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-24-000008

Report Date: 7/31/2024

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
300555794	RAW	7/1/2024 1300	7/2/24
300555795	Field Blank - RAW	7/1/2024 1300	7/2/24
300555796	FINISHED	7/1/2024 1300	7/2/24
300555797	Field Blank - FINISHED	7/1/2024 1300	7/2/24

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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.

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

Regional Water Authority

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

Sample ID: 300555794

Collection Date: 07/01/2024 13:00

Customer ID: RAW

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.13	0.97	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFHxA	307-24-4	2.72	0.77	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
HFPO-DA	13252-13-6	ND	1.16	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFHpA	375-85-9	1.68	0.71	2.04	ng/L	1.02	J	EPA537.1	7/10/24 2243	CSS
PFHxS	355-46-4	2.35	0.85	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
ADONA	919005-14-4	ND	0.64	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFOA	335-67-1	4.73	0.78	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFOS	1763-23-1	9.84	1.03	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFNA	375-95-1	1.00	0.73	2.04	ng/L	1.02	J	EPA537.1	7/10/24 2243	CSS
9Cl-PF3ONS	756426-58-1	ND	0.86	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFDA	335-76-2	ND	0.77	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFUnA	2058-94-8	ND	0.96	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.06	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
NMeFOSAA	2355-31-9	ND	1.17	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
NEtFOSAA	2991-50-6	ND	1.17	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFDoA	307-55-1	ND	0.92	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFTrDA	72629-94-8	ND	0.95	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFTA	376-06-7	ND	1.06	2.04	ng/L	1.02		EPA537.1	7/10/24 2243	CSS
PFAS6 (MassDEP)		16.92	2.04	2.04	ng/L	1.02				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	88.90	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	100.30	70 - 130	Pass
13C-PFDA (SUR) % Recovery	92.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	79.30	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300555794	PFAS_537	537_EXT-240705-1	244	07/05/2024

Regional Water Authority

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

Sample ID: 300555795

Collection Date: 07/01/2024 13:00

Customer ID: Field Blank - RAW

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.96	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFHxA	307-24-4	ND	0.76	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
HFPO-DA	13252-13-6	ND	1.15	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFHpA	375-85-9	ND	0.71	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFHxS	355-46-4	ND	0.84	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
ADONA	919005-14-4	ND	0.64	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFOA	335-67-1	ND	0.77	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFOS	1763-23-1	ND	1.02	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFNA	375-95-1	ND	0.73	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
9Cl-PF3ONS	756426-58-1	ND	0.85	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFDA	335-76-2	ND	0.76	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFUnA	2058-94-8	ND	0.95	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
NMeFOSAA	2355-31-9	ND	1.16	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
NEtFOSAA	2991-50-6	ND	1.16	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFDoA	307-55-1	ND	0.91	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFTrDA	72629-94-8	ND	0.94	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFTA	376-06-7	ND	1.05	2.02	ng/L	1.01		EPA537.1	7/10/24 2259	CSS
PFAS6 (MassDEP)		ND	2.02	2.02	ng/L	1.01				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	92.80	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	96.70	70 - 130	Pass
13C-PFDA (SUR) % Recovery	91.00	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	85.00	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300555795	PFAS_537	537_EXT-240705-1	248	07/05/2024

Regional Water Authority

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Sample ID: 300555796

Collection Date: 07/01/2024 13:00

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.45	0.97	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFHxA	307-24-4	3.08	0.77	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
HFPO-DA	13252-13-6	ND	1.16	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFHpA	375-85-9	2.00	0.71	2.04	ng/L	1.02	J	EPA537.1	7/10/24 2315	CSS
PFHxS	355-46-4	2.28	0.85	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
ADONA	919005-14-4	ND	0.64	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFOA	335-67-1	5.04	0.78	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFOS	1763-23-1	9.26	1.03	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFNA	375-95-1	1.02	0.73	2.04	ng/L	1.02	J	EPA537.1	7/10/24 2315	CSS
9Cl-PF3ONS	756426-58-1	ND	0.86	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFDA	335-76-2	ND	0.77	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFUnA	2058-94-8	ND	0.96	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.06	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
NMeFOSAA	2355-31-9	ND	1.17	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
NEtFOSAA	2991-50-6	ND	1.17	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFDoA	307-55-1	ND	0.92	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFTrDA	72629-94-8	ND	0.95	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFTA	376-06-7	ND	1.06	2.04	ng/L	1.02		EPA537.1	7/10/24 2315	CSS
PFAS6 (MassDEP)		18.58	2.04	2.04	ng/L	1.02				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	97.10	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	115.50	70 - 130	Pass
13C-PFDA (SUR) % Recovery	108.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	89.40	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300555796	PFAS_537	537_EXT-240705-1	244	07/05/2024

