

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

November 02, 2023

Alex Tompkins
MPFSS [MPFS75]
191 2nd Ave
Warwick, RI 02888-1155

The following analytical report covers the analysis performed on samples submitted to EMSL Analytical, Inc. on 10/24/2023. The results are tabulated on the attached pages for the following client designated project:

Pilot

The reference number for these samples is EMSL Order #: AB64003 . Please use this reference when calling about these samples. If you have any questions, please do not hesitate to contact the lab at 856-858-4800.

Owen McKenna Laboratory Manager or other approved signatory

Table of Contents

Cover Letter	1
Sample Condition on Receipt	3
Samples in Report	4
Positive Hits Summary	5
Sample Results	6
Quality Assurance Results	8
Certified Analyses	14
Certifications	14
Qualifiers, Definitions and Disclaimer	15
Chain of Custody PDF	16

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EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

Attention: Alex Tompkins
MPFSS [MPFS75]
191 2nd Ave
Warwick, RI 02888-1155

Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish

Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

Sample Condition on Receipt**Cooler ID:** Default Cooler**Temperature:** 4.2 °C

Custody Seals	Y
Containers Intact	Y
COC/Labels Agree	Y
Preservation Confirmed	Y

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EMSL Sales Rep: Jeromy Bish

Received: 10/24/2023 09:00

Reported: 11/02/2023 11:49

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
AB64003-01	Input	Drinking Water	10/23/2023	10/24/2023
AB64003-03	Product	Drinking Water	10/23/2023	10/24/2023

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Positive Hits Summary

Lab ID	Client ID					Sampled
AB64003-01	Input					10/23/23 00:00
Method	Analyte	Result	Qualifier	Unit	Analyzed	
EPA 537.1	Perfluorooctanoic acid (PFOA)	0.000873	J	µg/L	10/26/2023	01:33
EPA 537.1	Perfluorooctanesulfonic acid (PFOS)	0.00106	J	µg/L	10/26/2023	01:33

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Project Name: Pilot

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Reported: 11/02/2023 11:49

Sample Results

Sample: Input
AB64003-01 (Drinking Water)

Analyte	Result	Q	DF	MDL	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
LC/MS											
Perfluorobutanesulfonic acid (PFBS)	ND		1	0.000596	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorohexanoic acid (PFHxA)	ND		1	0.000669	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND		1	0.000693	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluoroheptanoic acid (PFHpA)	ND		1	0.000748	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorohexanesulfonic acid (PFHxS)	ND		1	0.000598	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND		1	0.000755	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorooctanoic acid (PFOA)	0.000873	J	1	0.000686	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorononanoic acid (PFNA)	ND		1	0.000683	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorooctanesulfonic acid (PFOS)	0.00106	J	1	0.000551	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND		1	0.000484	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorodecanoic acid (PFDA)	ND		1	0.000708	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluoroundecanoic acid (PFUnA)	ND		1	0.000679	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
N-methyl perfluorooctanesulfonamidoacetic acid	ND		1	0.000681	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
N-ethyl perfluorooctanesulfonamidoacetic acid	ND		1	0.000719	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND		1	0.000659	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorododecanoic acid (PFDoA)	ND		1	0.000963	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorotridecanoic acid (PFTTrDA)	ND		1	0.00111	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Perfluorotetradecanoic acid (PFTDA)	ND		1	0.00128	0.00185	µg/L	10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
Surrogate(s)	Recovery	Q	Limits								
<i>Surrogate: 13C3-HFPO-DA</i>	70%				70-130		10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
<i>Surrogate: 13C2-PFHxA</i>	78%				70-130		10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
<i>Surrogate: 13C2-PFDA</i>	94%				70-130		10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1
<i>Surrogate: d5-NEtFOSAA</i>	97%				70-130		10/25/23 08:00	10/26/23 01:33	AJ/RPM	EPA 537.1	EPA 537.1

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Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish
Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

