From: Beggs, Tauren R - DNR
Sent: Thursday, April 18, 2024 12:47 PM
To: Susan Petrofske
Cc: Kristin Jones (Kristin.Jones@newellco.com); Gabriel M. Rodriguez (gabriel.rodriguez@afslaw.com); Andrew Sawula ; Paul Lindquist; Jeanne Tarvin
Subject: RE: NR 716.14 Data Transmittal for BRRTS#: 02-36-589295 (BRIGHT HORIZON PROPERTIES LLC [FORMER])

Got it, thanks Susan

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Tauren R. Beggs
Phone: (920) 510-3472
Tauren.Beggs@wisconsin.gov

From: Susan Petrofske <SPETROFSKE@ramboll.com>
Sent: Thursday, April 18, 2024 12:21 PM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Cc: Kristin Jones (Kristin.Jones@newellco.com) <Kristin.Jones@newellco.com>; Gabriel M. Rodriguez (gabriel.rodriguez@afslaw.com) <gabriel.rodriguez@afslaw.com>; Andrew Sawula <andrew.sawula@afslaw.com>; Paul Lindquist <PLINDQUIST@ramboll.com>; Jeanne Tarvin <jtarvin@ramboll.com>
Subject: NR 716.14 Data Transmittal for BRRTS#: 02-36-589295 (BRIGHT HORIZON PROPERTIES LLC [FORMER])

Tauren,

Attached for your records is a copy of the data transmittal letter for soil samples collected in March 2024 as part of the PFAS focused site investigation activities at the West River Lofts, LLC (Former Bright Horizons) site in Two Rivers, WI. Please note, a copy of this letter and attachments has also been uploaded to the WDNR RR Program Submission Portal.

Thank you.

Kind regards
Susan Petrofske

Senior Managing Consultant

D 262-901-3501
M 262-391-5990
spetrofske@ramboll.com

Ramboll
234 W. Florida Street
Fifth Floor
Milwaukee, WI 53204
USA
https://ramboll.com

RAMBOLL

ENVIRONMENT
& HEALTH

Sent Via E-Mail and WAMS

Mr. Tauren Beggs
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727

West River Lofts LLC
c/o Melissa N. Allen
1420 W. Center Street, Suite 2
Milwaukee, WI 53206

NR 716.14 DATA TRANSMITTAL - SOIL SAMPLE RESULTS
WEST RIVER LOFTS, LLC, 1621 14TH STREET, TWO RIVERS, WISCONSIN
(PORTION OF BRIGHT HORIZON PROPERTIES, LLC [FORMER]
1702 13TH STREET); WDNR BRRTS NO. 02-36-589295

April 18, 2024

Ramboll
234 W. Florida Street
Fifth Floor
Milwaukee, WI 53204
USA

T +1 414 837 3607
F +1 414 837 3608
www.ramboll.com

Ref. 1690026868

Dear Mr. Beggs and Ms. Allen:

Ramboll Americas Engineering Solutions, Inc. (Ramboll), on behalf of Newell Operating Company (NOC), is providing the Wisconsin Department of Natural Resources (WDNR) and the current property owner with the attached soil sample analytical results collected during the recent monitoring well installation activities at the West River Lofts, LLC (WRL) property located at 1621 14th Street (former Mirro Plant No. 4) in Two Rivers, Wisconsin (the "Site"). The samples were collected on March 14, 2024, and analyzed in accordance with the WDNR approved *PFAS Focused NR 716 Site Investigation Work Plan* (the "Work Plan"). The laboratory analytical reports, tabulated discrete sample results, and a figure showing the sample locations are attached. These site investigation activities, along with the additional items outlined in the Work Plan, will be formally documented in the *Wisconsin Administrative Code NR 716 Focused Site Investigation Report* prepared at the completion of the site investigation.

If you have any questions or require additional information, feel free to contact the undersigned.

Sincerely,

Susan Petrofske
Senior Managing Consultant

D +1 262 901 3501
spetrofske@ramboll.com

Jeanne Tarvin, PG, CPG
E&H Americas Country Market Director

D +1 262 901 0085
jtarvin@ramboll.com

cc: Kristin Jones, NOC
Gabriel Rodriguez, ArentFox Schiff
Andrew Sawula, ArentFox Schiff
Edward Witte, Godfrey & Kahn

ATTACHMENTS

Table 1: March 2024 PFAS Soil Analytical Results

Figure 1: Monitoring Well Locations

Laboratory Analytical Reports (Eurofins TestAmerica)

Table 1. March 2024 PFAS Soil Analytical Results

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])
1621 14th Street, Two Rivers, Wisconsin
BRRTS No.: 02-36-589295 (ERP) FID: 436010300

				Fluorotelomer sulfonic acid (FTSA)					Perfluoroalkane sulfomides (FASA) and derivatives				
Station Name	Sample ID	Sample Depth (feet BGS)	Sample Date	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid	8:2 Fluorotelomer sulfonic acid	HFPO-DA (GenX)	NEtFOSA	NEtFOSAA	NEtFOSE	NMeFOSA	NMeFOSAA
			Reporting Units:	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
				Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
			WI Soil GW Pathways DF 2:	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
			WI Soil Industrial DC RCLs:	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**
			WI Soil Non-Industrial DC RCLs:	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-101	MW-101 (1-3)	1-3	3/14/2024	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U
MW-102	MW-102 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-103	MW-103 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-104	MW-104 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-105	MW-105 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	0.044 J	0.051 J	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U

Notes:

Italic	exceeds the Soil-to-Groundwater Pathway RCL (DF 2)
Bold	exceeds the WI Soil Industrial DC RCLs
Underline	exceeds the WI Soil Non-Industrial DC RCLs
Gray Text	analyte not detected

Results & Qualifiers:
< = Concentration is less than the reported limit
J = Estimated Concentration
U = Concentration is less than the reported limit

Acronyms:
BGS = Below ground surface
RCL = Soil Residual Contaminant Level
DC (or D-C) = Direct-Contact
WDNR = Wisconsin Department of Natural Resources
FID = facility identification number
PFAS = per- and polyfluoroalkyl substances
BRRTS = Bureau for Remediation and Redevelopment Tracking System

Acronyms, continued:
µg/kg = micrograms per kilogram
DF 2 = Dilution Factor of 2
WI = Wisconsin
NS = No Standard

Screening Levels:

Screening criteria are derived from the WDNR NR720 Soil RR (Remediation and Redevelopment Program) RCLs last updated December 2018

Groundwater Pathway RCLs are based on a Dilution Factor of 2 (DF 2).

Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

Table 1. March 2024 PFAS Soil Analytical Results

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])
1621 14th Street, Two Rivers, Wisconsin
BRRTS No.: 02-36-589295 (ERP) FID: 436010300

				Perfluoroalkane sulfomides (FASA) and derivatives		Perfluoroalkane sulfonic acid (PFSA)							
Station Name	Sample ID	Sample Depth (feet BGS)	Sample Date	NMeFOSE	Perfluorooctanesulfonamide (FOSA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorododecanesulfonic acid (PFDoS)	Perfluoroheptanesulfonic Acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanesulfonic acid (PFNS)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanesulfonic acid (PFPeS)
		Reporting Units:		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
				Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
		WI Soil GW Pathways DF 2:		*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
		WI Soil Industrial DC RCLs:		**NS**	**NS**	**16400000**	**NS**	**NS**	**NS**	**NS**	**NS**	**16400**	**NS**
		WI Soil Non-Industrial DC RCLs:		NS	NS	1260000	NS	NS	NS	NS	NS	1260	NS
MW-101	MW-101 (1-3)	1-3	3/14/2024	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	< 0.24 U	1.6	< 0.24 U
MW-102	MW-102 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	3.5	< 0.23 U
MW-103	MW-103 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	0.066 J	< 0.23 U	2.4	< 0.23 U
MW-104	MW-104 (1-3)	1-3	3/14/2024	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	0.93	< 0.23 U
MW-105	MW-105 (1-3)	1-3	3/14/2024	< 0.23 U	0.044 J	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	1.9	< 0.23 U

Notes:

Italic	exceeds the Soil-to-Groundwater Pathway RCL (DF 2)
Bold	exceeds the WI Soil Industrial DC RCLs
Underline	exceeds the WI Soil Non-Industrial DC RCLs
Gray Text	analyte not detected

Results & Flags:
< = Concentration is less than the reported limit
J = Estimated Concentration
U = Concentration is less than the reported limit

Acronyms:
BGS = Below ground surface
RCL = Soil Residual Contaminant Level
DC (or D-C) = Direct-Contact
WDNR = Wisconsin Department of Natural Resources
FID = facility identification number
PFAS = per- and polyfluoroalkyl substances
BRRTS = Bureau for Remediation and Redevelopment Tracking System

Acronyms, continued:
µg/kg = micrograms per kilograr
DF 2 = Dilution Factor of 2
WI = Wisconsin
NS = No Standard

Screening Levels:

Screening criteria are derived from the WDNR NR720 Soil RR (Remediation and Redevelopment Program) RCLs last updated December 2018

Groundwater Pathway RCLs are based on a Dilution Factor of 2 (DF 2).

Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

Table 1. March 2024 PFAS Soil Analytical Results

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])
1621 14th Street, Two Rivers, Wisconsin
BRRTS No.: 02-36-589295 (ERP) FID: 436010300

				Perfluoroalkyl carboxylic acid (PFCA)										
Station Name	Sample ID	Sample Depth (feet BGS)	Sample Date	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeA)	Perfluorotridecanoic acid (PFTriA)	Perfluoroundecanoic acid (PFUnA)
		Reporting Units:		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
				Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag	Result Flag
		WI Soil GW Pathways DF 2:		*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*
		WI Soil Industrial DC RCLs:		**NS**	**NS**	**NS**	**NS**	**NS**	**NS**	**16400**	**NS**	**NS**	**NS**	**NS**
		WI Soil Non-Industrial DC RCLs:		NS	NS	NS	NS	NS	NS	1260	NS	NS	NS	NS
MW-101	MW-101 (1-3)	1-3	3/14/2024	< 0.24 UJ	< 0.24 U	< 0.24 U	0.11 J	0.069 J	0.085 J	0.34	0.12 J	< 0.24 U	< 0.24 U	< 0.24 U
MW-102	MW-102 (1-3)	1-3	3/14/2024	< 0.23 UJ	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	0.062 J	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-103	MW-103 (1-3)	1-3	3/14/2024	< 0.23 UJ	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	0.18 J	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-104	MW-104 (1-3)	1-3	3/14/2024	< 0.23 UJ	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U
MW-105	MW-105 (1-3)	1-3	3/14/2024	< 0.23 UJ	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U	< 0.23 U

Notes:

Italic	exceeds the Soil-to-Groundwater Pathway RCL (DF 2)
Bold	exceeds the WI Soil Industrial DC RCLs
Underline	exceeds the WI Soil Non-Industrial DC RCLs
Gray Text	analyte not detected

Results & Flags:
< = Concentration is less than the reported limit
J = Estimated Concentration
U = Concentration is less than the reported limit

Acronyms:
BGS = Below ground surface
RCL = Soil Residual Contaminant Level
DC (or D-C) = Direct-Contact
WDNR = Wisconsin Department of Natural Resources
FID = facility identification number
PFAS = per- and polyfluoroalkyl substances
BRRTS = Bureau for Remediation and Redevelopment Tracking System

Acronyms, continued:
µg/kg = micrograms per kilogram
DF 2 = Dilution Factor of 2
WI = Wisconsin
NS = No Standard

Screening Levels:

Screening criteria are derived from the WDNR NR720 Soil RR (Remediation and Redevelopment Program) RCLs last updated December 2018

Groundwater Pathway RCLs are based on a Dilution Factor of 2 (DF 2).

Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

Table 1. March 2024 PFAS Soil Analytical Results

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])
1621 14th Street, Two Rivers, Wisconsin
BRRTS No.: 02-36-589295 (ERP) FID: 436010300

				Polyfluoroalkyl ether sulfonic acid (PFESA)			
Station Name	Sample ID	Sample Depth (feet BGS)	Sample Date	11Cl-PF3OUdS (F-53B Minor)		9Cl-PF3ONS (F-53B Major)	
			Reporting Units:	µg/kg		µg/kg	
				Result	Flag	Result	Flag
			WI Soil GW Pathways DF 2:	*NS*		*NS*	
			WI Soil Industrial DC RCLs:	**NS**		**NS**	
			WI Soil Non-Industrial DC RCLs:	NS		NS	
MW-101	MW-101 (1-3)	1-3	3/14/2024	< 0.24	U	< 0.24	U
MW-102	MW-102 (1-3)	1-3	3/14/2024	< 0.23	U	< 0.23	U
MW-103	MW-103 (1-3)	1-3	3/14/2024	< 0.23	U	< 0.23	U
MW-104	MW-104 (1-3)	1-3	3/14/2024	< 0.23	U	< 0.23	U
MW-105	MW-105 (1-3)	1-3	3/14/2024	< 0.23	U	< 0.23	U

Notes:

Italic	exceeds the Soil-to-Groundwater Pathway RCL (DF 2)
Bold	exceeds the WI Soil Industrial DC RCLs
Underline	exceeds the WI Soil Non-Industrial DC RCLs
Gray Text	analyte not detected

Results & Flags:
< = Concentration is less than the reported limit
J = Estimated Concentration
U = Concentration is less than the reported limit

Acronyms:
BGS = Below ground surface
RCL = Soil Residual Contaminant Level
DC (or D-C) = Direct-Contact
WDNR = Wisconsin Department of Natural Resources
FID = facility identification number
PFAS = per- and polyfluoroalkyl substances
BRRTS = Bureau for Remediation and Redevelopment Tracking System

Acronyms, continued:
µg/kg = micrograms per kilogram
DF 2 = Dilution Factor of 2
WI = Wisconsin
NS = No Standard

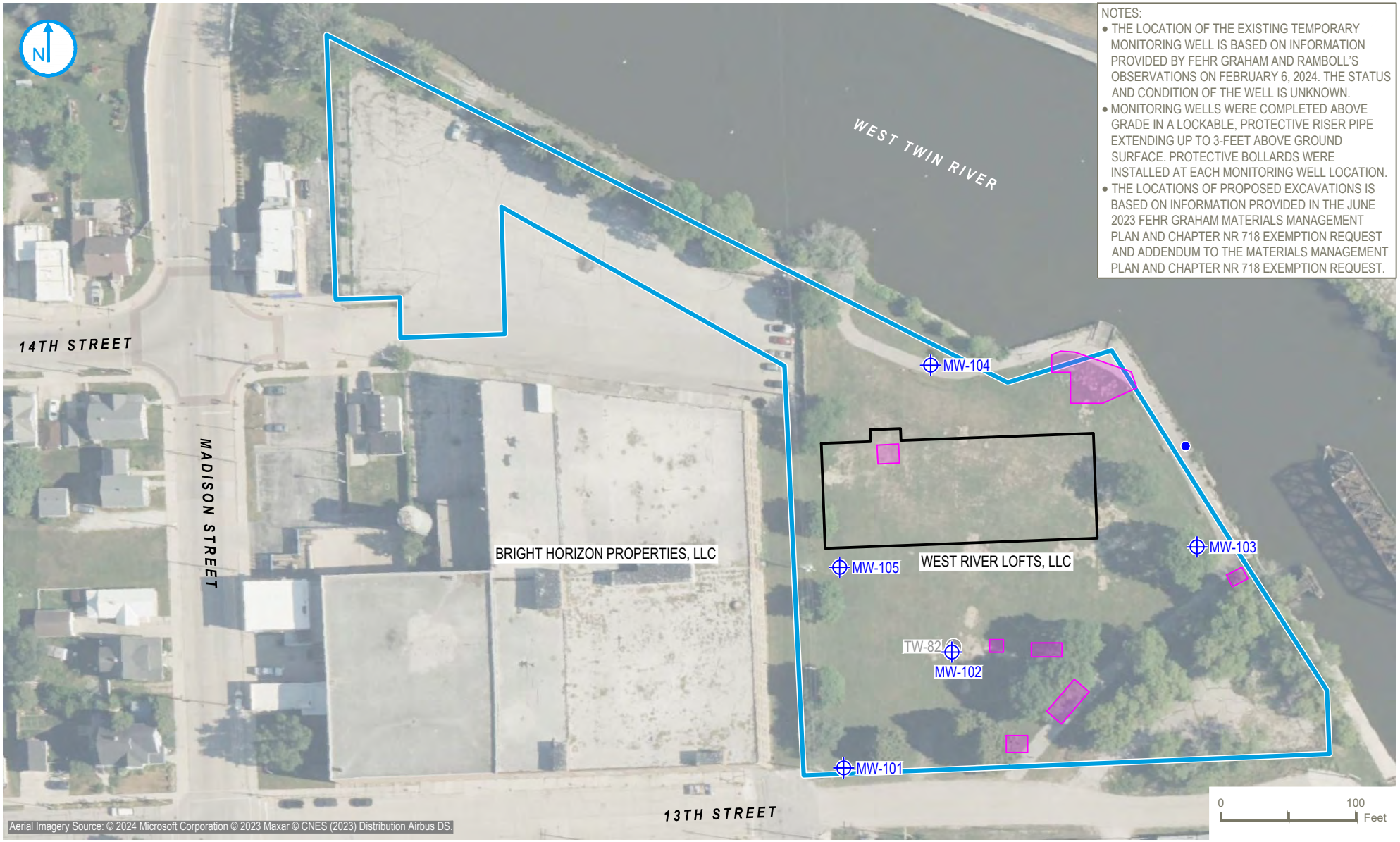
Screening Levels:

Screening criteria are derived from the WDNR NR720 Soil RR (Remediation and Redevelopment Program) RCLs last updated December 2018

Groundwater Pathway RCLs are based on a Dilution Factor of 2 (DF 2).

Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

PROJECT: 1690026868 DATED: 4/17/2024 DESIGNER: HJWARD L:\Loop Project Files_CAD\1690026868_Mirro4_PHII\2024-03\01_MW Locations.dwg



PROPERTY BOUNDARY (APPROXIMATE)

MONITORING WELL/TEMPORARY MONITORING WELL (INSTALLED BY OTHERS)

MONITORING WELL

APPROXIMATE LOCATION OF THE FUTURE EXCAVATION AREAS AS DESCRIBED IN THE MATERIALS MANAGEMENT PLAN AND ADDENDUM TO THE MATERIALS MANAGEMENT PLAN

WRL ANTICIPATED BUILDING FOOTPRINT (APPROXIMATE)

RIVER ELEVATION MEASUREMENT LOCATION

MONITORING WELL LOCATIONS

WEST RIVER LOFTS, LLC
(FORMER MIRRO PLANT NO. 4)
1621 14TH STREET
TWO RIVERS, WISCONSIN

FIGURE 1

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

RAMBOLL

ANALYTICAL REPORT

PREPARED FOR

Attn: Paul Lindquist
Ramboll Americas Engineering Solutions
234 W. Florida Street
Fifth Floor
Milwaukee, Wisconsin 53204

Generated 4/4/2024 8:33:14 AM

JOB DESCRIPTION

Mirro 4 - 1690026868

JOB NUMBER

500-247616-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits
- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = 3.33 x LOD as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization

Generated
4/4/2024 8:33:14 AM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

Table of Contents

Job ID: 500-247616-1 Eurofins Chicago

Job Narrative
500-247616-1

Receipt
The samples were received on 3/16/2024 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.1º C.

LCMS
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-101 (1-3) — Lab Sample ID: 500-247616-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.060	J B	0.24	0.055	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	0.12	J	0.24	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	0.069	J	0.24	0.037	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	0.11	J	0.24	0.046	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.34		0.24	0.064	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.085	J	0.24	0.027	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.6		0.24	0.052	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: MW-102 (1-3) — Lab Sample ID: 500-247616-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.089	J B	0.23	0.053	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.062	J	0.23	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3.5		0.23	0.049	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: 20240314-FB — Lab Sample ID: 500-247616-3

No Detections.

Client Sample ID: 20240314-EB — Lab Sample ID: 500-247616-4

No Detections.

Client Sample ID: MW-103 (1-3) — Lab Sample ID: 500-247616-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.15	J B	0.23	0.053	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.18	J	0.23	0.061	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.066	J	0.23	0.033	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4		0.23	0.050	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: MW-104 (1-3) — Lab Sample ID: 500-247616-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.22	J B	0.23	0.052	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.93		0.23	0.049	ug/Kg	1	☼	537 (modified)	Total/NA

Client Sample ID: MW-105 (1-3) — Lab Sample ID: 500-247616-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	0.15	J B	0.23	0.054	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.9		0.23	0.050	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.044	J	0.23	0.038	ug/Kg	1	☼	537 (modified)	Total/NA
6:2 FTS	0.044	J	0.23	0.031	ug/Kg	1	☼	537 (modified)	Total/NA
8:2 FTS	0.051	J	0.23	0.041	ug/Kg	1	☼	537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3550C	Percent Moisture	SW846	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-247616-1	MW-101 (1-3)	Solid	03/14/24 09:00	03/16/24 09:50
500-247616-2	MW-102 (1-3)	Solid	03/14/24 10:30	03/16/24 09:50
500-247616-3	20240314-FB	Water	03/14/24 11:05	03/16/24 09:50
500-247616-4	20240314-EB	Water	03/14/24 11:10	03/16/24 09:50
500-247616-5	MW-103 (1-3)	Solid	03/14/24 12:00	03/16/24 09:50
500-247616-6	MW-104 (1-3)	Solid	03/14/24 13:00	03/16/24 09:50
500-247616-7	MW-105 (1-3)	Solid	03/14/24 14:40	03/16/24 09:50

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-101 (1-3)
Lab Sample ID: 500-247616-1
Date Collected: 03/14/24 09:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 81.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.060**	**J B**	0.24	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluoropentanoic acid (PFPeA)	**0.12**	**J**	0.24	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorohexanoic acid (PFHxA)	**0.069**	**J**	0.24	0.037	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluoroheptanoic acid (PFHpA)	**0.11**	**J**	0.24	0.046	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorooctanoic acid (PFOA)	**0.34**		0.24	0.064	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorononanoic acid (PFNA)	**0.085**	**J**	0.24	0.027	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorodecanoic acid (PFDA)	<0.058		0.24	0.058	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluoroundecanoic acid (PFUnA)	<0.051		0.24	0.051	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorododecanoic acid (PFDoA)	<0.036		0.24	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorotridecanoic acid (PFTrDA)	<0.025		0.24	0.025	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorotetradecanoic acid (PFTeA)	<0.045		0.24	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorobutanesulfonic acid (PFBS)	<0.046		0.24	0.046	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluoropentanesulfonic acid (PFPeS)	<0.045		0.24	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorohexanesulfonic acid (PFHxS)	<0.035		0.24	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.059		0.24	0.059	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorooctanesulfonic acid (PFOS)	**1.6**		0.24	0.052	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorononanesulfonic acid (PFNS)	<0.035		0.24	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorodecanesulfonic acid (PFDS)	<0.063		0.24	0.063	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorododecanesulfonic acid (PFDoS)	<0.057		0.24	0.057	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
Perfluorooctanesulfonamide (FOSA)	<0.040		0.24	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NEtFOSA	<0.057		0.24	0.057	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NMeFOSA	<0.059		0.24	0.059	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NMeFOSAA	<0.028		0.24	0.028	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NEtFOSAA	<0.058		0.24	0.058	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NMeFOSE	<0.057		0.24	0.057	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
NEtFOSE	<0.034		0.24	0.034	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
4:2 FTS	<0.062		0.24	0.062	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
6:2 FTS	<0.033		0.24	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
8:2 FTS	<0.042		0.24	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.047		0.24	0.047	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
HFPO-DA (GenX)	<0.049		0.24	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
9Cl-PF3ONS	<0.042		0.24	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1
11Cl-PF3OUdS	<0.037		0.24	0.037	ug/Kg	☼	03/27/24 12:17	03/29/24 13:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C5 PFPeA	*84*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C2 PFHxA	*82*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C4 PFHpA	*85*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C4 PFOA	*93*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C5 PFNA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C2 PFDA	*81*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C2 PFUnA	*68*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C2 PFDoA	*56*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C2 PFTeDA	*47*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*
13C3 PFBS	*73*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:58*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-101 (1-3)
Lab Sample ID: 500-247616-1
Date Collected: 03/14/24 09:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 81.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	71		25 - 150	03/27/24 12:17	03/29/24 13:58	1
13C4 PFOS	64		25 - 150	03/27/24 12:17	03/29/24 13:58	1
13C8 FOSA	74		10 - 150	03/27/24 12:17	03/29/24 13:58	1
d3-NMeFOSAA	66		25 - 150	03/27/24 12:17	03/29/24 13:58	1
d5-NEtFOSAA	68		25 - 150	03/27/24 12:17	03/29/24 13:58	1
d-N-MeFOSA-M	48		10 - 150	03/27/24 12:17	03/29/24 13:58	1
d-N-EtFOSA-M	49		10 - 150	03/27/24 12:17	03/29/24 13:58	1
d7-N-MeFOSE-M	52		10 - 150	03/27/24 12:17	03/29/24 13:58	1
d9-N-EtFOSE-M	49		10 - 150	03/27/24 12:17	03/29/24 13:58	1
M2-4:2 FTS	66		25 - 150	03/27/24 12:17	03/29/24 13:58	1
M2-6:2 FTS	77		25 - 150	03/27/24 12:17	03/29/24 13:58	1
M2-8:2 FTS	81		25 - 150	03/27/24 12:17	03/29/24 13:58	1
13C3 HFPO-DA	77		25 - 150	03/27/24 12:17	03/29/24 13:58	1

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247616-1

Client Sample ID: MW-102 (1-3)
Date Collected: 03/14/24 10:30
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-2
Matrix: Solid
Percent Solids: 86.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.089**	**J B**	0.23	0.053	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluoropentanoic acid (PFPeA)	<0.047		0.23	0.047	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorohexanoic acid (PFHxA)	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluoroheptanoic acid (PFHpA)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorooctanoic acid (PFOA)	**0.062**	**J**	0.23	0.061	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorononanoic acid (PFNA)	<0.025		0.23	0.025	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorodecanoic acid (PFDA)	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluoroundecanoic acid (PFUnA)	<0.048		0.23	0.048	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorododecanoic acid (PFDoA)	<0.034		0.23	0.034	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorotridecanoic acid (PFTrDA)	<0.024		0.23	0.024	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorotetradecanoic acid (PFTeA)	<0.042		0.23	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorobutanesulfonic acid (PFBS)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluoropentanesulfonic acid (PFPeS)	<0.042		0.23	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorohexanesulfonic acid (PFHxS)	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorooctanesulfonic acid (PFOS)	**3.5**		0.23	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorononanesulfonic acid (PFNS)	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorodecanesulfonic acid (PFDS)	<0.060		0.23	0.060	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorododecanesulfonic acid (PFDoS)	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
Perfluorooctanesulfonamide (FOSA)	<0.038		0.23	0.038	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NEtFOSA	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NMeFOSA	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NMeFOSAA	<0.026		0.23	0.026	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NEtFOSAA	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NMeFOSE	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
NEtFOSE	<0.032		0.23	0.032	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
4:2 FTS	<0.058		0.23	0.058	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
6:2 FTS	<0.031		0.23	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
8:2 FTS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.045		0.23	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
HFPO-DA (GenX)	<0.047		0.23	0.047	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
9Cl-PF3ONS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1
11Cl-PF3OUdS	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*67*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C5 PFPeA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C2 PFHxA	*84*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C4 PFHpA	*86*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C4 PFOA	*92*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C5 PFNA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C2 PFDA	*81*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C2 PFUnA	*76*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C2 PFDoA	*70*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C2 PFTeDA	*66*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*
13C3 PFBS	*68*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:08*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-102 (1-3)
Lab Sample ID: 500-247616-2
Date Collected: 03/14/24 10:30
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 86.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	71		25 - 150	03/27/24 12:17	03/29/24 14:08	1
13C4 PFOS	71		25 - 150	03/27/24 12:17	03/29/24 14:08	1
13C8 FOSA	81		10 - 150	03/27/24 12:17	03/29/24 14:08	1
d3-NMeFOSAA	75		25 - 150	03/27/24 12:17	03/29/24 14:08	1
d5-NEtFOSAA	81		25 - 150	03/27/24 12:17	03/29/24 14:08	1
d-N-MeFOSA-M	72		10 - 150	03/27/24 12:17	03/29/24 14:08	1
d-N-EtFOSA-M	72		10 - 150	03/27/24 12:17	03/29/24 14:08	1
d7-N-MeFOSE-M	61		10 - 150	03/27/24 12:17	03/29/24 14:08	1
d9-N-EtFOSE-M	59		10 - 150	03/27/24 12:17	03/29/24 14:08	1
M2-4:2 FTS	58		25 - 150	03/27/24 12:17	03/29/24 14:08	1
M2-6:2 FTS	77		25 - 150	03/27/24 12:17	03/29/24 14:08	1
M2-8:2 FTS	84		25 - 150	03/27/24 12:17	03/29/24 14:08	1
13C3 HFPO-DA	84		25 - 150	03/27/24 12:17	03/29/24 14:08	1

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-FB
Lab Sample ID: 500-247616-3
Date Collected: 03/14/24 11:05
Matrix: Water
Date Received: 03/16/24 09:50

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.3		4.7	2.3	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluoropentanoic acid (PFPeA)	<0.46		1.9	0.46	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorohexanoic acid (PFHxA)	<0.55		1.9	0.55	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorooctanoic acid (PFOA)	<0.80		1.9	0.80	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.54		1.9	0.54	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.51		1.9	0.51	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.92		1.9	0.92	ng/L		03/22/24 05:19	03/23/24 23:23	1
Perfluorooctanesulfonamide (FOSA)	<0.93		1.9	0.93	ng/L		03/22/24 05:19	03/23/24 23:23	1
NEtFOSA	<0.82		1.9	0.82	ng/L		03/22/24 05:19	03/23/24 23:23	1
NMeFOSA	<0.41		1.9	0.41	ng/L		03/22/24 05:19	03/23/24 23:23	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		03/22/24 05:19	03/23/24 23:23	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		03/22/24 05:19	03/23/24 23:23	1
NMeFOSE	<1.3		3.8	1.3	ng/L		03/22/24 05:19	03/23/24 23:23	1
NEtFOSE	<0.80		1.9	0.80	ng/L		03/22/24 05:19	03/23/24 23:23	1
4:2 FTS	<0.23		1.9	0.23	ng/L		03/22/24 05:19	03/23/24 23:23	1
6:2 FTS	<2.4		4.7	2.4	ng/L		03/22/24 05:19	03/23/24 23:23	1
8:2 FTS	<0.43		1.9	0.43	ng/L		03/22/24 05:19	03/23/24 23:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		03/22/24 05:19	03/23/24 23:23	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		03/22/24 05:19	03/23/24 23:23	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		03/22/24 05:19	03/23/24 23:23	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		03/22/24 05:19	03/23/24 23:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*54*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C5 PFPeA	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C2 PFHxA	*55*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C4 PFHpA	*55*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C4 PFOA	*62*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C5 PFNA	*57*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C2 PFDA	*59*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C2 PFUnA	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C2 PFDoA	*63*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C2 PFTeDA	*60*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
13C3 PFBS	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*
18O2 PFHxS	*52*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:23*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-FB
Lab Sample ID: 500-247616-3
Date Collected: 03/14/24 11:05
Matrix: Water
Date Received: 03/16/24 09:50

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	55		25 - 150	03/22/24 05:19	03/23/24 23:23	1
13C8 FOSA	63		10 - 150	03/22/24 05:19	03/23/24 23:23	1
d3-NMeFOSAA	67		25 - 150	03/22/24 05:19	03/23/24 23:23	1
d5-NEtFOSAA	65		25 - 150	03/22/24 05:19	03/23/24 23:23	1
d-N-MeFOSA-M	47		10 - 150	03/22/24 05:19	03/23/24 23:23	1
d-N-EtFOSA-M	50		10 - 150	03/22/24 05:19	03/23/24 23:23	1
d7-N-MeFOSE-M	53		10 - 150	03/22/24 05:19	03/23/24 23:23	1
d9-N-EtFOSE-M	50		10 - 150	03/22/24 05:19	03/23/24 23:23	1
M2-4:2 FTS	64		25 - 150	03/22/24 05:19	03/23/24 23:23	1
M2-6:2 FTS	63		25 - 150	03/22/24 05:19	03/23/24 23:23	1
M2-8:2 FTS	74		25 - 150	03/22/24 05:19	03/23/24 23:23	1
13C3 HFPO-DA	52		25 - 150	03/22/24 05:19	03/23/24 23:23	1
13C2 10:2 FTS	73		25 - 150	03/22/24 05:19	03/23/24 23:23	1

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-EB
Date Collected: 03/14/24 11:10
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-4
Matrix: Water

