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-23-000008

Report Date: 7/8/2023

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
300359414	RAW	6/5/2023 1000	6/6/23
300359415	FB - RAW	6/5/2023 1000	6/6/23
300359416	FINISHED	6/5/2023 1000	6/6/23
300359417	FB - FINISHED	6/5/2023 1000	6/6/23

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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: 300359414
Collection Date: 06/05/2023 10:00
Customer ID: RAW
PWS ID# / LOC ID#:
Project: FEE-RANDOLPHHOLBROOK-23-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.18	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFHxA	307-24-4	3.27	0.68	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFHpA	375-85-9	1.89	0.62	2.0	ng/L	1.0	J	EPA537	6/13/23 1612	CSS/GMA
PFHxS	355-46-4	2.71	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFOA	335-67-1	5.73	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFOS	1763-23-1	8.74	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFNA	375-95-1	1.04	0.63	2.0	ng/L	1.0	J	EPA537	6/13/23 1612	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	6/13/23 1612	CSS/GMA
PFAS6 (MassDEP)		17.18	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	89.10	70 - 130	Pass
13C-PFDA (SUR) % Recovery	95.60	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	85.80	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300359414	PFAS_537	537_EXT-230609-1	250	06/09/2023

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Sample ID: 300359415
Collection Date: 06/05/2023 10:00
Customer ID: FB - RAW
PWS ID# / LOC ID#:
Project: FEE-RANDOLPHHOLBROOK-23-000008

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	6/13/23 1627	CSS/GMA
PFHxA	307-24-4	ND	0.68	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFHpA	375-85-9	ND	0.62	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFHxS	355-46-4	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFOA	335-67-1	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFOS	1763-23-1	ND	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	6/13/23 1627	CSS/GMA
PFAS6 (MassDEP)		ND	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	101.00	70 - 130	Pass
13C-PFDA (SUR) % Recovery	96.40	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	81.30	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300359415	PFAS_537	537_EXT-230609-1	250	06/09/2023

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Sample ID: 300359416

Collection Date: 06/05/2023 10:00

Customer ID: FINISHED

PWS ID# / LOC ID#: 4244001 / 10296

Project: FEE-RANDOLPHHOLBROOK-23-000008

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.31	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFHxA	307-24-4	3.23	0.68	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFHpA	375-85-9	2.01	0.62	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFHxS	355-46-4	2.51	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFOA	335-67-1	5.38	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFOS	1763-23-1	7.92	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFNA	375-95-1	0.89	0.63	2.0	ng/L	1.0	J	EPA537	6/13/23 1641	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	6/13/23 1641	CSS/GMA
PFAS6 (MassDEP)		17.82	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	92.90	70 - 130	Pass
13C-PFDA (SUR) % Recovery	98.30	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	87.70	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300359416	PFAS_537	537_EXT-230609-1	250	06/09/2023

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Sample ID: 300359417
Collection Date: 06/05/2023 10:00

Customer ID: FB - FINISHED
PWS ID# / LOC ID#:
Project: FEE-RANDOLPHHOLBROOK-23-000008

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	6/13/23 1656	CSS/GMA
PFHxA	307-24-4	ND	0.68	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFHpA	375-85-9	ND	0.62	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFHxS	355-46-4	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFOA	335-67-1	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFOS	1763-23-1	ND	0.89	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFNA	375-95-1	ND	0.63	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFDA	335-76-2	ND	0.72	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFUnA	2058-94-8	ND	0.91	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
NMeFOSAA	2355-31-9	ND	1.19	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
NEtFOSAA	2991-50-6	ND	1.03	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFDoA	307-55-1	ND	0.83	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFTrDA	72629-94-8	ND	0.90	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFTA	376-06-7	ND	0.97	2.0	ng/L	1.0		EPA537	6/13/23 1656	CSS/GMA
PFAS6 (MassDEP)		ND	2.00	2.00	ng/L	1.0				

Surrogates	Results	Recovery Limits	Pass/Fail
13C-PFHxA (SUR) % Recovery	93.70	70 - 130	Pass
13C-PFDA (SUR) % Recovery	91.80	70 - 130	Pass
d5-NEtFOSAA (SUR) % Recovery	83.20	70 - 130	Pass

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300359417	PFAS_537	537_EXT-230609-1	250	06/09/2023

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

RWA LIMS Number	Date Collected	Time Collected	Sample ID / Sample Location	Number of Bottles	EPA 537.1 PFAS 14 250mL Plastic w/Trizma & Ammonium Acetate	EPA 537.1 - Poured Field Blank 250mL Plastic w/Trizma & Ammonium Acetate	Field Blank #			Remarks
300359414	6/5/23	10AM	① RAW	5	4	1	300359415			NOT FOR COMPLIANCE
416	6/5/23	10AM	② FINISHED	5	4	1			417	MA DEP COMPLIANCE

State Sample Collected:
CT___ NY___ Other(specify)____

Thermometer ID:

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

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

Relinquished By (Signature):	Relinquished by (Signature):
PAUL HENNESSY	Fed Ex
Date & Time: 6/5/23 1030AM	Date & Time: 6/6/23
Received By (Signature):	Received By (Signature):
Date & Time:	Date & Time: 6/6/23 1010

Comments:
Lot # SLCN1650
Lot # SLCN1665

PFAS 14

South Central Connecticut Regional Water Authority PFAS QA/QC Summary

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

Extraction Batch Date: 6/9/2023 **Sample ID for LFSM/LFSMD:** 300359764

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	98.0	100.7	1.9	ND	[Y]	96.8
PFHxA	101.1	106.2	3.4	ND	[Y]	96.8
PFHpA	100.2	104.6	3.7	ND	[Y]	97.8
PFHxS	111.5	113.6	1.7	ND	[Y]	104.4
PFOA	109.0	112.3	2.2	ND	[Y]	108.0
PFOS	107.7	103.9	3.0	ND	[Y]	101.8
PFNA	105.1	109.1	3.7	ND	[Y]	100.5
PFDA	102.6	102.9	0.2	ND	[Y]	104.4
PFUnA	101.8	102.9	1.1	ND	[Y]	98.9
NMeFOSAA	92.9	96.3	3.6	ND	[Y]	93.5
NEtFOSAA	89.3	89.5	0.2	ND	[Y]	87.5
PFDoA	102.1	103.8	1.7	ND	[Y]	101.1
PFTrDA	96.2	99.1	2.9	ND	[Y]	98.3
PFTA	99.8	98.3	1.5	ND	[Y]	98.3

Surrogate %Recovery

$^{13}C_2$-PFHxA	$^{13}C_2$-PFDA	d_5-NEtFOSAA	
97.10	95.20	89.50	LFSM
100.50	99.00	89.80	LFSMD
97.00	97.60	93.70	LRB
101.80	98.80	92.80	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