

Laboratory Certification IDs

CT: PH-0411, NH: 2239, NY: 11867, PA: 68-05519, RI: LAO00339, MA: M-CT004

Certified analyte list is available at: www.rwalab.com

Client: Chris Pellitteri
Randolph Public Works
41 South Main St

Randolph, MA 02368

cpellitteri@randolph-ma.gov

ANALYTICAL REPORT

Project: FEE-RANDOLPHPUBLICWORKS_MA-22-000001

Report Date: 9/11/2022

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

SAMPLE SUMMARY

| Sample ID | Customer ID | Collection Date/Time | Receipt Date |
|------------------|--------------------|-----------------------------|---------------------|
| 300221894 | RAW | 7/28/2022 0830 | 7/29/22 |
| 300221895 | BLUEDROP FINISHED | 7/28/2022 0830 | 7/29/22 |
| 300221896 | FIELD BLANK | 7/28/2022 0830 | 7/29/22 |

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 EPA 537.

Method EPA 537 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 | 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)

Sample ID: 300221894

Customer ID: RAW

Collection Date: 07/28/2022 8:30

PWS ID# / LOC ID#:

Project: FEE-RANDOLPHPUBLICWORKS_MA-22-000001

| Analyte | CAS# | Results | MDL | RL | Units | Dilution | Qualifier | Method | Date Time/ Analyzed | Analyst |
|------------------------------|------------|---------|------|------|---------|----------|-----------|-----------------|------------------------|-----------|
| PFBS | 375-73-5 | 3.01 | 0.89 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFHxA | 307-24-4 | 4.13 | 0.68 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFHpA | 375-85-9 | 2.87 | 0.62 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFHxS | 355-46-4 | 2.56 | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFOA | 335-67-1 | 6.36 | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFOS | 1763-23-1 | 9.91 | 0.89 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFNA | 375-95-1 | 1.31 | 0.63 | 2.0 | ng/L | 1.0 | J | EPA537 | 8/11/22 2055 | CSS |
| PFDA | 335-76-2 | ND | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFUnA | 2058-94-8 | ND | 0.91 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| NMeFOSAA | 2355-31-9 | ND | 1.19 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| NEtFOSAA | 2991-50-6 | ND | 1.03 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFDoA | 307-55-1 | ND | 0.83 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFTrDA | 72629-94-8 | ND | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFTA | 376-06-7 | ND | 0.97 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2055 | CSS |
| PFAS6 (MassDEP) | | 21.70 | 2.00 | 2.00 | ng/L | | | | | |
| Surrogates | | | | | Results | | | Recovery Limits | | Pass/Fail |
| 13C-PFHxA (SUR) % Recovery | | | | | 116.91 | | | 70 - 130 | | Pass |
| 13C-PFDA (SUR) % Recovery | | | | | 113.69 | | | 70 - 130 | | Pass |
| d5-NEtFOSAA (SUR) % Recovery | | | | | 112.58 | | | 70 - 130 | | Pass |

Sample Extraction Data:

| Lab Number (Field ID) | Prep Method | Batch | Final (mL) | Date |
|-----------------------|-------------|------------------|------------|------------|
| 300221894 | PFAS_537 | 537_EXT-220805-1 | 250 | 08/05/2022 |

