: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Results Legend		Customer Sample Ref.	SHOWMANS GUILD				
# 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 1-4*§@ Sample deviation (see appendix)		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	Ground Water (GW) 06/07/2023 07/07/2023 230707-48 28289456				
Component	LOD/Units	Method					
Suspended solids, Total	<2 mg/l	TM022	56.1	#			
Sulphide	<0.01 mg/l	TM101	0.164	#			
Manganese (tot.unfilt)	<0.001 mg/l	TM152	0.699	#			
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	220	#			
Iron (Tot. Unfilt.)	<0.024 mg/l	TM152	24.7	#			
Hardness, Total as CaCO3 unfiltered	<0.35 mg/l	TM152	686				
Sulphate (soluble) as S	<1 mg/l	TM184	3.7	#			
Methane, dissolved	<0.001 mg/l	TM223	7.47				
pH	<1 pH Units	TM256	6.95	#			
Alkalinity, Total as CaCO3	<3 mg/l	TM256	836	#			
PFBA (375-22-4)	<0.000002 mg/l	TM337	<0.00001	#			
PFPA (2706-90-3)	<0.000001 mg/l	TM337	<0.000005	#			
PFHxA (307-24-4)	<0.000001 mg/l	TM337	<0.000005	#			
PFBS (375-73-5)	<0.000001 mg/l	TM337	<0.000005	#			
PFHpA (375-85-9)	<0.000001 mg/l	TM337	<0.000005	#			
6:2 FTS (27619-97-2)	<0.000001 mg/l	TM337	<0.000005	#			
PFOA (335-67-1)	<0.000001 mg/l	TM337	0.000009	#			
PFHxS (355-46-4)	<0.000001 mg/l	TM337	0.000006	#			
PFNA (375-95-1)	<0.000001 mg/l	TM337	<0.000005	#			
PFHpS (375-92-8)	<0.000001 mg/l	TM337	<0.000005	#			
PFDA (335-76-2)	<0.000001 mg/l	TM337	<0.000005	#			
Linear PFOS (1763-23-1)	<0.000001 mg/l	TM337	0.000004	#			
Branched PFOS	<0.000001 mg/l	TM337	0.000006	#			
PFUnA (2058-94-8)	<0.000001 mg/l	TM337	<0.000005	#			
PFDoA (307-55-1)	<0.000001 mg/l	TM337	<0.000005	#			
PFOSA (754-91-6)	<0.000002 mg/l	TM337	<0.00001	#			
PFDS (335-77-3)	<0.000001 mg/l	TM337	<0.000005				
PFPeS (2706-91-4)	<0.000001 mg/l	TM337	<0.000005	#			
Total PFOS	<0.000001 mg/l	TM337	0.00001	#			



CERTIFICATE OF ANALYSIS

Validated

SDG: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Data Amendment

Sample No. : 28289456 Date of Amendment : 10/08/2023

Sample Ref.	Reason	Previous	Amended
All	Matrix Change	Landfill leachate	Groundwater



CERTIFICATE OF ANALYSIS

Validated

SDG: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Table of Results - Appendix

Method No	Description
TM184	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM022	Determination of total suspended solids in waters
TM101	Determination of Sulphide in soil and water samples using the Kone Analyser
TM337	Analysis of PFAS
TM152	Analysis of Aqueous Samples by ICP-MS
TM223	Determination of Dissolved C1-7 Hydrocarbon gases in waters
TM256	Determination of pH, EC, TDS and Alkalinity in Aqueous samples

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Laboratories (UK) Limited Hawarden (Method codes TM).



CERTIFICATE OF ANALYSIS

Validated

SDG: 230707-48
Client Ref.: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Test Completion Dates

Lab Sample No(s) 28289456
Customer Sample Ref. SHOWMANS GUILD
AGS Ref.
Depth
Type Ground Water

Anions by Kone (w)	10-Jul-2023
Determination of Dissolved Gases	11-Jul-2023
PFAS Liquids	11-Jul-2023
pH Value	12-Jul-2023
Sulphide	13-Jul-2023
Suspended Solids	10-Jul-2023
Total Metals by ICP-MS	12-Jul-2023



CERTIFICATE OF ANALYSIS

SDG: 230707-48
Client Ref: 326R

Report Number: 699721
Location: Victoria North

Superseded Report: 696226

Appendix

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 15 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. For dried and crushed preparations of soils volatile loss may occur e.g volatile mercury

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 Data retention. All records, communications and reports pertaining to the analysis are archived for seven years from the date of issue of the final report.

General

18. **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.

19. Sample Deviations

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

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

20. 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 (2021), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials and soils are obtained from supplied bulk materials and soils 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 (2021).

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.

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.

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.

Appendix C3 – summary of soil analysis data.

