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ANALYTICAL REPORT

PREPARED FOR

Attn: Jesse Burns
Norwich Public Utilities
16 South Golden St
Norwich, Connecticut 06360

Generated 6/29/2023 10:30:16 AM

JOB DESCRIPTION

UCMR5 - CT1040011 - SE1 - Deep River Water

JOB NUMBER

810-64248-1

Eurofins Eaton Analytical South Bend
110 S Hill Street
South Bend IN 46617

See page two for job notes and contact information.

myEOL

Job Notes

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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 Eaton Analytical, LLC Project Manager.

Authorization

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6/29/2023 10:30:16 AM

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Table of Contents

Definitions/Glossary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

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

Case Narrative

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Job ID: 810-64248-1

Laboratory: Eurofins Eaton Analytical South Bend

Narrative

Job Narrative
810-64248-1

Receipt
The sample was received on 5/24/2023 9:20 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

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

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

Detection Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Client Sample ID: WSFID 00700/Deep River Reservoir
Lab Sample ID: 810-64248-1
PWSID Number: CT1040011

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Eaton Analytical South Bend

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Client Sample ID: WSFID 00700/Deep River Reservoir
Lab Sample ID: 810-64248-1
Date Collected: 05/23/23 08:15
Matrix: Drinking Water
Date Received: 05/24/23 09:20
PWSID Number: CT1040011

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.0050		0.0050		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoropentanoic acid (PFPeA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorohexanoic acid (PFHxA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoroheptanoic acid (PFHpA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorooctanoic acid (PFOA)	<0.0040		0.0040		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorononanoic acid (PFNA)	<0.0040		0.0040		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorodecanoic acid (PFDA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoroundecanoic acid (PFUnA)	<0.0020		0.0020		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorododecanoic acid (PFDoA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorohexanesulfonic acid (PFHxS)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.0040		0.0040		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoropentanesulfonic acid (PFPeS)	<0.0040		0.0040		ug/L		06/12/23 09:20	06/13/23 13:59	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0050		0.0050		ug/L		06/12/23 09:20	06/13/23 13:59	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<0.0020		0.0020		ug/L		06/12/23 09:20	06/13/23 13:59	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<0.0050		0.0050		ug/L		06/12/23 09:20	06/13/23 13:59	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0050		0.0050		ug/L		06/12/23 09:20	06/13/23 13:59	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0050		0.0050		ug/L		06/12/23 09:20	06/13/23 13:59	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0200		0.0200		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0040		0.0040		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.0030		0.0030		ug/L		06/12/23 09:20	06/13/23 13:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C4 PFBA	*98*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C3 PFBS	*93*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C5 PFPeA	*132*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C5 PFHxA	*90*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C4 PFHpA	*89*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C8 PFOA	*92*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C9 PFNA	*96*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C6 PFDA	*92*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C7 PFUnA	*89*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C2 PFDoA	*87*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C8 PFOS	*97*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C3 PFHxS	*95*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Client Sample ID: WSFID 00700/Deep River Reservoir
Lab Sample ID: 810-64248-1
Date Collected: 05/23/23 08:15
Matrix: Drinking Water
Date Received: 05/24/23 09:20
PWSID Number: CT1040011

Method: EPA 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2-4:2-FTS	*95*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C2-6:2-FTS	*98*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*
13C2-8:2-FTS	*104*		*50 - 200*	*06/12/23 09:20*	*06/13/23 13:59*	*1*

