

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

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Randolph, MA 02368

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ANALYTICAL REPORT

Project: FEE-RANDOLPHHOLBROOK-24-000006

Report Date: 5/23/2024

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
300524868	Raw	5/6/2024 1000	5/7/24
300524869	Field Blank - Raw	5/6/2024 1000	5/7/24
300524870	Finished	5/6/2024 1000	5/7/24
300524871	Field Blank - Finished	5/6/2024 1000	5/7/24

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-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.

Sample ID: 300524868

Customer ID: Raw

Collection Date: 05/06/2024 10:00

PWS ID# / LOC ID#: Raw

Project: FEE-RANDOLPHHOLBROOK-24-000006

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.26	0.95	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFHxA	307-24-4	2.96	0.75	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFHpA	375-85-9	1.64	0.70	2.0	ng/L	1.0	J	EPA537.1	5/10/24 2339	CSS
PFHxS	355-46-4	1.85	0.83	2.0	ng/L	1.0	J	EPA537.1	5/10/24 2339	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFOA	335-67-1	4.59	0.76	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFOS	1763-23-1	6.94	1.01	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFNA	375-95-1	0.87	0.72	2.0	ng/L	1.0	J	EPA537.1	5/10/24 2339	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/10/24 2339	CSS
PFAS6 (MassDEP)		11.53	2.00	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		95.60		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		92.00		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		98.10		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
300524868	PFAS_537	537_EXT-240509-1	250	05/09/2024

Sample ID: 300524869

Customer ID: Field Blank - Raw

Collection Date: 05/06/2024 10:00

PWS ID# / LOC ID#: Field Blank - Raw

Project: FEE-RANDOLPHHOLBROOK-24-000006

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	5/10/24 2355	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFTTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/10/24 2355	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				
Surrogates		Results	Recovery Limits		Pass/Fail					
13C-PFHxA (SUR) % Recovery		92.30	70 - 130		Pass					
13C3-HFPO-DA (SUR) % Recovery		82.20	70 - 130		Pass					
13C-PFDA (SUR) % Recovery		89.90	70 - 130		Pass					
d5-NEtFOSAA (SUR) % Recovery		82.80	70 - 130		Pass					

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300524869	PFAS_537	537_EXT-240509-1	250	05/09/2024

Sample ID: 300524870

Customer ID: Finished

Collection Date: 05/06/2024 10:00

PWS ID# / LOC ID#: 4244001/10296

Project: FEE-RANDOLPHHOLBROOK-24-000006

Analyte	CAS#	Results	MDL	RL	Units	Dilution	Qualifier	Method	Date Time/ Analyzed	Analyst
PFBS	375-73-5	2.10	0.95	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFHxA	307-24-4	2.68	0.75	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFHpA	375-85-9	1.73	0.70	2.0	ng/L	1.0	J	EPA537.1	5/11/24 0010	CSS
PFHxS	355-46-4	1.75	0.83	2.0	ng/L	1.0	J	EPA537.1	5/11/24 0010	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFOA	335-67-1	4.26	0.76	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFOS	1763-23-1	7.83	1.01	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFNA	375-95-1	0.83	0.72	2.0	ng/L	1.0	J	EPA537.1	5/11/24 0010	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/11/24 0010	CSS
PFAS6 (MassDEP)		12.09	2.00	2.0	ng/L	1.0				
Surrogates		Results		Recovery Limits		Pass/Fail				
13C-PFHxA (SUR) % Recovery		91.80		70 - 130		Pass				
13C3-HFPO-DA (SUR) % Recovery		93.00		70 - 130		Pass				
13C-PFDA (SUR) % Recovery		89.10		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
300524870	PFAS_537	537_EXT-240509-1	250	05/09/2024

