Regional Water Authority

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.

Richard Sibley
Laboratory Manager
Technical Representative

Regional Water Authority
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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

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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 (Acronymn)
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	Perfluorohepatanoic 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-dioxa-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.

Regional Water Authority

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203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300583758

Collection Date: 08/22/2024 14:00

Customer ID: RAW

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
9Cl-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
11Cl-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
PFTrDA	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

Collection Date: 08/22/2024 14:00

Customer ID: Field Blank - Raw

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
9Cl-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
11Cl-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
PFTrDA	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

Collection Date: 08/22/2024 14:00

Customer ID: FINISHED

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
9Cl-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
11Cl-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
PFTrDA	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

Regional Water Authority

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203-401-6743 or 877-894-5773 (Telephone) • Website: www.rwater.com

Sample ID: 300583761

Collection Date: 08/22/2024 14:00

Customer ID: Field Blank - Finished

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
9Cl-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
11Cl-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
PFTrDA	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

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

Chain of Custody Form

Company Name	Company Address
RANDOLPH/HOLBROOK JOINT WATER	275 POND ST. RANDOLPH, MA 02368
Sampler	**PO Number**
PAUL HENNESSY	

RWA LIMS Number	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	Test Requested, Container, & Preservative: EPA 537.1 PFAS 14 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	Test Requested, Container, & Preservative: EPA 537.1 - Poured Field Blank 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	Test Requested, Container, & Preservative	Remarks
300583758	8/22/24	2PM	① RAW	5	4	1	300583759	NOT FOR COMPLIANCE
760	8/22/24	2PM	② FINISHED	5	4	1	761	MA DEP COMPLIANCE

State Sample Collected: CT___ NY___ Other(specify)____

Thermometer ID:

Evidence of Cooling (Circle): Ø or N

Cooler Temp °C: 2.9

Container & Preservative Meet Criteria (Circle): ~~Yes~~/No

Relinquished By (Signature):	Relinquished by (Signature):
PAUL HENNESSY	FedEx
Date & Time: 8/22/24 215PM	Date & Time:
Received By (Signature):	Received By (Signature):
Date & Time:	Date & Time: 8/23/24 0940

Comments:
Lot # SLCP2107
Lot # SLCQ2107

PFAS14

Fee-Randolphholbrook-24-000010

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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
9Cl-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
11Cl-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
PFDoA	86.8	82.9	4.5	ND	[Y]	102.9
PFTrDA	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