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.4		4.9	2.4	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluoropentanoic acid (PFPeA)	<0.48		2.0	0.48	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorohexanoic acid (PFHxA)	<0.57		2.0	0.57	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluoroheptanoic acid (PFHpA)	<0.24		2.0	0.24	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorooctanoic acid (PFOA)	<0.83		2.0	0.83	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorononanoic acid (PFNA)	<0.26		2.0	0.26	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorodecanoic acid (PFDA)	<0.30		2.0	0.30	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorododecanoic acid (PFDoA)	<0.54		2.0	0.54	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorotetradecanoic acid (PFTeA)	<0.71		2.0	0.71	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluoropentanesulfonic acid (PFPeS)	<0.29		2.0	0.29	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorohexanesulfonic acid (PFHxS)	<0.56		2.0	0.56	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorooctanesulfonic acid (PFOS)	<0.53		2.0	0.53	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorononanesulfonic acid (PFNS)	<0.36		2.0	0.36	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorodecanesulfonic acid (PFDS)	<0.31		2.0	0.31	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorododecanesulfonic acid (PFDoS)	<0.95		2.0	0.95	ng/L		03/22/24 05:19	03/23/24 23:33	1
Perfluorooctanesulfonamide (FOSA)	<0.96		2.0	0.96	ng/L		03/22/24 05:19	03/23/24 23:33	1
NEtFOSA	<0.85		2.0	0.85	ng/L		03/22/24 05:19	03/23/24 23:33	1
NMeFOSA	<0.42		2.0	0.42	ng/L		03/22/24 05:19	03/23/24 23:33	1
NMeFOSAA	<1.2		4.9	1.2	ng/L		03/22/24 05:19	03/23/24 23:33	1
NEtFOSAA	<1.3		4.9	1.3	ng/L		03/22/24 05:19	03/23/24 23:33	1
NMeFOSE	<1.4		3.9	1.4	ng/L		03/22/24 05:19	03/23/24 23:33	1
NEtFOSE	<0.83		2.0	0.83	ng/L		03/22/24 05:19	03/23/24 23:33	1
4:2 FTS	<0.24		2.0	0.24	ng/L		03/22/24 05:19	03/23/24 23:33	1
6:2 FTS	<2.4		4.9	2.4	ng/L		03/22/24 05:19	03/23/24 23:33	1
8:2 FTS	<0.45		2.0	0.45	ng/L		03/22/24 05:19	03/23/24 23:33	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.39		2.0	0.39	ng/L		03/22/24 05:19	03/23/24 23:33	1
HFPO-DA (GenX)	<1.5		3.9	1.5	ng/L		03/22/24 05:19	03/23/24 23:33	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		03/22/24 05:19	03/23/24 23:33	1
11Cl-PF3OUdS	<0.31		2.0	0.31	ng/L		03/22/24 05:19	03/23/24 23:33	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*69*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C5 PFPeA	*65*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C2 PFHxA	*71*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C4 PFHpA	*68*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C4 PFOA	*72*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C5 PFNA	*67*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C2 PFDA	*70*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C2 PFUnA	*67*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C2 PFDoA	*75*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C2 PFTeDA	*64*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
13C3 PFBS	*63*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*
18O2 PFHxS	*62*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:33*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-EB
Lab Sample ID: 500-247616-4
Date Collected: 03/14/24 11:10
Matrix: Water
Date Received: 03/16/24 09:50

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	64		25 - 150	03/22/24 05:19	03/23/24 23:33	1
13C8 FOSA	70		10 - 150	03/22/24 05:19	03/23/24 23:33	1
d3-NMeFOSAA	74		25 - 150	03/22/24 05:19	03/23/24 23:33	1
d5-NEtFOSAA	76		25 - 150	03/22/24 05:19	03/23/24 23:33	1
d-N-MeFOSA-M	56		10 - 150	03/22/24 05:19	03/23/24 23:33	1
d-N-EtFOSA-M	54		10 - 150	03/22/24 05:19	03/23/24 23:33	1
d7-N-MeFOSE-M	55		10 - 150	03/22/24 05:19	03/23/24 23:33	1
d9-N-EtFOSE-M	49		10 - 150	03/22/24 05:19	03/23/24 23:33	1
M2-4:2 FTS	78		25 - 150	03/22/24 05:19	03/23/24 23:33	1
M2-6:2 FTS	79		25 - 150	03/22/24 05:19	03/23/24 23:33	1
M2-8:2 FTS	86		25 - 150	03/22/24 05:19	03/23/24 23:33	1
13C3 HFPO-DA	65		25 - 150	03/22/24 05:19	03/23/24 23:33	1
13C2 10:2 FTS	78		25 - 150	03/22/24 05:19	03/23/24 23:33	1

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-103 (1-3)
Lab Sample ID: 500-247616-5
Date Collected: 03/14/24 12:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 82.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.15**	**J B**	0.23	0.053	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluoropentanoic acid (PFPeA)	<0.047		0.23	0.047	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorohexanoic acid (PFHxA)	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluoroheptanoic acid (PFHpA)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorooctanoic acid (PFOA)	**0.18**	**J**	0.23	0.061	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorononanoic acid (PFNA)	<0.025		0.23	0.025	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorodecanoic acid (PFDA)	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluoroundecanoic acid (PFUnA)	<0.048		0.23	0.048	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorododecanoic acid (PFDoA)	<0.035		0.23	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorotridecanoic acid (PFTrDA)	<0.024		0.23	0.024	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorotetradecanoic acid (PFTeA)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorobutanesulfonic acid (PFBS)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluoropentanesulfonic acid (PFPeS)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorohexanesulfonic acid (PFHxS)	**0.066**	**J**	0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorooctanesulfonic acid (PFOS)	**2.4**		0.23	0.050	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorononanesulfonic acid (PFNS)	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorodecanesulfonic acid (PFDS)	<0.060		0.23	0.060	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorododecanesulfonic acid (PFDoS)	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
Perfluorooctanesulfonamide (FOSA)	<0.038		0.23	0.038	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NEtFOSA	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NMeFOSA	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NMeFOSAA	<0.027		0.23	0.027	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NEtFOSAA	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NMeFOSE	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
NEtFOSE	<0.032		0.23	0.032	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
4:2 FTS	<0.059		0.23	0.059	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
6:2 FTS	<0.031		0.23	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
8:2 FTS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.045		0.23	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
HFPO-DA (GenX)	<0.047		0.23	0.047	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
9Cl-PF3ONS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1
11Cl-PF3OUdS	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*48*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C5 PFPeA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C2 PFHxA	*80*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C4 PFHpA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C4 PFOA	*93*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C5 PFNA	*88*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C2 PFDA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C2 PFUnA	*73*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C2 PFDoA	*74*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C2 PFTeDA	*57*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*
13C3 PFBS	*70*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:18*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-103 (1-3)
Lab Sample ID: 500-247616-5
Date Collected: 03/14/24 12:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 82.4

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	66		25 - 150	03/27/24 12:17	03/29/24 14:18	1
13C4 PFOS	68		25 - 150	03/27/24 12:17	03/29/24 14:18	1
13C8 FOSA	78		10 - 150	03/27/24 12:17	03/29/24 14:18	1
d3-NMeFOSAA	77		25 - 150	03/27/24 12:17	03/29/24 14:18	1
d5-NEtFOSAA	83		25 - 150	03/27/24 12:17	03/29/24 14:18	1
d-N-MeFOSA-M	69		10 - 150	03/27/24 12:17	03/29/24 14:18	1
d-N-EtFOSA-M	67		10 - 150	03/27/24 12:17	03/29/24 14:18	1
d7-N-MeFOSE-M	51		10 - 150	03/27/24 12:17	03/29/24 14:18	1
d9-N-EtFOSE-M	56		10 - 150	03/27/24 12:17	03/29/24 14:18	1
M2-4:2 FTS	65		25 - 150	03/27/24 12:17	03/29/24 14:18	1
M2-6:2 FTS	78		25 - 150	03/27/24 12:17	03/29/24 14:18	1
M2-8:2 FTS	84		25 - 150	03/27/24 12:17	03/29/24 14:18	1
13C3 HFPO-DA	83		25 - 150	03/27/24 12:17	03/29/24 14:18	1

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-104 (1-3)
Lab Sample ID: 500-247616-6
Date Collected: 03/14/24 13:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 83.6

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.22**	**J B**	0.23	0.052	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluoropentanoic acid (PFPeA)	<0.046		0.23	0.046	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorohexanoic acid (PFHxA)	<0.035		0.23	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluoroheptanoic acid (PFHpA)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorooctanoic acid (PFOA)	<0.060		0.23	0.060	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorononanoic acid (PFNA)	<0.025		0.23	0.025	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorodecanoic acid (PFDA)	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluoroundecanoic acid (PFUnA)	<0.048		0.23	0.048	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorododecanoic acid (PFDoA)	<0.034		0.23	0.034	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.024		0.23	0.024	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorotetradecanoic acid (PFTeA)	<0.042		0.23	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.042		0.23	0.042	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorooctanesulfonic acid (PFOS)	**0.93**		0.23	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorononanesulfonic acid (PFNS)	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorodecanesulfonic acid (PFDS)	<0.059		0.23	0.059	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorododecanesulfonic acid (PFDoS)	<0.053		0.23	0.053	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
Perfluorooctanesulfonamide (FOSA)	<0.037		0.23	0.037	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NEtFOSA	<0.053		0.23	0.053	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NMeFOSA	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NMeFOSAA	<0.026		0.23	0.026	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NEtFOSAA	<0.054		0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NMeFOSE	<0.053		0.23	0.053	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
NEtFOSE	<0.032		0.23	0.032	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
4:2 FTS	<0.058		0.23	0.058	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
6:2 FTS	<0.031		0.23	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
8:2 FTS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
HFPO-DA (GenX)	<0.046		0.23	0.046	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
9Cl-PF3ONS	<0.040		0.23	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1
11Cl-PF3OUdS	<0.035		0.23	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 14:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*90*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C5 PFPeA	*86*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C2 PFHxA	*88*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C4 PFHpA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C4 PFOA	*93*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C5 PFNA	*82*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C2 PFDA	*78*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C2 PFUnA	*68*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C2 PFDoA	*64*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C2 PFTeDA	*55*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*
13C3 PFBS	*70*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:28*	*1*

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-104 (1-3)
Lab Sample ID: 500-247616-6
Date Collected: 03/14/24 13:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 83.6

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	70		25 - 150	03/27/24 12:17	03/29/24 14:28	1
13C4 PFOS	62		25 - 150	03/27/24 12:17	03/29/24 14:28	1
13C8 FOSA	71		10 - 150	03/27/24 12:17	03/29/24 14:28	1
d3-NMeFOSAA	68		25 - 150	03/27/24 12:17	03/29/24 14:28	1
d5-NEtFOSAA	77		25 - 150	03/27/24 12:17	03/29/24 14:28	1
d-N-MeFOSA-M	51		10 - 150	03/27/24 12:17	03/29/24 14:28	1
d-N-EtFOSA-M	50		10 - 150	03/27/24 12:17	03/29/24 14:28	1
d7-N-MeFOSE-M	58		10 - 150	03/27/24 12:17	03/29/24 14:28	1
d9-N-EtFOSE-M	56		10 - 150	03/27/24 12:17	03/29/24 14:28	1
M2-4:2 FTS	71		25 - 150	03/27/24 12:17	03/29/24 14:28	1
M2-6:2 FTS	76		25 - 150	03/27/24 12:17	03/29/24 14:28	1
M2-8:2 FTS	79		25 - 150	03/27/24 12:17	03/29/24 14:28	1
13C3 HFPO-DA	84		25 - 150	03/27/24 12:17	03/29/24 14:28	1

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247616-1

Client Sample ID: MW-105 (1-3)
Date Collected: 03/14/24 14:40
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-7
Matrix: Solid
Percent Solids: 83.6

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.15**	**J B**	0.23	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluoropentanoic acid (PFPeA)	<0.048		0.23	0.048	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorohexanoic acid (PFHxA)	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluoroheptanoic acid (PFHpA)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorooctanoic acid (PFOA)	<0.062		0.23	0.062	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorononanoic acid (PFNA)	<0.026		0.23	0.026	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorodecanoic acid (PFDA)	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluoroundecanoic acid (PFUnA)	<0.049		0.23	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorododecanoic acid (PFDoA)	<0.035		0.23	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorotridecanoic acid (PFTrDA)	<0.024		0.23	0.024	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorotetradecanoic acid (PFTeA)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorobutanesulfonic acid (PFBS)	<0.044		0.23	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluoropentanesulfonic acid (PFPeS)	<0.043		0.23	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorohexanesulfonic acid (PFHxS)	<0.034		0.23	0.034	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.057		0.23	0.057	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorooctanesulfonic acid (PFOS)	**1.9**		0.23	0.050	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorononanesulfonic acid (PFNS)	<0.034		0.23	0.034	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorodecanesulfonic acid (PFDS)	<0.061		0.23	0.061	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorododecanesulfonic acid (PFDoS)	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
Perfluorooctanesulfonamide (FOSA)	**0.044**	**J**	0.23	0.038	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NEtFOSA	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NMeFOSA	<0.057		0.23	0.057	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NMeFOSAA	<0.027		0.23	0.027	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NEtFOSAA	<0.056		0.23	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NMeFOSE	<0.055		0.23	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
NEtFOSE	<0.033		0.23	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
4:2 FTS	<0.059		0.23	0.059	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
6:2 FTS	**0.044**	**J**	0.23	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
8:2 FTS	**0.051**	**J**	0.23	0.041	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.045		0.23	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
HFPO-DA (GenX)	<0.048		0.23	0.048	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
9Cl-PF3ONS	<0.041		0.23	0.041	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1
11Cl-PF3OUdS	<0.036		0.23	0.036	ug/Kg	☼	03/27/24 12:17	03/29/24 14:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*53*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C5 PFPeA	*90*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C2 PFHxA	*92*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C4 PFHpA	*92*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C4 PFOA	*101*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C5 PFNA	*94*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C2 PFDA	*91*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C2 PFUnA	*90*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C2 PFDoA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C2 PFTeDA	*72*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*
13C3 PFBS	*80*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:39*	*1*

Client Sample ID: MW-105 (1-3)
Lab Sample ID: 500-247616-7
Date Collected: 03/14/24 14:40
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 83.6

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	75		25 - 150	03/27/24 12:17	03/29/24 14:39	1
13C4 PFOS	80		25 - 150	03/27/24 12:17	03/29/24 14:39	1
13C8 FOSA	89		10 - 150	03/27/24 12:17	03/29/24 14:39	1
d3-NMeFOSAA	85		25 - 150	03/27/24 12:17	03/29/24 14:39	1
d5-NEtFOSAA	92		25 - 150	03/27/24 12:17	03/29/24 14:39	1
d-N-MeFOSA-M	81		10 - 150	03/27/24 12:17	03/29/24 14:39	1
d-N-EtFOSA-M	82		10 - 150	03/27/24 12:17	03/29/24 14:39	1
d7-N-MeFOSE-M	75		10 - 150	03/27/24 12:17	03/29/24 14:39	1
d9-N-EtFOSE-M	79		10 - 150	03/27/24 12:17	03/29/24 14:39	1
M2-4:2 FTS	71		25 - 150	03/27/24 12:17	03/29/24 14:39	1
M2-6:2 FTS	80		25 - 150	03/27/24 12:17	03/29/24 14:39	1
M2-8:2 FTS	95		25 - 150	03/27/24 12:17	03/29/24 14:39	1
13C3 HFPO-DA	88		25 - 150	03/27/24 12:17	03/29/24 14:39	1

Definitions/Glossary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

LCMS

Prep Batch: 749216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247616-3	20240314-FB	Total/NA	Water	3535	
500-247616-4	20240314-EB	Total/NA	Water	3535	
MB 320-749216/1-A	Method Blank	Total/NA	Water	3535	
LLCS 320-749216/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 749680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247616-3	20240314-FB	Total/NA	Water	537 (modified)	749216
500-247616-4	20240314-EB	Total/NA	Water	537 (modified)	749216
MB 320-749216/1-A	Method Blank	Total/NA	Water	537 (modified)	749216
LLCS 320-749216/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	749216

Prep Batch: 750326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247616-1	MW-101 (1-3)	Total/NA	Solid	SHAKE	
500-247616-2	MW-102 (1-3)	Total/NA	Solid	SHAKE	
500-247616-5	MW-103 (1-3)	Total/NA	Solid	SHAKE	
500-247616-6	MW-104 (1-3)	Total/NA	Solid	SHAKE	
500-247616-7	MW-105 (1-3)	Total/NA	Solid	SHAKE	
MB 320-750326/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-750326/3-A	Lab Control Sample	Total/NA	Solid	SHAKE	
LLCS 320-750326/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 751083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247616-1	MW-101 (1-3)	Total/NA	Solid	537 (modified)	750326
500-247616-2	MW-102 (1-3)	Total/NA	Solid	537 (modified)	750326
500-247616-5	MW-103 (1-3)	Total/NA	Solid	537 (modified)	750326
500-247616-6	MW-104 (1-3)	Total/NA	Solid	537 (modified)	750326
500-247616-7	MW-105 (1-3)	Total/NA	Solid	537 (modified)	750326
MB 320-750326/1-A	Method Blank	Total/NA	Solid	537 (modified)	750326
LCS 320-750326/3-A	Lab Control Sample	Total/NA	Solid	537 (modified)	750326
LLCS 320-750326/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	750326

General Chemistry

Analysis Batch: 749011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247616-1	MW-101 (1-3)	Total/NA	Solid	3550C	
500-247616-2	MW-102 (1-3)	Total/NA	Solid	3550C	
500-247616-5	MW-103 (1-3)	Total/NA	Solid	3550C	
500-247616-6	MW-104 (1-3)	Total/NA	Solid	3550C	
500-247616-7	MW-105 (1-3)	Total/NA	Solid	3550C	

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-749216/1-A
Matrix: Water
Analysis Batch: 749680