Sample ID: 300221895

Customer ID: BLUEDROP FINISHED

Collection Date: 07/28/2022 8:30

PWS ID# / LOC ID#: 4244003 / 10000

Project: FEE-RANDOLPHPUBLICWORKS_MA-22-000001

| 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 | 8/11/22 2108 | CSS |
| PFHxA | 307-24-4 | ND | 0.68 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFHpA | 375-85-9 | ND | 0.62 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFHxS | 355-46-4 | ND | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFOA | 335-67-1 | ND | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFOS | 1763-23-1 | ND | 0.89 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFNA | 375-95-1 | ND | 0.63 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFDA | 335-76-2 | ND | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFUnA | 2058-94-8 | ND | 0.91 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| NMeFOSAA | 2355-31-9 | ND | 1.19 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| NEtFOSAA | 2991-50-6 | ND | 1.03 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFDoA | 307-55-1 | ND | 0.83 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFTrDA | 72629-94-8 | ND | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFTA | 376-06-7 | ND | 0.97 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2108 | CSS |
| PFAS6 (MassDEP) | | ND | 2.00 | 2.00 | ng/L | | | | | |
| Surrogates | | Results | Recovery Limits | | Pass/Fail | | | | | |
| 13C-PFHxA (SUR) % Recovery | | 89.18 | 70 - 130 | | Pass | | | | | |
| 13C-PFDA (SUR) % Recovery | | 93.14 | 70 - 130 | | Pass | | | | | |
| d5-NEtFOSAA (SUR) % Recovery | | 91.67 | 70 - 130 | | Pass | | | | | |

Sample Extraction Data:

| Lab Number (Field ID) | Prep Method | Batch | Final (mL) | Date |
|-----------------------|-------------|------------------|------------|------------|
| 300221895 | PFAS_537 | 537_EXT-220805-1 | 250 | 08/05/2022 |

Sample ID: 300221896

Customer ID: FIELD BLANK

Collection Date: 07/28/2022 8:30

PWS ID# / LOC ID#:

Project: FEE-RANDOLPHPUBLICWORKS_MA-22-000001

| 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 | 8/11/22 2120 | CSS |
| PFHxA | 307-24-4 | ND | 0.68 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFHpA | 375-85-9 | ND | 0.62 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFHxS | 355-46-4 | ND | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFOA | 335-67-1 | ND | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFOS | 1763-23-1 | ND | 0.89 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFNA | 375-95-1 | ND | 0.63 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFDA | 335-76-2 | ND | 0.72 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFUnA | 2058-94-8 | ND | 0.91 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| NMeFOSAA | 2355-31-9 | ND | 1.19 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| NEtFOSAA | 2991-50-6 | ND | 1.03 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFDoA | 307-55-1 | ND | 0.83 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFTrDA | 72629-94-8 | ND | 0.90 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFTA | 376-06-7 | ND | 0.97 | 2.0 | ng/L | 1.0 | | EPA537 | 8/11/22 2120 | CSS |
| PFAS6 (MassDEP) | | ND | 2.00 | 2.00 | ng/L | | | | | |
| Surrogates | | Results | Recovery Limits | | Pass/Fail | | | | | |
| 13C-PFHxA (SUR) % Recovery | | 96.44 | 70 - 130 | | Pass | | | | | |
| 13C-PFDA (SUR) % Recovery | | 98.82 | 70 - 130 | | Pass | | | | | |
| d5-NEtFOSAA (SUR) % Recovery | | 102.11 | 70 - 130 | | Pass | | | | | |

Sample Extraction Data:

| Lab Number (Field ID) | Prep Method | Batch | Final (mL) | Date |
|-----------------------|-------------|------------------|------------|------------|
| 300221896 | PFAS_537 | 537_EXT-220805-1 | 250 | 08/05/2022 |

Regional Water Authority

Sample Chain of Custody 90 Sargent Dr, New Haven, CT 06511 Client Services Phone: 203-401-6743 Lab Billing Phone: 203-401-2709 Lab Manager Phone: 203-401-2700