Trial Pit		TP403A	TP405A	TP410	TP411	TP412	TP413	TP414	TP415	TP416	TP417	TP418	TP420	TP421	TP422	TP422
Sample depth (mbgl)	Units	0.60-	0.55-	0.40-	0.40-	1.00-	0.50-	0.45-	0.50-	1.1	1.00-	0.50-	0.75-	0.40-0.40	0.50-	1.00-
Laboratory ref		230401-54	230401-54	230401-54	230401-54	230401-54	230401-54	230401-54	230401-54	230401-54	230401-52	230520-22	230401-52	230401-106	230524-55	230524-55
PRE-OX																
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPa (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	7.47	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	13.8	2.31
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	29.8	4.89
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	8.55	11
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	22.5	5.46
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	2.13	<1	<1	<1	<1	<1	<1	<1	<1	<1	7.39	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.04	21
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.03	2.74
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	<1	<1	2.13	<1	<1	<1	<1	<1	<1	<2	<1	<1	7.39	<1
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	29.8	4.89
POST-OX																
PFBA (Post Ox.) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	-	-	-	<3	-	-	-	-	-	-	4.82	<3
PFPa (Post Ox.) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	-	-	-	<3	-	-	-	-	-	-	7.78	<3
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	-	-	-	<2	-	-	-	-	-	-	11.2	<2
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	18.3	<1
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFOA (Post Ox.) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	15	<1
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	7.64	1
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFDA (Post Ox.) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	11.2	1.54
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	5.27	<1
Branched PFOS (Post Ox.)	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	4.4	6.52
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	3.58	<1
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	<1	<1
Total PFOS (Post Ox.)	µg/kg	<2	<2	<2	-	-	-	<2	-	-	-	-	-	-	5.27	<2
PFOA	µg/kg	<1	<1	<1	-	-	-	<1	-	-	-	-	-	-	15	<1

Appendix C3 - Summary of Soils analysis data - PFAS

ed grey represent the TP422/TP423 Outlier

Trial Pit	Units	TP422	TP423	TP423	TP423	TP424	TP424	TP EW01	TP EW03	TP-EW04	TP-EW05	TP-EW06	TP-EW07	TP-EW08	TP-EW09	TP-EW10
Sample depth (mbgl)		2.00-	0.50-0.50	1	2.00-	0.50-0.50	1.00-1.00	1.50-	0.50-	2.00-	0.50-	0.75-0.75	0.50-	0.5	1.50-	3.00-
Laboratory ref		230524-55	230401-106	230524-55	230524-55	230401-106	230401-106	230401-74	230401-74	230520-22	230520-22	230401-106	230405-48	230405-48	230405-48	230405-47
PRE-OX																
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	1.24	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	1.09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	1.07	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	11.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	2.51	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	2.77	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<1	14.2	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1
PFOA	µg/kg	1.24	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
POST-OX																
PFBA (Post Ox.) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	-	-	-	<3	-	-	-	<3	-	-	-
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	-	-	-	<3	-	-	-	<3	-	-	-
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	-	-	-	<2	-	-	-	<2	-	-	-
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFOA (Post Ox.) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFDA (Post Ox.) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	µg/kg	<1	17	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
Branched PFOS (Post Ox.)	µg/kg	<1	3.04	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	µg/kg	1.68	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-
Total PFOS (Post Ox.)	µg/kg	<2	20	<2	<2	-	-	-	<2	-	-	-	<2	-	-	-
PFOA	µg/kg	<1	<1	<1	<1	-	-	-	<1	-	-	-	<1	-	-	-

Appendix C3 - Summary of Soils analysis data - PFAS

Cells shaded grey represent the carriage shed

Trial Pit	Units	TP-EW11	TP-EW11	TP-CS2	TP-CS2	TP-CS3	TP CS4A	TP CS4A	TP CS4A	TP CS4	TP CS4	TP CS6	TP CS6	TP-CS6A	TP-CS6A	TP-CS7
Sample depth (mbgl)		0.50-	0.9-	0.4	1	1.50-	0.5	1.5	2	1.6	1.8	0.50-	1.1	0.45	2.4	0.5
Laboratory ref		230520-22	230406-69	230520-22	230520-22	230520-23	230520-23	230520-23	230414-35	230520-23	230520-23	230406-140	230406-140	230406-140	230406-140	230520-23
PRE-OX																
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	2.61	<1	<1	3.01	<1	<1	<1	<1	1.87	<1	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total PFOS	µg/kg	<2	<1	2.61	<2	<2	3.01	<2	<1	<2	<2	1.87	<1	<2	<2	<2
PFOA	µg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
POST-OX																
PFBA (Post Ox.) Perfluoro-n-butanoic acid	µg/kg	-	-	-	-	<3	-	-	<3	-	-	-	-	-	-	-
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	µg/kg	-	-	-	-	<3	-	-	<3	-	-	-	-	-	-	-
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	µg/kg	-	-	-	-	<2	-	-	<2	-	-	-	-	-	-	-
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFOA (Post Ox.) Perfluoro-n-octanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFDA (Post Ox.) Perfluoro-n-decanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
Branched PFOS (Post Ox.)	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-
Total PFOS (Post Ox.)	µg/kg	-	-	-	-	<2	-	-	<2	-	-	-	-	-	-	-
PFOA	µg/kg	-	-	-	-	<1	-	-	<1	-	-	-	-	-	-	-

