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-24-000012

Report Date: 11/8/2024

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

SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300616110	RAW	10/17/2024 1400	10/18/24
300616111	FIELD BLANK- RAW	10/17/2024 1400	10/18/24
300616112	FINISHED	10/17/2024 1400	10/18/24
300616113	FIELD BLANK - FINISHED	10/17/2024 1400	10/18/24

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

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

Sample ID: 300616110
Collection Date: 10/17/2024 14:00

Customer ID: RAW
PWS ID# / LOC ID#: RAW
Project: FEE-RANDOLPHHOLBROOK-24-000012

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.21	0.97	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFHxA	307-24-4	3.59	0.77	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
HFPO-DA	13252-13-6	ND	1.16	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFHpA	375-85-9	1.89	0.71	2.04	ng/L	1.02	J	EPA537.1	10/25/24 0133	CSS
PFHxS	355-46-4	2.44	0.85	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
ADONA	919005-14-4	ND	0.64	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFOA	335-67-1	4.18	0.78	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFOS	1763-23-1	7.92	1.03	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFNA	375-95-1	0.99	0.73	2.04	ng/L	1.02	J	EPA537.1	10/25/24 0133	CSS
9Cl-PF3ONS	756426-58-1	ND	0.86	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFDA	335-76-2	ND	0.77	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFUnA	2058-94-8	ND	0.96	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.06	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
NMeFOSAA	2355-31-9	ND	1.17	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
NEtFOSAA	2991-50-6	ND	1.17	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFDoA	307-55-1	ND	0.92	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFTrDA	72629-94-8	ND	0.95	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFTA	376-06-7	ND	1.06	2.04	ng/L	1.02		EPA537.1	10/25/24 0133	CSS
PFAS6 (MassDEP)		14.54	2.04	2.04	ng/L	1.02				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	113.80	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	111.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	94.40	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	93.10	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300616110	PFAS_537	537_EXT-241021-1	244	10/21/2024

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

Sample ID: 300616111
Collection Date: 10/17/2024 14:00

Customer ID: Field Blank - Raw
PWS ID# / LOC ID#: FIELD BLANK
Project: FEE-RANDOLPHHOLBROOK-24-000012

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	10/25/24 0149	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0149	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	102.40	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	92.30	70 - 130	Pass
13C-PFDA (SUR) % Recovery	106.20	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	84.90	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300616111	PFAS_537	537_EXT-241021-1	250	10/21/2024

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

Sample ID: 300616112
Collection Date: 10/17/2024 14:00

Customer ID: Finished
PWS ID# / LOC ID#: 4244001/10296
Project: FEE-RANDOLPHHOLBROOK-24-000012

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.21	0.95	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFHxA	307-24-4	3.60	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFHpA	375-85-9	2.04	0.70	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFHxS	355-46-4	2.28	0.83	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFOA	335-67-1	4.96	0.76	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFOS	1763-23-1	8.38	1.01	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFNA	375-95-1	0.94	0.72	2.0	ng/L	1.0	J	EPA537.1	10/25/24 0204	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0204	CSS
PFAS6 (MassDEP)		17.66	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	112.30	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	112.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	112.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	94.50	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300616112	PFAS_537	537_EXT-241021-1	250	10/21/2024

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

Sample ID: 300616113
Collection Date: 10/17/2024 14:00

Customer ID: Field Blank - Finished
PWS ID# / LOC ID#: FIELD BLANK
Project: FEE-RANDOLPHHOLBROOK-24-000012

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	10/25/24 0220	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	10/25/24 0220	CSS
PFAS6 (MassDEP)		ND	2.0	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	97.80	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	92.40	70 - 130	Pass
13C-PFDA (SUR) % Recovery	100.50	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	93.20	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300616113	PFAS_537	537_EXT-241021-1	250	10/21/2024

Regional Water Authority

90 Sargent Dr, New Haven, CT 06511
Lab Billing: 203-401-2709
Lab Manager Phone: 203-401-2700
Client Services Phone: 203-401-6743