Sample Results

(Continued)

Sample: Product
AB64003-03 (Drinking Water)

Analyte	Result	Q	DF	MDL	RL	Units	Prepared Date/Time	Analyzed Date/Time	Prep/Analyst Initials	Prep Method	Analytical Method
LC/MS											
Perfluorobutanesulfonic acid (PFBS)	ND	1	0.000575	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorohexanoic acid (PFHxA)	ND	1	0.000645	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1	0.000668	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluoroheptanoic acid (PFHpA)	ND	1	0.000721	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorohexanesulfonic acid (PFHxS)	ND	1	0.000577	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1	0.000728	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorooctanoic acid (PFOA)	ND	1	0.000662	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorononanoic acid (PFNA)	ND	1	0.000659	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorooctanesulfonic acid (PFOS)	ND	1	0.000531	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	1	0.000467	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorodecanoic acid (PFDA)	ND	1	0.000683	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluoroundecanoic acid (PFUnA)	ND	1	0.000654	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
N-methyl perfluorooctanesulfonamidoacetic acid	ND	1	0.000657	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	1	0.000693	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	1	0.000636	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorododecanoic acid (PFDoA)	ND	1	0.000929	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorotridecanoic acid (PFTrDA)	ND	1	0.00107	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Perfluorotetradecanoic acid (PFTDA)	ND	1	0.00123	0.00179		µg/L	10/27/23 08:00	10/27/23 21:11	AxJ/RPM	EPA 537.1	EPA 537.1
Surrogate(s)	Recovery	Q	Limits								
<i>Surrogate: 13C3-HFPO-DA</i>	97%		70-130								
<i>Surrogate: 13C2-PFHxA</i>	101%		70-130								
<i>Surrogate: 13C2-PFDA</i>	114%		70-130								
<i>Surrogate: d5-NEtFOSAA</i>	119%		70-130								

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Project Name: Pilot

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EMSL Sales Rep: Jeromy Bish
Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

Quality Control**LC/MS**

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0433 - EPA 537.1**Blank (BBJ0433-BLK1)**

Prepared: 10/25/2023 Analyzed: 10/26/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.00200	µg/L
Perfluorohexanoic acid (PFHxA)	ND	0.00200	µg/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.00200	µg/L
Perfluoroheptanoic acid (PFHpA)	ND	0.00200	µg/L
Perfluorohexanesulfonic acid (PFHxS)	ND	0.00200	µg/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.00200	µg/L
Perfluorooctanoic acid (PFOA)	ND	0.00200	µg/L
Perfluorononanoic acid (PFNA)	ND	0.00200	µg/L
Perfluorooctanesulfonic acid (PFOS)	ND	0.00200	µg/L
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	0.00200	µg/L
Perfluorodecanoic acid (PFDA)	ND	0.00200	µg/L
Perfluoroundecanoic acid (PFUnA)	ND	0.00200	µg/L
N-methyl perfluorooctanesulfonamidoacetic acid	ND	0.00200	µg/L
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	0.00200	µg/L
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	0.00200	µg/L
Perfluorododecanoic acid (PFDoA)	ND	0.00200	µg/L
Perfluorotridecanoic acid (PFTriDA)	ND	0.00200	µg/L
Perfluorotetradecanoic acid (PFTDA)	ND	0.00200	µg/L

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.04000	93	70-130
Surrogate: 13C2-PFHxA	0.04000	97	70-130
Surrogate: 13C2-PFDA	0.04000	105	70-130
Surrogate: d5-NetFOSAA	0.1600	100	70-130