Method: EPA 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.0047		0.0047	ug/L		06/02/23 07:36	06/02/23 23:57	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.0056		0.0056	ug/L		06/02/23 07:36	06/02/23 23:57	1
Perfluorotetradecanoic acid (PFTA)	<0.0075		0.0075	ug/L		06/02/23 07:36	06/02/23 23:57	1
Perfluorotridecanoic acid (PFTrDA)	<0.0065		0.0065	ug/L		06/02/23 07:36	06/02/23 23:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
d5-NEtFOSAA	*106*		*70 - 130*	*06/02/23 07:36*	*06/02/23 23:57*	*1*
13C2 PFHxA	*112*		*70 - 130*	*06/02/23 07:36*	*06/02/23 23:57*	*1*
13C2 PFDA	*112*		*70 - 130*	*06/02/23 07:36*	*06/02/23 23:57*	*1*
13C3 HFPO-DA	*108*		*70 - 130*	*06/02/23 07:36*	*06/02/23 23:57*	*1*

Method: EPA 200.7 UCMR5 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<9.00		9.00	ug/L		05/30/23 16:45	05/31/23 21:26	1

Surrogate Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Matrix: Drinking Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		d5NEFOS	PFHxA	PFDA	HFPODA
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)	(70-130)
810-64248-1	WSFID 00700/Deep River Resei	106	112	112	108
LLCS 810-61099/2-A	Lab Control Sample	104	124	109	120
MBL 810-61099/1-A	Method Blank	98	106	104	101

Surrogate Legend

d5NEFOS = d5-NEtFOSAA
PFHxA = 13C2 PFHxA
PFDA = 13C2 PFDA
HFPODA = 13C3 HFPO-DA

Isotope Dilution Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HFPODA	PFBA	C3PFBS	PFPeA	13C5PHA	C4PFHA	C8PFOA	C9PFNA
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
810-64248-1	WSFID 00700/Deep River Resel	90	98	93	132	90	89	92	96
LLCS 810-62093/2-A	Lab Control Sample	89	95	90	92	93	95	95	102
MBL 810-62093/1-A	Method Blank	90	95	92	94	97	96	93	102

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		C6PFDA	13C7PUA	PFDoA	C8PFOS	C3PFHS	42FTS	62FTS	82FTS
Lab Sample ID	Client Sample ID	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)	(50-200)
810-64248-1	WSFID 00700/Deep River Resel	92	89	87	97	95	95	98	104
LLCS 810-62093/2-A	Lab Control Sample	98	96	94	92	92	101	120	115
MBL 810-62093/1-A	Method Blank	90	85	82	89	91	105	119	105

Surrogate Legend

HFPODA = 13C3 HFPO-DA
PFBA = 13C4 PFBA
C3PFBS = 13C3 PFBS
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
C8PFOS = 13C8 PFOS
C3PFHS = 13C3 PFHxS
42FTS = 13C2-4:2-FTS
62FTS = 13C2-6:2-FTS
82FTS = 13C2-8:2-FTS

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water

Lab Sample ID: MBL 810-62093/1-A
Matrix: Drinking Water
Analysis Batch: 62192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62093

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<0.0005		0.0050		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoropentanoic acid (PFPeA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorohexanoic acid (PFHxA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoroheptanoic acid (PFHpA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorooctanoic acid (PFOA)	<0.0004		0.0040		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorononanoic acid (PFNA)	<0.0004		0.0040		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorodecanoic acid (PFDA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoroundecanoic acid (PFUnA)	<0.0004		0.0020		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorododecanoic acid (PFDoA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorobutanesulfonic acid (PFBS)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorohexanesulfonic acid (PFHxS)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluorooctanesulfonic acid (PFOS)	0.0004		0.0040		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoropentanesulfonic acid (PFPeS)	<0.0004		0.0040		ug/L		06/12/23 09:20	06/13/23 11:28	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	<0.0005		0.0050		ug/L		06/12/23 09:20	06/13/23 11:28	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	<0.0005		0.0020		ug/L		06/12/23 09:20	06/13/23 11:28	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	<0.0005		0.0050		ug/L		06/12/23 09:20	06/13/23 11:28	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	<0.0006		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	<0.0007		0.0050		ug/L		06/12/23 09:20	06/13/23 11:28	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	<0.0006		0.0050		ug/L		06/12/23 09:20	06/13/23 11:28	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	<0.0009		0.0200		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	<0.0003		0.0040		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	<0.0004		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	<0.0005		0.0030		ug/L		06/12/23 09:20	06/13/23 11:28	1