Appendix C3 - Summary of Soils analysis data - PFAS

Trial Pit	Units	TP-CS8	TP-CS8	TP-CS8	TP CS9	TP CS9	TP CS9	TP CS9(A)	TP CS9(A)
Sample depth (mbgl)		0.50-	1.50-	2.00-	0.50-	1.5	3.50-	0.45-0.75	2.50-
Laboratory ref		230520-23	230520-23	230520-23	230406-140	230406-140	230406-140	230406-140	230406-140
PRE-OX									
PFBA (375-22-4) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	<3	-	<3	<3	<3
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	<3	-	<3	<3	<3
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	<2	-	<2	<2	<2
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
6:2-FTS (27619-97-2)	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFOA (335-67-1) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFNA (375-95-1) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFDA (335-76-2) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
Branched PFOS	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFOSA (754-91-6) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFDS (335-73-3) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
Total PFOS	µg/kg	<1	<2	<1	<1	-	<1	<1	<1
PFOA	µg/kg	<1	<1	<1	<1	-	<1	<1	<1
POST-OX									
PFBA (Post Ox.) Perfluoro-n-butanoic acid	µg/kg	<3	<3	<3	-	-	-	-	-
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	µg/kg	<3	<3	<3	-	-	-	-	-
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	µg/kg	<2	<2	<2	-	-	-	-	-
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	µg/kg	<1	<1	<1	-	-	-	-	-
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	µg/kg	<1	<1	<1	-	-	-	-	-
PFOA (Post Ox.) Perfluoro-n-octanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	µg/kg	<1	<1	<1	-	-	-	-	-
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	µg/kg	<1	<1	<1	-	-	-	-	-
PFDA (Post Ox.) Perfluoro-n-decanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	µg/kg	1.52	<1	<1	-	-	-	-	-
Branched PFOS (Post Ox.)	µg/kg	<1	<1	<1	-	-	-	-	-
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	µg/kg	<1	<1	<1	-	-	-	-	-
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	µg/kg	<1	<1	<1	-	-	-	-	-
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	µg/kg	<1	<1	<1	-	-	-	-	-
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	µg/kg	<1	<1	<1	-	-	-	-	-
Total PFOS (Post Ox.)	µg/kg	<2	<2	<2	-	-	-	-	-
PFOA	µg/kg	<1	<1	<1	-	-	-	-	-

Appendix C4 – summary of analysis data from leachability and perched groundwater samples (liquid-phase).

Appendix C4 - Summary of leachability and perched groundwater analysis data - PFAS

TP405a hotspot

Trial Pit	Units	TP403A	TP403A	TP403A	TP405A	TP405A	TP405A	TP410	TP414	TP419	TP422
Sample depth (mbgl)		0.50-	1	2	0.50-	1.5	2	0.40-	0.45-	1.00-	0.50-
Laboratory ref		230524-55	230524-55	230524-55	230524-55	230524-55	230524-55	230401-54	230401-54	230520-22	230524-55
		Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Leachability
PRE-OX											
PFBA (375-22-4) Perfluoro-n-butanoic acid	mg/l	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.000015	<0.00001	<0.00002	0.000116
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000003	0.000005	<0.00001	0.000349
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000006	0.000008	<0.00001	0.000846
PFBS (375-73-5) Perfluoro-1-butanedisulfonate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000001
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000005	<0.000005	<0.00001	0.00153
6:2-FTS (27619-97-2)	mg/l	<0.00001	<0.00001	0.0000114	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	0.0000157
PFOA (335-67-1) Perfluoro-n-octanoic acid	mg/l	0.0000156	<0.0000065	<0.0000065	0.0000158	<0.0000065	<0.0000065	0.000026	0.00002	<0.0000065	0.00323
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.0000498	<0.000001	<0.000005	<0.00001	<0.000001
PFNA (375-95-1) Perfluoro-n-nonanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	0.000438
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000005
PFDA (335-76-2) Perfluoro-n-decanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	0.00037
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	mg/l	<0.0000065	<0.0000065	<0.0000065	0.0000112	<0.0000065	0.0000422	0.000002	0.000004	<0.0000065	0.0000375
Branched PFOS	mg/l	<0.0000065	<0.0000065	<0.0000065	<0.0000065	<0.0000065	0.00005	0.000002	<0.000003	<0.0000065	0.0000143
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000009
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000005
PFOSA (754-91-6) Perfluoro-octanesulfonamide	mg/l	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.000002	<0.00001	<0.00002	<0.000002
PFDS (335-73-3) Perfluoro-1-decanesulfonate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000008
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	mg/l	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000005	<0.00001	<0.000001
Total PFOS	mg/l	<0.0000065	<0.0000065	<0.0000065	0.0000112	<0.0000065	0.0000922	0.000003	0.000004	<0.0000065	0.0000519
PFOA	mg/l	0.0000156	<0.0000065	<0.0000065	0.0000158	<0.0000065	<0.0000065	0.000026	0.00002	<0.0000065	0.00323
Total PFOS	ng/l	<LOD	<LOD	<LOD	11.2	<LOD	92.2	3	4	<LOD	51.9
PFOA	ng/l	15.6	<LOD	<LOD	15.8	<LOD	<LOD	26	20	<LOD	3230
POST-OX											
PFBA (Post Ox.) Perfluoro-n-butanoic acid	mg/l	0.00000562	<0.00002	<0.000004	0.00000704	<0.000004	<0.000004	0.000023	<0.00001	<0.00002	0.000243
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	mg/l	0.00000298	<0.00001	<0.000002	0.00000691	<0.000002	<0.000002	0.000021	0.000023	<0.00001	0.00041
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	0.000015	0.000025	<0.00001	0.00122
PFBS (Post Ox.) Perfluoro-1-butanedisulfonate	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	mg/l	0.00000293	<0.00001	<0.000002	0.00000258	<0.000002	<0.000002	0.000008	0.00001	<0.00001	0.00196
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
PFOA (Post Ox.) Perfluoro-n-octanoic acid	mg/l	0.0000103	<0.00001	<0.000002	0.0000117	0.00000291	<0.000002	0.000033	0.000023	<0.00001	0.00338
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	mg/l	<0.000002	<0.00001	<0.000002	0.00000358	<0.000002	<0.000002	0.000003	0.000006	<0.00001	0.000582
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
PFDA (Post Ox.) Perfluoro-n-decanoic acid	mg/l	<0.000002	<0.00001	<0.000002	0.00000221	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	0.000413
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	mg/l	<0.000002	<0.00001	<0.000002	0.0000109	<0.000002	<0.000002	0.000002	<0.000005	<0.00001	0.0000336
Branched PFOS (Post Ox.)	mg/l	<0.000002	<0.00001	<0.000002	0.00000388	<0.000002	<0.000002	0.000002	<0.000005	<0.00001	0.000039
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	0.0000195
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	0.00000969
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	mg/l	<0.000004	<0.00002	<0.000004	<0.000004	<0.000004	<0.000004	<0.000004	<0.00001	<0.00002	<0.000004
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	mg/l	<0.000002	<0.00001	<0.000002	<0.000002	<0.000002	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002
Total PFOS	mg/l	<LOD	<LOD	<LOD	0.00001478	<LOD	<LOD	0.000004	<LOD	<LOD	0.0000726
PFOA	mg/l	0.0000103	<0.00001	<0.000002	0.0000117	0.00000291	<0.000002	0.000033	0.000023	<0.00001	0.00338
Total PFOS	ng/l	<LOD	<LOD	<LOD	14.78	<LOD	<LOD	4	<LOD	<LOD	72.6