Sample ID: 300524871

Customer ID: Field Blank - Finished

Collection Date: 05/06/2024 10:00

PWS ID# / LOC ID#: Field Blank - Finished

Project: FEE-RANDOLPHHOLBROOK-24-000006

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	5/11/24 0026	CSS
PFHxA	307-24-4	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
HFPO-DA	13252-13-6	ND	1.14	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFHpA	375-85-9	ND	0.70	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFHxS	355-46-4	ND	0.83	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
ADONA	919005-14-4	ND	0.63	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFOA	335-67-1	ND	0.76	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFOS	1763-23-1	ND	1.01	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFNA	375-95-1	ND	0.72	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
9CI-PF3ONS	756426-58-1	ND	0.84	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFDA	335-76-2	ND	0.75	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFUnA	2058-94-8	ND	0.94	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
11CI-PF3OUdS	763051-92-9	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
NMeFOSAA	2355-31-9	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
NEtFOSAA	2991-50-6	ND	1.15	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFDoA	307-55-1	ND	0.90	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFTrDA	72629-94-8	ND	0.93	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFTA	376-06-7	ND	1.04	2.0	ng/L	1.0		EPA537.1	5/11/24 0026	CSS
PFAS6 (MassDEP)		ND	2.00	2.0	ng/L	1.0				
Surrogates		Results	Recovery Limits		Pass/Fail					
13C-PFHxA (SUR) % Recovery		89.60	70 - 130		Pass					
13C3-HFPO-DA (SUR) % Recovery		78.90	70 - 130		Pass					
13C-PFDA (SUR) % Recovery		84.90	70 - 130		Pass					
d5-NEtFOSAA (SUR) % Recovery		78.10	70 - 130		Pass					

Sample Extraction Data:

Lab Number (Field ID)	Prep Method	Batch	Final (mL)	Date
300524871	PFAS_537	537_EXT-240509-1	250	05/09/2024

Chain of Custody Form

Company Name RANDOLPH/HULLBROOK JOINT WATER		Company Address 275 POND ST. RANDOLPH, MA 01268	
Sampler PAUL HENNESSY		PO Number	
RWA LIMS Number 300524868 870	Date Collected 5/6/24 5/6/24	Time Collected 10 AM 10 AM	Sample ID / Sample Location ① RAW ② FINISHED
Number of Bottles 5		Test Requested, Container, & Preservative	
PFAS PFAS 14 250mL Plastic w/Tris Hydrochloride & Tris (Hydroxymethyl) Aminomethane		4	1
PFAS PFAS 14 250mL Plastic w/Tris Hydrochloride & Tris (Hydroxymethyl) Aminomethane		4	1
Field Blank # 300524869 871		NOT FOR COMPLIANCE MA DEP COMPLIANCE	
LOT # SLCN1650 LOT # SLCN1665		Evidence of Cooling (Circle): <input checked="" type="radio"/> or N Cooler Temp °C: 0.7 Container & Preservative Meet Criteria (Circle): <input checked="" type="radio"/> Yes No	
State Sample Collected: CT ___ NY ___ Other (specify) ___		Test Requested, Container, & Preservative	

Relinquished By (Signature): *[Signature]*
 Date & Time: 5/6/24 10:15 AM
 Relinquished by (Signature): Fed Ex
 Date & Time: 5/7/24 1130

Comments: PFAS 14
 Fee - Randolph Brook - 24 - 000006

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: 5/9/2024

Sample ID for LFSM/LFSMD: 300524848

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	95.3	88.7	7.2	ND	[Y]	91.5
PFHxA	91.8	88.3	3.9	ND	[Y]	96.3
HFPO-DA	79.6	80.2	0.8	ND	[Y]	93.3
PFHpA	83.8	89.4	6.4	ND	[Y]	91.1
PFHxS	89.8	86.5	3.7	ND	[Y]	104.9
ADONA	78.9	89.5	12.6	ND	[Y]	81.3
PFOA	91.8	90.7	1.2	ND	[Y]	88.9
PFOS	94.0	83.5	11.7	ND	[Y]	92.3
PFNA	90.3	86.1	4.7	ND	[Y]	94.0
9Cl-PF3ONS	84.2	83.2	1.1	ND	[Y]	84.2
PFDA	90.1	87.4	3.1	ND	[Y]	91.0
PFUnA	83.4	83.9	0.6	ND	[Y]	90.9
11Cl-PF3OUdS	97.2	88.8	9.1	ND	[Y]	82.0
NMeFOSAA	77.5	87.8	12.5	ND	[Y]	81.7
NEtFOSAA	82.5	82.2	0.4	ND	[Y]	76.8
PFDoA	89.7	83.8	6.8	ND	[Y]	93.0
PFTTrDA	88.6	82.5	7.1	ND	[Y]	87.0
PFTA	88.9	84.0	5.6	ND	[Y]	96.1

Surrogate %Recovery

¹³ C ₂ -PFHxA	¹³ C ₃ -HFPO-DA	¹³ C ₂ -PFDA	^d ₅ -NEtFOSAA	
94.90	85.00	93.70	89.10	LFSM
89.30	79.10	85.00	80.30	LFSMD
97.50	90.50	94.60	81.20	LRB
94.10	81.70	87.60	70.50	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