Isotope Dilution	*MBL %Recovery*	*MBL Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C3 HFPO-DA	*90*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C4 PFBA	*95*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C3 PFBS	*92*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C5 PFPeA	*94*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C5 PFHxA	*97*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C4 PFHpA	*96*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C8 PFOA	*93*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C9 PFNA	*102*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C6 PFDA	*90*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C7 PFUnA	*85*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C2 PFDoA	*82*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*
13C8 PFOS	*89*		*50 - 200*	*06/12/23 09:20*	*06/13/23 11:28*	*1*

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Lab Sample ID: MBL 810-62093/1-A
Matrix: Drinking Water
Analysis Batch: 62192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 62093

Isotope Dilution	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C3 PFHxS	91		50 - 200	06/12/23 09:20	06/13/23 11:28	1
13C2-4:2-FTS	105		50 - 200	06/12/23 09:20	06/13/23 11:28	1
13C2-6:2-FTS	119		50 - 200	06/12/23 09:20	06/13/23 11:28	1
13C2-8:2-FTS	105		50 - 200	06/12/23 09:20	06/13/23 11:28	1

Lab Sample ID: LLCS 810-62093/2-A
Matrix: Drinking Water
Analysis Batch: 62192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 62093

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	0.00200	0.0019		ug/L		97	50 - 150
Perfluoropentanoic acid (PFPeA)	0.00200	0.0020		ug/L		98	50 - 150
Perfluorohexanoic acid (PFHxA)	0.00200	0.0020		ug/L		99	50 - 150
Perfluoroheptanoic acid (PFHpA)	0.00200	0.0019		ug/L		97	50 - 150
Perfluorooctanoic acid (PFOA)	0.00200	0.0020		ug/L		100	50 - 150
Perfluorononanoic acid (PFNA)	0.00200	0.0021		ug/L		104	50 - 150
Perfluorodecanoic acid (PFDA)	0.00200	0.0020		ug/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	0.00200	0.0020		ug/L		102	50 - 150
Perfluorododecanoic acid (PFDoA)	0.00200	0.0020		ug/L		102	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.00189	0.0018		ug/L		96	50 - 150
Perfluorobutanesulfonic acid (PFBS)	0.00178	0.0016		ug/L		91	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	0.00183	0.0017		ug/L		93	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.00191	0.0018		ug/L		94	50 - 150
Perfluorooctanesulfonic acid (PFOS)	0.00186	0.0018		ug/L		95	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	0.00188	0.0017		ug/L		90	50 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.00200	0.0019		ug/L		95	50 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.00187	0.0016		ug/L		88	50 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.00189	0.0018		ug/L		93	50 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.00188	0.0020		ug/L		105	50 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.00190	0.0019		ug/L		100	50 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.00192	0.0019		ug/L		100	50 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.00200	0.0021		ug/L		107	50 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.00200	0.0018		ug/L		89	50 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.00200	0.0017		ug/L		85	50 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	0.00178	0.0017		ug/L		98	50 - 150

Method: 533 - Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (Continued)

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C3 HFPO-DA	89		50 - 200
13C4 PFBA	95		50 - 200
13C3 PFBS	90		50 - 200
13C5 PFPeA	92		50 - 200
13C5 PFHxA	93		50 - 200
13C4 PFHpA	95		50 - 200
13C8 PFOA	95		50 - 200
13C9 PFNA	102		50 - 200
13C6 PFDA	98		50 - 200
13C7 PFUnA	96		50 - 200
13C2 PFDoA	94		50 - 200
13C8 PFOS	92		50 - 200
13C3 PFHxS	92		50 - 200
13C2-4:2-FTS	101		50 - 200
13C2-6:2-FTS	120		50 - 200
13C2-8:2-FTS	115		50 - 200