Regional Water Authority

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

Sample ID: 300555797

Collection Date: 07/01/2024 13:00

Customer ID: Field Blank - FINISHED

PWS ID# / LOC ID#: FB

Project: FEE-RANDOLPHHOLBROOK-24-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.96	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFHxA	307-24-4	ND	0.76	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
HFPO-DA	13252-13-6	ND	1.15	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFHpA	375-85-9	ND	0.71	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFHxS	355-46-4	ND	0.84	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
ADONA	919005-14-4	ND	0.64	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFOA	335-67-1	ND	0.77	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFOS	1763-23-1	ND	1.02	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFNA	375-95-1	ND	0.73	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
9Cl-PF3ONS	756426-58-1	ND	0.85	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFDA	335-76-2	ND	0.76	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFUnA	2058-94-8	ND	0.95	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.05	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
NMeFOSAA	2355-31-9	ND	1.16	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
NEtFOSAA	2991-50-6	ND	1.16	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFDoA	307-55-1	ND	0.91	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFTrDA	72629-94-8	ND	0.94	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFTA	376-06-7	ND	1.05	2.02	ng/L	1.01		EPA537.1	7/10/24 2331	CSS
PFAS6 (MassDEP)		ND	2.02	2.02	ng/L	1.01				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	100.40	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	98.10	70 - 130	Pass
13C-PFDA (SUR) % Recovery	93.80	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	94.40	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300555797	PFAS_537	537_EXT-240705-1	248	07/05/2024

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	

Test Requested, Container, & Preservative

State Sample Collected: CT___ NY___ Other(specify) MA

Thermometer ID:

Evidence of Cooling (Circle): (Y) or N

Cooler Temp °C: 3.9

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

RWA LIMS Number	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	EPA 537.1 PFAS 14 250mL Plastic w/Trizma & Tris (Hydroxymethyl) Aminomethane	EPA 537.1 - Poured Field Blank 250mL Plastic w/Trizma & Tris (Hydroxymethyl) Aminomethane	Field Blank #				Remarks
300555794	7/1/24	1PM	① RAW	5	4	1	300555795				NOT FOR COMPLIANCE
796	7/1/24	1PM	② FINISHED	5	4	1		797			MA DEP COMPLIANCE

Relinquished By (Signature):	Relinquished by (Signature):
PAUL HENNESSY	
Date & Time: 7/1/24 1:15PM	Date & Time:
Received By (Signature):	Received By (Signature):
Date & Time: 7/2/24 @ 16:29	Date & Time:

Comments:
Lot # SLCP2107
Lot # SLCQ2107

PFAS 14

Fee-Randolph/Holbrook-24-000008

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: 7/5/2024 **Sample ID for LFSM/LFSMD:** 300553998

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 20 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	97.1	97.3	0.2	ND	[Y]	99.2
PFHxA	94.3	87.8	6.5	ND	[Y]	92.0
HFPO-DA	101.7	97.0	4.7	ND	[Y]	92.3
PFHpA	91.5	85.4	6.6	ND	[Y]	90.8
PFHxS	100.8	92.0	9.0	ND	[Y]	98.6
ADONA	89.1	85.0	4.7	ND	[Y]	89.6
PFOA	96.9	98.7	1.6	ND	[Y]	97.1
PFOS	92.7	96.5	3.8	ND	[Y]	100.1
PFNA	93.2	92.8	0.4	ND	[Y]	93.9
9CL-PF3ONS	82.5	86.6	4.8	ND	[Y]	96.9
PFDA	95.3	94.5	0.8	ND	[Y]	96.6
PFUnA	82.3	87.9	6.6	ND	[Y]	93.6
11Cl-PF3OUdS	**61.9**	76.3	20.7	ND	[Y]	95.9
NMeFOSAA	82.8	94.7	13.3	ND	[Y]	94.0
NEtFOSAA	80.1	84.3	5.0	ND	[Y]	93.7
PFDoA	78.0	80.8	3.5	ND	[Y]	91.7
PFTrDA	75.3	72.8	3.3	ND	[Y]	88.1
PFTA	75.3	73.0	3.0	ND	[Y]	88.6

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_5$-NEtFOSAA	
92.10	95.70	90.30	72.60	LFSM
95.90	103.60	99.10	90.60	LFSMD
87.70	87.20	87.70	79.40	LRB
94.10	100.80	96.60	91.60	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 LFSM percent recovery fails low for compound 11Cl. The LFSMD 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