Appendix C4 - Summary of leachability and perched groundwater analysis data -

Cells shaded grey represent the TP422/TP423 Outlier

Trial Pit	Units	TP422	TP422	TP423	TP423	TP423	TP EW02	TP EW03	TP-EW05	TP-EW07	TP-EW08
Sample depth (mbgl)		1.00-	2.00-	0.50-0.50	1	2.00-	1.5	0.50-	0.75	0.50-	1m
Laboratory ref		230524-55	230524-55	230401-106	230524-55	230524-55	230520-22	31/03/2023	230520-22	230405-48	230520-22
		Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Leachability	Perched GW	Leachability	Perched GW
PRE-OX											
PFBA (375-22-4) Perfluoro-n-butanoic acid	mg/l	0.000105	0.0000101	<0.000009	<0.00002	<0.00002	<0.00002	<0.0000075	0.000006	<0.000006	0.000016
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	mg/l	0.00102	0.0000162	0.0000053	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	0.00000123	<0.000002
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	mg/l	0.0045	0.0000214	0.00000753	<0.00001	<0.00001	<0.00001	0.00000169	0.000003	0.00000219	0.000003
PFBS (375-73-5) Perfluoro-1-butanesulfonate	mg/l	<0.000002	<0.000002	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	0.000004	<0.000001	0.000008
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	mg/l	0.00174	0.0000459	0.00000673	<0.00001	<0.00001	<0.00001	<0.000001	0.000002	0.00000218	0.000003
6:2-FTS (27619-97-2)	mg/l	0.0000987	<0.000002	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	<0.000001	<0.000002
PFOA (335-67-1) Perfluoro-n-octanoic acid	mg/l	0.00193	0.000118	0.0000209	0.0000133	0.0000102	<0.0000065	0.00000229	0.000005	0.00000457	0.000011
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	mg/l	<0.000002	<0.000002	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	<0.000001	<0.000002
PFNA (375-95-1) Perfluoro-n-nonanoic acid	mg/l	0.000128	0.0000209	0.00000134	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	0.00000174	<0.000002
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	mg/l	<0.00001	<0.00001	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	<0.000001	<0.000002
PFDA (335-76-2) Perfluoro-n-decanoic acid	mg/l	0.0000384	0.0000117	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000004	0.00000103	<0.000004
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	mg/l	<0.0000065	<0.0000065	0.00000615	<0.0000065	<0.0000065	<0.0000065	0.00000124	0.000003	0.0000019	0.000003
Branched PFOS	mg/l	<0.0000065	<0.0000065	0.0000143	<0.0000065	<0.0000065	<0.0000065	0.00000078	0.000002	0.0000007	0.000002
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	mg/l	<0.00001	<0.00001	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000004	<0.000001	<0.000004
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	mg/l	<0.00001	<0.00001	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000004	<0.000001	<0.000004
PFOSA (754-91-6) Perfluoro-octanesulfonamide	mg/l	<0.000004	<0.000004	<0.000002	<0.00002	<0.00002	<0.00002	<0.000002	<0.000004	<0.000002	<0.000004
PFDS (335-73-3) Perfluoro-1-decanesulfonate	mg/l	<0.00001	<0.00001	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000004	<0.000001	<0.000004
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	mg/l	<0.000002	<0.000002	<0.000001	<0.00001	<0.00001	<0.00001	<0.000001	<0.000002	<0.000001	<0.000002
Total PFOS	mg/l	<0.0000065	<0.0000065	0.0000758	<0.0000065	<0.0000065	<0.0000065	0.00000201	0.000005	0.0000026	0.000005
PFOA	mg/l	0.00193	0.000118	0.0000209	0.0000133	0.0000102	<0.0000065	0.00000229	0.000005	0.00000457	0.000011
Total PFOS	ng/l	<LOD	<LOD	75.8	<LOD	<LOD	<LOD	2.01	5	2.6	5
PFOA	ng/l	1930	118	20.9	13.3	10.2	<LOD	2.29	5	4.57	11
POST-OX											
PFBA (Post Ox.) Perfluoro-n-butanoic acid	mg/l	0.00134	0.0000136	0.0000509	0.00000525	<0.00001	<0.00002	<0.000004	-	0.0000145	-
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	mg/l	0.00221	0.0000304	0.0000129	0.00000405	<0.000005	<0.00001	<0.000002	-	0.00000743	-
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	mg/l	0.00769	0.0000549	0.000017	<0.000002	<0.000005	<0.00001	<0.000002	-	0.00000787	-
PFBS (Post Ox.) Perfluoro-1-butanesulfonate	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	mg/l	0.00377	0.0000611	0.0000116	0.00000328	<0.000005	<0.00001	<0.000002	-	0.00000486	-
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFOA (Post Ox.) Perfluoro-n-octanoic acid	mg/l	0.00379	0.000128	0.000028	0.00000773	<0.000005	<0.00001	<0.000002	-	0.0000056	-
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	mg/l	0.000732	0.0000251	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	0.0000028	-
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFDA (Post Ox.) Perfluoro-n-decanoic acid	mg/l	0.000548	0.0000105	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	mg/l	<0.000005	<0.000005	0.0000787	<0.000002	<0.000005	<0.00001	<0.000002	-	0.00000279	-
Branched PFOS (Post Ox.)	mg/l	<0.000005	<0.000005	0.0000178	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	mg/l	0.000206	0.0000124	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	mg/l	0.000267	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	mg/l	<0.00001	<0.00001	<0.000004	<0.000004	<0.00001	<0.00002	<0.000004	-	<0.000004	-
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	mg/l	<0.000005	<0.000005	<0.000002	<0.000002	<0.000005	<0.00001	<0.000002	-	<0.000002	-
Total PFOS	mg/l	<LOD	<LOD	0.0000965	<LOD	<LOD	<LOD	<LOD		<LOD	
PFOA	mg/l	0.00379	0.000128	0.000028	0.00000773	<0.000005	<0.00001	<0.000002	-	0.0000056	-
Total PFOS	ng/l	<LOD	<LOD	96.5	<LOD	<LOD	<LOD	<LOD		<LOD	

