

90 Sargent Drive • New Haven, Connecticut 06511-5966
203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Laboratory Certification IDs

CT: PH-0411, NH: 2239, NY: 11867, PA: 68-05519, RI: LAO00339, MA: M-CT004
See website, www.rwalab.com/rwa-lab-certifications, for certified analyte list.

Client: Paul Hennessy
Randolph-Holbrook Joint Water

275 Pond St
Randolph, MA 02368

781-964-9292
phennessy@holbrookmassachusetts.us

ANALYTICAL REPORT

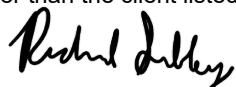
Project: FEE-RANDOLPHHOLBROOK-24-000010

Report Date: 9/6/2024

This Laboratory is in compliance with the NELAP requirements of procedures used except where indicated .
This report contains results for the analysis tested, under the sampling conditions described on the Chain Of Custody (COC), as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

The COC form has been scanned to accompany the analytical report and is an exact copy of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact RWA Client Services at (203) 401-6743 or (877) 894-5773. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

A handwritten signature in black ink, appearing to read "Richard Sibley".

Richard Sibley
Laboratory Manager
Technical Representative

SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300583758	RAW	8/22/2024 1400	8/23/24
300583759	Field Blank - Raw	8/22/2024 1400	8/23/24
300583760	FINISHED	8/22/2024 1400	8/23/24
300583761	Field Blank - Finished	8/22/2024 1400	8/23/24

Case Narrative and Comments

All QC passes criteria unless noted in a Comment below.

Samples were received at the appropriate temperature and in accordance with the chain of custody unless noted.

E = Exceeds calibration range

ND = Non Detect

FB = Field Blank

RL = Minimum Reporting Level

MDL = Method Detection Limit

J = The reported result is below RL but greater than the MDL. The reported result is an estimate.

Massachusetts samples for required water quality sampling are included.

Samples and FBs were received in bottles with preservatives Trizma HCL & Trizma base per method requirements.

"FB" added at beginning/end designates "Field Blank" (Field Reagent Blank) for associated Customer ID sample. Field Blank analytes (unless noted) were shown to be less than 1/3 of the RL as per EPA537 or EPA537.1.

Method EPA537 or EPA537.1 Analyte Results, MDL and RL are adjusted to reflect the actual Final (mL) volume used.

Method	CAS#	PFAS Analyte (Acronym)
537, 537.1	1763-23-1	Perfluorooctanesulfonic acid (PFOS)
537, 537.1	335-67-1	Perfluorooctanoic acid (PFOA)
537, 537.1	355-46-4	Perfluorohexanesulfonic acid (PFHxS)
537, 537.1	375-95-1	Perfluorononanoic acid (PFNA)
537, 537.1	375-85-9	Perfluorohexanoic acid (PFHpA)
537, 537.1	335-76-2	Perfluorodecanoic acid (PFDA)
537, 537.1	375-73-5	Perfluorobutanesulfonic acid (PFBS)
537, 537.1	307-55-1	Perfluorododecanoic acid (PFDoA)
537, 537.1	307-24-4	Perfluorohexanoic acid (PFHxA)
537, 537.1	376-06-7	Perfluorotetradecanoic acid (PFTA)
537, 537.1	72629-94-8	Perfluorotridecanoic acid (PFTrDA)
537, 537.1	2058-94-8	Perfluoroundecanoic acid (PFUnA)
537, 537.1	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537, 537.1	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)
537.1	763051-92-9	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)
537.1	756426-58-1	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)
537.1	919005-14-4	4,8-dioxo-3H-perfluorononanoic acid (ADONA)
537.1	13252-13-6	Hexafluoropropylene oxide dimer acid (HFPO-DA)

PFAS6 (MassDEP) = sum of PFOS, PFOA, PFHxS, PFNA, PFHpA and PFDA (only include Results at or above the RL)

MassDEP has established a maximum contaminant level (MCL) of 20 ng/L for PFAS6.