Duplicate (BBJ0433-DUP1)**Source: AB64020-01**

Prepared: 10/25/2023 Analyzed: 10/26/2023

Perfluorobutanesulfonic acid (PFBS)	0.000763 J	0.00181	µg/L	0.000828	8	30
Perfluorohexanoic acid (PFHxA)	ND	0.00181	µg/L	ND		30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.00181	µg/L	ND		30
Perfluoroheptanoic acid (PFHpA)	ND	0.00181	µg/L	ND		30
Perfluorohexanesulfonic acid (PFHxS)	ND	0.00181	µg/L	ND		30
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.00181	µg/L	ND		30
Perfluorooctanoic acid (PFOA)	0.000801 J	0.00181	µg/L	0.000920	14	30
Perfluorononanoic acid (PFNA)	ND	0.00181	µg/L	ND		30
Perfluorooctanesulfonic acid (PFOS)	0.00114 J	0.00181	µg/L	0.00119	4	30

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Quality Control (Continued)

LC/MS (Continued)

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0433 - EPA 537.1 (Continued)**Duplicate (BBJ0433-DUP1)****Source: AB64020-01**

Prepared: 10/25/2023 Analyzed: 10/26/2023

9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	0.00181	µg/L		ND				30
Perfluorodecanoic acid (PFDA)	ND	0.00181	µg/L		ND				30
Perfluoroundecanoic acid (PFUnA)	ND	0.00181	µg/L		ND				30
N-methylperfluorooctanesulfonamidoacetic acid	ND	0.00181	µg/L		ND				30
N-ethylperfluorooctanesulfonamidoacetic acid	ND	0.00181	µg/L		ND				30
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	0.00181	µg/L		ND				30
Perfluorododecanoic acid (PFDoA)	ND	0.00181	µg/L		ND				30
Perfluorotridecanoic acid (PFTTrDA)	ND	0.00181	µg/L		ND				30
Perfluorotetradecanoic acid (PFTDA)	ND	0.00181	µg/L		ND				30

Surrogate(s)

Surrogate: 13C3-HFPO-DA

0.03623

77

70-130

Surrogate: 13C2-PFHxA

0.03623

85

70-130

Surrogate: 13C2-PFDA

0.03623

98

70-130

Surrogate: d5-NEtFOSAA

0.1449

95

70-130

MRL Check (BBJ0433-MRL1)

Prepared: 10/25/2023 Analyzed: 10/26/2023

Perfluorobutanesulfonic acid (PFBS)	0.00147 J	0.00200	µg/L	0.001770	83	50-150
Perfluorohexanoic acid (PFHxA)	0.00185 J	0.00200	µg/L	0.002000	93	50-150
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.00176 J	0.00200	µg/L	0.002000	88	50-150
Perfluoroheptanoic acid (PFHpA)	0.00183 J	0.00200	µg/L	0.002000	91	50-150
Perfluorohexanesulfonic acid (PFHxS)	0.00167 J	0.00200	µg/L	0.001820	92	50-150
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	0.00149 J	0.00200	µg/L	0.002000	74	50-150
Perfluorooctanoic acid (PFOA)	0.00176 J	0.00200	µg/L	0.002000	88	50-150
Perfluorononanoic acid (PFNA)	0.00186 J	0.00200	µg/L	0.002000	93	50-150
Perfluorooctanesulfonic acid (PFOS)	0.00167 J	0.00200	µg/L	0.001850	90	50-150
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	0.00158 J	0.00200	µg/L	0.001870	84	50-150
Perfluorodecanoic acid (PFDA)	0.00194 J	0.00200	µg/L	0.002000	97	50-150
Perfluoroundecanoic acid (PFUnA)	0.00202	0.00200	µg/L	0.002000	101	50-150
N-methylperfluorooctanesulfonamidoacetic acid	0.00185 J	0.00200	µg/L	0.002000	93	50-150
N-ethylperfluorooctanesulfonamidoacetic acid	0.00200 J	0.00200	µg/L	0.002000	100	50-150
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.00163 J	0.00200	µg/L	0.001890	86	50-150
Perfluorododecanoic acid (PFDoA)	0.00229	0.00200	µg/L	0.002000	114	50-150
Perfluorotridecanoic acid (PFTTrDA)	0.00228	0.00200	µg/L	0.002000	114	50-150
Perfluorotetradecanoic acid (PFTDA)	0.00201	0.00200	µg/L	0.002000	100	50-150

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted."

