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-24-000001

Report Date: 1/18/2024

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
300468397	RAW	1/4/2024 1300	1/5/24
300468398	FB - RAW	1/4/2024 1300	1/5/24
300468399	FINISHED	1/4/2024 1300	1/5/24
300468400	FB - FINISHED	1/4/2024 1300	1/5/24

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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.

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

Sample ID: 300468397

Collection Date: 01/04/2024 13:00

Customer ID: RAW

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000001

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.44	0.95	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFHxA	307-24-4	3.36	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFHpA	375-85-9	2.02	0.70	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFHxS	355-46-4	2.15	0.83	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFOA	335-67-1	5.09	0.76	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFOS	1763-23-1	8.62	1.01	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFNA	375-95-1	1.04	0.72	2.0	ng/L	1.0	J	EPA537.1	1/9/24 2201	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2201	CSS
PFAS6 (MassDEP)		17.88	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	90.20	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	85.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	93.30	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	81.00	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300468397	PFAS_537	537_EXT-240108-1	250	01/08/2024

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Sample ID: 300468398

Collection Date: 01/04/2024 13:00

Customer ID: FB - RAW

PWS ID# / LOC ID#: FB - RAW

Project: FEE-RANDOLPHHOLBROOK-24-000001

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

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	96.30	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	94.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	91.70	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	86.20	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300468398	PFAS_537	537_EXT-240108-1	250	01/08/2024

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Sample ID: 300468399

Collection Date: 01/04/2024 13:00

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000001

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.75	0.95	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFHxA	307-24-4	3.70	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFHpA	375-85-9	2.04	0.70	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFHxS	355-46-4	2.22	0.83	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFOA	335-67-1	5.11	0.76	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFOS	1763-23-1	8.66	1.01	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFNA	375-95-1	0.95	0.72	2.0	ng/L	1.0	J	EPA537.1	1/9/24 2230	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2230	CSS
PFAS6 (MassDEP)		18.03	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	95.20	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	90.70	70 - 130	Pass
13C-PFDA (SUR) % Recovery	95.90	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	79.00	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300468399	PFAS_537	537_EXT-240108-1	250	01/08/2024

Regional Water Authority

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

Sample ID: 300468400

Collection Date: 01/04/2024 13:00

Customer ID: FB - FINISHED

PWS ID# / LOC ID#: FB - FINISHED

Project: FEE-RANDOLPHHOLBROOK-24-000001

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	1/9/24 2314	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
9Cl-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
11Cl-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	1/9/24 2314	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	92.10	70 - 130	Pass
13C3-HFPO-DA (SUR) % Recovery	86.50	70 - 130	Pass
13C-PFDA (SUR) % Recovery	91.40	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	83.00	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300468400	PFAS_537	537_EXT-240108-1	250	01/08/2024

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	PFAS 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane	PFAS Poured Field Blank 250mL Plastic w/Tris HydroChloride & Tris (Hydroxymethyl) Aminomethane					
300468397	1/4/24	1PM	① RAW	5	4	1	FB-300468398				NOT FOR COMPLIANCE
399	1/4/24	1PM	② FINISHED	5	4	1	FB-400				MA DEP COMPLIANCE

Test Requested, Container, & Preservative

State Sample Collected:
CT__ NY___ Other(specify)__

Evidence of Cooling (Circle): Y or N
Cooler Temp °C: 1.0

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

LOT # SLCN1650

LOT # SLCN1665

Relinquished By (Signature):	Relinquished by (Signature):
PAUL HENNESSY	FEDX
Date & Time: 1/4/24 115PM	Date & Time:
Received By (Signature):	Received By (Signature):
Date & Time: 1/5/24 1121	Date & Time:

Comments: PFAS X 1/8/24

Fee-RanDalPHHolbrook-24-000001

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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: 1/8/2024 **Sample ID for LFSM/LFSMD:** 300468399

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	93.3	90.8	2.3	ND	[Y]	95.7
PFHxA	92.9	85.4	7.0	ND	[Y]	88.0
HFPO-DA	84.6	98.3	14.9	ND	[Y]	87.0
PFHpA	93.2	87.2	5.9	ND	[Y]	88.0
PFHxS	100.8	95.7	4.6	ND	[Y]	92.9
ADONA	90.0	85.4	5.2	ND	[Y]	85.0
PFOA	98.9	91.7	5.9	ND	[Y]	90.5
PFOS	86.8	85.3	1.1	ND	[Y]	90.7
PFNA	99.2	91.7	7.5	ND	[Y]	91.9
9Cl-PF3ONS	92.5	86.9	6.3	ND	[Y]	86.3
PFDA	101.1	91.9	9.4	ND	[Y]	88.0
PFUnA	91.2	86.9	4.8	ND	[Y]	82.6
11Cl-PF3OUdS	89.4	78.6	12.8	ND	[Y]	87.8
NMeFOSAA	89.1	78.8	12.2	ND	[Y]	82.8
NEtFOSAA	80.8	82.2	1.7	ND	[Y]	81.9
PFDoA	88.2	80.7	8.9	ND	[Y]	83.0
PFTrDA	87.9	80.5	8.9	ND	[Y]	81.1
PFTA	90.1	82.5	8.8	ND	[Y]	83.5

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_3$-HFPO-DA	$^{13}C_2$-PFDA	$^{d}_5$-NEtFOSAA	
94.40	93.00	96.20	84.70	LFSM
91.20	88.20	92.00	77.90	LFSMD
96.90	92.60	92.10	86.00	LRB
90.00	85.70	87.80	84.90	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*** from a sample in this upload batch.

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