| Contact Information | | Sampling Address Info <small>(If different from Contact information)</small> | | Total Number of Bottles | Compliance Reporting (Yes / No) | Analysis/Method Requested | | |
|---|--|---|----------------|------------------------------------|---------------------------------|------------------------------------|----------------|---------------|
| Collected by Name / Initials: | | Date Collected | Time Collected | | | Client ID / Sample site / Loc ID # | FINISHED WATER | PFAS - Sample |
| Name: Randolph Bluecrop Attn: Chris Pennington Street Address: 41 South Main St. City, STATE Zip Code: Randolph MA 02368 Phone: (781) 844-1247 Email: | | PWS ID: 42441003 | | | | | | |
| LIMS Number Sample <small>(FOR RWA USE ONLY)</small> | LIMS Number Field Blank <small>(FOR RWA USE ONLY)</small> | Date Collected | Time Collected | Client ID / Sample site / Loc ID # | Y/N | Y/N | Y/N | Y/N |
| 30021894 | | 7/28/2022 | 08:30 | RANW | Y | N | Y | N |
| 895 | | 7/28/2022 | 08:30 | FINISH | Y | N | Y | N |
| 896 | | | | Field Blank | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| | | | | | Y | N | Y | N |
| Relinquished By (Signature): | | | | | | | | |
| Date & Time: | | | | 7/28/2022 | | | | |
| Received By (Signature): | | | | | | | | |
| Date & Time: | | | | 7/29/2022 12:22 | | | | |
| COMMENT Fee - Randolph Public works - MA - 22-000001 | | | | | | | | |

| For RWA Sample Receipt personnel | | Sample Receipt Comments (Sample Bottle / Preservative Lot Numbers, if applicable) | |
|--|-----|---|--|
| Cooler/Sample Temp °C: | 2°C | Is the condition of the sample(s) acceptable? Yes or No | This Hydro Lot# SLCM 5980 This Amino Lot# 179099 REC Duty Completed 07-20-22 |
| Evidence of Cooling (Circle) Yes or No only required if the date collected = received date | | If no, add comment and report to Client Services. | |

South Central Connecticut Regional Water Authority PFAS QA/QC Summary

Extraction Batch QC for: EPA 537

MA Lab Cert.#: M-CT004

Extraction Batch Date: 8/5/2022

Sample ID for LFSM/LFSMD: 300220412

| Analyte | LFSM %Recovery | LFSMD %Recovery | RPD of LFSM/LFSMD | LRB (MRL is 2) | | LFB 60 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 | 111.1 | 101.1 | 9.2 | ND | [Y] | 112.4 |
| PFHxA | 113.7 | 94.9 | 17.1 | ND | [Y] | 121.3 |
| PFHpA | 121.7 | 103.2 | 16.1 | ND | [Y] | 125.0 |
| PFHxS | 102.8 | 93.0 | 9.8 | ND | [Y] | 129.9 |
| PFOA | 122.3 | 100.4 | 19.1 | ND | [Y] | 121.2 |
| PFOS | 98.4 | 86.8 | 12.1 | ND | [Y] | 116.4 |
| PFNA | 114.8 | 98.6 | 15.0 | ND | [Y] | 122.8 |
| PFDA | 101.3 | 91.8 | 9.8 | ND | [Y] | 120.1 |
| PFUnA | 102.7 | 84.5 | 19.4 | ND | [Y] | 123.7 |
| NMeFOSAA | 107.5 | 84.8 | 23.7 | ND | [Y] | 126.0 |
| NEtFOSAA | 102.6 | 85.0 | 18.8 | ND | [Y] | 128.6 |
| PFDoA | 94.1 | 85.1 | 10.1 | ND | [Y] | 126.5 |
| PFTTrDA | 115.3 | 83.0 | 32.5 * | ND | [Y] | 127.8 |
| PFTA | 102.0 | 87.1 | 15.7 | ND | [Y] | 128.9 |

Surrogate %Recovery

| ¹³ C ₂ -PFHxA | ¹³ C ₂ -PFDA | d ₅ -NEtFOSAA | |
|-------------------------------------|------------------------------------|--------------------------|-------|
| 104.23 | 96.49 | 93.18 | LFSM |
| 97.43 | 85.74 | 78.67 | LFSMD |
| 109.18 | 116.89 | 108.51 | LRB |
| 105.51 | 107.83 | 118.34 | 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.

* Duplicate RPD fails high for PFTTrDA. The LFSM and LFSMD pass all other RPD and all %REC criteria. All Surrogate and Internal Standard pass criteria. The PFTTrDA result is commented on their final report as suspect.

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