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 749216

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		03/22/24 05:19	03/23/24 23:02	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		03/22/24 05:19	03/23/24 23:02	1
NEtFOSA	<0.87		2.0	0.87	ng/L		03/22/24 05:19	03/23/24 23:02	1
NMeFOSA	<0.43		2.0	0.43	ng/L		03/22/24 05:19	03/23/24 23:02	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		03/22/24 05:19	03/23/24 23:02	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		03/22/24 05:19	03/23/24 23:02	1
NMeFOSE	<1.4		4.0	1.4	ng/L		03/22/24 05:19	03/23/24 23:02	1
NEtFOSE	<0.85		2.0	0.85	ng/L		03/22/24 05:19	03/23/24 23:02	1
4:2 FTS	<0.24		2.0	0.24	ng/L		03/22/24 05:19	03/23/24 23:02	1
6:2 FTS	<2.5		5.0	2.5	ng/L		03/22/24 05:19	03/23/24 23:02	1
8:2 FTS	<0.46		2.0	0.46	ng/L		03/22/24 05:19	03/23/24 23:02	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		03/22/24 05:19	03/23/24 23:02	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		03/22/24 05:19	03/23/24 23:02	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		03/22/24 05:19	03/23/24 23:02	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		03/22/24 05:19	03/23/24 23:02	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*46*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C5 PFPeA	*48*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C2 PFHxA	*49*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C4 PFHpA	*48*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C4 PFOA	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C5 PFNA	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C2 PFDA	*53*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C2 PFUnA	*51*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C2 PFDoA	*55*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*
13C2 PFTeDA	*55*		*25 - 150*	*03/22/24 05:19*	*03/23/24 23:02*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-749216/1-A
Matrix: Water
Analysis Batch: 749680

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 749216

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	47		25 - 150	03/22/24 05:19	03/23/24 23:02	1
18O2 PFHxS	48		25 - 150	03/22/24 05:19	03/23/24 23:02	1
13C4 PFOS	50		25 - 150	03/22/24 05:19	03/23/24 23:02	1
13C8 FOSA	54		10 - 150	03/22/24 05:19	03/23/24 23:02	1
d3-NMeFOSAA	58		25 - 150	03/22/24 05:19	03/23/24 23:02	1
d5-NEtFOSAA	58		25 - 150	03/22/24 05:19	03/23/24 23:02	1
d-N-MeFOSA-M	42		10 - 150	03/22/24 05:19	03/23/24 23:02	1
d-N-EtFOSA-M	48		10 - 150	03/22/24 05:19	03/23/24 23:02	1
d7-N-MeFOSE-M	46		10 - 150	03/22/24 05:19	03/23/24 23:02	1
d9-N-EtFOSE-M	44		10 - 150	03/22/24 05:19	03/23/24 23:02	1
M2-4:2 FTS	52		25 - 150	03/22/24 05:19	03/23/24 23:02	1
M2-6:2 FTS	52		25 - 150	03/22/24 05:19	03/23/24 23:02	1
M2-8:2 FTS	61		25 - 150	03/22/24 05:19	03/23/24 23:02	1
13C3 HFPO-DA	46		25 - 150	03/22/24 05:19	03/23/24 23:02	1
13C2 10:2 FTS	64		25 - 150	03/22/24 05:19	03/23/24 23:02	1

Lab Sample ID: LLCS 320-749216/2-A
Matrix: Water
Analysis Batch: 749680

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 749216

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	9.74		ng/L		122	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	10.2		ng/L		127	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	10.3		ng/L		129	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	9.58		ng/L		120	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	9.56		ng/L		119	50 - 150
Perfluorononanoic acid (PFNA)	8.00	9.63		ng/L		120	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	9.51		ng/L		119	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	11.0		ng/L		137	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	9.65		ng/L		121	50 - 150
Perfluorotridecanoic acid (PFTrDA)	8.00	8.45		ng/L		106	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	7.28		ng/L		91	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	9.04		ng/L		127	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	8.88		ng/L		118	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.30	8.42		ng/L		115	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	8.89		ng/L		117	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	8.30		ng/L		112	50 - 150
Perfluorononanesulfonic acid (PFNS)	7.70	8.80		ng/L		114	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	7.96		ng/L		103	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	7.76	7.37		ng/L		95	50 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-749216/2-A
Matrix: Water
Analysis Batch: 749680

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 749216

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	8.00	9.18		ng/L		115	50 - 150
NEtFOSA	8.00	7.13		ng/L		89	50 - 150
NMeFOSA	8.00	8.61		ng/L		108	50 - 150
NMeFOSAA	8.00	8.56		ng/L		107	50 - 150
NEtFOSAA	8.00	8.15		ng/L		102	50 - 150
NMeFOSE	8.00	9.49		ng/L		119	50 - 150
NEtFOSE	8.00	10.4		ng/L		130	50 - 150
4:2 FTS	7.50	9.62		ng/L		128	50 - 150
6:2 FTS	7.62	7.52		ng/L		99	50 - 150
8:2 FTS	7.68	8.38		ng/L		109	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.57	9.23		ng/L		122	50 - 150
HFPO-DA (GenX)	8.00	8.61		ng/L		108	50 - 150
9Cl-PF3ONS	7.47	8.96		ng/L		120	50 - 150
11Cl-PF3OUdS	7.55	8.88		ng/L		118	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*61*		*25 - 150*
13C5 PFPeA	*61*		*25 - 150*
13C2 PFHxA	*65*		*25 - 150*
13C4 PFHpA	*66*		*25 - 150*
13C4 PFOA	*71*		*25 - 150*
13C5 PFNA	*69*		*25 - 150*
13C2 PFDA	*69*		*25 - 150*
13C2 PFUnA	*66*		*25 - 150*
13C2 PFDoA	*69*		*25 - 150*
13C2 PFTeDA	*67*		*25 - 150*
13C3 PFBS	*60*		*25 - 150*
18O2 PFHxS	*60*		*25 - 150*
13C4 PFOS	*65*		*25 - 150*
13C8 FOSA	*71*		*10 - 150*
d3-NMeFOSAA	*75*		*25 - 150*
d5-NEtFOSAA	*76*		*25 - 150*
d-N-MeFOSA-M	*56*		*10 - 150*
d-N-EtFOSA-M	*57*		*10 - 150*
d7-N-MeFOSE-M	*59*		*10 - 150*
d9-N-EtFOSE-M	*52*		*10 - 150*
M2-4:2 FTS	*72*		*25 - 150*
M2-6:2 FTS	*81*		*25 - 150*
M2-8:2 FTS	*87*		*25 - 150*
13C3 HFPO-DA	*63*		*25 - 150*
13C2 10:2 FTS	*79*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-750326/1-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 750326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0637	J	0.20	0.046	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoropentanoic acid (PFPeA)	<0.041		0.20	0.041	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorohexanoic acid (PFHxA)	<0.031		0.20	0.031	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroheptanoic acid (PFHpA)	<0.038		0.20	0.038	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanoic acid (PFOA)	<0.053		0.20	0.053	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorononanoic acid (PFNA)	<0.022		0.20	0.022	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorodecanoic acid (PFDA)	<0.048		0.20	0.048	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroundecanoic acid (PFUnA)	<0.042		0.20	0.042	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorododecanoic acid (PFDoA)	<0.030		0.20	0.030	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.021		0.20	0.021	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorotetradecanoic acid (PFTeA)	<0.037		0.20	0.037	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorobutanesulfonic acid (PFBS)	0.0532	J	0.20	0.038	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.037		0.20	0.037	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.029		0.20	0.029	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.049		0.20	0.049	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.043		0.20	0.043	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorononanesulfonic acid (PFNS)	<0.029		0.20	0.029	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorodecanesulfonic acid (PFDS)	<0.052		0.20	0.052	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorododecanesulfonic acid (PFDoS)	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanesulfonamide (FOSA)	<0.033		0.20	0.033	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSA	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSA	<0.049		0.20	0.049	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSAA	<0.023		0.20	0.023	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSAA	<0.048		0.20	0.048	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSE	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSE	<0.028		0.20	0.028	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
4:2 FTS	<0.051		0.20	0.051	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
6:2 FTS	<0.027		0.20	0.027	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
8:2 FTS	<0.035		0.20	0.035	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.039		0.20	0.039	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
HFPO-DA (GenX)	<0.041		0.20	0.041	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
9Cl-PF3ONS	<0.035		0.20	0.035	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
11Cl-PF3OUdS	<0.031		0.20	0.031	ug/Kg		03/27/24 12:17	03/29/24 13:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C5 PFPeA	*85*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C2 PFHxA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C4 PFHpA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C4 PFOA	*94*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C5 PFNA	*88*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C2 PFDA	*87*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C2 PFUnA	*75*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C2 PFDoA	*76*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*
13C2 PFTeDA	*74*		*25 - 150*	*03/27/24 12:17*	*03/29/24 13:28*	*1*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-750326/1-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 750326

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFBS	78		25 - 150	03/27/24 12:17	03/29/24 13:28	1
18O2 PFHxS	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C4 PFOS	74		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C8 FOSA	79		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d3-NMeFOSAA	72		25 - 150	03/27/24 12:17	03/29/24 13:28	1
d5-NEtFOSAA	80		25 - 150	03/27/24 12:17	03/29/24 13:28	1
d-N-MeFOSA-M	55		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d-N-EtFOSA-M	57		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d7-N-MeFOSE-M	67		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d9-N-EtFOSE-M	71		10 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-4:2 FTS	75		25 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-6:2 FTS	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-8:2 FTS	96		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C3 HFPO-DA	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1

Lab Sample ID: LCS 320-750326/3-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	2.00	1.99		ug/Kg		99	60 - 135
Perfluoropentanoic acid (PFPeA)	2.00	2.02		ug/Kg		101	60 - 135
Perfluorohexanoic acid (PFHxA)	2.00	2.18		ug/Kg		109	60 - 135
Perfluoroheptanoic acid (PFHpA)	2.00	2.04		ug/Kg		102	60 - 135
Perfluorooctanoic acid (PFOA)	2.00	2.07		ug/Kg		103	60 - 135
Perfluorononanoic acid (PFNA)	2.00	2.07		ug/Kg		103	60 - 135
Perfluorodecanoic acid (PFDA)	2.00	2.02		ug/Kg		101	60 - 135
Perfluoroundecanoic acid (PFUnA)	2.00	2.33		ug/Kg		116	60 - 135
Perfluorododecanoic acid (PFDoA)	2.00	2.08		ug/Kg		104	60 - 135
Perfluorotridecanoic acid (PFTrDA)	2.00	1.96		ug/Kg		98	60 - 135
Perfluorotetradecanoic acid (PFTeA)	2.00	1.91		ug/Kg		96	60 - 135
Perfluorobutanesulfonic acid (PFBS)	1.78	1.82		ug/Kg		103	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.90		ug/Kg		101	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.79		ug/Kg		98	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	1.91	2.11		ug/Kg		110	60 - 135
Perfluorooctanesulfonic acid (PFOS)	1.86	1.95		ug/Kg		105	60 - 135
Perfluorononanesulfonic acid (PFNS)	1.92	1.96		ug/Kg		102	60 - 135
Perfluorodecanesulfonic acid (PFDS)	1.93	1.89		ug/Kg		98	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.77		ug/Kg		91	60 - 135

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-750326/3-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	2.00	2.10		ug/Kg		105	60 - 135
NEtFOSA	2.00	2.11		ug/Kg		106	60 - 135
NMeFOSA	2.00	2.06		ug/Kg		103	60 - 135
NMeFOSAA	2.00	2.24		ug/Kg		112	60 - 135
NEtFOSAA	2.00	2.15		ug/Kg		108	60 - 135
NMeFOSE	2.00	2.16		ug/Kg		108	60 - 135
NEtFOSE	2.00	2.02		ug/Kg		101	60 - 135
4:2 FTS	1.88	1.98		ug/Kg		105	60 - 135
6:2 FTS	1.90	2.21		ug/Kg		116	60 - 135
8:2 FTS	1.92	2.09		ug/Kg		109	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.37		ug/Kg		125	60 - 135
HFPO-DA (GenX)	2.00	2.26		ug/Kg		113	60 - 135
9Cl-PF3ONS	1.87	2.21		ug/Kg		118	60 - 135
11Cl-PF3OUdS	1.89	1.91		ug/Kg		101	60 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*66*		*25 - 150*
13C5 PFPeA	*84*		*25 - 150*
13C2 PFHxA	*91*		*25 - 150*
13C4 PFHpA	*97*		*25 - 150*
13C4 PFOA	*92*		*25 - 150*
13C5 PFNA	*92*		*25 - 150*
13C2 PFDA	*91*		*25 - 150*
13C2 PFUnA	*77*		*25 - 150*
13C2 PFDoA	*83*		*25 - 150*
13C2 PFTeDA	*83*		*25 - 150*
13C3 PFBS	*84*		*25 - 150*
18O2 PFHxS	*81*		*25 - 150*
13C4 PFOS	*78*		*25 - 150*
13C8 FOSA	*82*		*10 - 150*
d3-NMeFOSAA	*70*		*25 - 150*
d5-NEtFOSAA	*79*		*25 - 150*
d-N-MeFOSA-M	*76*		*10 - 150*
d-N-EtFOSA-M	*72*		*10 - 150*
d7-N-MeFOSE-M	*65*		*10 - 150*
d9-N-EtFOSE-M	*70*		*10 - 150*
M2-4:2 FTS	*85*		*25 - 150*
M2-6:2 FTS	*91*		*25 - 150*
M2-8:2 FTS	*98*		*25 - 150*
13C3 HFPO-DA	*82*		*25 - 150*

Lab Sample ID: LLCS 320-750326/2-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	0.400	0.504		ug/Kg		126	50 - 150

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-750326/2-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoropentanoic acid (PFPeA)	0.400	0.464		ug/Kg		116	50 - 150
Perfluorohexanoic acid (PFHxA)	0.400	0.495		ug/Kg		124	50 - 150
Perfluoroheptanoic acid (PFHpA)	0.400	0.490		ug/Kg		122	50 - 150
Perfluorooctanoic acid (PFOA)	0.400	0.476		ug/Kg		119	50 - 150
Perfluorononanoic acid (PFNA)	0.400	0.520		ug/Kg		130	50 - 150
Perfluorodecanoic acid (PFDA)	0.400	0.480		ug/Kg		120	50 - 150
Perfluoroundecanoic acid (PFUnA)	0.400	0.485		ug/Kg		121	50 - 150
Perfluorododecanoic acid (PFDoA)	0.400	0.495		ug/Kg		124	50 - 150
Perfluorotridecanoic acid (PFTrDA)	0.400	0.426		ug/Kg		106	50 - 150
Perfluorotetradecanoic acid (PFTeA)	0.400	0.400		ug/Kg		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.355	0.462		ug/Kg		130	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	0.376	0.436		ug/Kg		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	0.365	0.409		ug/Kg		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.382	0.438		ug/Kg		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	0.372	0.408		ug/Kg		110	50 - 150
Perfluorononanesulfonic acid (PFNS)	0.385	0.405		ug/Kg		105	50 - 150
Perfluorodecanesulfonic acid (PFDS)	0.386	0.346		ug/Kg		90	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	0.388	0.316		ug/Kg		82	50 - 150
Perfluorooctanesulfonamide (FOSA)	0.400	0.467		ug/Kg		117	50 - 150
NEtFOSA	0.400	0.463		ug/Kg		116	50 - 150
NMeFOSA	0.400	0.455		ug/Kg		114	50 - 150
NMeFOSAA	0.400	0.506		ug/Kg		127	50 - 150
NEtFOSAA	0.400	0.484		ug/Kg		121	50 - 150
NMeFOSE	0.400	0.489		ug/Kg		122	50 - 150
NEtFOSE	0.400	0.437		ug/Kg		109	50 - 150
4:2 FTS	0.375	0.477		ug/Kg		127	50 - 150
6:2 FTS	0.381	0.453		ug/Kg		119	50 - 150
8:2 FTS	0.384	0.410		ug/Kg		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.378	0.494		ug/Kg		131	50 - 150
HFPO-DA (GenX)	0.400	0.458		ug/Kg		114	50 - 150
9Cl-PF3ONS	0.374	0.441		ug/Kg		118	50 - 150
11Cl-PF3OUdS	0.378	0.422		ug/Kg		112	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*73*		*25 - 150*
13C5 PFPeA	*86*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*
13C4 PFHpA	*88*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-750326/2-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C4 PFOA	94		25 - 150
13C5 PFNA	86		25 - 150
13C2 PFDA	86		25 - 150
13C2 PFUnA	75		25 - 150
13C2 PFDoA	81		25 - 150
13C2 PFTeDA	79		25 - 150
13C3 PFBS	79		25 - 150
18O2 PFHxS	74		25 - 150
13C4 PFOS	78		25 - 150
13C8 FOSA	83		10 - 150
d3-NMeFOSAA	74		25 - 150
d5-NEtFOSAA	77		25 - 150
d-N-MeFOSA-M	74		10 - 150
d-N-EtFOSA-M	69		10 - 150
d7-N-MeFOSE-M	70		10 - 150
d9-N-EtFOSE-M	75		10 - 150
M2-4:2 FTS	77		25 - 150
M2-6:2 FTS	89		25 - 150
M2-8:2 FTS	97		25 - 150
13C3 HFPO-DA	81		25 - 150

