

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-24-000003

Report Date: 2/12/2024

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

SAMPLE SUMMARY

Sample ID	Customer ID	Collection Date/Time	Receipt Date
300484230	RAW	2/5/2024 1400	2/6/24
300484231	FB - RAW	2/5/2024 1400	2/6/24
300484232	FINISHED	2/5/2024 1400	2/6/24
300484233	FB - FINISHED	2/5/2024 1400	2/6/24

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.

<u>Method</u>	<u>CAS#</u>	<u>PFAS Analyte (Acronym)</u>
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-chloroeicosafuoro-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.

Sample ID: 300484230

Customer ID: RAW

Collection Date: 02/05/2024 14:00

PWS ID# / LOC ID#: RAW

Project: FEE-RANDOLPHHOLBROOK-24-000003

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	1.89	0.95	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2306	CSS
PFHxA	307-24-4	2.74	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFHpA	375-85-9	1.64	0.70	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2306	CSS
PFHxS	355-46-4	2.11	0.83	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFOA	335-67-1	4.36	0.76	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFOS	1763-23-1	7.12	1.01	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFNA	375-95-1	0.86	0.72	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2306	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2306	CSS
PFAS6 (MassDEP)		13.59	2.00	2.0	ng/L	1.0				
Surrogates		Results	Recovery Limits		Pass/Fail					
13C-PFHxA (SUR) % Recovery		84.80	70 - 130		Pass					
13C3-HFPO-DA (SUR) % Recovery		82.40	70 - 130		Pass					
13C-PFDA (SUR) % Recovery		80.00	70 - 130		Pass					
d5-NEtFOSAA (SUR) % Recovery		76.90	70 - 130		Pass					

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300484230	PFAS_537	537_EXT-240208-1	250	02/08/2024

Sample ID: 300484231

Customer ID: FB - RAW

Collection Date: 02/05/2024 14:00

PWS ID# / LOC ID#: FB - RAW

Project: FEE-RANDOLPHHOLBROOK-24-000003

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	2/9/24 2320	CSS	
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2320	CSS	
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0					
Surrogates		Results	Recovery Limits		Pass/Fail						
13C-PFHxA (SUR) % Recovery		97.20	70 - 130		Pass						
13C3-HFPO-DA (SUR) % Recovery		93.10	70 - 130		Pass						
13C-PFDA (SUR) % Recovery		86.80	70 - 130		Pass						
d5-NEtFOSAA (SUR) % Recovery		75.70	70 - 130		Pass						

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300484231	PFAS_537	537_EXT-240208-1	250	02/08/2024

Sample ID: 300484232

Customer ID: FINISHED

Collection Date: 02/05/2024 14:00

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000003

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	1.90	0.95	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2335	CSS
PFHxA	307-24-4	2.93	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFHpA	375-85-9	1.76	0.70	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2335	CSS
PFHxS	355-46-4	2.09	0.83	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFOA	335-67-1	4.23	0.76	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFOS	1763-23-1	7.20	1.01	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFNA	375-95-1	0.81	0.72	2.0	ng/L	1.0	J	EPA537.1	2/9/24 2335	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2335	CSS
PFAS6 (MassDEP)		13.52	2.00	2.0	ng/L	1.0				
Surrogates		Results	Recovery Limits		Pass/Fail					
13C-PFHxA (SUR) % Recovery		89.80	70 - 130		Pass					
13C3-HFPO-DA (SUR) % Recovery		89.40	70 - 130		Pass					
13C-PFDA (SUR) % Recovery		79.30	70 - 130		Pass					
d5-NEtFOSAA (SUR) % Recovery		74.40	70 - 130		Pass					

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300484232	PFAS_537	537_EXT-240208-1	250	02/08/2024