The total for MassDEP PFAS6 for the Finished was 21.19 ng/L. Result Over MCL.

90 Sargent Drive • New Haven, Connecticut 06511-5966
203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300583758

Customer ID: RAW

Collection Date: 08/22/2024 14:00

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.74	0.95	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFHxA	307-24-4	3.74	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFHpA	375-85-9	2.26	0.70	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFHxS	355-46-4	2.84	0.83	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFOA	335-67-1	5.30	0.76	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFOS	1763-23-1	10.51	1.01	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFNA	375-95-1	1.05	0.72	2.0	ng/L	1.0	J	EPA537.1	8/28/24 1839	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1839	CSS
PFAS6 (MassDEP)		20.91	2.04	2.04	ng/L	1.0				
Surrogates				Results	Recovery Limits		Pass/Fail			
13C-PFHxA (SUR) % Recovery				123.20	70 - 130		Pass			
13C3-HFPO-DA (SUR) % Recovery				122.10	70 - 130		Pass			
13C-PFDA (SUR) % Recovery				99.20	70 - 130		Pass			
d5-NEtFOSAA (SUR) % Recovery				99.30	70 - 130		Pass			

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300583758	PFAS_537	537_EXT-240823-1	250	08/23/2024

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Sample ID: 300583759

Customer ID: Field Blank - Raw

Collection Date: 08/22/2024 14:00

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1855	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				
Surrogates				Results	Recovery Limits		Pass/Fail			
13C-PFHxA (SUR) % Recovery				91.30	70 - 130		Pass			
13C3-HFPO-DA (SUR) % Recovery				93.10	70 - 130		Pass			
13C-PFDA (SUR) % Recovery				98.90	70 - 130		Pass			
d5-NEtFOSAA (SUR) % Recovery				94.70	70 - 130		Pass			

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300583759	PFAS_537	537_EXT-240823-1	250	08/23/2024

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Sample ID: 300583760

Customer ID: FINISHED

Collection Date: 08/22/2024 14:00

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.64	0.95	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFHxA	307-24-4	3.21	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFHpA	375-85-9	2.36	0.70	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFHxS	355-46-4	2.42	0.83	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFOA	335-67-1	5.46	0.76	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFOS	1763-23-1	10.95	1.01	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFNA	375-95-1	0.99	0.72	2.0	ng/L	1.0	J	EPA537.1	8/28/24 1911	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1911	CSS
PFAS6 (MassDEP)		21.19	2.0	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		106.40		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		100.30		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		91.30		70 - 130		Pass				
d5-NEtFOSAA (SUR) % Recovery		97.40		70 - 130		Pass				

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300583760	PFAS_537	537_EXT-240823-1	250	08/23/2024

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Sample ID: 300583761

Customer ID: Field Blank - Finished

Collection Date: 08/22/2024 14:00

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000010

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	8/28/24 1927	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				
Surrogates				Results	Recovery Limits		Pass/Fail			
13C-PFHxA (SUR) % Recovery				99.80	70 - 130		Pass			
13C3-HFPO-DA (SUR) % Recovery				78.90	70 - 130		Pass			
13C-PFDA (SUR) % Recovery				101.10	70 - 130		Pass			
d5-NEtFOSAA (SUR) % Recovery				93.30	70 - 130		Pass			

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300583761	PFAS_537	537_EXT-240823-1	250	08/23/2024



90 Sargent Dr, New Haven, CT 06511
Phone: 203-401-2700
Fax: 203-401-6799

Chain of Custody Form

Company Name

RANDOLPH/HOLBROOK
JOINT WATER

Company Address

275 POND ST.
RANDOLPH, MA
02368

Sampler

PAUL HENNESSY

PO Number

Number of Bottles

RWA LIMS
Number

300583758

Date
Collected

8/22/24

Time
Collected

2PM

Sample ID /
Sample Location

① RAW

② FINISHED

5

4

1

300583759

761

NOT FOR COMPLIANCE

MA DEP COMPLIANCE

Remarks

State Sample Collected:

CT ☐ NY ☐ Other (specify) _____

Thermometer ID: _____

Evidence of Cooling (Circle): ☒ or N

Cooler Temp °C: 2.9

Container & Preservative Meet Criteria
(Circle): ☒ Yes ☐ No

Test Requested, Container, & Preservative

EPA 537.1 - Poured Field Blank
& Tris (Hydroxymethyl) Aminomethane
250mL Plastic w/Tris Hydrochloride
PFA514

Relinquished By (Signature):

Paul Hennessy

Date & Time:

8/22/24 2:15PM

Received By (Signature):

[Signature]

Date & Time:

8/23/24 0946

Relinquished by (Signature):

Paul Kx

Date & Time:

8/23/24 0946

Comments:

Lot # SCCP2107

Lot # SCCQ2107

PFA514

Free-Randolph/Holbrook-24-000010

South Central Connecticut Regional Water Authority PFAS QA/QC Summary

Extraction Batch QC for: EPA 537.1

MA Lab Cert.#: M-CT004

Extraction Batch Date: 8/23/2024

Sample ID for LFSM/LFSMD: 300583488

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 60 ng/L %Recovery
	Acceptance Range 70-130%	Acceptance Range 70-130%	Acceptance Limit <30%	Result, ng/L	Meets < 1/3 of MRL criteria?	Acceptance Range 70-130%
PFBS	110.7	102.3	5.1	ND	[Y]	101.7
PFHxA	126.9	103.9	11.2	ND	[Y]	100.2
HFPO-DA	102.5	97.6	4.8	ND	[Y]	101.3
PFHpA	109.8	119.7	5.5	ND	[Y]	79.5
PFHxS	127.6	83.1	10.9	ND	[Y]	111.4
ADONA	105.4	115.1	8.8	ND	[Y]	83.1
PFOA	106.1	101.9	1.4	ND	[Y]	99.1
PFOS	85.1	57.5	4.4	ND	[Y]	96.4
PFNA	88.3	86.1	2.1	ND	[Y]	110.9
9CI-PF3ONS	82.0	87.4	6.4	ND	[Y]	96.9
PFDA	92.6	85.1	7.8	ND	[Y]	104.3
PFUnA	86.4	92.2	6.4	ND	[Y]	92.1
11CI-PF3OUdS	73.9	77.9	5.3	ND	[Y]	88.0
NMeFOSAA	94.8	91.0	4.0	ND	[Y]	96.1
NEtFOSAA	83.6	95.6	13.4	ND	[Y]	86.0
PFDaA	86.8	82.9	4.5	ND	[Y]	102.9
PFTTrDA	91.5	81.3	11.8	ND	[Y]	104.0
PFTA	86.6	84.2	2.8	ND	[Y]	104.8

Surrogate %Recovery

¹³ C ₂ -PFHxA	¹³ C ₃ -HFPO-DA	¹³ C ₂ -PFDA	d ₅ -NEtFOSAA	
104.50	106.00	94.80	92.60	LFSM
95.30	107.20	84.50	90.80	LFSMD
91.00	89.30	96.80	92.70	LRB
104.50	103.90	109.20	92.50	LFB

Note: The Surrogate %Recovery for Samples and Poured Field Blanks is included on Final Reports.

All Batch QC passes method criteria unless noted in "Comments" section below

Comments: The matrix spike data is **NOT** from a sample in this upload batch. The LFSMD percent recovery fails low for compound PFOS. The native concentration was above the spike amount. The LFSM passes percent recovery criteria and the RPD passes criteria. The other client's sample results were commented as suspect.

LRB = Laboratory Reagent Blank

RPD = relative percent difference

FB = Field Blank

ND = Non-Detect

LFB = Laboratory Fortified Blank

MRL = Method Reporting Level

Results are ng/L (ppt)

LFSM = Laboratory Fortified Sample Matrix

LFSM/LFSMD spike concentration is 20 ng/L, unless noted otherwise

LFSMD = Laboratory Fortified Sample Matrix Duplicate

Surrogate Acceptance Limit is 70 - 130% Recovery