Appendix C4 - Summary of leachability and perched groundwater analysis data -

Cells shaded grey represent the carriage shed

Trial Pit	Units	TP-EW11	TP-CS3	TP-CS4	TP-CS7	TP-CS8
Sample depth (mbgl)		1m	1.70-	1.70-	2.00-	1.50-
Laboratory ref		230520-22	230520-23	230520-23	230520-23	230520-23
		Perched GW	Perched GW	Perched GW	Perched GW	Perched GW
PRE-OX						
PFBA (375-22-4) Perfluoro-n-butanoic acid	mg/l	<0.00013	0.000046	0.000055	<0.00001	0.000048
PFPA (2706-90-3) Perfluoro-n-pentanoic acid	mg/l	0.000011	0.000023	0.000023	0.000023	0.00002
PFHxA (307-24-4) Perfluoro-n-hexanoic acid	mg/l	0.00001	0.000016	0.000021	0.00002	0.000019
PFBS (375-73-5) Perfluoro-1-butanesulfonate	mg/l	0.000009	<0.00001	<0.00001	<0.000005	<0.00001
PFHpA (375-85-9) Perfluoro-n-heptanoic acid	mg/l	0.000009	0.00001	0.000013	0.000017	0.000014
6:2-FTS (27619-97-2)	mg/l	<0.000002	<0.00001	<0.00001	0.000008	<0.00001
PFOA (335-67-1) Perfluoro-n-octanoic acid	mg/l	0.000011	0.000041	0.00005	0.000035	0.00005
PFHxS (355-46-4) Perfluoro-1-hexanesulfonate	mg/l	<0.000002	<0.00001	<0.00001	<0.000005	<0.00001
PFNA (375-95-1) Perfluoro-n-nonanoic acid	mg/l	<0.000002	<0.00001	<0.00001	<0.000005	<0.00001
PFHpS (375-92-8) Perfluoro-1-heptanesulfonate	mg/l	<0.000002	<0.00001	<0.00001	<0.000005	<0.00001
PFDA (335-76-2) Perfluoro-n-decanoic acid	mg/l	<0.000004	<0.00001	<0.00001	<0.000005	<0.00001
Linear PFOS(1763-23-1) Perfluoro-1-octanesulfonate	mg/l	0.000001	0.000033	0.000021	0.000012	0.000028
Branched PFOS	mg/l	<0.000001	0.000017	0.000012	0.000007	0.000015
PFUnA (2058-94-8) Perfluoro-n-undecanoic acid	mg/l	<0.000004	<0.00001	<0.00001	<0.000005	<0.00001
PFDoA (307-55-1) Perfluoro-n-dodecanoic acid	mg/l	<0.000004	<0.00001	<0.00001	<0.000005	<0.00001
PFOSA (754-91-6) Perfluoro-octanesulfonamide	mg/l	<0.000004	<0.00002	<0.00002	<0.00001	<0.00002
PFDS (335-73-3) Perfluoro-1-decanesulfonate	mg/l	<0.000004	<0.00001	<0.00001	<0.000005	<0.00001
PFPeS (2706-91-4) Perfluoro-1-pentanesulfonate	mg/l	<0.000002	<0.00001	<0.00001	<0.000005	<0.00001
Total PFOS	mg/l	0.000001	0.00005	0.000033	0.000019	0.000043
PFOA	mg/l	0.000011	0.000041	0.00005	0.000035	0.00005
Total PFOS	ng/l	1	50	33	19	43
PFOA	ng/l	11	41	50	35	50
POST-OX						
PFBA (Post Ox.) Perfluoro-n-butanoic acid	mg/l	-	<0.00002	0.000024	0.000018	0.000042
PFPA (Post Ox.) Perfluoro-n-pentanoic acid	mg/l	-	<0.00001	0.000015	0.000027	0.00002
PFHxA (Post Ox.) Perfluoro-n-hexanoic acid	mg/l	-	<0.00001	0.000017	0.000019	0.000028
PFBS (Post Ox.) Perfluoro-1-butanesulfonate	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFHpA (Post Ox.) Perfluoro-n-heptanoic acid	mg/l	-	0.000014	0.000015	0.000018	0.000018
6:2 PTS (Post Ox.) Perfluoro-octane sulfonate 6:2	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFOA (Post Ox.) Perfluoro-n-octanoic acid	mg/l	-	0.000044	0.000047	0.00003	0.000056
PFHxS (Post Ox.) Perfluoro-1-hexanesulfonate	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFNA (Post Ox.) Perfluoro-n-nonanoic acid	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFHpS (Post Ox.) Perfluoro-1-heptanesulfonate	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFDA (Post Ox.) Perfluoro-n-decanoic acid	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
Linear PFOS (Post Ox.) Perfluoro-1-octanesulfonate	mg/l	-	0.000037	0.000027	0.000016	0.000037
Branched PFOS (Post Ox.)	mg/l	-	0.000022	0.000014	0.000007	0.000019
PFUnA (Post Ox.) Perfluoro-n-undecanoic acid	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFDoA (Post Ox.) Perfluoro-n-dodecanoic acid	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFOSA (Post Ox.) Perfluoro-octanesulfonamide	mg/l	-	<0.00002	<0.00002	<0.00001	<0.00002
PFDS (Post Ox.) Perfluoro-1-decanesulfonate	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
PFPeS (Post Ox.) Perfluoro-1-pentanesulfonate	mg/l	-	<0.00001	<0.00001	<0.000005	<0.00001
Total PFOS	mg/l		0.000059	0.000041	0.000023	0.000056
PFOA	mg/l	-	0.000044	0.000047	0.00003	0.000056
Total PFOS	ng/l		59	41	23	56