Sample ID: 300484233

Customer ID: FB - FINISHED

Collection Date: 02/05/2024 14:00

PWS ID# / LOC ID#: FB - FINISHED

Project: FEE-RANDOLPHHOLBROOK-24-000003

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	2/9/24 2350	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	2/9/24 2350	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				
Surrogates		Results	Recovery Limits		Pass/Fail					
13C-PFHxA (SUR) % Recovery		97.90	70 - 130		Pass					
13C3-HFPO-DA (SUR) % Recovery		83.90	70 - 130		Pass					
13C-PFDA (SUR) % Recovery		85.00	70 - 130		Pass					
d5-NEtFOSAA (SUR) % Recovery		78.20	70 - 130		Pass					

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300484233	PFAS_537	537_EXT-240208-1	250	02/08/2024

Chain of Custody Form

Company Name
 RANDOLPH/HOLBROOK
 JOINT WATER

Company Address
 275 POND ST.
 RANDOLPH, MA
 02368

Sampler
 PAUL HENNESSY

PO Number

RWA LIMS Number	Date Collected	Time Collected	Sample ID / Sample Location
300484230	2/5/24	2PM	① RAW
232	2/5/24	2PM	② FINISHED

Number of Bottles

PFAS PFA5 14
 250mL Plastic w/Tris Hydrochloride & Tris (Hydroxymethyl) Aminomethane 4
 PFAS Poured Field Blank 250mL Plastic w/Tris Hydrochloride & Tris (Hydroxymethyl) Aminomethane 1
 FB-281
 23B

Test Requested, Container, & Preservative

State Sample Collected:
 CT__ NY__ Other(specify)____
 Evidence of Cooling (Circle): **Y** or N
 Cooler Temp °C: **08**
 Container & Preservative Meet Criteria (Circle): Yes/ No

LOT # SLCN1650

LOT # SLCN1665

NOT FOR COMPLIANCE
 MA DEP COMPLIANCE

Relinquished By (Signature):
Paul Hennessy
Date & Time: 2/5/24 2:30PM

Relinquished by (Signature):

Date & Time:

Received By (Signature):

Date & Time: 2/6/24 1510

Date & Time:

Comments:

PFA5 14

Fee - Randolph/Holbrook-24-000003

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: 2/8/2024

Sample ID for LFSM/LFSMD: 300482749

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	102.3	90.8	11.9	ND	[Y]	96.2
PFHxA	98.3	91.2	7.5	ND	[Y]	95.6
HFPO-DA	100.8	85.8	16.0	ND	[Y]	89.3
PFHpA	98.1	92.2	6.2	ND	[Y]	93.2
PFHxS	100.4	96.1	4.3	ND	[Y]	99.6
ADONA	96.8	89.8	7.5	ND	[Y]	93.2
PFOA	97.7	90.2	8.0	ND	[Y]	94.4
PFOS	99.2	86.2	14.0	ND	[Y]	89.0
PFNA	96.3	88.7	8.3	ND	[Y]	93.6
9Cl-PF3ONS	93.1	84.8	9.3	ND	[Y]	91.2
PFDA	85.9	80.7	6.2	ND	[Y]	83.8
PFUnA	93.2	84.6	9.7	ND	[Y]	84.2
11Cl-PF3OUdS	93.3	83.4	11.2	ND	[Y]	84.5
NMeFOSAA	81.2	83.8	3.2	ND	[Y]	83.9
NEtFOSAA	75.4	75.2	0.3	ND	[Y]	76.2
PFDaA	90.2	85.1	5.8	ND	[Y]	86.0
PFTTrDA	89.6	82.1	8.7	ND	[Y]	81.7
PFTA	89.2	84.5	5.5	ND	[Y]	83.9

Surrogate %Recovery

¹³ C ₂ -PFHxA	¹³ C ₃ -HFPO-DA	¹³ C ₂ -PFDA	d ₅ -NEtFOSAA	
96.10	91.40	81.80	79.00	LFSM
93.80	90.90	82.30	78.00	LFSMD
87.20	79.40	79.70	73.00	LRB
99.90	93.70	87.60	84.70	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

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