Lab Chronicle

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247616-1

Client Sample ID: MW-101 (1-3)
Date Collected: 03/14/24 09:00
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	3550C		1	749011	JCB	EET SAC	03/21/24 11:28

Client Sample ID: MW-101 (1-3)
Date Collected: 03/14/24 09:00
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-1
Matrix: Solid
Percent Solids: 81.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 13:58

Client Sample ID: MW-102 (1-3)
Date Collected: 03/14/24 10:30
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	3550C		1	749011	JCB	EET SAC	03/21/24 11:28

Client Sample ID: MW-102 (1-3)
Date Collected: 03/14/24 10:30
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-2
Matrix: Solid
Percent Solids: 86.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 14:08

Client Sample ID: 20240314-FB
Date Collected: 03/14/24 11:05
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			749216	VJC	EET SAC	03/22/24 05:19
Total/NA	Analysis	537 (modified)		1	749680	C1P	EET SAC	03/23/24 23:23

Client Sample ID: 20240314-EB
Date Collected: 03/14/24 11:10
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247616-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			749216	VJC	EET SAC	03/22/24 05:19
Total/NA	Analysis	537 (modified)		1	749680	C1P	EET SAC	03/23/24 23:33

Lab Chronicle

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: MW-103 (1-3)
Lab Sample ID: 500-247616-5
Date Collected: 03/14/24 12:00
Matrix: Solid
Date Received: 03/16/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	3550C		1	749011	JCB	EET SAC	03/21/24 11:28

Client Sample ID: MW-103 (1-3)
Lab Sample ID: 500-247616-5
Date Collected: 03/14/24 12:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 82.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 14:18

Client Sample ID: MW-104 (1-3)
Lab Sample ID: 500-247616-6
Date Collected: 03/14/24 13:00
Matrix: Solid
Date Received: 03/16/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	3550C		1	749011	JCB	EET SAC	03/21/24 11:28

Client Sample ID: MW-104 (1-3)
Lab Sample ID: 500-247616-6
Date Collected: 03/14/24 13:00
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 14:28

Client Sample ID: MW-105 (1-3)
Lab Sample ID: 500-247616-7
Date Collected: 03/14/24 14:40
Matrix: Solid
Date Received: 03/16/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	3550C		1	749011	JCB	EET SAC	03/21/24 11:28

Client Sample ID: MW-105 (1-3)
Lab Sample ID: 500-247616-7
Date Collected: 03/14/24 14:40
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 83.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 14:39

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-24

Eurofins Chicago
2417 Bond Street
University Park IL 60484
Phone 708-534-5200 Fax 708-534-5211

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: K. HEIMSTEAD	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-121894-49169 1
Client Contact: Paul Lindquist	Phone: 262-901-0129	E-Mail: Sandra Fredrick@et.eurofinsus com	State of Origin: WI	Page: Page 1 of 1
Company: Ramboll Americas Engineering Solutions	PWSID:			Job #: 500-247616
Address: 234 W Florida Street Fifth Floor	Due Date Requested:			
City: Milwaukee	TAT Requested (days): STANDARD TAT			
State Zip: WI, 53204	Compliance Project: Δ Yes Δ No			
Phone: 262-901-3510(Tel)	PO #: MIRRO 4			
Email: plindquist@ramboll com	WO #:			
Project Name: Mirro 4 - 1690026868	Project #: 50022917			
Site:	SSOW#:			

Analysis Requested

500-247616 COC

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA_WI - PFAS, Standard List (33 analytes)	Total Number of containers	Special Instructions/Note
				Preservation Code:				N		
1	MW-101 (1-3)	3/14/2024	0900	G	Solid			X	1	
2	MW-102 (1-3)		1030		Solid			X	1	
3	20240314-FB		1105		~~Solid~~ WATER			X	2	
4	20240314-EB		1110		~~Solid~~ WATER			X	2	
5	MW-103 (1-3)		1200		Solid			X	1	
6	MW-104 (1-3)		1300		Solid			X	1	
7	MW-105 (1-3)		1440		~~Solid~~ Water			X	1	
					Water					
					Water					
					Water					
					Water					

K. H 03/14/2024

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I, II, III, IV, Other (specify) LEVEL IV DATA PACKAGE

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
K. H	03/15/2024 0612	RAMBOLL		3/15/24 0800	Eurofins
	3/15/24 1700	Eurofins		03/16/24 0950	EETA

Custody Seals Intact. Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks
		-0.4 => 0.1

SAMPLE RECEIPT
EUROFINS CHICAGO
2417 BOND ST.

UNIVERSITY PARK, IL 60484
UNITED STATES US

ACTWGT: 48.45 LB
CAD: 0780307/CAFE3755

BILL RECIPIENT

Part # 159469-434 MTW EXP 10/24

TO SAMPLE RECEIPT
EUROFINS – CHICAGO
2417 BOND ST.

UNIVERSITY PARK IL 60484

(708) 634-6200 REF
INV:
PO: DEPT:

FedEx Express

3 of 4

MPS# 0263 7252 5234 3978

Mstr# 7252 5234 3956 0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO JOTA

60484
IL-US ORD

500-247616 Waybi

3694

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-185830 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - Wisconsin		Job #: 500-247616-1
Address: 880 Riverside Parkway,	Due Date Requested: 4/8/2024			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Mirro 4 - 1690026868	Project #: 50022917			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I Ice, J DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P Na2O4S, Q Na2SO3, R - Na2S2O3, S H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA_WI/Shake_Bath_28D PFAS, Standard List (33 analytes)	PFC_IDA_WI/3535_PFC_28D PFAS, Standard List (33 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-101 (1-3) (500-247616-1)	3/14/24	09 00 Central		Solid			X		1	
MW-102 (1-3) (500-247616-2)	3/14/24	10 30 Central		Solid			X		1	
20240314-FB (500-247616-3)	3/14/24	11 05 Central		Water				X	2	
20240314-EB (500-247616-4)	3/14/24	11 10 Central		Water				X	2	
MW-103 (1-3) (500-247616-5)	3/14/24	12.00 Central		Solid			X		1	
MW-104 (1-3) (500-247616-6)	3/14/24	13 00 Central		Solid			X		1	
MW-105 (1-3) (500-247616-7)	3/14/24	14 40 Central		Solid			X		1	

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: Shivi Sood	Date/Time: 3/14/24 0900	Company	Received by:	Date/Time: 3.20.24 930	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No: 3310662 | Cooler Temperature(s) °C and Other Remarks: 2.3c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-247616-1

Login Number: 247616
List Number: 1
Creator: Schmidt, Kara

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-247616-1

Login Number: 247616
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/20/24 04:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2370662
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-247616-1	MW-101 (1-3)	87	84	82	85	93	83	81	68
500-247616-2	MW-102 (1-3)	67	83	84	86	92	87	81	76
500-247616-5	MW-103 (1-3)	48	83	80	83	93	88	83	73
500-247616-6	MW-104 (1-3)	90	86	88	87	93	82	78	68
500-247616-7	MW-105 (1-3)	53	90	92	92	101	94	91	90
LCS 320-750326/3-A	Lab Control Sample	66	84	91	97	92	92	91	77
LLCS 320-750326/2-A	Lab Control Sample	73	86	84	88	94	86	86	75
MB 320-750326/1-A	Method Blank	87	85	87	87	94	88	87	75

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
500-247616-1	MW-101 (1-3)	56	47	73	71	64	74	66	68
500-247616-2	MW-102 (1-3)	70	66	68	71	71	81	75	81
500-247616-5	MW-103 (1-3)	74	57	70	66	68	78	77	83
500-247616-6	MW-104 (1-3)	64	55	70	70	62	71	68	77
500-247616-7	MW-105 (1-3)	87	72	80	75	80	89	85	92
LCS 320-750326/3-A	Lab Control Sample	83	83	84	81	78	82	70	79
LLCS 320-750326/2-A	Lab Control Sample	81	79	79	74	78	83	74	77
MB 320-750326/1-A	Method Blank	76	74	78	81	74	79	72	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
500-247616-1	MW-101 (1-3)	48	49	52	49	66	77	81	77
500-247616-2	MW-102 (1-3)	72	72	61	59	58	77	84	84
500-247616-5	MW-103 (1-3)	69	67	51	56	65	78	84	83
500-247616-6	MW-104 (1-3)	51	50	58	56	71	76	79	84
500-247616-7	MW-105 (1-3)	81	82	75	79	71	80	95	88
LCS 320-750326/3-A	Lab Control Sample	76	72	65	70	85	91	98	82
LLCS 320-750326/2-A	Lab Control Sample	74	69	70	75	77	89	97	81
MB 320-750326/1-A	Method Blank	55	57	67	71	75	81	96	81

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M

Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
500-247616-3	20240314-FB	54	53	55	55	62	57	59	53
500-247616-4	20240314-EB	69	65	71	68	72	67	70	67
LLCS 320-749216/2-A	Lab Control Sample	61	61	65	66	71	69	69	66
MB 320-749216/1-A	Method Blank	46	48	49	48	53	53	53	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(10-150)	(25-150)	(25-150)
500-247616-3	20240314-FB	63	60	53	52	55	63	67	65
500-247616-4	20240314-EB	75	64	63	62	64	70	74	76
LLCS 320-749216/2-A	Lab Control Sample	69	67	60	60	65	71	75	76
MB 320-749216/1-A	Method Blank	55	55	47	48	50	54	58	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		dMeFOSA	dEtFOSA	NMFM	NEFM	M242FTS	M262FTS	M282FTS	HFPODA
Lab Sample ID	Client Sample ID	(10-150)	(10-150)	(10-150)	(10-150)	(25-150)	(25-150)	(25-150)	(25-150)
500-247616-3	20240314-FB	47	50	53	50	64	63	74	52
500-247616-4	20240314-EB	56	54	55	49	78	79	86	65
LLCS 320-749216/2-A	Lab Control Sample	56	57	59	52	72	81	87	63
MB 320-749216/1-A	Method Blank	42	48	46	44	52	52	61	46

		Percent Isotope Dilution Recovery (Acceptance Limits)
		M102FTS
Lab Sample ID	Client Sample ID	(25-150)
500-247616-3	20240314-FB	73
500-247616-4	20240314-EB	78
LLCS 320-749216/2-A	Lab Control Sample	79
MB 320-749216/1-A	Method Blank	64

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA

Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247616-1
Project/Site: Mirro 4 - 1690026868

d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
M102FTS = 13C2 10:2 FTS

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Paul Lindquist
Ramboll Americas Engineering Solutions
234 W. Florida Street
Fifth Floor
Milwaukee, Wisconsin 53204

Generated 4/5/2024 2:02:13 PM

JOB DESCRIPTION

Mirro 4 - 1690026868

JOB NUMBER

500-247617-1

Eurofins Chicago
2417 Bond Street
University Park IL 60484

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

Definitions of Limits
- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = 3.33 x LOD as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

Authorization

Generated
4/5/2024 2:02:13 PM

Authorized for release by
Sandie Fredrick, Senior Project Manager
Sandra.Fredrick@et.eurofinsus.com
(920)261-1660

Table of Contents

Job ID: 500-247617-1 — Eurofins Chicago

Job Narrative
500-247617-1

Receipt
The sample was received on 3/16/2024 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.1° C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with the following had compounds outside 20% drift for method 8260D. Where applicable, a standard was analyzed at the reporting limit (CCVL) and analyses were able to continue, as low failing compounds were detected. Any detects for these out of control compounds should be considered estimates.20240314-IDW-S (500-247617-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 8270E: The continuing calibration verification (CCV) analyzed in 500-759949 was outside the method criteria for the following analyte(s): 2,4,6-Tribromophenol (Surr). As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270E: The following sample was diluted due to the nature of the sample matrix: 20240314-IDW-S (500-247617-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method 8082A: Surrogate Tetrachloro-m-xylene is outside acceptable limits for the following continuing control verification (CCVIS): (CCVIS 500-759334/3). Surrogate DCB Decachlorobiphenyl is within acceptable limits; therefore, re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010D: The laboratory control sample (LCS) for prep batch 759786 recovered outside control limits for the following analytes: Se. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

LCMS
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-IDW-S
Lab Sample ID: 500-247617-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
PCB-1254	0.43		0.080	0.027	mg/Kg	5		8082A	Total/NA
Perfluorobutanoic acid (PFBA)	0.078	J B	0.21	0.049	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	0.10	J	0.21	0.056	ug/Kg	1	☼	537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.86		0.21	0.045	ug/Kg	1	☼	537 (modified)	Total/NA
6:2 FTS	0.034	J	0.21	0.029	ug/Kg	1	☼	537 (modified)	Total/NA
Barium	0.25	J	0.50	0.050	mg/L	1		6010D	TCLP
Cadmium	0.63		0.0050	0.0020	mg/L	1		6010D	TCLP
Lead	0.014	J	0.050	0.0075	mg/L	1		6010D	TCLP
Cyanide, Total	42		4.2	2.1	mg/Kg	20		9012B	Total/NA
pH	8.1		0.2	0.2	SU	1		9045D	Total/NA
Free Liquid	FAIL				No Unit	1		9095B	Total/NA
Flashpoint	>200		99.0	99.0	Degrees F	1		D92	Total/NA
Specific Gravity	1.9728				NONE	1		SM 2710F	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CHI
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
6010D	Metals (ICP)	SW846	EET CHI
7470A	TCLP Mercury	SW846	EET CHI
9012B	Cyanide, Total andor Amenable	SW846	EET CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
9045D	pH	SW846	EET CHI
9095B	Paint Filter	SW846	EET CHI
9251	Chlorine, Total	SW846	EET SAV
D92	Flashpoint	ASTM	EET CHI
Moisture	Percent Moisture	EPA	EET CHI
SM 2710F	Specific Gravity, Density	SM	EET CHI
1311	TCLP Extraction	SW846	EET CHI
3010A	Preparation, Total Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
3541	Automated Soxhlet Extraction	SW846	EET CHI
5030B	Purge and Trap	SW846	EET CHI
5050	Bomb Preparation Method for Solid Waste	SW846	EET SAV
7470A	Preparation, Mercury	SW846	EET CHI
9010C	Cyanide, Distillation	SW846	EET CHI
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CHI
SHAKE	Shake Extraction with Ultrasonic Bath Extraction	SW846	EET SAC

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247617-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-247617-1	20240314-IDW-S	Solid	03/14/24 15:45	03/16/24 09:50

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Client Sample ID: 20240314-IDW-S
Lab Sample ID: 500-247617-1
Date Collected: 03/14/24 15:45
Matrix: Solid
Date Received: 03/16/24 09:50
Percent Solids: 91.6

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
Carbon tetrachloride	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
Chlorobenzene	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
Chloroform	<0.020		0.040	0.020	mg/L			03/27/24 12:26	20
1,2-Dichloroethane	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
1,1-Dichloroethene	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
2-Butanone (MEK)	<0.050		0.10	0.050	mg/L			03/27/24 12:26	20
Tetrachloroethene	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
Trichloroethene	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20
Vinyl chloride	<0.010		0.020	0.010	mg/L			03/27/24 12:26	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*75 - 126*		*03/27/24 12:26*	*20*
Toluene-d8 (Surr)	*101*		*75 - 120*		*03/27/24 12:26*	*20*
4-Bromofluorobenzene (Surr)	*104*		*72 - 124*		*03/27/24 12:26*	*20*
Dibromofluoromethane (Surr)	*106*		*75 - 120*		*03/27/24 12:26*	*20*

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<0.10		0.10	0.10	mg/L		03/26/24 06:14	03/26/24 16:57	5
3 & 4 Methylphenol	<0.10		0.10	0.10	mg/L		03/26/24 06:14	03/26/24 16:57	5
1,4-Dichlorobenzene	<0.10		0.10	0.10	mg/L		03/26/24 06:14	03/26/24 16:57	5
2,4-Dinitrotoluene	<0.050		0.050	0.050	mg/L		03/26/24 06:14	03/26/24 16:57	5
Hexachlorobenzene	<0.025		0.025	0.025	mg/L		03/26/24 06:14	03/26/24 16:57	5
Hexachlorobutadiene	<0.25		0.25	0.25	mg/L		03/26/24 06:14	03/26/24 16:57	5
Hexachloroethane	<0.25		0.25	0.25	mg/L		03/26/24 06:14	03/26/24 16:57	5
Nitrobenzene	<0.050		0.050	0.050	mg/L		03/26/24 06:14	03/26/24 16:57	5
Pentachlorophenol	<1.0		1.0	1.0	mg/L		03/26/24 06:14	03/26/24 16:57	5
Pyridine	<1.0		1.0	1.0	mg/L		03/26/24 06:14	03/26/24 16:57	5
2,4,5-Trichlorophenol	<0.50		0.50	0.50	mg/L		03/26/24 06:14	03/26/24 16:57	5
2,4,6-Trichlorophenol	<0.25		0.25	0.25	mg/L		03/26/24 06:14	03/26/24 16:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*60*		*27 - 110*	*03/26/24 06:14*	*03/26/24 16:57*	*5*
Phenol-d5 (Surr)	*37*		*20 - 100*	*03/26/24 06:14*	*03/26/24 16:57*	*5*
Nitrobenzene-d5 (Surr)	*88*		*36 - 120*	*03/26/24 06:14*	*03/26/24 16:57*	*5*
2-Fluorobiphenyl (Surr)	*87*		*34 - 110*	*03/26/24 06:14*	*03/26/24 16:57*	*5*
2,4,6-Tribromophenol (Surr)	*88*		*40 - 145*	*03/26/24 06:14*	*03/26/24 16:57*	*5*
Terphenyl-d14 (Surr)	*79*		*40 - 145*	*03/26/24 06:14*	*03/26/24 16:57*	*5*