Appendix C5 – screening of analysis of metals and hydrocarbons against relevant GACs (samples from carriage shed area only).

Appendix C5 Soil screening assessment - carriage shed samples

Concentration exceeds GAC			100.00	ARUP				Hole Ref		TP-CS3	TP-CS3A	TP-CS4	TP-CS4	TP-CS4A	TP-CS4A	TP-CS7	TP-CS7	TP-CS8	TP-CS8	TP-CS8	
Limit of Detection value exceeds GAC			<0.1					Sample Ref		1A	3A	2A	3A	1A	2A	1A	2A	1A	2A	3A	
Concentration exceeds saturation value but not GAC			50					Eastings		0	0	0	0	0	0	0	0	0	0	0	
								Northings		0	0	0	0	0	0	0	0	0	0	0	
						Hole Elevation (mOD)															
						Sample Depth (mbgl)															
						Sample Date															
						Investigation															
						Geology															

BTEX - Ethyl benzene	438.716	GAC/S4U	mg/kg	7 of 144	0	<0.001	0.34	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - m & p Xylene	428	AC (p-xyli	mg/kg	5 of 104	0	<0.001	0.82	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
BTEX - o Xylene	475.7208	AGAC	mg/kg	5 of 104	0	<0.001	2.13	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Xylene	428	AC (p-xyli	mg/kg	4 of 145	0	<0.01	1.9	0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
BTEX (total)			mg/kg	No GAC	-	<0.001	5.9	0	<0.04	<0.04	<0.04	<0.04	0.105	<0.04
BTEX and MTBE Total			mg/kg	No GAC	-	<0.01	<0.01	0						
VOCs/SVOCs														
1,1,2,2-Tetrachloroethane	8.2	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,1-Trichloroethane	40.4	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.14	0	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
1,1,2,2-Tetrachloroethane	17.2	AGAC	mg/kg	1 of 32	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichloroethane	5.53	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethane	10.9	AGAC	mg/kg	0 of 51	0	<0.001	<0.16	0	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,1-Dichloroethane	1.17	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloropropene			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,3 Trichlorobenzene	8.81	GAC/S4U	mg/kg	1 of 51	0	<0.003	<0.4	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2,3-Trichloropropane			mg/kg	No GAC	-	<0.001	<0.32	0	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
1,2,4-Trichlorobenzene	15.3	GAC/S4U	mg/kg	1 of 51	0	<0.003	<0.4	0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
1,2,4-Trimethylbenzene	3.31	AGAC	mg/kg	5 of 51	0	<0.001	0.85	0	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
1,2-Dibromo-3-Chloropropane			mg/kg	No GAC	-	<0.002	<0.28	0	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
1,2-Dibromoethane			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	133	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane	0.0227	GAC/S4U	mg/kg	0 of 51	0	<0.002	<0.1	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,2-Dichloropropane	0.121	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3,5-Trimethylbenzene			mg/kg	No GAC	-	<0.001	0.42	0	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3-Dichlorobenzene	2.45	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.6	0	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
1,3-Dichloropropane			mg/kg	No GAC	-	<0.001	<0.14	0	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
1,4-Dichlorobenzene	350	S4UL (in)	mg/kg	0 of 51	0	<0.001	<0.1	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
2,2-Dichloropropane			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,3,4,6-Tetrachlorophenol	229	AGAC	mg/kg	0 of 17	0	<0.1	<0.1	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
2,4,5-Trichlorophenol	210	S4UL	mg/kg	0 of 39	0	<0.1	<0.1	0						
2,4,6-Trichlorophenol	231	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
2,4-Dichlorophenol	186	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
2,4-Dimethylphenol	1040	AGAC	mg/kg	1 of 39	0	<0.1	0.2	0						
2,4-Dinitrotoluene	254	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
2,6-Dinitrotoluene	125	AGAC	mg/kg	1 of 39	0	<0.1	0.2	0						
2-Chloronaphthalene	31.6	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
2-Chlorophenol	207	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
2-Chlorotoluene			mg/kg	No GAC	-	<0.001	<0.18	0	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