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS)

Lab Sample ID: MBL 810-61099/1-A
Matrix: Drinking Water
Analysis Batch: 61181

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 61099

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	<0.0005		0.0050		ug/L		06/02/23 07:36	06/02/23 23:04	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	<0.0006		0.0060		ug/L		06/02/23 07:36	06/02/23 23:04	1
Perfluorotetradecanoic acid (PFTA)	<0.0007		0.0080		ug/L		06/02/23 07:36	06/02/23 23:04	1
Perfluorotridecanoic acid (PFTrDA)	<0.0006		0.0070		ug/L		06/02/23 07:36	06/02/23 23:04	1

Surrogate	MBL %Recovery	MBL Qualifier	Limits	Prepared	Analyzed	Dil Fac
d5-NEtFOSAA	98		70 - 130	06/02/23 07:36	06/02/23 23:04	1
13C2 PFHxA	106		70 - 130	06/02/23 07:36	06/02/23 23:04	1
13C2 PFDA	104		70 - 130	06/02/23 07:36	06/02/23 23:04	1
13C3 HFPO-DA	101		70 - 130	06/02/23 07:36	06/02/23 23:04	1

Lab Sample ID: LLCS 810-61099/2-A
Matrix: Drinking Water
Analysis Batch: 61181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61099

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			0.00200	0.0018		ug/L		92	50 - 150		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			0.00200	0.0016		ug/L		82	50 - 150		
Perfluorotetradecanoic acid (PFTA)			0.00200	0.0013		ug/L		67	50 - 150		
Perfluorotridecanoic acid (PFTrDA)			0.00200	0.0018		ug/L		91	50 - 150		

Surrogate	LLCS %Recovery	LLCS Qualifier	Limits
d5-NEtFOSAA	104		70 - 130

Method: 537.1 UCMR5 - Perfluorinated Alkyl Acids (LC/MS) (Continued)

Lab Sample ID: LLCS 810-61099/2-A
Matrix: Drinking Water
Analysis Batch: 61181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 61099

Surrogate	*LLCS %Recovery*	*LLCS Qualifier*	*Limits*
13C2 PFHxA	*124*		*70 - 130*
13C2 PFDA	*109*		*70 - 130*
13C3 HFPO-DA	*120*		*70 - 130*

Method: 200.7 UCMR5 - Metals (ICP)

Lab Sample ID: MBL 810-60719/1-A
Matrix: Drinking Water
Analysis Batch: 60903

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 60719

Analyte	MBL Result	MBL Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Lithium	<0.520		9.00		ug/L		05/30/23 16:45	05/31/23 20:41	1

Lab Sample ID: LLCS 810-60719/2-A
Matrix: Drinking Water
Analysis Batch: 60903

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 60719

Analyte			Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits		
Lithium			9.00	9.12		ug/L		101	50 - 150		

QC Association Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

LCMS

Prep Batch: 61099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	537.1 DW	
MBL 810-61099/1-A	Method Blank	Total/NA	Drinking Water	537.1 DW	
LLCS 810-61099/2-A	Lab Control Sample	Total/NA	Drinking Water	537.1 DW	

Analysis Batch: 61181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	537.1 UCMR5	61099
MBL 810-61099/1-A	Method Blank	Total/NA	Drinking Water	537.1 UCMR5	61099
LLCS 810-61099/2-A	Lab Control Sample	Total/NA	Drinking Water	537.1 UCMR5	61099

Prep Batch: 62093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	533	
MBL 810-62093/1-A	Method Blank	Total/NA	Drinking Water	533	
LLCS 810-62093/2-A	Lab Control Sample	Total/NA	Drinking Water	533	

Analysis Batch: 62192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	533	62093
MBL 810-62093/1-A	Method Blank	Total/NA	Drinking Water	533	62093
LLCS 810-62093/2-A	Lab Control Sample	Total/NA	Drinking Water	533	62093