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.031		0.080	0.031	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1221	<0.031		0.080	0.031	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1232	<0.022		0.080	0.022	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1242	<0.031		0.080	0.031	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1248	<0.038		0.080	0.038	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1254	**0.43**		0.080	0.027	mg/Kg		03/19/24 07:28	03/21/24 11:33	5
PCB-1260	<0.030		0.080	0.030	mg/Kg		03/19/24 07:28	03/21/24 11:33	5

Client Sample ID: 20240314-IDW-S
Date Collected: 03/14/24 15:45
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247617-1
Matrix: Solid
Percent Solids: 91.6

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	*85*		*49 - 129*	*03/19/24 07:28*	*03/21/24 11:33*	*5*
DCB Decachlorobiphenyl	*77*		*37 - 121*	*03/19/24 07:28*	*03/21/24 11:33*	*5*

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	**0.078**	**J B**	0.21	0.049	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluoropentanoic acid (PFPeA)	<0.043		0.21	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorohexanoic acid (PFHxA)	<0.033		0.21	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluoroheptanoic acid (PFHpA)	<0.040		0.21	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorooctanoic acid (PFOA)	**0.10**	**J**	0.21	0.056	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorononanoic acid (PFNA)	<0.023		0.21	0.023	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorodecanoic acid (PFDA)	<0.051		0.21	0.051	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluoroundecanoic acid (PFUnA)	<0.044		0.21	0.044	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorododecanoic acid (PFDoA)	<0.032		0.21	0.032	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorotridecanoic acid (PFTrDA)	<0.022		0.21	0.022	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorotetradecanoic acid (PFTeA)	<0.039		0.21	0.039	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorobutanesulfonic acid (PFBS)	<0.040		0.21	0.040	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluoropentanesulfonic acid (PFPeS)	<0.039		0.21	0.039	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorohexanesulfonic acid (PFHxS)	<0.031		0.21	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.052		0.21	0.052	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorooctanesulfonic acid (PFOS)	**0.86**		0.21	0.045	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorononanesulfonic acid (PFNS)	<0.031		0.21	0.031	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorodecanesulfonic acid (PFDS)	<0.055		0.21	0.055	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorododecanesulfonic acid (PFDoS)	<0.050		0.21	0.050	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
Perfluorooctanesulfonamide (FOSA)	<0.035		0.21	0.035	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NEtFOSA	<0.050		0.21	0.050	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NMeFOSA	<0.052		0.21	0.052	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NMeFOSAA	<0.024		0.21	0.024	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NEtFOSAA	<0.051		0.21	0.051	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NMeFOSE	<0.050		0.21	0.050	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
NEtFOSE	<0.030		0.21	0.030	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
4:2 FTS	<0.054		0.21	0.054	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
6:2 FTS	**0.034**	**J**	0.21	0.029	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
8:2 FTS	<0.037		0.21	0.037	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.041		0.21	0.041	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
HFPO-DA (GenX)	<0.043		0.21	0.043	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
9Cl-PF3ONS	<0.037		0.21	0.037	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1
11Cl-PF3OUdS	<0.033		0.21	0.033	ug/Kg	☼	03/27/24 12:17	03/29/24 14:49	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	*74*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C5 PFPeA	*93*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C2 PFHxA	*90*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C4 PFHpA	*90*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C4 PFOA	*100*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C5 PFNA	*92*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C2 PFDA	*94*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*

Client Sample ID: 20240314-IDW-S
Date Collected: 03/14/24 15:45
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247617-1
Matrix: Solid
Percent Solids: 91.6

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFUnA	*83*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C2 PFDoA	*78*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C2 PFTeDA	*64*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C3 PFBS	*82*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
18O2 PFHxS	*80*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C4 PFOS	*78*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C8 FOSA	*86*		*10 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d3-NMeFOSAA	*82*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d5-NEtFOSAA	*89*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d-N-MeFOSA-M	*74*		*10 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d-N-EtFOSA-M	*75*		*10 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d7-N-MeFOSE-M	*78*		*10 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
d9-N-EtFOSE-M	*80*		*10 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
M2-4:2 FTS	*80*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
M2-6:2 FTS	*88*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
M2-8:2 FTS	*105*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*
13C3 HFPO-DA	*86*		*25 - 150*	*03/27/24 12:17*	*03/29/24 14:49*	*1*

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.010		0.050	0.010	mg/L		03/25/24 08:41	03/26/24 12:21	1
Barium	**0.25**	**J**	0.50	0.050	mg/L		03/25/24 08:41	03/26/24 12:21	1
Cadmium	**0.63**		0.0050	0.0020	mg/L		03/25/24 08:41	03/26/24 12:21	1
Chromium	<0.010		0.025	0.010	mg/L		03/25/24 08:41	03/26/24 12:21	1
Lead	**0.014**	**J**	0.050	0.0075	mg/L		03/25/24 08:41	03/26/24 12:21	1
Selenium	<0.020	*+	0.050	0.020	mg/L		03/25/24 08:41	03/26/24 12:21	1
Silver	<0.010		0.025	0.010	mg/L		03/25/24 08:41	03/26/24 12:21	1

Method: SW846 7470A - TCLP Mercury - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00020	mg/L		04/04/24 11:05	04/05/24 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	**42**		4.2	2.1	mg/Kg		03/20/24 14:01	03/20/24 16:00	20
Sulfide (SW846 9034)	<4.6		9.7	4.6	mg/Kg		03/18/24 08:48	03/20/24 09:01	1
pH (SW846 9045D)	**8.1**		0.2	0.2	SU			03/20/24 13:04	1
Free Liquid (SW846 9095B)	**FAIL**				No Unit			03/18/24 21:32	1
Total Chlorine (SW846 9251)	<990		990	990	mg/Kg		03/20/24 15:49	03/20/24 19:27	1
Flashpoint (ASTM D92)	**>200**		99.0	99.0	Degrees F			03/18/24 23:00	1
Specific Gravity (SM 2710F)	**1.9728**				NONE			03/19/24 15:26	1

Definitions/Glossary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Qualifiers

LCMS

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Association Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

GC/MS VOA

Leach Batch: 759838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	1311	
LB 500-759838/1-A	Method Blank	TCLP	Solid	1311	
LCS 500-759838/14-A	Lab Control Sample	TCLP	Solid	1311	

Analysis Batch: 760106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	8260D	759838
LB 500-759838/1-A	Method Blank	TCLP	Solid	8260D	759838
MB 500-760106/7	Method Blank	Total/NA	Solid	8260D	
LCS 500-759838/14-A	Lab Control Sample	TCLP	Solid	8260D	759838
LCS 500-760106/5	Lab Control Sample	Total/NA	Solid	8260D	

GC/MS Semi VOA

Leach Batch: 759408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	1311	
LB 500-759408/1-E	Method Blank	TCLP	Solid	1311	

Prep Batch: 759885

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	3510C	759408
LB 500-759408/1-E	Method Blank	TCLP	Solid	3510C	759408
MB 500-759885/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 500-759885/2-A	Lab Control Sample	Total/NA	Solid	3510C	

Analysis Batch: 759949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	8270E	759885
LB 500-759408/1-E	Method Blank	TCLP	Solid	8270E	759885
MB 500-759885/1-A	Method Blank	Total/NA	Solid	8270E	759885
LCS 500-759885/2-A	Lab Control Sample	Total/NA	Solid	8270E	759885

GC Semi VOA

Prep Batch: 758858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	3541	
MB 500-758858/1-A	Method Blank	Total/NA	Solid	3541	
LCS 500-758858/3-A	Lab Control Sample	Total/NA	Solid	3541	

Analysis Batch: 758960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-758858/1-A	Method Blank	Total/NA	Solid	8082A	758858
LCS 500-758858/3-A	Lab Control Sample	Total/NA	Solid	8082A	758858

Analysis Batch: 759334

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	8082A	758858

LCMS

Prep Batch: 750326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	SHAKE	
MB 320-750326/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-750326/3-A	Lab Control Sample	Total/NA	Solid	SHAKE	
LLCS 320-750326/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	

Analysis Batch: 751083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	537 (modified)	750326
MB 320-750326/1-A	Method Blank	Total/NA	Solid	537 (modified)	750326
LCS 320-750326/3-A	Lab Control Sample	Total/NA	Solid	537 (modified)	750326
LLCS 320-750326/2-A	Lab Control Sample	Total/NA	Solid	537 (modified)	750326

Metals

Leach Batch: 759408

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	1311	
LB 500-759408/1-B	Method Blank	TCLP	Solid	1311	
LB 500-759408/1-I	Method Blank	TCLP	Solid	1311	

Prep Batch: 759786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	3010A	759408
LB 500-759408/1-B	Method Blank	TCLP	Solid	3010A	759408
LCS 500-759786/2-A	Lab Control Sample	Total/NA	Solid	3010A	

Analysis Batch: 760048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	6010D	759786
LB 500-759408/1-B	Method Blank	TCLP	Solid	6010D	759786
LCS 500-759786/2-A	Lab Control Sample	Total/NA	Solid	6010D	759786

Prep Batch: 761568

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	7470A	759408
LB 500-759408/1-I	Method Blank	TCLP	Solid	7470A	759408
MB 500-761568/12-A	Method Blank	Total/NA	Solid	7470A	
LCS 500-761568/14-A	Lab Control Sample	Total/NA	Solid	7470A	

Analysis Batch: 761768

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	TCLP	Solid	7470A	761568
LB 500-759408/1-I	Method Blank	TCLP	Solid	7470A	761568
MB 500-761568/12-A	Method Blank	Total/NA	Solid	7470A	761568
LCS 500-761568/14-A	Lab Control Sample	Total/NA	Solid	7470A	761568

General Chemistry

Prep Batch: 758711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9030B	
MB 500-758711/1-A	Method Blank	Total/NA	Solid	9030B	

General Chemistry (Continued)

Prep Batch: 758711 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-758711/2-A	Lab Control Sample	Total/NA	Solid	9030B	

Analysis Batch: 758799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9095B	

Analysis Batch: 758803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	D92	

Analysis Batch: 758991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	SM 2710F	
500-247617-1 DU	20240314-IDW-S	Total/NA	Solid	SM 2710F	

Analysis Batch: 758999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	Moisture	

Analysis Batch: 759113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9034	758711
MB 500-758711/1-A	Method Blank	Total/NA	Solid	9034	758711
LCS 500-758711/2-A	Lab Control Sample	Total/NA	Solid	9034	758711

Prep Batch: 759176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9010C	
MB 500-759176/1-A	Method Blank	Total/NA	Solid	9010C	
LCS 500-759176/2-A	Lab Control Sample	Total/NA	Solid	9010C	

Analysis Batch: 759261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9045D	
LCS 500-759261/2	Lab Control Sample	Total/NA	Solid	9045D	
LCSD 500-759261/3	Lab Control Sample Dup	Total/NA	Solid	9045D	
500-247617-1 DU	20240314-IDW-S	Total/NA	Solid	9045D	

Analysis Batch: 759361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9012B	759176
MB 500-759176/1-A	Method Blank	Total/NA	Solid	9012B	759176
LCS 500-759176/2-A	Lab Control Sample	Total/NA	Solid	9012B	759176

Prep Batch: 828629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	5050	
MB 680-828629/1-A	Method Blank	Total/NA	Solid	5050	
LCS 680-828629/2-A	Lab Control Sample	Total/NA	Solid	5050	

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

General Chemistry

Analysis Batch: 828668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-247617-1	20240314-IDW-S	Total/NA	Solid	9251	828629
MB 680-828629/1-A	Method Blank	Total/NA	Solid	9251	828629
LCS 680-828629/2-A	Lab Control Sample	Total/NA	Solid	9251	828629

Surrogate Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
LCS 500-760106/5	Lab Control Sample	94	104	103	103
MB 500-760106/7	Method Blank	98	101	105	105

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(75-126)	(75-120)	(72-124)	(75-120)
500-247617-1	20240314-IDW-S	104	101	104	106
LB 500-759838/1-A	Method Blank	101	102	109	106
LCS 500-759838/14-A	Lab Control Sample	100	103	103	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(27-110)	(20-100)	(36-120)	(34-110)	(40-145)	(40-145)
LCS 500-759885/2-A	Lab Control Sample	59	42	84	77	102	71
MB 500-759885/1-A	Method Blank	53	37	73	61	72	63

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: TCLP**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPHL
Lab Sample ID	Client Sample ID	(27-110)	(20-100)	(36-120)	(34-110)	(40-145)	(40-145)
500-247617-1	20240314-IDW-S	60	37	88	87	88	79
LB 500-759408/1-E	Method Blank	66	45	93	80	95	83

Surrogate Legend

2FP = 2-Fluorophenol (Surr)

Surrogate Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPHL = Terphenyl-d14 (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)									
		TCX1	DCBP1								
Lab Sample ID	Client Sample ID	(49-129)	(37-121)								
500-247617-1	20240314-IDW-S	85	77								
LCS 500-758858/3-A	Lab Control Sample	88	65								
MB 500-758858/1-A	Method Blank	107	82								

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCBP = DCB Decachlorobiphenyl

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 500-760106/7
Matrix: Solid
Analysis Batch: 760106

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
Carbon tetrachloride	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
Chlorobenzene	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
Chloroform	<0.0010		0.0020	0.0010	mg/L			03/27/24 10:49	1
1,2-Dichloroethane	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
1,1-Dichloroethene	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
2-Butanone (MEK)	<0.0025		0.0050	0.0025	mg/L			03/27/24 10:49	1
Tetrachloroethene	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
Trichloroethene	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1
Vinyl chloride	<0.00050		0.0010	0.00050	mg/L			03/27/24 10:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 126*		*03/27/24 10:49*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*03/27/24 10:49*	*1*
4-Bromofluorobenzene (Surr)	*105*		*72 - 124*		*03/27/24 10:49*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 120*		*03/27/24 10:49*	*1*

Lab Sample ID: LCS 500-760106/5
Matrix: Solid
Analysis Batch: 760106

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.0500	0.0421		mg/L		84	70 - 120
Carbon tetrachloride	0.0500	0.0496		mg/L		99	59 - 133
Chlorobenzene	0.0500	0.0457		mg/L		91	70 - 120
Chloroform	0.0500	0.0449		mg/L		90	70 - 120
1,2-Dichloroethane	0.0500	0.0426		mg/L		85	68 - 127
1,1-Dichloroethene	0.0500	0.0512		mg/L		102	67 - 122
2-Butanone (MEK)	0.0500	0.0289		mg/L		58	46 - 144
Tetrachloroethene	0.0500	0.0466		mg/L		93	70 - 128
Trichloroethene	0.0500	0.0446		mg/L		89	70 - 125
Vinyl chloride	0.0500	0.0434		mg/L		87	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*75 - 126*
Toluene-d8 (Surr)	*104*		*75 - 120*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*
Dibromofluoromethane (Surr)	*103*		*75 - 120*

Lab Sample ID: LB 500-759838/1-A
Matrix: Solid
Analysis Batch: 760106

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
Carbon tetrachloride	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
Chlorobenzene	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
Chloroform	<0.020		0.040	0.020	mg/L			03/27/24 11:37	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 500-759838/1-A
Matrix: Solid
Analysis Batch: 760106

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
1,1-Dichloroethene	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
2-Butanone (MEK)	<0.050		0.10	0.050	mg/L			03/27/24 11:37	20
Tetrachloroethene	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
Trichloroethene	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20
Vinyl chloride	<0.010		0.020	0.010	mg/L			03/27/24 11:37	20

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*75 - 126*		*03/27/24 11:37*	*20*
Toluene-d8 (Surr)	*102*		*75 - 120*		*03/27/24 11:37*	*20*
4-Bromofluorobenzene (Surr)	*109*		*72 - 124*		*03/27/24 11:37*	*20*
Dibromofluoromethane (Surr)	*106*		*75 - 120*		*03/27/24 11:37*	*20*