2-Methyl-4,6-Dinitrophenol			mg/kg	No GAC	-	<0.1	<0.1	0						
2-Methylnaphthalene			mg/kg	No GAC	-	<0.1	23.8	0						
2-Methylphenol			mg/kg	1 of 39	0	<0.1	0.2	0						
2-Nitroaniline	9930	AGAC	mg/kg	No GAC	-	<0.1	<0.1	0						
2-Nitrophenol			mg/kg	No GAC	-	<0.1	<0.1	0						
3-Nitroaniline			mg/kg	No GAC	-	<0.1	<0.1	0						
4-Bromofluorobenzene Surrogate			%	No GAC	-	76.4	97.9	0	85	88.9	85.6	76.8	97.9	81.8
4-Bromophenyl Phenyl Ether			mg/kg	No GAC	-	<0.1	<0.1	0						
4-Chloro-3-Methylphenol			mg/kg	No GAC	-	<0.1	<0.1	0						
4-Chlorotoluene			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Isopropyltoluene			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
4-Nitroaniline			mg/kg	No GAC	-	<0.1	<0.1	0						
4-Nitrophenol			mg/kg	No GAC	-	<0.1	6.2	0						
Aniline			mg/kg	No GAC	-	<0.1	<0.1	0						
Azobenzene			mg/kg	No GAC	-	<0.1	<0.1	0						
Benzyl Alcohol			mg/kg	No GAC	-	<0.1	<0.1	0						
Bis(2-chloroethoxy)methane			mg/kg	No GAC	-	<0.1	<0.1	0						
Bis(2-chloroethyl)ether			mg/kg	No GAC	-	<0.1	<0.1	0						
Bis(2-chloroisopropyl)ether			mg/kg	No GAC	-	<0.1	<0.1	0						
Bis(2-ethylhexyl)phthalate	4090	AGAC	mg/kg	1 of 39	0	<0.1	7.85	0						
Bromobenzene	7	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromochloromethane			mg/kg	No GAC	-	<0.005	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane	0.096	AGAC	mg/kg	0 of 51	0	<0.007	<0.14	0	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Bromofom	32.4	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Bromomethane			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Butylbenzyl phthalate	63800	AGAC	mg/kg	1 of 39	0	<0.1	<0.1	0						
Carbazole			mg/kg	No GAC	-	<0.1	7.75	0						
Carbon Disulphide	0.622	GAC/S4U	mg/kg	1 of 32	0	<0.001	<0.14	0	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Carbon Tetrachloride	0.128	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorobenzene	2.41	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.1	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Chlorodibromomethane			mg/kg	No GAC	-	<0.003	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethane	26	AGAC	mg/kg	0 of 32	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethene	0.00153	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.12	0	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Chloroform	4.22	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.16	0	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Chloromethane	0.0188	AGAC	mg/kg	0 of 32	0	<0.007	<0.14	0	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007
Di-N-Butyl Phthalate	645	AGAC	mg/kg	1 of 39	0	<0.1	0.345	0						
Di-N-Octyl Phthalate	4920	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
Dibenzofuran			mg/kg	No GAC	-	<0.1	16.9	0						
Dibromomethane			mg/kg	No GAC	-	<0.001	<0.18	0	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Dichloromethane	6.37	AGAC	mg/kg	2 of 32	0	<0.005	<0.2	0	<0.01	<0.01	0.0353	0.0305	<0.01	<0.01
Diethyl phthalate	8970	AGAC	mg/kg	0 of 39	0	<0.1	<0.1	0						
Dimethyl phthalate			mg/kg	No GAC	-	<0.1	<0.1	0						
Diphenylamine			mg/kg	No GAC	-	<0.1	<0.1	0						
Hexachlorobenzene	6.38	AGAC	mg/kg	0 of 47	0	<0.01	<0.1	0						
Hexachlorobutadiene	1.79	GAC/S4U	mg/kg	0 of 51	0	<0.001	<0.4	0	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Hexachlorocyclopentadiene			mg/kg	No GAC	-	<0.1	<0.1	0						
Hexachloroethane	1.8	AGAC	mg/kg	0 of 22	0	<0.1	<0.1	0						
Isophorone			mg/kg	No GAC	-	<0.1	<0.1	0						
Isopropylbenzene	95.4	AGAC	mg/kg	2 of 51	0	<0.001	<0.1	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
M-Dinitrobenzene			mg/kg	No GAC	-	<0.1	<0.1	0						
MTBE	319	AGAC	mg/kg	0 of 102	0	<0.01	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Nitrobenzene			mg/kg	No GAC	-	<0.1	<0.1	0						
O-Dinitrobenzene			mg/kg	No GAC	-	<0.1	11	0						
P-Dinitrobenzene			mg/kg	No GAC	-	<0.1	<0.1	0						
PCP: (Pentachlorophenol)	30.6	GAC/S4U	mg/kg	0 of 47	0	<0.1	<0.1	0						
Sec-Butylbenzene			mg/kg	No GAC	-	<0.001	0.85	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Styrene	236	AGAC	mg/kg	1 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tert-Butylbenzene			mg/kg	No GAC	-	<0.001	<0.18	0	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014

