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-23-000007

Report Date: 5/13/2023

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.

Gary M. Alexander, Team Lead
Technical Representative

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SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300345441	RAW	5/4/2023 0930	5/5/23
300345442	FB - RAW	5/4/2023 0930	5/5/23
300345443	FINISHED	5/4/2023 0930	5/5/23
300345444	FB - FINISHED	5/4/2023 0930	5/5/23

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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.

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

Method	CAS#	PFAS Analyte (Acronymn)
537	1763-23-1	Perfluorooctanesulfonic acid (PFOS)
537	335-67-1	Perfluorooctanoic acid (PFOA)
537	355-46-4	Perfluorohexanesulfonic acid (PFHxS)
537	375-95-1	Perfluorononanoic acid (PFNA)
537	375-85-9	Perfluorohepatanoic acid (PFHpA)
537	335-76-2	Perfluorodecanoic acid (PFDA)
537	375-73-5	Perfluorobutanesulfonic acid (PFBS)
537	307-55-1	Perfluorododecanoic acid (PFDoA)
537	307-24-4	Perfluorohexanoic acid (PFHxA)
537	376-06-7	Perfluorotetradecanoic acid (PFTA)
537	72629-94-8	Perfluorotridecanoic acid (PFTrDA)
537	2058-94-8	Perfluoroundecanoic acid (PFUnA)
537	2991-50-6	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)
537	2355-31-9	N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)

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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Sample ID: 300345441

Collection Date: 05/04/2023 9:30

Customer ID: RAW

PWS ID# / LOC ID#:

Project: FEE-RANDOLPHHOLBROOK-23-000007

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	1.74	0.89	2.0	ng/L	1.0	J	EPA537	5/9/23 2239	CSS/GMA
PFHxA	307-24-4	2.64	0.68	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFHpA	375-85-9	1.66	0.62	2.0	ng/L	1.0	J	EPA537	5/9/23 2239	CSS/GMA
PFHxS	355-46-4	2.17	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFOA	335-67-1	3.91	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFOS	1763-23-1	5.85	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	5/9/23 2239	CSS/GMA
PFAS6 (MassDEP)		11.93	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	90.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	87.00	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	80.50	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300345441	PFAS_537	537_EXT-230508-1	250	05/08/2023

Regional Water Authority

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Sample ID: 300345442

Collection Date: 05/04/2023 9:30

Customer ID: FB - RAW

PWS ID# / LOC ID#:

Project: FEE-RANDOLPHHOLBROOK-23-000007

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFHxA	307-24-4	ND	0.68	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFHpA	375-85-9	ND	0.62	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFHxS	355-46-4	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFOA	335-67-1	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFOS	1763-23-1	ND	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	5/9/23 2253	CSS/GMA
PFAS6 (MassDEP)		ND	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	89.60	70 - 130	Pass
13C-PFDA (SUR) % Recovery	79.40	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	75.80	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300345442	PFAS_537	537_EXT-230508-1	250	05/08/2023

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Sample ID: 300345443

Collection Date: 05/04/2023 9:30

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001 / 10296

Project: FEE-RANDOLPHHOLBROOK-23-000007

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.01	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFHxA	307-24-4	2.67	0.68	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFHpA	375-85-9	1.68	0.62	2.0	ng/L	1.0	J	EPA537	5/9/23 2308	CSS/GMA
PFHxS	355-46-4	2.02	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFOA	335-67-1	3.76	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFOS	1763-23-1	5.63	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	5/9/23 2308	CSS/GMA
PFAS6 (MassDEP)		11.41	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	100.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	92.20	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	86.40	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300345443	PFAS_537	537_EXT-230508-1	250	05/08/2023

Regional Water Authority

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Sample ID: 300345444

Collection Date: 05/04/2023 9:30

Customer ID: FB - FINISHED

PWS ID# / LOC ID#:

Project: FEE-RANDOLPHHOLBROOK-23-000007

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	ND	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFHxA	307-24-4	ND	0.68	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFHpA	375-85-9	ND	0.62	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFHxS	355-46-4	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFOA	335-67-1	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFOS	1763-23-1	ND	0.89	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	5/9/23 2323	CSS/GMA
PFAS6 (MassDEP)		ND	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	94.20	70 - 130	Pass
13C-PFDA (SUR) % Recovery	84.30	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	80.30	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300345444	PFAS_537	537_EXT-230508-1	250	05/08/2023

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	

Test Requested, Container, & Preservative

State Sample Collected: CT___ NY___ Other(specify) MA

Thermometer ID:

Evidence of Cooling (Circle): Y or N

Cooler Temp °C: 3.4 / 6

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				Remarks
300345441	5/4/23	930AM	① RAW	5	4	1	FB- 442			NOT FOR COMPLIANCE
443	5/4/23	930AM	② FINISHED	5	4	1	FB- 444			MA DEP COMPLIANCE

Relinquished By (Signature): Paul Hennessy PAUL HENNESSY

Date & Time: 5/4/23 10AM

Received By (Signature):

Date & Time: 5/5/23 @ 10:48

Relinquished by (Signature):

Date & Time:

Received By (Signature):

Date & Time:

Comments:

Lot # SLCN1650 PFAS 14

Lot # SLCN1665

Fee-RandolphHolbrook-23-000007

South Central Connecticut Regional Water Authority PFAS QA/QC Summary

Extraction Batch QC for: EPA 537 **MA Lab Cert.#:** M-CT004

Extraction Batch Date: 5/8/2023 **Sample ID for LFSM/LFSMD:** 300344279

Analyte	LFSM %Recovery	LFSMD %Recovery	RPD of LFSM/LFSMD	LRB (MRL is 2)		LFB 10 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	87.9	93.0	5.3	ND	[Y]	96.8
PFHxA	90.1	89.9	0.2	ND	[Y]	92.8
PFHpA	94.9	94.1	0.8	ND	[Y]	96.7
PFHxS	97.4	93.0	4.5	ND	[Y]	95.1
PFOA	92.8	92.8	0.0	ND	[Y]	95.6
PFOS	86.7	92.0	5.7	ND	[Y]	88.5
PFNA	93.2	86.7	7.2	ND	[Y]	87.7
PFDA	91.8	88.9	3.2	ND	[Y]	86.4
PFUnA	88.7	86.4	2.6	ND	[Y]	83.4
NMeFOSAA	84.2	78.1	7.5	ND	[Y]	89.0
NEtFOSAA	77.5	80.7	4.0	ND	[Y]	81.4
PFDoA	82.0	81.6	0.5	ND	[Y]	86.0
PFTrDA	80.6	78.9	2.1	ND	[Y]	84.8
PFTA	81.4	78.0	4.2	ND	[Y]	84.5

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_2$-PFDA	d_5-NEtFOSAA	
98.30	97.70	85.70	LFSM
98.50	94.60	86.50	LFSMD
99.80	92.10	85.10	LRB
94.20	84.60	81.10	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 submitted on this Chain of Custody.

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