Chain of Custody Form

Contact Address (please include email address)
RANDOLPH / HOLBROOK JOINT WATER

Sampling Address (If different from Contact information)
275 POND ST. RANDOLPH, MA 02368

Sampler
PAUL HENNESSY

Additional Information

LIMS Number (For RWA USE ONLY)	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	PFAS (SEE COMMENT) 250mL Plastic w/Trizma & Tris (Hydroxymethyl) Aminomethane — PFAS 14	PFAS - Poured Field Blank 250mL Plastic w/Trizma & Tris (Hydroxymethyl) Aminomethane					
300616110	10/17/24	2PM	① RAW	4	4						
111	↓	↓	Poured Field Blank ①	1		1					
112			② FINISHED	4	4						
113			POURED FIELD BLANK ②	1		1					

Test Requested, Container, & Preservative

State Sample Collected:
CT___ Other(specify) MA

Sample Temp °C: (must be received at or below 10°C within the first 48 hours) 1.9

Evidence of Cooling (Circle): (Y) or N (only required if sampled date = receive date.)

Sample receipt condition circle:
Acceptable / Not Acceptable

If not acceptable contact client service

NOT FOR COMPLIANCE ↓
MA DEP COMPLIANCE ↓

Relinquished By (Signature): PAUL HENNESSY
Date & Time: 10/17/24 215PM

Received By (Signature):
Date & Time: 10/18/24 10:18

Relinquished by (Signature):
Date & Time:

Received By (Signature):
Date & Time:

Lot # SLCQ2107
SLCQ2107
PFAS14

Sample bottle and Preservative Lot Numbers
Free-Randolph/holbrook-24-00012

Page 8 of 9

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: 10/21/2024 **Sample ID for LFSM/LFSMD:** 300613842

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	107.9	101.4	5.5	ND	[Y]	78.2
PFHxA	102.0	111.1	7.9	ND	[Y]	94.3
HFPO-DA	98.1	105.4	7.1	ND	[Y]	89.4
PFHpA	101.1	114.3	11.8	ND	[Y]	91.3
PFHxS	101.3	101.7	0.4	ND	[Y]	99.3
ADONA	114.7	108.2	5.8	ND	[Y]	79.1
PFOA	96.5	96.9	0.3	ND	[Y]	92.1
PFOS	103.7	96.5	6.2	ND	[Y]	90.8
PFNA	106.0	113.4	6.7	ND	[Y]	105.6
9Cl-PF3ONS	95.1	84.0	12.5	ND	[Y]	86.6
PFDA	94.4	99.3	5.0	ND	[Y]	89.4
PFUnA	94.7	82.6	13.6	ND	[Y]	86.9
11Cl-PF3OUdS	90.7	80.0	12.5	ND	[Y]	83.9
NMeFOSAA	94.4	91.1	3.6	ND	[Y]	88.5
NEtFOSAA	92.9	84.9	9.0	ND	[Y]	84.9
PFDoA	89.3	89.2	0.1	ND	[Y]	92.6
PFTrDA	88.2	90.6	2.7	ND	[Y]	91.0
PFTA	90.2	92.7	2.8	ND	[Y]	94.0

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_5$-NEtFOSAA	
102.70	96.80	100.40	97.00	LFSM
110.40	102.60	107.50	90.90	LFSMD
109.70	98.70	107.50	99.70	LRB
90.90	88.80	87.90	84.00	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.

LRB = Laboratory Reagent Blank

LFB = Laboratory Fortified Blank

LFSM = Laboratory Fortified Sample Matrix

LFSMD = Laboratory Fortified Sample Matrix Duplicate

RPD = relative percent difference

MRL = Method Reporting Level

FB = Field Blank

ND = Non-Detect

Results are ng/L (ppt)

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

Surrogate Acceptance Limit is 70 - 130% Recovery