Lab Sample ID: LCS 500-759838/14-A
Matrix: Solid
Analysis Batch: 760106

Client Sample ID: Lab Control Sample
Prep Type: TCLP

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	1.00	0.917		mg/L		92	70 - 120
Carbon tetrachloride	1.00	1.07		mg/L		107	59 - 133
Chlorobenzene	1.00	1.01		mg/L		101	70 - 120
Chloroform	1.00	0.980		mg/L		98	70 - 120
1,2-Dichloroethane	1.00	0.966		mg/L		97	68 - 127
1,1-Dichloroethene	1.00	1.08		mg/L		108	67 - 122
2-Butanone (MEK)	1.00	0.574		mg/L		57	46 - 144
Tetrachloroethene	1.00	0.979		mg/L		98	70 - 128
Trichloroethene	1.00	0.978		mg/L		98	70 - 125
Vinyl chloride	1.00	0.853		mg/L		85	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*75 - 126*
Toluene-d8 (Surr)	*103*		*75 - 120*
4-Bromofluorobenzene (Surr)	*103*		*72 - 124*
Dibromofluoromethane (Surr)	*107*		*75 - 120*

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-759885/1-A
Matrix: Solid
Analysis Batch: 759949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 759885

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<0.0020		0.0020	0.0020	mg/L		03/26/24 06:14	03/26/24 11:54	1
3 & 4 Methylphenol	<0.0020		0.0020	0.0020	mg/L		03/26/24 06:14	03/26/24 11:54	1
1,4-Dichlorobenzene	<0.0020		0.0020	0.0020	mg/L		03/26/24 06:14	03/26/24 11:54	1
2,4-Dinitrotoluene	<0.0010		0.0010	0.0010	mg/L		03/26/24 06:14	03/26/24 11:54	1
Hexachlorobenzene	<0.00050		0.00050	0.00050	mg/L		03/26/24 06:14	03/26/24 11:54	1
Hexachlorobutadiene	<0.0050		0.0050	0.0050	mg/L		03/26/24 06:14	03/26/24 11:54	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-759885/1-A
Matrix: Solid
Analysis Batch: 759949

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 759885

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexachloroethane	<0.0050		0.0050	0.0050	mg/L		03/26/24 06:14	03/26/24 11:54	1
Nitrobenzene	<0.0010		0.0010	0.0010	mg/L		03/26/24 06:14	03/26/24 11:54	1
Pentachlorophenol	<0.020		0.020	0.020	mg/L		03/26/24 06:14	03/26/24 11:54	1
Pyridine	<0.020		0.020	0.020	mg/L		03/26/24 06:14	03/26/24 11:54	1
2,4,5-Trichlorophenol	<0.010		0.010	0.010	mg/L		03/26/24 06:14	03/26/24 11:54	1
2,4,6-Trichlorophenol	<0.0050		0.0050	0.0050	mg/L		03/26/24 06:14	03/26/24 11:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*53*		*27 - 110*	*03/26/24 06:14*	*03/26/24 11:54*	*1*
Phenol-d5 (Surr)	*37*		*20 - 100*	*03/26/24 06:14*	*03/26/24 11:54*	*1*
Nitrobenzene-d5 (Surr)	*73*		*36 - 120*	*03/26/24 06:14*	*03/26/24 11:54*	*1*
2-Fluorobiphenyl (Surr)	*61*		*34 - 110*	*03/26/24 06:14*	*03/26/24 11:54*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*40 - 145*	*03/26/24 06:14*	*03/26/24 11:54*	*1*
Terphenyl-d14 (Surr)	*63*		*40 - 145*	*03/26/24 06:14*	*03/26/24 11:54*	*1*

Lab Sample ID: LCS 500-759885/2-A
Matrix: Solid
Analysis Batch: 759949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 759885

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Methylphenol	0.0400	0.0291		mg/L		73	53 - 115
3 & 4 Methylphenol	0.0400	0.0268		mg/L		67	50 - 116
1,4-Dichlorobenzene	0.0400	0.0238		mg/L		60	23 - 110
2,4-Dinitrotoluene	0.0400	0.0394		mg/L		98	63 - 129
Hexachlorobenzene	0.0400	0.0323		mg/L		81	61 - 126
Hexachlorobutadiene	0.0400	0.0225		mg/L		56	20 - 100
Hexachloroethane	0.0400	0.0215		mg/L		54	20 - 100
Nitrobenzene	0.0400	0.0323		mg/L		81	54 - 121
Pentachlorophenol	0.0800	0.0617		mg/L		77	42 - 148
Pyridine	0.0800	<0.020		mg/L		22	15 - 110
2,4,5-Trichlorophenol	0.0400	0.0347		mg/L		87	63 - 124
2,4,6-Trichlorophenol	0.0400	0.0357		mg/L		89	62 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*59*		*27 - 110*
Phenol-d5 (Surr)	*42*		*20 - 100*
Nitrobenzene-d5 (Surr)	*84*		*36 - 120*
2-Fluorobiphenyl (Surr)	*77*		*34 - 110*
2,4,6-Tribromophenol (Surr)	*102*		*40 - 145*
Terphenyl-d14 (Surr)	*71*		*40 - 145*

Lab Sample ID: LB 500-759408/1-E
Matrix: Solid
Analysis Batch: 759949

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 759885

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<0.020		0.020	0.020	mg/L		03/26/24 06:14	03/26/24 12:45	1
3 & 4 Methylphenol	<0.020		0.020	0.020	mg/L		03/26/24 06:14	03/26/24 12:45	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 500-759408/1-E
Matrix: Solid
Analysis Batch: 759949

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 759885

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.020		0.020	0.020	mg/L		03/26/24 06:14	03/26/24 12:45	1
2,4-Dinitrotoluene	<0.010		0.010	0.010	mg/L		03/26/24 06:14	03/26/24 12:45	1
Hexachlorobenzene	<0.0050		0.0050	0.0050	mg/L		03/26/24 06:14	03/26/24 12:45	1
Hexachlorobutadiene	<0.050		0.050	0.050	mg/L		03/26/24 06:14	03/26/24 12:45	1
Hexachloroethane	<0.050		0.050	0.050	mg/L		03/26/24 06:14	03/26/24 12:45	1
Nitrobenzene	<0.010		0.010	0.010	mg/L		03/26/24 06:14	03/26/24 12:45	1
Pentachlorophenol	<0.20		0.20	0.20	mg/L		03/26/24 06:14	03/26/24 12:45	1
Pyridine	<0.20		0.20	0.20	mg/L		03/26/24 06:14	03/26/24 12:45	1
2,4,5-Trichlorophenol	<0.10		0.10	0.10	mg/L		03/26/24 06:14	03/26/24 12:45	1
2,4,6-Trichlorophenol	<0.050		0.050	0.050	mg/L		03/26/24 06:14	03/26/24 12:45	1

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*66*		*27 - 110*	*03/26/24 06:14*	*03/26/24 12:45*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*03/26/24 06:14*	*03/26/24 12:45*	*1*
Nitrobenzene-d5 (Surr)	*93*		*36 - 120*	*03/26/24 06:14*	*03/26/24 12:45*	*1*
2-Fluorobiphenyl (Surr)	*80*		*34 - 110*	*03/26/24 06:14*	*03/26/24 12:45*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*40 - 145*	*03/26/24 06:14*	*03/26/24 12:45*	*1*
Terphenyl-d14 (Surr)	*83*		*40 - 145*	*03/26/24 06:14*	*03/26/24 12:45*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-758858/1-A
Matrix: Solid
Analysis Batch: 758960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 758858

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.0066		0.017	0.0066	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1221	<0.0066		0.017	0.0066	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1232	<0.0045		0.017	0.0045	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1242	<0.0065		0.017	0.0065	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1248	<0.0079		0.017	0.0079	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1254	<0.0057		0.017	0.0057	mg/Kg		03/19/24 07:28	03/19/24 14:49	1
PCB-1260	<0.0063		0.017	0.0063	mg/Kg		03/19/24 07:28	03/19/24 14:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*107*		*49 - 129*	*03/19/24 07:28*	*03/19/24 14:49*	*1*
DCB Decachlorobiphenyl	*82*		*37 - 121*	*03/19/24 07:28*	*03/19/24 14:49*	*1*

Lab Sample ID: LCS 500-758858/3-A
Matrix: Solid
Analysis Batch: 758960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 758858

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
PCB-1016			0.167	0.147		mg/Kg		88	57 - 120		
PCB-1260			0.167	0.131		mg/Kg		78	61 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*88*		*49 - 129*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 500-758858/3-A
Matrix: Solid
Analysis Batch: 758960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 758858

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	65		37 - 121

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-750326/1-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 750326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0637	J	0.20	0.046	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoropentanoic acid (PFPeA)	<0.041		0.20	0.041	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorohexanoic acid (PFHxA)	<0.031		0.20	0.031	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroheptanoic acid (PFHpA)	<0.038		0.20	0.038	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanoic acid (PFOA)	<0.053		0.20	0.053	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorononanoic acid (PFNA)	<0.022		0.20	0.022	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorodecanoic acid (PFDA)	<0.048		0.20	0.048	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroundecanoic acid (PFUnA)	<0.042		0.20	0.042	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorododecanoic acid (PFDoA)	<0.030		0.20	0.030	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorotridecanoic acid (PFTrDA)	<0.021		0.20	0.021	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorotetradecanoic acid (PFTeA)	<0.037		0.20	0.037	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorobutanesulfonic acid (PFBS)	0.0532	J	0.20	0.038	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.037		0.20	0.037	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.029		0.20	0.029	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.049		0.20	0.049	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanesulfonic acid (PFOS)	<0.043		0.20	0.043	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorononanesulfonic acid (PFNS)	<0.029		0.20	0.029	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorodecanesulfonic acid (PFDS)	<0.052		0.20	0.052	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorododecanesulfonic acid (PFDoS)	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
Perfluorooctanesulfonamide (FOSA)	<0.033		0.20	0.033	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSA	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSA	<0.049		0.20	0.049	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSAA	<0.023		0.20	0.023	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSAA	<0.048		0.20	0.048	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NMeFOSE	<0.047		0.20	0.047	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
NEtFOSE	<0.028		0.20	0.028	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
4:2 FTS	<0.051		0.20	0.051	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
6:2 FTS	<0.027		0.20	0.027	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
8:2 FTS	<0.035		0.20	0.035	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.039		0.20	0.039	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
HFPO-DA (GenX)	<0.041		0.20	0.041	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
9Cl-PF3ONS	<0.035		0.20	0.035	ug/Kg		03/27/24 12:17	03/29/24 13:28	1
11Cl-PF3OUdS	<0.031		0.20	0.031	ug/Kg		03/27/24 12:17	03/29/24 13:28	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	87		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C5 PFPeA	85		25 - 150	03/27/24 12:17	03/29/24 13:28	1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-750326/1-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 750326

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C2 PFHxA	87		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C4 PFHpA	87		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C4 PFOA	94		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C5 PFNA	88		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C2 PFDA	87		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C2 PFUnA	75		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C2 PFDoA	76		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C2 PFTeDA	74		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C3 PFBS	78		25 - 150	03/27/24 12:17	03/29/24 13:28	1
18O2 PFHxS	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C4 PFOS	74		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C8 FOSA	79		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d3-NMeFOSAA	72		25 - 150	03/27/24 12:17	03/29/24 13:28	1
d5-NEtFOSAA	80		25 - 150	03/27/24 12:17	03/29/24 13:28	1
d-N-MeFOSA-M	55		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d-N-EtFOSA-M	57		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d7-N-MeFOSE-M	67		10 - 150	03/27/24 12:17	03/29/24 13:28	1
d9-N-EtFOSE-M	71		10 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-4:2 FTS	75		25 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-6:2 FTS	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1
M2-8:2 FTS	96		25 - 150	03/27/24 12:17	03/29/24 13:28	1
13C3 HFPO-DA	81		25 - 150	03/27/24 12:17	03/29/24 13:28	1

Lab Sample ID: LCS 320-750326/3-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	2.00	1.99		ug/Kg		99	60 - 135
Perfluoropentanoic acid (PFPeA)	2.00	2.02		ug/Kg		101	60 - 135
Perfluorohexanoic acid (PFHxA)	2.00	2.18		ug/Kg		109	60 - 135
Perfluoroheptanoic acid (PFHpA)	2.00	2.04		ug/Kg		102	60 - 135
Perfluorooctanoic acid (PFOA)	2.00	2.07		ug/Kg		103	60 - 135
Perfluorononanoic acid (PFNA)	2.00	2.07		ug/Kg		103	60 - 135
Perfluorodecanoic acid (PFDA)	2.00	2.02		ug/Kg		101	60 - 135
Perfluoroundecanoic acid (PFUnA)	2.00	2.33		ug/Kg		116	60 - 135
Perfluorododecanoic acid (PFDoA)	2.00	2.08		ug/Kg		104	60 - 135
Perfluorotridecanoic acid (PFTrDA)	2.00	1.96		ug/Kg		98	60 - 135
Perfluorotetradecanoic acid (PFTeA)	2.00	1.91		ug/Kg		96	60 - 135
Perfluorobutanesulfonic acid (PFBS)	1.78	1.82		ug/Kg		103	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	1.88	1.90		ug/Kg		101	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	1.82	1.79		ug/Kg		98	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	1.91	2.11		ug/Kg		110	60 - 135

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247617-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-750326/3-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonic acid (PFOS)	1.86	1.95		ug/Kg		105	60 - 135
Perfluorononanesulfonic acid (PFNS)	1.92	1.96		ug/Kg		102	60 - 135
Perfluorodecanesulfonic acid (PFDS)	1.93	1.89		ug/Kg		98	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.77		ug/Kg		91	60 - 135
Perfluorooctanesulfonamide (FOSA)	2.00	2.10		ug/Kg		105	60 - 135
NEtFOSA	2.00	2.11		ug/Kg		106	60 - 135
NMeFOSA	2.00	2.06		ug/Kg		103	60 - 135
NMeFOSAA	2.00	2.24		ug/Kg		112	60 - 135
NEtFOSAA	2.00	2.15		ug/Kg		108	60 - 135
NMeFOSE	2.00	2.16		ug/Kg		108	60 - 135
NEtFOSE	2.00	2.02		ug/Kg		101	60 - 135
4:2 FTS	1.88	1.98		ug/Kg		105	60 - 135
6:2 FTS	1.90	2.21		ug/Kg		116	60 - 135
8:2 FTS	1.92	2.09		ug/Kg		109	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.89	2.37		ug/Kg		125	60 - 135
HFPO-DA (GenX)	2.00	2.26		ug/Kg		113	60 - 135
9Cl-PF3ONS	1.87	2.21		ug/Kg		118	60 - 135
11Cl-PF3OUdS	1.89	1.91		ug/Kg		101	60 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*66*		*25 - 150*
13C5 PFPeA	*84*		*25 - 150*
13C2 PFHxA	*91*		*25 - 150*
13C4 PFHpA	*97*		*25 - 150*
13C4 PFOA	*92*		*25 - 150*
13C5 PFNA	*92*		*25 - 150*
13C2 PFDA	*91*		*25 - 150*
13C2 PFUnA	*77*		*25 - 150*
13C2 PFDoA	*83*		*25 - 150*
13C2 PFTeDA	*83*		*25 - 150*
13C3 PFBS	*84*		*25 - 150*
18O2 PFHxS	*81*		*25 - 150*
13C4 PFOS	*78*		*25 - 150*
13C8 FOSA	*82*		*10 - 150*
d3-NMeFOSAA	*70*		*25 - 150*
d5-NEtFOSAA	*79*		*25 - 150*
d-N-MeFOSA-M	*76*		*10 - 150*
d-N-EtFOSA-M	*72*		*10 - 150*
d7-N-MeFOSE-M	*65*		*10 - 150*
d9-N-EtFOSE-M	*70*		*10 - 150*
M2-4:2 FTS	*85*		*25 - 150*
M2-6:2 FTS	*91*		*25 - 150*
M2-8:2 FTS	*98*		*25 - 150*
13C3 HFPO-DA	*82*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-750326/2-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	0.400	0.504		ug/Kg		126	50 - 150
Perfluoropentanoic acid (PFPeA)	0.400	0.464		ug/Kg		116	50 - 150
Perfluorohexanoic acid (PFHxA)	0.400	0.495		ug/Kg		124	50 - 150
Perfluoroheptanoic acid (PFHpA)	0.400	0.490		ug/Kg		122	50 - 150
Perfluorooctanoic acid (PFOA)	0.400	0.476		ug/Kg		119	50 - 150
Perfluorononanoic acid (PFNA)	0.400	0.520		ug/Kg		130	50 - 150
Perfluorodecanoic acid (PFDA)	0.400	0.480		ug/Kg		120	50 - 150
Perfluoroundecanoic acid (PFUnA)	0.400	0.485		ug/Kg		121	50 - 150
Perfluorododecanoic acid (PFDoA)	0.400	0.495		ug/Kg		124	50 - 150
Perfluorotridecanoic acid (PFTrDA)	0.400	0.426		ug/Kg		106	50 - 150
Perfluorotetradecanoic acid (PFTeA)	0.400	0.400		ug/Kg		100	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.355	0.462		ug/Kg		130	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	0.376	0.436		ug/Kg		116	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	0.365	0.409		ug/Kg		112	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.382	0.438		ug/Kg		115	50 - 150
Perfluorooctanesulfonic acid (PFOS)	0.372	0.408		ug/Kg		110	50 - 150
Perfluorononanesulfonic acid (PFNS)	0.385	0.405		ug/Kg		105	50 - 150
Perfluorodecanesulfonic acid (PFDS)	0.386	0.346		ug/Kg		90	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	0.388	0.316		ug/Kg		82	50 - 150
Perfluorooctanesulfonamide (FOSA)	0.400	0.467		ug/Kg		117	50 - 150
NEtFOSA	0.400	0.463		ug/Kg		116	50 - 150
NMeFOSA	0.400	0.455		ug/Kg		114	50 - 150
NMeFOSAA	0.400	0.506		ug/Kg		127	50 - 150
NEtFOSAA	0.400	0.484		ug/Kg		121	50 - 150
NMeFOSE	0.400	0.489		ug/Kg		122	50 - 150
NEtFOSE	0.400	0.437		ug/Kg		109	50 - 150
4:2 FTS	0.375	0.477		ug/Kg		127	50 - 150
6:2 FTS	0.381	0.453		ug/Kg		119	50 - 150
8:2 FTS	0.384	0.410		ug/Kg		107	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.378	0.494		ug/Kg		131	50 - 150
HFPO-DA (GenX)	0.400	0.458		ug/Kg		114	50 - 150
9Cl-PF3ONS	0.374	0.441		ug/Kg		118	50 - 150
11Cl-PF3OUdS	0.378	0.422		ug/Kg		112	50 - 150