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**Quality Control
(Continued)****LC/MS (Continued)**

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0433 - EPA 537.1 (Continued)**MRL Check (BBJ0433-MRL1)**

Prepared: 10/25/2023 Analyzed: 10/26/2023

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.04000	83	70-130
Surrogate: 13C2-PFHxA	0.04000	85	70-130
Surrogate: 13C2-PFDA	0.04000	91	70-130
Surrogate: d5-NEtFOSAA	0.1600	89	70-130

Matrix Spike (BBJ0433-MS1)**Source: AB64007-01**

Prepared: 10/25/2023 Analyzed: 10/26/2023

Perfluorobutanesulfonic acid (PFBS)	0.0247	0.00194	µg/L	0.03430	ND	72	70-130
Perfluorohexanoic acid (PFHxA)	0.0349	0.00194	µg/L	0.03876	ND	90	70-130
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.0338	0.00194	µg/L	0.03876	ND	87	70-130
Perfluoroheptanoic acid (PFHpA)	0.0365	0.00194	µg/L	0.03876	ND	94	70-130
Perfluorohexanesulfonic acid (PFHxS)	0.0341	0.00194	µg/L	0.03527	ND	97	70-130
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	0.0307	0.00194	µg/L	0.03876	ND	79	70-130
Perfluorooctanoic acid (PFOA)	0.0352	0.00194	µg/L	0.03876	ND	91	70-130
Perfluorononanoic acid (PFNA)	0.0364	0.00194	µg/L	0.03876	ND	94	70-130
Perfluorooctanesulfonic acid (PFOS)	0.0318	0.00194	µg/L	0.03585	ND	89	70-130
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	0.0325	0.00194	µg/L	0.03624	ND	90	70-130
Perfluorodecanoic acid (PFDA)	0.0374	0.00194	µg/L	0.03876	ND	96	70-130
Perfluoroundecanoic acid (PFUnA)	0.0383	0.00194	µg/L	0.03876	ND	99	70-130
N-methylperfluorooctanesulfonamidoacetic acid	0.0335	0.00194	µg/L	0.03876	ND	87	70-130
N-ethylperfluorooctanesulfonamidoacetic acid	0.0359	0.00194	µg/L	0.03876	ND	93	70-130
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.0322	0.00194	µg/L	0.03663	ND	88	70-130
Perfluorododecanoic acid (PFDoA)	0.0427	0.00194	µg/L	0.03876	ND	110	70-130
Perfluorotridecanoic acid (PFTriDA)	0.0428	0.00194	µg/L	0.03876	ND	110	70-130
Perfluorotetradecanoic acid (PFTDA)	0.0401	0.00194	µg/L	0.03876	ND	104	70-130

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.03876	84	70-130
Surrogate: 13C2-PFHxA	0.03876	85	70-130
Surrogate: 13C2-PFDA	0.03876	91	70-130
Surrogate: d5-NEtFOSAA	0.1550	87	70-130

**EMSL Analytical, Inc.**

200 Route 130, Cinnaminson, NJ, 08077
Telephone: 856-858-4800 Fax: 856-786-5974
EMSL-CIN-01

EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

Attention: Alex Tompkins
MPFS [MPFS75]
191 2nd Ave
Warwick, RI 02888-1155

Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish
Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

Quality Control
(Continued)**LC/MS (Continued)**

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0491 - EPA 537.1**Blank (BBJ0491-BLK1)**