Metals

Prep Batch: 60719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	200.7 UCMR5	
MBL 810-60719/1-A	Method Blank	Total/NA	Drinking Water	200.7 UCMR5	
LLCS 810-60719/2-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	

Analysis Batch: 60903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
810-64248-1	WSFID 00700/Deep River Reservoir	Total/NA	Drinking Water	200.7 UCMR5	60719
MBL 810-60719/1-A	Method Blank	Total/NA	Drinking Water	200.7 UCMR5	60719
LLCS 810-60719/2-A	Lab Control Sample	Total/NA	Drinking Water	200.7 UCMR5	60719

Lab Chronicle

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Client Sample ID: WSFID 00700/Deep River Reservoir
Lab Sample ID: 810-64248-1
Date Collected: 05/23/23 08:15
Matrix: Drinking Water
Date Received: 05/24/23 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	533			62093	TK	EA SB	06/12/23 09:20
Total/NA	Analysis	533		1	62192	KB	EA SB	06/13/23 13:59
Total/NA	Prep	537.1 DW			61099	SS	EA SB	06/02/23 07:36
Total/NA	Analysis	537.1 UCMR5		1	61181	ST	EA SB	06/02/23 23:57
Total/NA	Prep	200.7 UCMR5			60719	NB	EA SB	05/30/23 16:45
Total/NA	Analysis	200.7 UCMR5		1	60903	NB	EA SB	05/31/23 21:26

Laboratory References:
EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Accreditation/Certification Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Laboratory: Eurofins Eaton Analytical South Bend

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

Authority	Program	Identification Number	Expiration Date
USEPA UCMR 5	US Federal Programs	IN00035	12-31-25

Method Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Method	Method Description	Protocol	Laboratory
533	Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water	EPA	EA SB
537.1 UCMR5	Perfluorinated Alkyl Acids (LC/MS)	EPA	EA SB
200.7 UCMR5	Metals (ICP)	EPA	EA SB
200.7 UCMR5	Preparation, Total Recoverable Metals	EPA	EA SB
533	Extraction of Perfluorinated and Polyfluorinated Alkyl Acids	EPA	EA SB
537.1 DW	Extraction of Perfluorinated Alkyl Acids	EPA	EA SB

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EA SB = Eurofins Eaton Analytical South Bend, 110 S Hill Street, South Bend, IN 46617, TEL (574)233-4777

Sample Summary

Client: Norwich Public Utilities
Job ID: 810-64248-1
Project/Site: UCMR5 - CT1040011 - SE1 - Deep River Water

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	PWSID Number
810-64248-1	WSFID 00700/Deep River Reservoir	Drinking Water	05/23/23 08:15	05/24/23 09:20	CT1040011

South Bend, IN
110 S Hill Street
South Bend, IN 46617
Phone (574) 233-4777; Phone (574) 233-8207

UCMR 5 Sampling Form for Single Collection Site

(Separate form is needed for each collection site)

eurofins | Environment Testing America

Company Contact: Jesse Burns
Company Name: Norwich Public Utilities
Company Address: 16 South Golden St
Norwich, CT 06360

Phone: (860) 887-3162
Email: jesse.burns@npumail.com
Purchase Order:

810-64248 Chain of Custody

PWSID: CT1040011
FacID: NSFID 00700
SPID:
FacName: Deep River Reservoir
SPName:
Sampling Event: 2nd quarter 2023
* 348

Water System Name: Norwich Public Utilities
Collection Location: Deep River Reservoir Entry Point
Scheduled Collection Date: 5/23/2023

Sampler Name (Print): Steven Colli

Date/Time Sampled: 5/23/23 - 8:15

Client Storage temp, if > 2 days from collection:

AREA BELOW FOR LAB USE ONLY

For UCMR 5 specific criteria see: REC-WI55108 Guidance Document for UCMR 5 Sample Receiving Requirements and QA-SOP-SOP48964 UCMR 5 QAPP