n-Butylbenzene			mg/kg	No GAC	-	<0.002	<0.06	0	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
Tertiary Amyl Methyl Ether			mg/kg	No GAC	-	<0.01	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene	0.92	GAC/S4U	mg/kg	2 of 51	0	<0.001	<0.1	0	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Trichloroethene	0.0797	GAC/S4U	mg/kg	1 of 51	0	<0.001	<0.18	0	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Trichlorofluoromethane			mg/kg	No GAC	-	<0.001	<0.12	0	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
cis 1,2-Dichloroethene	0.559	AGAC	mg/kg	0 of 51	0	<0.001	<0.12	0	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
cis 1,3-Dichloropropene			mg/kg	No GAC	-	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
cis 1,3-Dichloropropene			mg/kg	No GAC	-	<0.01	<0.1	0							
n-Butylbenzene			mg/kg	No GAC	-	<0.001	<0.22	0	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011
n-Nitroso-n-dipropylamine			mg/kg	No GAC	-	<0.1	<0.1	0							
n-Propylbenzene	323	AGAC	mg/kg	2 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
trans 1,2-Dichloroethene	1.02	AGAC	mg/kg	0 of 51	0	<0.001	<0.2	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
trans 1,3-Dichloropropene			mg/kg	No GAC	-	<0.001	<0.2	0							
SVOC Total (excl. PAH/Phenols/Cresols and Chlorophenols)			mg/kg	No GAC	-	<0.1	0.277	0	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
SVOC Total (excl. PAH/Phenols/Cresols/Chlorophenols/Ethi			mg/kg	No GAC	-	<0.1	0.277	0							

Appendix C6 – summary of residual PFAS concentrations in all sampled media.

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

[illegible]

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

[illegible]

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

[illegible]

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

[illegible]

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

Residual PFAS concentrations	Units	TP-EW11	TP-EW11	TP-EW11
		0.5-	0.9-	1m
		230520-22	230406-69	230520-22
Medium		Soil	Soil	Perched GW
PFBA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFPA	µg/kg or ng/l	<LOD	<LOD	11
PFHxA	µg/kg or ng/l	<LOD	<LOD	10
PFBS	µg/kg or ng/l	<LOD	<LOD	9
PFHpA	µg/kg or ng/l	<LOD	<LOD	9
6:2-FTS	µg/kg or ng/l	<LOD	<LOD	<LOD
PFOA	µg/kg or ng/l	<LOD	<LOD	11
PFHxS	µg/kg or ng/l	<LOD	<LOD	<LOD
PFNA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFHpS	µg/kg or ng/l	<LOD	<LOD	<LOD
PFDA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFOS	µg/kg or ng/l	<LOD	<LOD	1
PFUnA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFDoA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFOSA	µg/kg or ng/l	<LOD	<LOD	<LOD
PFDS	µg/kg or ng/l	<LOD	<LOD	<LOD
PFPeS	µg/kg or ng/l	<LOD	<LOD	<LOD

Summary - Soils			
	Units	No. of results > LOD	Max concentration
PFBA	µg/kg	0	LOD
PFPA	µg/kg	0	LOD
PFHxA	µg/kg	0	LOD
PFBS	µg/kg	0	LOD
PFHpA	µg/kg	0	LOD
6:2-FTS	µg/kg	0	LOD
PFOA	µg/kg	0	LOD
PFHxS	µg/kg	0	LOD
PFNA	µg/kg	0	LOD
PFHpS	µg/kg	0	LOD
PFDA	µg/kg	0	LOD
PFOS	µg/kg	1	13.00
PFUnA	µg/kg	0	LOD
PFDoA	µg/kg	1	1.03
PFOSA	µg/kg	0	LOD
PFDS	µg/kg	0	LOD
PFPeS	µg/kg	0	LOD

Appendix C6 - Summary of analysis data - Residual PFAS

All results Pre-Ox

		Summary - liquid phase			
Residual PFAS concentrations	Units				
		Units	No. of results > LOD	Max concentration	Mean concentration
Medium					
PFBA	µg/kg or ng/l	ng/l	2	16.0	23.6
PFPA	µg/kg or ng/l	ng/l	4	11.0	6.8
PFHxA	µg/kg or ng/l	ng/l	7	10.0	7.4
PFBS	µg/kg or ng/l	ng/l	3	9.0	7.1
PFHpA	µg/kg or ng/l	ng/l	5	9.0	6.9
6:2-FTS	µg/kg or ng/l	ng/l	1	11.4	6.1
PFOA	µg/kg or ng/l	ng/l	9	26.0	10.3
PFHxS	µg/kg or ng/l	ng/l	0	LOD	6.0
PFNA	µg/kg or ng/l	ng/l	1	1.7	6.1
PFHpS	µg/kg or ng/l	ng/l	0	LOD	6.0
PFDA	µg/kg or ng/l	ng/l	1	1.0	6.4
PFOS	µg/kg or ng/l	ng/l	8	11.2	8.0
PFUnA	µg/kg or ng/l	ng/l	0	LOD	6.4
PFDoA	µg/kg or ng/l	ng/l	0	LOD	6.4
PFOSA	µg/kg or ng/l	ng/l	0	LOD	12.0
PFDS	µg/kg or ng/l	ng/l	0	LOD	6.4
PFPeS	µg/kg or ng/l	ng/l	0	LOD	6.0