Prepared & Analyzed: 10/27/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.00200	µg/L
Perfluorohexanoic acid (PFHxA)	ND	0.00200	µg/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.00200	µg/L
Perfluoroheptanoic acid (PFHpA)	ND	0.00200	µg/L
Perfluorohexanesulfonic acid (PFHxS)	ND	0.00200	µg/L
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	0.00200	µg/L
Perfluorooctanoic acid (PFOA)	ND	0.00200	µg/L
Perfluorononanoic acid (PFNA)	ND	0.00200	µg/L
Perfluorooctanesulfonic acid (PFOS)	ND	0.00200	µg/L
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	0.00200	µg/L
Perfluorodecanoic acid (PFDA)	ND	0.00200	µg/L
Perfluoroundecanoic acid (PFUnA)	ND	0.00200	µg/L
N-methyl perfluorooctanesulfonamidoacetic acid	ND	0.00200	µg/L
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	0.00200	µg/L
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	0.00200	µg/L
Perfluorododecanoic acid (PFDoA)	ND	0.00200	µg/L
Perfluorotridecanoic acid (PFTTrDA)	ND	0.00200	µg/L
Perfluorotetradecanoic acid (PFTDA)	ND	0.00200	µg/L

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.04000	106	70-130
Surrogate: 13C2-PFHxA	0.04000	106	70-130
Surrogate: 13C2-PFDA	0.04000	114	70-130
Surrogate: d5-NetFOSAA	0.1600	104	70-130

LCS (BBJ0491-BS1)

Prepared & Analyzed: 10/27/2023

Perfluorobutanesulfonic acid (PFBS)	0.0336	0.00200	µg/L	0.03540	95	70-130
Perfluorohexanoic acid (PFHxA)	0.0421	0.00200	µg/L	0.04000	105	70-130
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.0406	0.00200	µg/L	0.04000	101	70-130
Perfluoroheptanoic acid (PFHpA)	0.0430	0.00200	µg/L	0.04000	107	70-130
Perfluorohexanesulfonic acid (PFHxS)	0.0389	0.00200	µg/L	0.03640	107	70-130
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	0.0363	0.00200	µg/L	0.04000	91	70-130
Perfluorooctanoic acid (PFOA)	0.0417	0.00200	µg/L	0.04000	104	70-130
Perfluorononanoic acid (PFNA)	0.0429	0.00200	µg/L	0.04000	107	70-130
Perfluorooctanesulfonic acid (PFOS)	0.0368	0.00200	µg/L	0.03700	99	70-130

**EMSL Analytical, Inc.**

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EMSL-CIN-01

EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

Attention: Alex Tompkins
MPFSS [MPFS75]
191 2nd Ave
Warwick, RI 02888-1155

Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish
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**Quality Control
(Continued)****LC/MS (Continued)**

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0491 - EPA 537.1 (Continued)**LCS (BBJ0491-BS1)**

Prepared & Analyzed: 10/27/2023

9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	0.0373	0.00200	µg/L	0.03740		100	70-130		
Perfluorodecanoic acid (PFDA)	0.0438	0.00200	µg/L	0.04000		110	70-130		
Perfluoroundecanoic acid (PFUnA)	0.0439	0.00200	µg/L	0.04000		110	70-130		
N-methyl perfluorooctanesulfonamidoacetic acid	0.0416	0.00200	µg/L	0.04000		104	70-130		
N-ethyl perfluorooctanesulfonamidoacetic acid	0.0418	0.00200	µg/L	0.04000		105	70-130		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.0370	0.00200	µg/L	0.03780		98	70-130		
Perfluorododecanoic acid (PFDoA)	0.0497	0.00200	µg/L	0.04000		124	70-130		
Perfluorotridecanoic acid (PFTTrDA)	0.0502	0.00200	µg/L	0.04000		126	70-130		
Perfluorotetradecanoic acid (PFTDA)	0.0521	0.00200	µg/L	0.04000		130	70-130		

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.04000	105	70-130
Surrogate: 13C2-PFHxA	0.04000	105	70-130
Surrogate: 13C2-PFDA	0.04000	109	70-130
Surrogate: d5-NEtFOSAA	0.1600	105	70-130

