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-23-000014

Report Date: 11/28/2023

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
300442608	RAW	11/7/2023 1300	11/8/23
300442609	FB - RAW	11/7/2023 1300	11/8/23
300442610	FINISHED	11/7/2023 1300	11/8/23
300442611	FB - FINISHED	11/7/2023 1300	11/8/23

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.

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: 300442608

Collection Date: 11/07/2023 13:00

Customer ID: RAW

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-23-000014

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Analyzed	Analyst
PFBS	375-73-5	2.50	0.95	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFHxA	307-24-4	3.24	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFHpA	375-85-9	2.09	0.70	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFHxS	355-46-4	2.33	0.83	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFOA	335-67-1	5.03	0.76	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFOS	1763-23-1	8.69	1.01	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFNA	375-95-1	1.04	0.72	2.0	ng/L	1.0	J	EPA537.1	11/17/23 2132	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2132	CSS
PFAS6 (MassDEP)		18.14	2.00	2.0	ng/L					

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	87.60	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	86.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	94.90	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	77.40	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300442608	PFAS_537	537_EXT-231114-1	250	11/14/2023

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: 300442609

Collection Date: 11/07/2023 13:00

Customer ID: FB - RAW

PWS ID# / LOC ID#: FB - RAW

Project: FEE-RANDOLPHHOLBROOK-23-000014

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2147	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L					

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	98.50	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	91.40	70 - 130	Pass
13C-PFDA (SUR) % Recovery	90.10	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	80.90	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300442609	PFAS_537	537_EXT-231114-1	250	11/14/2023

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: 300442610

Collection Date: 11/07/2023 13:00

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-23-000014

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Analyzed	Analyst
PFBS	375-73-5	2.44	0.95	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFHxA	307-24-4	3.63	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFHpA	375-85-9	2.02	0.70	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFHxS	355-46-4	2.22	0.83	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFOA	335-67-1	5.25	0.76	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFOS	1763-23-1	11.07	1.01	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFNA	375-95-1	1.38	0.72	2.0	ng/L	1.0	J	EPA537.1	11/17/23 2201	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2201	CSS
PFAS6 (MassDEP)		**20.56**	2.00	2.0	ng/L					

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	90.80	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	90.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	97.20	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	80.80	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300442610	PFAS_537	537_EXT-231114-1	250	11/14/2023

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: 300442611

Collection Date: 11/07/2023 13:00

Customer ID: FB - FINISHED

PWS ID# / LOC ID#: FB - FINISHED

Project: FEE-RANDOLPHHOLBROOK-23-000014

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Analyzed	Analyst
PFBS	375-73-5	ND	0.95	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	11/17/23 2216	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L					

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	93.20	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	93.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	92.70	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	83.90	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300442611	PFAS_537	537_EXT-231114-1	250	11/14/2023

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: PFAS PFAS 14 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	Test Requested, Container, & Preservative: PFAS Poured Field Blank 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	Test Requested, Container, & Preservative	Test Requested, Container, & Preservative	Test Requested, Container, & Preservative	Test Requested, Container, & Preservative
3004426085	11/7/23	1PM	① RAW	5	4	1	FB-3004426085			
6110	11/7/23	1PM	② FINISHED	5	4	1	FB-		6111	

State Sample Collected: CT__ NY___ Other(specify)__

Evidence of Cooling (Circle): Y or N

Cooler Temp °C: 2.3

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

LOT # SLCN1650

LOT # SLCN1665

NOT FOR COMPLIANCE

MA DEP COMPLIANCE

Relinquished By (Signature):	Relinquished by (Signature):
PAUL HENNESSY	
Date & Time: 11/7/23 1:15 PM	Date & Time:
Received By (Signature):	Received By (Signature):
Date & Time:	Date & Time: 11/8/23 959AM

Comments:

PFAS 14

Fee-RANDOLPHHOLBROOK-23-000014

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: 11/14/2023 **Sample ID for LFSM/LFSMD:** 300442648

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 2.0 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 50-150%
PFBS	87.7	84.7	3.3	ND	[Y]	98.0
PFHxA	88.0	84.1	4.3	ND	[Y]	101.0
HFPO-DA	84.9	76.0	10.9	ND	[Y]	110.5
PFHpA	90.0	81.9	9.2	ND	[Y]	97.0
PFHxS	90.4	87.0	3.6	ND	[Y]	98.5
ADONA	84.9	83.0	2.3	ND	[Y]	102.0
PFOA	91.3	88.5	3.0	ND	[Y]	102.5
PFOS	94.7	86.6	8.1	ND	[Y]	108.0
PFNA	96.0	88.6	7.9	ND	[Y]	96.5
9Cl-PF3ONS	89.3	88.7	0.7	ND	[Y]	97.0
PFDA	98.1	90.1	8.4	ND	[Y]	104.0
PFUnA	94.4	90.8	3.9	ND	[Y]	95.0
11Cl-PF3OUdS	87.3	85.1	2.5	ND	[Y]	104.0
NMeFOSAA	84.8	85.7	1.1	ND	[Y]	112.0
NEtFOSAA	92.0	86.9	5.7	ND	[Y]	91.5
PFDoA	85.8	83.6	2.6	ND	[Y]	94.0
PFTrDA	83.7	78.2	6.8	ND	[Y]	95.5
PFTA	77.0	77.7	0.9	ND	[Y]	99.5

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_{5}$-NEtFOSAA	
94.30	90.20	103.20	88.10	LFSM
88.50	84.40	94.40	82.30	LFSMD
103.20	99.00	101.10	95.90	LRB
96.50	88.70	96.20	94.00	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