IR Gun#: 29
Ice: Wet / Blue

Method	Type	# Bot	Temp °C (10°C within 2 days of collection, 6°C for > 2 days) Initial / Corrected	pH* value	✓if receipt pH acceptable	✓if pH needs adjustment	Cl (P/A) **	Sample Comments	✓if sample is invalid
200.7	FS	1	[redacted]				[redacted]		
200.7	FS	2							
533	FS	1	.6 / 1.4		✓		A		
533	FS	2	/		✓		A		
533	FS	3	/		✓		A		
533	FRB	2	.4 / 1.2		✓		A		
537.1	FS	2	.6 / 1.4		✓	[redacted]	A		
537.1	FS	2	/		✓		A		
537.1	FS	3	/		✓		A		
537.1	FRB	2	1.2 / 2.0		✓		A		

* pH <2 for 200.7. pH 6-8 for 533 & 537.1. *Note: 200.7 & 533 pH may be adjusted upon receipt.*

** A = Absent if Free Cl <0.1 mg/L; P = Chlorine is present

Received By [signature] **Date/Time** 05 24 23 09 2-

South Bend, IN
110 S Hill Street
South Bend, IN 46617
Phone (574) 233-4777; Phone (574) 233-8207

"UCMR 5 Sampling Form for Single Collection Site"

(Separate form is needed for each collection site)

eurofins | Environment Testing America

Company Contact: Jesse Burns
Company Name: Norwich Public Utilities
Company Address: 16 South Golden St
Norwich, CT 06360

Phone: (860) 887-3162
Email: jesse.burns@npumail.com
Purchase Order:

[redacted] Norwich Public Utilities
Collection Location: Deep River Reservoir Entry Point
Scheduled Collection Date: 5/23/2023

Sampler Name (Printed): Steven Colli

Client Storage temp, if > 2 days from collection:

810-64248 Chain of Custody

PWSID: CT1040011
FacID: NSFID 00700
SPID:
FacName: Deep River Reservoir
SPName:
Sampling Event: 2nd Quarter 2023
* 348

Date/Time Sampled: 5/23/23 - 8:15

AREA BELOW FOR LAB USE ONLY

For UCMR 5 specific criteria see: REC-WI55108 Guidance Document for UCMR 5 Sample Receiving Requirements and QA-SOP-SOP48964 UCMR 5 QAPP

IR Gun#: 29
Ice: Wet / Blue

Method	Type	# Bot	Temp °C (10°C within 2 days of collection, 6°C for > 2 days) Initial / Corrected	pH* value	✓if receipt pH acceptable	✓if pH needs adjustment	Cl (P/A) **	Sample Comments	✓if sample is invalid
200.7	FS	1	[redacted]				[redacted]		
200.7	FS	2							
533	FS	1	.6 / 1.4		✓		A		
533	FS	2	/		✓		A		
533	FS	3	/		✓		A		
533	FRB	2	.4 / 1.2		✓		A		
537.1	FS	1	.5 / 1.4		✓	[redacted]	A		
537.1	FS	2	/		✓		A		
537.1	FS	3	/		✓		A		
537.1	FRB	2	1.2 / 2.0		✓		A		

* pH <2 for 200.7. pH 6-8 for 533 & 537.1. *Note: 200.7 & 533 pH may be adjusted upon receipt.*

** A = Absent if Free Cl <0.1 mg/L; P = Chlorine is present

Received By: [signature]
Date/Time: 05 24 23 09 2-

Login Sample Receipt Checklist

Client: Norwich Public Utilities

Job Number: 810-64248-1

Login Number: 64248
List Number: 1
Creator: Moore, Gary

List Source: Eurofins Eaton Analytical South Bend

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	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	
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	
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	
Samples do not require splitting or compositing.	True	
Container provided by EEA	True	