Duplicate (BBJ0491-DUP1)**Source: AB64094-01**

Prepared & Analyzed: 10/27/2023

Perfluorobutanesulfonic acid (PFBS)	ND	0.00195	µg/L	ND				30
Perfluorohexanoic acid (PFHxA)	ND	0.00195	µg/L	ND				30
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	0.00195	µg/L	ND				30
Perfluoroheptanoic acid (PFHpA)	ND	0.00195	µg/L	ND				30
Perfluorohexanesulfonic acid (PFHxS)	ND	0.00195	µg/L	ND				30
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	ND	0.00195	µg/L	ND				30
Perfluorooctanoic acid (PFOA)	0.00179 J	0.00195	µg/L	0.00144			21	30
Perfluorononanoic acid (PFNA)	ND	0.00195	µg/L	ND				30
Perfluorooctanesulfonic acid (PFOS)	ND	0.00195	µg/L	ND				30
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	ND	0.00195	µg/L	ND				30
Perfluorodecanoic acid (PFDA)	ND	0.00195	µg/L	ND				30
Perfluoroundecanoic acid (PFUnA)	ND	0.00195	µg/L	ND				30
N-methyl perfluorooctanesulfonamidoacetic acid	ND	0.00195	µg/L	ND				30
N-ethyl perfluorooctanesulfonamidoacetic acid	ND	0.00195	µg/L	ND				30
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	ND	0.00195	µg/L	ND				30
Perfluorododecanoic acid (PFDoA)	ND	0.00195	µg/L	ND				30
Perfluorotridecanoic acid (PFTTrDA)	ND	0.00195	µg/L	ND				30
Perfluorotetradecanoic acid (PFTDA)	ND	0.00195	µg/L	ND				30

**EMSL Analytical, Inc.**

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Telephone: 856-858-4800 Fax:856-786-5974
EMSL-CIN-01

EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

Attention: Alex Tompkins
MPFSS [MPFS75]
191 2nd Ave
Warwick, RI 02888-1155

Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish
Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

**Quality Control
(Continued)****LC/MS (Continued)**

Analyte	Result Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
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Batch: BBJ0491 - EPA 537.1 (Continued)**Duplicate (BBJ0491-DUP1)****Source: AB64094-01**

Prepared & Analyzed: 10/27/2023

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.03891	103	70-130
Surrogate: 13C2-PFHxA	0.03891	105	70-130
Surrogate: 13C2-PFDA	0.03891	112	70-130
Surrogate: d5-NEtFOSAA	0.1556	107	70-130

Matrix Spike (BBJ0491-MS1)**Source: AB64093-01**

Prepared & Analyzed: 10/27/2023

Perfluorobutanesulfonic acid (PFBS)	0.0192 R1	0.00185	µg/L	0.03278	ND	59	70-130
Perfluorohexanoic acid (PFHxA)	0.0385	0.00185	µg/L	0.03704	ND	104	70-130
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.0358	0.00185	µg/L	0.03704	ND	97	70-130
Perfluoroheptanoic acid (PFHpA)	0.0404	0.00185	µg/L	0.03704	ND	109	70-130
Perfluorohexanesulfonic acid (PFHxS)	0.0360	0.00185	µg/L	0.03370	ND	107	70-130
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	0.0343	0.00185	µg/L	0.03704	ND	92	70-130
Perfluorooctanoic acid (PFOA)	0.0408	0.00185	µg/L	0.03704	0.00167	106	70-130
Perfluorononanoic acid (PFNA)	0.0398	0.00185	µg/L	0.03704	ND	107	70-130
Perfluorooctanesulfonic acid (PFOS)	0.0341	0.00185	µg/L	0.03426	ND	100	70-130
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	0.0341	0.00185	µg/L	0.03463	ND	99	70-130
Perfluorodecanoic acid (PFDA)	0.0399	0.00185	µg/L	0.03704	ND	108	70-130
Perfluoroundecanoic acid (PFUnA)	0.0399	0.00185	µg/L	0.03704	ND	108	70-130
N-methylperfluorooctanesulfonamidoacetic acid	0.0374	0.00185	µg/L	0.03704	ND	101	70-130
N-ethylperfluorooctanesulfonamidoacetic acid	0.0378	0.00185	µg/L	0.03704	ND	102	70-130
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.0338	0.00185	µg/L	0.03500	ND	97	70-130
Perfluorododecanoic acid (PFDoA)	0.0448	0.00185	µg/L	0.03704	ND	121	70-130
Perfluorotridecanoic acid (PFTriDA)	0.0456	0.00185	µg/L	0.03704	ND	123	70-130
Perfluorotetradecanoic acid (PFTDA)	0.0464	0.00185	µg/L	0.03704	ND	125	70-130

Surrogate(s)

Surrogate: 13C3-HFPO-DA	0.03704	99	70-130
Surrogate: 13C2-PFHxA	0.03704	102	70-130
Surrogate: 13C2-PFDA	0.03704	107	70-130
Surrogate: d5-NEtFOSAA	0.1481	102	70-130

**EMSL Analytical, Inc.**

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 Telephone: 856-858-4800 Fax: 856-786-5974
 EMSL-CIN-01

EMSL Order ID: 012364003**LIMS Reference ID:** AB64003**EMSL Customer ID:** MPFS75

Attention: Alex Tompkins
 MPFS [MPFS75]
 191 2nd Ave
 Warwick, RI 02888-1155

Project Name: Pilot

Customer PO:
EMSL Sales Rep: Jeromy Bish
Received: 10/24/2023 09:00
Reported: 11/02/2023 11:49

Certified Analyses included in this Report

Analyte	CAS #	Certifications
EPA 537.1 in Drinking Water		
Perfluorobutanesulfonic acid (PFBS)	375-73-5	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorohexanoic acid (PFHxA)	307-24-4	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Hexafluoropropylene oxide dimer acid (HFPO-DA)	13252-13-6	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluoroheptanoic acid (PFHpA)	375-85-9	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
4,8-dioxo-3H-perfluorononanoic acid (ADONA)	919005-14-4	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorooctanoic acid (PFOA)	335-67-1	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorononanoic acid (PFNA)	375-95-1	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	756426-58-1	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorodecanoic acid (PFDA)	335-76-2	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluoroundecanoic acid (PFUnA)	2058-94-8	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
N-ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorododecanoic acid (PFDoA)	307-55-1	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	CTDPH,NJDEP,NYSDOH,PADEP,A2LA
Perfluorotetradecanoic acid (PFTDA)	376-06-7	CTDPH,NJDEP,NYSDOH,PADEP,A2LA

List of Certifications

Code	Description	Number	Expires
MADEP	Massachusetts Department of Environmental Protection	M-NJ337	06/30/2024
California ELAP	California Water Boards	1877	06/30/2024
A2LA	A2LA Environmental Certificate	2845.01	07/31/2024
AIHA LAP	EMSL Analytical, Inc. Cinnaminson, NJ AIHA-LAP, LLC-ELLAP Accredited	100194	01/01/2025
NJDEP	New Jersey Department of Environmental Protection	03036	06/30/2024
PADEP	Pennsylvania Department of Environmental Protection	68-00367	11/30/2023
NYSDOH	New York State Department of Health	10872	04/01/2024
CTDPH	Connecticut Department of Public Health	PH-0270	06/23/2024

Please see the specific Field of Testing (FOT) on www.emsl.com <<http://www.emsl.com>> for a complete listing of parameters for which EMSL is certified.

**EMSL Analytical, Inc.**

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EMSL-CIN-01

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Notes and Definitions

Item	Definition
J	Estimated value. The result is less than the RL but above the MDL.
R1	Recovery is outside of the method control limits.
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
Q	Qualifier
RL	Reporting Limit
%REC	Percent Recovery
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.