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFBA	*73*		*25 - 150*
13C5 PFPeA	*86*		*25 - 150*
13C2 PFHxA	*84*		*25 - 150*

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-750326/2-A
Matrix: Solid
Analysis Batch: 751083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 750326

Isotope Dilution	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C4 PFHpA	*88*		*25 - 150*
13C4 PFOA	*94*		*25 - 150*
13C5 PFNA	*86*		*25 - 150*
13C2 PFDA	*86*		*25 - 150*
13C2 PFUnA	*75*		*25 - 150*
13C2 PFDoA	*81*		*25 - 150*
13C2 PFTeDA	*79*		*25 - 150*
13C3 PFBS	*79*		*25 - 150*
18O2 PFHxS	*74*		*25 - 150*
13C4 PFOS	*78*		*25 - 150*
13C8 FOSA	*83*		*10 - 150*
d3-NMeFOSAA	*74*		*25 - 150*
d5-NEtFOSAA	*77*		*25 - 150*
d-N-MeFOSA-M	*74*		*10 - 150*
d-N-EtFOSA-M	*69*		*10 - 150*
d7-N-MeFOSE-M	*70*		*10 - 150*
d9-N-EtFOSE-M	*75*		*10 - 150*
M2-4:2 FTS	*77*		*25 - 150*
M2-6:2 FTS	*89*		*25 - 150*
M2-8:2 FTS	*97*		*25 - 150*
13C3 HFPO-DA	*81*		*25 - 150*

Method: 6010D - Metals (ICP)

Lab Sample ID: LCS 500-759786/2-A
Matrix: Solid
Analysis Batch: 760048

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 759786

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.100	0.113		mg/L		113	80 - 120
Barium	0.500	0.500		mg/L		100	80 - 120
Cadmium	0.0500	0.0575		mg/L		115	80 - 120
Chromium	0.200	0.204		mg/L		102	80 - 120
Lead	0.100	0.0941		mg/L		94	80 - 120
Selenium	0.100	0.122	*+	mg/L		122	80 - 120
Silver	0.0500	0.0587		mg/L		117	80 - 120

Lab Sample ID: LB 500-759408/1-B
Matrix: Solid
Analysis Batch: 760048

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 759786

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.010		0.050	0.010	mg/L		03/25/24 08:41	03/26/24 11:26	1
Barium	<0.050		0.50	0.050	mg/L		03/25/24 08:41	03/26/24 11:26	1
Cadmium	<0.0020		0.0050	0.0020	mg/L		03/25/24 08:41	03/26/24 11:26	1
Chromium	<0.010		0.025	0.010	mg/L		03/25/24 08:41	03/26/24 11:26	1
Lead	<0.0075		0.050	0.0075	mg/L		03/25/24 08:41	03/26/24 11:26	1
Selenium	<0.020		0.050	0.020	mg/L		03/25/24 08:41	03/26/24 11:26	1
Silver	<0.010		0.025	0.010	mg/L		03/25/24 08:41	03/26/24 11:26	1

Method: 7470A - TCLP Mercury

Lab Sample ID: MB 500-761568/12-A
Matrix: Solid
Analysis Batch: 761768

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 761568

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00020	mg/L		04/04/24 11:05	04/05/24 09:17	1

Lab Sample ID: LCS 500-761568/14-A
Matrix: Solid
Analysis Batch: 761768

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 761568

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00201	0.00194		mg/L		97	80 - 120

Lab Sample ID: LB 500-759408/1-I
Matrix: Solid
Analysis Batch: 761768

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 761568

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00020	mg/L		04/04/24 11:05	04/05/24 09:20	1

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 500-759176/1-A
Matrix: Solid
Analysis Batch: 759361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 759176

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.12		0.24	0.12	mg/Kg		03/20/24 14:01	03/20/24 15:32	1

Lab Sample ID: LCS 500-759176/2-A
Matrix: Solid
Analysis Batch: 759361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 759176

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	2.40	2.34		mg/Kg		98	85 - 115

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-758711/1-A
Matrix: Solid
Analysis Batch: 759113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 758711

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<4.7		10	4.7	mg/Kg		03/18/24 08:48	03/20/24 09:01	1

Lab Sample ID: LCS 500-758711/2-A
Matrix: Solid
Analysis Batch: 759113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 758711

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	166	153		mg/Kg		92	80 - 120

Method: 9045D - pH

Lab Sample ID: 500-247617-1 DU
Matrix: Solid
Analysis Batch: 759261

Client Sample ID: 20240314-IDW-S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
pH	8.1			8.3		SU				2	

Method: 9251 - Chlorine, Total

Lab Sample ID: MB 680-828629/1-A
Matrix: Solid
Analysis Batch: 828668

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 828629

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Chlorine	<50		50	50	mg/Kg		03/20/24 15:49	03/20/24 19:27	1

Lab Sample ID: LCS 680-828629/2-A
Matrix: Solid
Analysis Batch: 828668

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 828629

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Chlorine			9900	8220		mg/Kg		83	70 - 130		

Method: SM 2710F - Specific Gravity, Density

Lab Sample ID: 500-247617-1 DU
Matrix: Solid
Analysis Batch: 758991

Client Sample ID: 20240314-IDW-S
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Specific Gravity	1.9728			2.0152		NONE				2	

Lab Chronicle

Client: Ramboll Americas Engineering Solutions
Project/Site: Mirro 4 - 1690026868

Job ID: 500-247617-1

Client Sample ID: 20240314-IDW-S
Date Collected: 03/14/24 15:45
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247617-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			759838		EET CHI	03/25/24 15:25
TCLP	Analysis	8260D		20	760106	W1T	EET CHI	03/27/24 12:26
TCLP	Leach	1311			759408		EET CHI	03/21/24 20:45 - 03/22/24 12:50 [1]
TCLP	Prep	3510C			759885	AC	EET CHI	03/26/24 06:14
TCLP	Analysis	8270E		5	759949	JSB	EET CHI	03/26/24 16:57
Total/NA	Prep	3541			758858	FRG	EET CHI	03/19/24 07:28 - 03/19/24 13:11 [1]
Total/NA	Analysis	8082A		5	759334	H7CM	EET CHI	03/21/24 11:33
TCLP	Leach	1311			759408		EET CHI	03/21/24 20:45 - 03/22/24 12:50 [1]
TCLP	Prep	3010A			759786	BDE	EET CHI	03/25/24 08:41 - 03/25/24 14:41 [1]
TCLP	Analysis	6010D		1	760048	SJ	EET CHI	03/26/24 12:21
TCLP	Leach	1311			759408		EET CHI	03/21/24 20:45 - 03/22/24 12:50 [1]
TCLP	Prep	7470A			761568	MJG	EET CHI	04/04/24 11:05 - 04/04/24 13:05 [1]
TCLP	Analysis	7470A		1	761768	MJG	EET CHI	04/05/24 09:24
Total/NA	Prep	9010C			759176	KH	EET CHI	03/20/24 14:01 - 03/20/24 14:31 [1]
Total/NA	Analysis	9012B		20	759361	KH	EET CHI	03/20/24 16:00
Total/NA	Prep	9030B			758711	DM	EET CHI	03/18/24 08:48 - 03/19/24 15:36 [1]
Total/NA	Analysis	9034		1	759113	DM	EET CHI	03/20/24 09:01
Total/NA	Analysis	9045D		1	759261	SO	EET CHI	03/20/24 13:04
Total/NA	Analysis	9095B		1	758799	CLB	EET CHI	03/18/24 21:32
Total/NA	Prep	5050			828629	SM	EET SAV	03/20/24 15:49
Total/NA	Analysis	9251		1	828668	SM	EET SAV	03/20/24 19:27
Total/NA	Analysis	D92		1	758803	CLB	EET CHI	03/18/24 23:00 - 03/18/24 23:15 [1]
Total/NA	Analysis	Moisture		1	758999	MR	EET CHI	03/19/24 16:04
Total/NA	Analysis	SM 2710F		1	758991	KF	EET CHI	03/19/24 15:26

Client Sample ID: 20240314-IDW-S
Date Collected: 03/14/24 15:45
Date Received: 03/16/24 09:50

Lab Sample ID: 500-247617-1
Matrix: Solid
Percent Solids: 91.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	SHAKE			750326	V1T	EET SAC	03/27/24 12:17
Total/NA	Analysis	537 (modified)		1	751083	RS1	EET SAC	03/29/24 14:49

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	999580010	08-31-24

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-24

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-24
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas (DW)	State	GA00006	06-30-24
California	State	2939	06-30-24
Florida	NELAP	E87052	06-30-24
Georgia	State	E87052	06-30-24
Georgia (DW)	State	803	06-30-24
Guam	State	19-007R	04-17-24
Hawaii	State	<cert No.>	06-30-24
Illinois	NELAP	200022	11-30-24
Indiana	State	C-GA-02	06-30-24
Iowa	State	353	07-01-25
Kentucky (UST)	State	NA	06-30-24
Louisiana	NELAP	30690	06-30-24
Louisiana (All)	NELAP	30690	06-30-24
Louisiana (DW)	State	LA009	12-31-24
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-24
Massachusetts	State	M-GA006	06-30-24
Michigan	State	9925	06-30-24
Mississippi	State	<cert No.>	06-30-24
Nebraska	State	NE-OS-7-04	06-30-24
New Jersey	NELAP	GA769	06-30-24
New Mexico	State	GA00006	06-30-24
North Carolina (DW)	State	13701	07-31-24
North Carolina (WW/SW)	State	269	12-31-24
Pennsylvania	NELAP	68-00474	06-30-24
Puerto Rico	State	GA00006	01-01-25
South Carolina	State	98001	06-30-24
Tennessee	State	TN02961	06-30-24
Texas	NELAP	T1047004185	11-30-24
Texas	TCEQ Water Supply	T104704185	06-30-24
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-24
Wyoming	State	8TMS-L	06-30-24

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone 708-534-5200 Fax 708-534-5211

Chain of Custody Record

eurofins | Environment Testing

Client Information	Sampler: K. HEIMSTEAD	Lab PM: Fredrick Sandie	Carrier Tracking No(s):	COC No: 500-122096-49208 1
Client Contact: Paul Lindquist	Phone: 262-901-0129	E-Mail: Sandra Fredrick@et eurofinsus com	State of Origin:	Page: Page 1 of 1
Company: Ramboll Americas Engineering Solutions	PWSID:			Job #: 500-247617
Address: 234 W Florida Street Fifth Floor	Due Date Requested:			
City: Milwaukee	TAT Requested (days): STANDARD TAT			
State Zip: WI, 53204	Compliance Project: Δ Yes Δ No			
Phone: 262-901-3510(Tel)	PO #: MIRRO 4			
Email: plindquist@ramboll com	WO #:			
Project Name: Mirro 4 - 1690026868	Project #: 50022917			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

500-247617 COC

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA_WI - PFAS, Standard List (33 analytes) PROTOCOL IS	Total Number of containers	Special Instructions/Note
			Preservation Code:				N		
1 20240314 - IDW - S	3/14/24	1545	C	Solid			X X	3	
				Solid					
				Solid					
				Solid					
				Solid					
				Water					
				Water					

14.1 C 03/14/2024

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested I II III, IV, Other (specify)

Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		03/15/2024 0612	RAMBOLL		3/15/24 0800	Eurofins
2		3/15/24 1700	Eurofins		03/16/24 0950	EETA
3						

Custody Seals Intact: Δ Yes Δ No | Custody Seal No

Cooler Temperature(s) °C and Other Remarks: -0.4 -> 0.1

SAMPLE RECEIPT
EUROFINS CHICAGO
2417 BOND ST.

UNIVERSITY PARK, IL 60484
UNITED STATES US

ACTWGT: 48.45 LB
CAD: 0780307/CAFE3755

BILL RECIPIENT

TO SAMPLE RECEIPT
EUROFINS – CHICAGO
2417 BOND ST.

UNIVERSITY PARK IL 60484
(708) 634-6200

REF:
INV:
PO:
DEPT

Part # 159469-434 MTW EXP 10/24

FedEx Express

3 of 4

MPS# 0263 7252 5234 3978
Mstr# 7252 5234 3956

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO JOTA

60484
IL-US ORD

36qt.

500-247617 Waybi

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone. 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Fredrick, Sandie	Carrier Tracking No(s)	COC No: 500-185831 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra Fredrick@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - Wisconsin		Job #: 500-247617-1
Address: 880 Riverside Parkway	Due Date Requested: 4/8/2024			
City: West Sacramento	TAT Requested (days)			
State Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Mirro 4 - 1690026868	Project #: 50022917			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H Ascorbic Acid
I - Ice
J DI Water
K - EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T TSP Dodecahydrate
U - Acetone
V MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	PFC_IDA_WI/Shake_Bath_28D PFAS, Standard List (33 analytes)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
20240314-IDW-S (500-247617-1)	3/14/24	15 45 Central		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Chicago attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

	Date/Time:	Company	Received by	Date/Time:	Company
Relinquished by:	3/18/24 0900			3.20.24 930	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:
		2.3c

Ver: 06/08/2021

Eurofins Chicago
2417 Bond Street
University Park, IL 60484
Phone: 708-534-5200 Fax: 708-534-5211

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Fredrick, Sandie	Carrier Tracking No(s):	COC No: 500-185833.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Sandra.Fredrick@et.eurofinsus.com	State of Origin: Wisconsin	Page: Page 1 of 1
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): State Wisconsin		Job #: 500-247617 1
Address: 5102 LaRoche Avenue,	Due Date Requested: 4/8/2024			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Mirro 4 1690026868	Project #: 50022917			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9251_Total_Cl/5050 Chlorine, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
20240314-IDW-S (500-247617 1)	3/14/24	15:45 Central		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Chicago places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Chicago laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Chicago attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Chicago.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Alli Lodd	3/18/24 0900		[signature]	3/19/24 1028	ETS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 1.4

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-247617-1

Login Number: 247617
List Number: 1
Creator: Schmidt, Kara

List Source: Eurofins Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.1
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-247617-1

Login Number: 247617
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/20/24 04:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	2370662
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-247617-1

Login Number: 247617
List Number: 2
Creator: Kirkland, Bernard C

List Source: Eurofins Savannah
List Creation: 03/19/24 12:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions
Job ID: 500-247617-1
Project/Site: Mirro 4 - 1690026868

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Solid **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-247617-1	20240314-IDW-S	74	93	90	90	100	92	94	83
LCS 320-750326/3-A	Lab Control Sample	66	84	91	97	92	92	91	77
LLCS 320-750326/2-A	Lab Control Sample	73	86	84	88	94	86	86	75
MB 320-750326/1-A	Method Blank	87	85	87	87	94	88	87	75

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
500-247617-1	20240314-IDW-S	78	64	82	80	78	86	82	89
LCS 320-750326/3-A	Lab Control Sample	83	83	84	81	78	82	70	79
LLCS 320-750326/2-A	Lab Control Sample	81	79	79	74	78	83	74	77
MB 320-750326/1-A	Method Blank	76	74	78	81	74	79	72	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
500-247617-1	20240314-IDW-S	74	75	78	80	80	88	105	86
LCS 320-750326/3-A	Lab Control Sample	76	72	65	70	85	91	98	82
LLCS 320-750326/2-A	Lab Control Sample	74	69	70	75	77	89	97	81
MB 320-750326/1-A	Method Blank	55	57	67	71	75	81	96	81

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA