



The State of New Hampshire
DEPARTMENT OF ENVIRONMENTAL SERVICES



Robert R. Scott, Commissioner

EMAIL ONLY

April 26, 2019

Michael Houghton
Select Board Chair, Town of Stratham
10 Bunker Hill Avenue
Stratham, NH 03885

Subject: **Stratham** – Stratham Fire Department, 4 Winnicut Road
DES Site #**199507007**, Project #39022

Request for Focused Site Investigation

Dear Mr. Houghton:

The New Hampshire Department of Environmental Services (NHDES) has reviewed the water quality data from a sample collected on March 22, 2019 from the water supply well that services the Fire Department facility and has become aware of the exceedance of the Ambient Groundwater Quality Standard (AGQS) included in Env-Or 600 Contaminated Site Management rules for per- and polyfluoroalkyl substances (PFAS) in groundwater.

Specifically, the concentrations of the NHDES-regulated PFAS perfluorooctanoic acid (PFOA, 33.4 nanograms per liter [ng/L]) and perfluorooctane sulfonic acid (PFOS, 149 ng/L) were found to exceed the current AGQS of 70 nanograms per liter (ng/L), which applies to the concentrations of PFOA and PFOS individually, or as a sum of their two concentrations combined (i.e., "PFOA+PFOS"). The PFOA+PFOS combined concentration in groundwater from this well was 182.4 ng/L. Refer to the attached Figure and Table that summarizes the water quality samples collected to date in the immediate area. The laboratory data packages for the samples depicted in the table are also attached for your reference. Sampling of the Fire Department's water supply well was initially requested by NHDES based on our preliminary investigation activities associated with identifying the source and spatial extent of impacted water supply wells when we became aware of data results from a nearby and apparent downgradient community water supply well located at 149-151 Portsmouth Avenue that had a combined concentration of PFOS+PFOA of 71.2 ng/l.

In response to these data, and as an interim measure, we understand that the Town has arranged for an alternative water supply (bottled water) to be provided to properties that have known AGQS violations. NHDES appreciates your rapid response to ensuring safe drinking water is available. NHDES is currently conducting additional sampling of water supply wells in the immediate area that may be at risk of having PFAS contamination. Those results will be shared with the Town as soon as they are available.

www.des.nh.gov

PO Box 95, 29 Hazen Drive, Concord, NH 03302-0095

Telephone: (603) 271-2908 Fax: (603) 271-2181 TDD Access: Relay NH 1-800-735-2964

Based on the information available to date, a discharge of regulated contaminants appears to have occurred at or in the vicinity of the Fire Department property; however, the source and the location of release(s) of PFAS has not yet been confirmed. We do know that certain formulations of Class B firefighting foams, which are typically used on flammable liquid fires and spills, may contain PFAS that can contaminate groundwater and make it unsafe to drink even if only very small quantities are released to the environment. It is anticipated that Class B Firefighting Foam would have been used at this property while historically being operated as a Fire Department. Class B firefighting foams may be released into the environment through a variety of practices and mechanisms during routine non-fire firefighting activities including, but not limited to, the following:

- releases of foam concentrate during storage, transfer or equipment calibration;
- discharge of foam solution for apparatus testing and/or cleaning (i.e. washing/drying of hoses);
- discharge of foam solution for fire training; and/or
- leaks from foam distribution equipment between storage and pumping locations.

We are also aware that historically the fire department maintained floor drains and a dry well where discharges of interior truck/hose wash water potentially containing PFAS may have entered the subsurface.

In consideration of the information above, NHDES is requiring the Town, as a potentially responsible party, to conduct a Focused Site Investigation to evaluate the source of PFAS contamination in groundwater at the Fire Station. As a first step to evaluate the potential source(s) of contamination, NHDES suggests that you and your consultant collect and evaluate information regarding the on-site well (construction information, pump intake depth, any recent pump repairs/installations, etc. if known), physical location of Site utilities including the water supply well, septic system, storm water management systems, and other pertinent site features etc. Additional information of interest includes basic history of site operations, historical and current storage and use of any PFAS containing materials, hazardous materials and/or petroleum products, and the location of any storage areas of such onsite. Information considered should include Fire Department practices and designated areas for storage, handling and use of PFAS containing products and any historical knowledge of releases / spills of Class B Foam concentrate or solutions. This information in total should then be used to: (1) identify potential PFAS release mechanism and discharge area(s); and (2) identify and guide any additional investigation actions under Env-Or 600 Contaminated Site Management rules that may be warranted.

Please prepare a Work Plan for a Focused Site Investigation that includes a schedule for implementation, and provide the Work Plan to NHDES for our review by June 7, 2019. NHDES is available to work with you and your consultant to define an appropriate scope of work and adjust the schedule if appropriate.

If water supply samples collected by NHDES or by the Town exhibit PFOA and/or PFOS concentrations that exceed AGQS, then we ask/request that the Town provide bottled potable water immediately to those locations as an interim measure. Subsequently, if it is concluded that the Fire Department site is the source of PFAS contamination, the Town will need to provide a longer term alternative water supply solution such as a connection to a public water supply or

installation (including maintenance and monitoring of) operate, and maintain point-of-entry (POE) treatment systems.

Please note that the Focused Site Investigation must be completed by, or under the direction of, a professional engineer or professional geologist licensed under RSA 310-A, and the report shall bear the seal of the professional responsible for the work. A list of companies that conduct Site Investigations is available at: http://www2.des.state.nh.us/OneStop/ORCB_Web_Reports_Menu.aspx. NHDES does not pre-qualify consultants on this list; therefore, NHDES strongly recommends that you review a firm's experience and qualifications prior to retaining them to conduct the required work.

NHDES will provide guidance on the need for further investigation, remediation, or closure of this project after we have reviewed the Focused Site Investigation report.

Should you have any questions about the Focused Site Investigation discussed herein, please do not hesitate to contact me directly at NHDES' Waste Management Division.

Sincerely,



Amy T. Doherty, P.G.
State Sites Supervisor
Hazardous Waste Remediation Bureau
Tel: (603) 271-6542
Fax: (603) 271-2181
Email: amy.doherty@des.nh.gov

Attns: Table – Water Quality Summary
Figure
Laboratory Data Packages

ec: Michael Wimsatt, P.G., Director, WMD
Karlee Kenison, P.G., Administrator, HWRB
David Moore, Town Administrator, Town of Stratham
Matt Larrabee, Fire Chief, Town of Stratham
Attention Health Officer, Town of Stratham

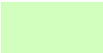
Water Quality Summary
Stratham Fire Department
Stratham, New Hampshire

PFAS Compounds	AGQS (ng/L)	149/151 Portsmouth Ave 3/5/2019	142 Portsmouth Ave Pipers Landing 3/22/2019	CL Stratham Green Well#1	CL Stratham Green Well#2 Stratham Green Condominium Association 3/22/2019	CL Stratham Green Well #3	157 Portsmouth Ave Stratham Central Condos 3/22/2019	4 Winnicutt Rd Stratham Fire Dept 3/22/2019
PERFLUOROBUTANOIC ACID - PFBA	---	2.48	<1.96	3.58	4.83	5.06	16.6	6.72
PERFLUOROPENTANOIC ACID - PFPEA	---	4.62	3.02	3.39	<1.98	2.35	59.9	20.1
PERFLUOROBUTANE SULFONIC ACID - PFBS	---	6.36	5.81	3.72	3.73	4	15.2	4.61
PERFLUOROHEXANOIC ACID - PFHXA	---	12.8	13.8	5.59	3.83	2.97	52.7	21.3
PERFLUOROHEPTANOIC ACID - PFHPA	---	3	2.92	3.21	2.26	<2.02	16.3	11.1
PERFLUOROHEXANE SULFONIC ACID - PFHXS	---	63.3	63.3	12.8	14	21.9	222	57.6
6:2 FLUOROTELOMER SULFONIC ACID - 6:2 FTSA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
PERFLUOROOCTANOIC ACID - PFOA	70	31.4	36.9	17.9	12.4	13.2	84.1	33.4
PERFLUOROHEPTANE SULFONIC ACID - PFHPS	---	n/a	<1.96	<1.94	<1.98	<2.02	4.23	<2.00
PERFLUORONONANOIC ACID - PFNA	---	<1.74	<1.96	<1.94	<1.98	<2.02	<1.94	2.11
PERFLUOROOCTANESULFONAMIDE - FOSA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
PERFLUOROOCTANE SULFONIC ACID - PFOS	70	39.8	32	28.7	14.3	19.1	206	149
PERFLUORODECANOIC ACID - PFDA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
8:2 FLUOROTELOMER SULFONIC ACID - 8:2 FTSA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
N-METHYL PERFLUOROOCTANE SULFONAMIDO ACETIC ACID - NMEFOSAA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
N-ETHYL PERFLUOROOCTANE SULFONAMIDO ACETIC ACID - NETFOSAA	---	n/a	<1.96	<1.94	<1.98	<2.02	2.98	<2.00
PERFLUOROUNDECANOIC ACID - PFUNA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
PERFLUORODECANE SULFONIC ACID - PFDS	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
PERFLUORODODECANOIC ACID - PFDOA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
N-METHYL PERFLUOROOCTANE SULFONAMIDE - NMEFOSA	---	n/a	<9.79	<9.71	<9.91	<10.1	<9.71	<10.0
PERFLUOROTRIDECANOIC ACID - PFTRA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
PERFLUOROTETRADECANOIC ACID - PFTEA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
N-ETHYL PERFLUOROOCTANE SULFONAMIDE - NETFOSA	---	n/a	<9.79	<9.71	<9.91	<10.1	<9.71	<10.0
PERFLUOROHEXADECANOIC ACID - PFHXDA	---	n/a	<1.96	<1.94	<1.98	<2.02	<1.94	<2.00
N-METHYL PERFLUOROOCTANESULFONAMIDO ETHANOL - NMEFOSE	---	n/a	<9.79	<9.71	<9.91	<10.1	<9.71	<10.0
N-ETHYL PERFLUOROOCTANESULFONAMIDO ETHANOL - ETFOSE	---	n/a	<9.79	<9.71	<9.91	<10.1	<9.71	<10.0
PFOA+PFOS Total	70	71.2	68.9	46.6	26.7	32.3	290.1	182.4
Total PFAS	---	163.76	157.75	78.89	55.35	68.58	680.01	305.94

Notes:
'ng/L' - nanograms per liter
'---' - no current standard
AGQS' - Ambient Groundwater Quality Standard included in Env-Or 600 Contamianted Site Management rules
'<' - concentration not detected above the applicable laboratory reporting limit
'n/a' - not tested for

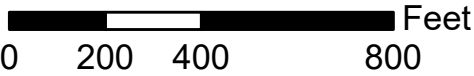
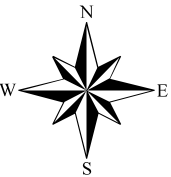
Stratham NH
April 16, 2019

The data presented is under constant revision as new sites or facilities are added. The data may not contain all of the potential or existing sites or facilities. NHDES is not responsible for the use or interpretation of this information. Not intended for legal purposes.

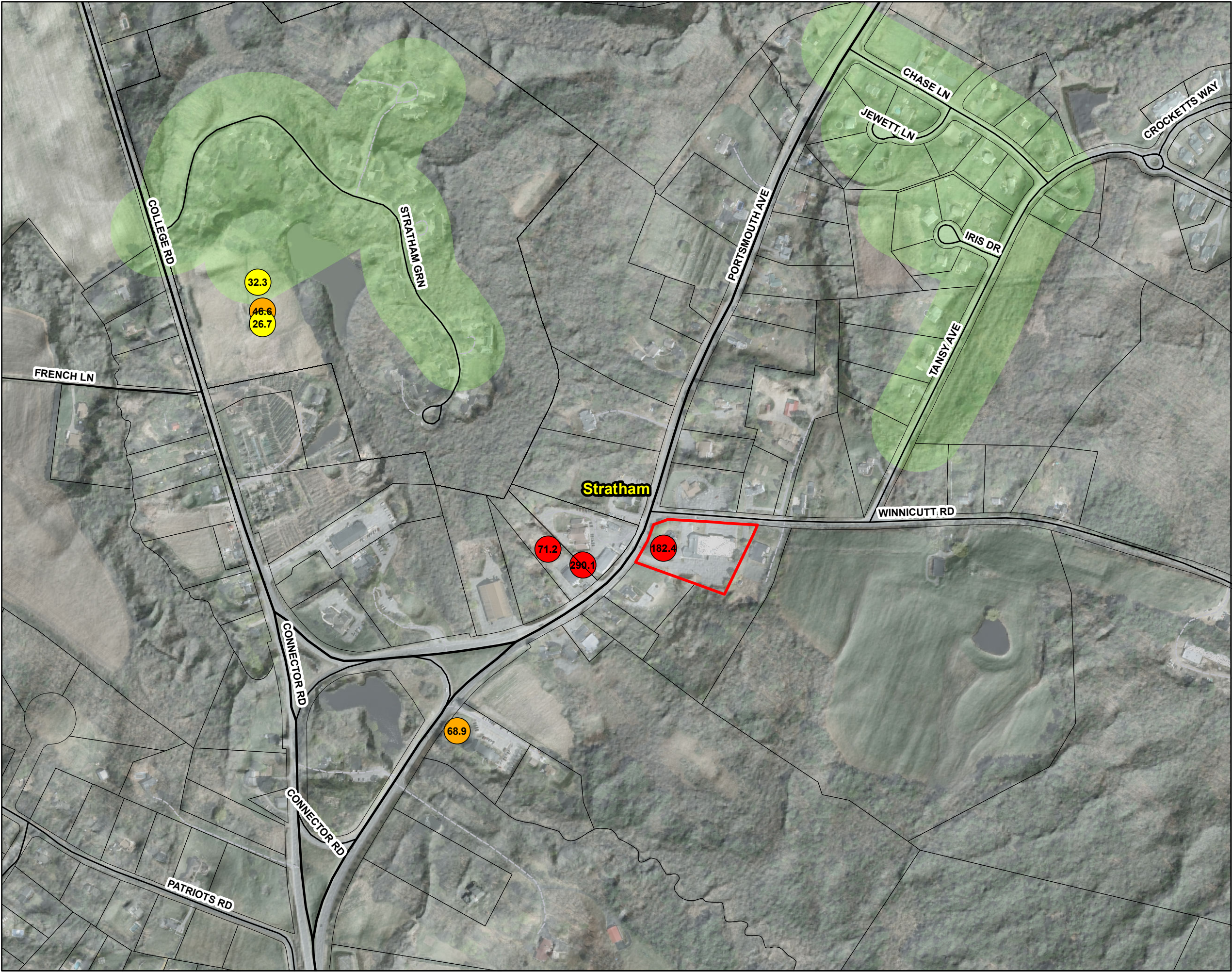
-  Water Distribution
-  Stratham FD

PFOA+PFOS

-  ≥400
-  70 - <400
-  45 - <70
-  10 - <45
-  < 10



1 in = 400 feet





GRANITE STATE

ANALYTICAL SERVICES, LLC.

22 Manchester Road, Unit 2, Derry, NH 03038

Phone: (800) 699-9920 | (603) 432-3044

website: www.granitestateanalytical.com

DRINKING WATER COMPLIANCE REPORT

DATE PRINTED: 03/15/2019 CHEMICAL RESULTS FOR THE 1st QUARTER 2019

SAMPLE ID#: 1903-00270-001

LAB ID#: 2064

SAMPLED BY: Sheing, Curt
by GSA QCM App. I

SAMPLE CATEGORY: Treatment Evaluation

SYSTEM NAME: 149/151 Portsmouth Ave

SYSTEM TOWN: Stratham

SAMPLE AGENT #: 603-432-3044

SAMPLE LOCATION: 501 DEP Tap/Basement Pump
Room/After Treatment

BAR CODE:

EPA ID #: 2236190

DATE & TIME COLLECTED: 03/05/2019 11:10AM

DATE & TIME RECEIVED: 03/05/2019 1:08PM

WATER SYS TYPE:

RECEIPT TEMP: ON ICE 5.5° CELSIUS

CLIENT JOB #

Legend	
Passes	✓
Fails EPA Primary	✗
Fails EPA Secondary	⚠
Fails State Guideline	✗
Attention	⚠

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date & Time Analyzed
Date Extracted	-					No Limit	EPA 537	2064	03/12/19 3:37PM
Perfluorobutanesulfonic Acid (PFBS)	6.36	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorobutanoic Acid (PFBA)	2.48	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluoroheptanoic Acid (PFHpA)	3.00	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorohexanesulfonic Acid (PFHxS)	63.3	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorohexanoic Acid (PFHxA)	12.8	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorononanoic Acid (PFNA)	<1.74	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorooctanesulfonic Acid (PFOS)	39.8	ng/L	✓		Sub Report	70 ng/L	EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluorooctanoic Acid (PFOA)	31.4	ng/L	✓		Sub Report	70 ng/L	EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Perfluoropentanoic Acid (PFPeA)	4.62	ng/L			Sub Report		EPA 537 Isotope Dilution	2064	03/13/19 3:16PM
Total PFOA PFOS	71.2	ng/L	✗		Sub Report	70 ng/L	N/A Calculation	2064	03/13/19 3:16PM

The results presented in this report relate to the samples listed above in the condition in which they were received.

RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

* NELAP Accredited Analysis



Donald A. D'Anjou

Donald A. D'Anjou, Ph. D.
Laboratory Director



ANALYTICAL REPORT

Lab Number:	L1908562
Client:	Granite State Analytical Services 22 Manchester Rd Unit 2 Derry, NH 03038
ATTN:	Erin Shaw
Phone:	(603) 432-3044
Project Name:	Not Specified
Project Number:	1902-00270
Report Date:	03/14/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: Not Specified
Project Number: 1902-00270

Lab Number: L1908562
Report Date: 03/14/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1908562-01	1903-00270-001	DW	Not Specified	03/05/19 11:10	03/06/19
L1908562-02	1903-00270-001 FB	DW	Not Specified	03/05/19 00:00	03/06/19

Project Name: Not Specified
Project Number: 1902-00270

Lab Number: L1908562
Report Date: 03/14/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: Not Specified
Project Number: 1902-00270

Lab Number: L1908562
Report Date: 03/14/19

Case Narrative (continued)

Perfluorinated Alkyl Acids by Isotope Dilution

Please note that the Isotopically labelled Extracted Internal Standards that are part of sample extraction for our Isotope Dilution method are found under the "Surrogate" section of the report. These labelled analogs are utilized for the Isotope Dilution method of target analyte quantitation.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:



Elizabeth Porta

Title: Technical Director/Representative

Date: 03/14/19

ORGANICS

SEMIVOLATILES

Project Name: Not Specified**Lab Number:** L1908562**Project Number:** 1902-00270**Report Date:** 03/14/19**SAMPLE RESULTS**

Lab ID: L1908562-01
 Client ID: 1903-00270-001
 Sample Location: Not Specified

Date Collected: 03/05/19 11:10
 Date Received: 03/06/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 122,537(M)
 Analytical Date: 03/13/19 15:16
 Analyst: JW

Extraction Method: EPA 537
 Extraction Date: 03/12/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	2.48		ng/l	1.74	--	1
Perfluoropentanoic Acid (PFPeA)	4.62		ng/l	1.74	--	1
Perfluorobutanesulfonic Acid (PFBS)	6.36		ng/l	1.74	--	1
Perfluorohexanoic Acid (PFHxA)	12.8		ng/l	1.74	--	1
Perfluoroheptanoic Acid (PFHpA)	3.00		ng/l	1.74	--	1
Perfluorohexanesulfonic Acid (PFHxS)	63.3		ng/l	1.74	--	1
Perfluorooctanoic Acid (PFOA)	31.4		ng/l	1.74	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.74	--	1
Perfluorooctanesulfonic Acid (PFOS)	39.8		ng/l	1.74	--	1
PFOA/PFOS, Total	71.2		ng/l	1.74	--	1
PFAS, Total (5)	138		ng/l	1.74	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	108		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	102		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	100		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	98		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	98		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		42-146

Project Name: Not Specified**Lab Number:** L1908562**Project Number:** 1902-00270**Report Date:** 03/14/19**SAMPLE RESULTS**

Lab ID: L1908562-02
 Client ID: 1903-00270-001 FB
 Sample Location: Not Specified

Date Collected: 03/05/19 00:00
 Date Received: 03/06/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 122,537(M)
 Analytical Date: 03/13/19 15:49
 Analyst: JW

Extraction Method: EPA 537
 Extraction Date: 03/12/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.99	--	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	1.99	--	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.99	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.99	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.99	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.99	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.99	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.99	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.99	--	1
PFOA/PFOS, Total	ND		ng/l	1.99	--	1
PFAS, Total (5)	ND		ng/l	1.99	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	99		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	100		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	108		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	100		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	102		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	100		42-146

Project Name: Not Specified

Lab Number: L1908562

Project Number: 1902-00270

Report Date: 03/14/19

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537(M)
 Analytical Date: 03/13/19 17:12
 Analyst: JW

Extraction Method: EPA 537
 Extraction Date: 03/12/19 15:37

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-02 Batch: WG1214853-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	--
Perfluoropentanoic Acid (PFPeA)	ND		ng/l	2.00	--
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--
PFAS, Total (5)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	101		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	103		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	102		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	104		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	102		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	107		42-146

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified
Project Number: 1902-00270

Lab Number: L1908562
Report Date: 03/14/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-02 Batch: WG1214853-2 WG1214853-3								
Perfluorobutanoic Acid (PFBA)	102		98		67-148	4		30
Perfluoropentanoic Acid (PFPeA)	97		93		63-161	4		30
Perfluorobutanesulfonic Acid (PFBS)	93		91		65-157	2		30
Perfluorohexanoic Acid (PFHxA)	104		100		69-168	4		30
Perfluoroheptanoic Acid (PFHpA)	95		90		58-159	5		30
Perfluorohexanesulfonic Acid (PFHxS)	98		100		69-177	2		30
Perfluorooctanoic Acid (PFOA)	97		92		63-159	5		30
Perfluorononanoic Acid (PFNA)	101		97		68-171	4		30
Perfluorooctanesulfonic Acid (PFOS)	85		82		52-151	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	100		104		2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	101		105		16-173
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	109		109		31-159
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	104		104		21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	102		104		30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	107		103		47-153
Perfluoro[13C8]Octanoic Acid (M8PFOA)	101		101		36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	100		100		34-146
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	106		104		42-146

Matrix Spike Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 1902-00270

Lab Number: L1908562

Report Date: 03/14/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG1214853-4 QC Sample: L1908562-01 Client ID: 1903-00270-001												
Perfluorobutanoic Acid (PFBA)	2.48	36.4	40.1	103		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	4.62	36.4	40.5	99		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	6.36	36.4	39.1	90		-	-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	12.8	36.4	51.3	106		-	-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	3.00	36.4	38.0	96		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	63.3	36.4	106	117		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	31.4	36.4	66.7	97		-	-		63-159	-		30
Perfluorononanoic Acid (PFNA)	ND	36.4	38.0	105		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	39.8	36.4	71.3	87		-	-		52-151	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	96				21-145
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	94				30-139
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103				47-153
Perfluoro[13C4]Butanoic Acid (MPFBA)	89				2-156
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	107				16-173
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	103				42-146
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93				36-149
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94				34-146
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	110				31-159

Project Name: Not Specified**Lab Number:** L1908562**Project Number:** 1902-00270**Report Date:** 03/14/19**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

Cooler Information**Cooler** **Custody Seal**

A Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1908562-01A	2 Plastic/1 Plastic/1 H2O Plastic	A	NA		2.2	Y	Absent		A2-NH-537-ISOTOPE(14)
L1908562-01B	2 Plastic/1 Plastic/1 H2O Plastic	A	NA		2.2	Y	Absent		A2-NH-537-ISOTOPE(14)
L1908562-02A	2 Plastic/1 Plastic/1 H2O Plastic	A	NA		2.2	Y	Absent		A2-NH-537-ISOTOPE(14)

Project Name: Not Specified
Project Number: 1902-00270

Lab Number: L1908562
Report Date: 03/14/19

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
	Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the

Report Format: Data Usability Report



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original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- ND** - Not detected at the reporting limit (RL) for the sample.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.

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REFERENCES

- 122 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Alpha Analytical, Inc.

ID No.:17873

Facility: **Company-wide**

Revision 12

Department: **Quality Assurance**

Published Date: 10/9/2018 4:58:19 PM

Title: **Certificate/Approval Program Summary**

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility**EPA 624/624.1:** m/p-xylene, o-xylene**EPA 8260C:** NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.**EPA 8270D:** NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.**EPA 6860:** SCM: Perchlorate**SM4500:** NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO₂, NO₃.**Mansfield Facility****SM 2540D:** TSS**EPA 8082A:** NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.**Biological Tissue Matrix:** EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:**Drinking Water****EPA 300.0:** Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,****EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B****EPA 332:** Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.****Non-Potable Water****SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH:** Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.**EPA 624.1:** Volatile Halocarbons & Aromatics,**EPA 608.3:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs**EPA 625.1:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.****Mansfield Facility:****Drinking Water****EPA 200.7:** Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.****EPA 522.****Non-Potable Water****EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.**EPA 245.1 Hg.****SM2340B**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



April 15, 2019

Vista Work Order No. 1900522

Mr. Brandon Kernen
New Hampshire DES
29 Hazen Road
Concord, NH 03302

Dear Mr. Kernen,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on March 26, 2019 under your Project Name 'General PWS'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1900522**Case Narrative****Sample Condition on Receipt:**

Five aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:**PFAS Isotope Dilution Method**

The samples were extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537). The results for PFHxS, PFOA, PFOS, MeFOSAA, and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1900522-01	2236100001	22-Mar-19 10:08	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1900522-02	2232050001	22-Mar-19 10:40	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1900522-03	2232050002	22-Mar-19 10:55	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1900522-04	2232050003	22-Mar-19 10:35	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1900522-05	2236130002	22-Mar-19 13:05	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank					PFAS Isotope Dilution Method				
Client Data					Laboratory Data				
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	B9D0034-BLK1	Column:	BEH C18		
Project:	General PWS								
Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFPeA	2706-90-3	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFBS	375-73-5	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxA	307-24-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHpA	375-85-9	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxS	355-46-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
6:2 FTS	27619-97-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOA	335-67-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHpS	375-92-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFNA	375-95-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOSA	754-91-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOS	1763-23-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDA	335-76-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
8:2 FTS	39108-34-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSAA	2355-31-9	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSAA	2991-50-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFUnA	2058-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDS	335-77-3	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDoA	307-55-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSA	31506-32-8	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFTTrDA	72629-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFTeDA	376-06-7	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSA	4151-50-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxDA	67905-19-5	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSE	24448-09-7	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSE	1691-99-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	104	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C3-PFPeA	IS	98.2	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C3-PFBS	IS	101	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-PFHxA	IS	97.2	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C4-PFHpA	IS	99.6	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
18O2-PFHxS	IS	102	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-6:2 FTS	IS	101	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-PFOA	IS	94.6	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C5-PFNA	IS	92.2	50 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C8-PFOSA	IS	53.0	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C8-PFOS	IS	99.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1

Sample ID: Method Blank					PFAS Isotope Dilution Method					
Client Data Name: New Hampshire DES Project: General PWS					Laboratory Data Lab Sample: B9D0034-BLK1 Column: BEH C18					
Matrix: Aqueous										
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFDA	IS	86.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-8:2 FTS	IS	95.6	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d3-MeFOSAA	IS	82.8	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d5-EtFOSAA	IS	88.5	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFUnA	IS	85.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFDoA	IS	81.6	30 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d3-MeFOSA	IS	19.6	10 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFTeDA	IS	89.8	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d5-EtFOSA	IS	22.6	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFHxDA	IS	88.2	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d7-MeFOSE	IS	45.1	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d9-EtFOSE	IS	42.3	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR						PFAS Isotope Dilution Method					
Client Data						Laboratory Data					
Name:	New Hampshire DES	Matrix:	Aqueous			Lab Sample:	B9D0034-BS1	Column:	BEH C18		
Project:	General PWS										
Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	42.7	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFPeA	2706-90-3	41.4	40.0	104	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFBS	375-73-5	42.8	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxA	307-24-4	42.6	40.0	106	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHpA	375-85-9	42.0	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxS	355-46-4	42.2	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
6:2 FTS	27619-97-2	43.4	40.0	108	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOA	335-67-1	42.7	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHpS	375-92-8	43.5	40.0	109	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFNA	375-95-1	44.3	40.0	111	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOSA	754-91-6	45.2	40.0	113	70 - 130	Q	B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOS	1763-23-1	42.2	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDA	335-76-2	46.1	40.0	115	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
8:2 FTS	39108-34-4	46.4	40.0	116	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSAA	2355-31-9	41.2	40.0	103	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSAA	2991-50-6	43.1	40.0	108	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFUnA	2058-94-8	42.0	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDS	335-77-3	38.3	40.0	95.8	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDoA	307-55-1	40.0	40.0	100	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSA	31506-32-8	235	200	117	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFTTrDA	72629-94-8	42.3	40.0	106	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFTeDA	376-06-7	44.9	40.0	112	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSA	4151-50-2	247	200	123	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxDA	67905-19-5	42.8	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSE	24448-09-7	238	200	119	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSE	1691-99-2	229	200	114	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
Labeled Standards		Type		% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA		IS		99.2	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C3-PFPeA		IS		99.6	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C3-PFBS		IS		96.9	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFHxA		IS		104	70- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C4-PFHpA		IS		103	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
18O2-PFHxS		IS		98.6	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-6:2 FTS		IS		100	40- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFOA		IS		102	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1

Sample ID: OPR					PFAS Isotope Dilution Method				
Client Data Name: New Hampshire DES Project: General PWS Matrix: Aqueous					Laboratory Data Lab Sample: B9D0034-BS1 Column: BEH C18				
Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	88.4	50- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C8-PFOSA	IS	48.0	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C8-PFOS	IS	98.0	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFDA	IS	84.4	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-8:2 FTS	IS	90.4	40- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d3-MeFOSAA	IS	85.2	50- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d5-EtFOSAA	IS	82.5	50- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFUnA	IS	88.3	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFDoA	IS	90.6	30- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d3-MeFOSA	IS	22.2	10- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFTeDA	IS	85.0	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d5-EtFOSA	IS	25.6	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFHxDA	IS	84.6	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d7-MeFOSE	IS	41.5	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d9-EtFOSE	IS	42.0	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1

Sample ID: 2236100001
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900522-01	Column:	BEH C18
Project:	General PWS	Date Collected:	22-Mar-19 10:08	Date Received:	26-Mar-19 09:24		
Location:	142 Portsmouth Ave						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFPeA	2706-90-3	3.02	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFBS	375-73-5	5.81	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFHxA	307-24-4	13.8	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFHpA	375-85-9	2.92	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFHxS	355-46-4	63.3	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
6:2 FTS	27619-97-2	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFOA	335-67-1	36.9	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFHpS	375-92-8	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFNA	375-95-1	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFOSA	754-91-6	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFOS	1763-23-1	32.0	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFDA	335-76-2	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
8:2 FTS	39108-34-4	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
MeFOSAA	2355-31-9	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
EtFOSAA	2991-50-6	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFUnA	2058-94-8	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFDS	335-77-3	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFDaA	307-55-1	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
MeFOSA	31506-32-8	ND	9.79		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFTeDA	72629-94-8	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFTeDA	376-06-7	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
EtFOSA	4151-50-2	ND	9.79		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
PFHxDA	67905-19-5	ND	1.96		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
MeFOSE	24448-09-7	ND	9.79		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
EtFOSE	1691-99-2	ND	9.79		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.8	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C3-PFPeA	IS	91.6	60 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C3-PFBS	IS	100	60 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFHxA	IS	93.7	70 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C4-PFHpA	IS	93.5	60 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
18O2-PFHxS	IS	96.8	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-6:2 FTS	IS	95.1	40 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFOA	IS	93.7	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C5-PFNA	IS	94.2	50 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C8-PFOSA	IS	60.4	20 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C8-PFOS	IS	95.2	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1

Sample ID: 2236100001	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS Location: 142 Portsmouth Ave	Laboratory Data Lab Sample: 1900522-01 Date Received: 26-Mar-19 09:24 Matrix: Aqueous Date Collected: 22-Mar-19 10:08 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	89.0	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-8:2 FTS	IS	89.4	40 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d3-MeFOSAA	IS	89.4	50 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d5-EtFOSAA	IS	90.3	50 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFUnA	IS	88.7	60 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFDoA	IS	86.9	30 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d3-MeFOSA	IS	31.0	10 - 130		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFTeDA	IS	90.9	20 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d5-EtFOSA	IS	34.4	10 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
13C2-PFHxDA	IS	85.0	20 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d7-MeFOSE	IS	54.1	10 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1
d9-EtFOSE	IS	57.9	10 - 150		B9D0034	04-Apr-19	0.255 L	05-Apr-19 20:52	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: 2232050001
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900522-02	Column:	BEH C18
Project:	General PWS	Date Collected:	22-Mar-19 10:40	Date Received:	26-Mar-19 09:24		
Location:	CL Stratham Green - Well 1						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	3.58	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFPeA	2706-90-3	3.39	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFBS	375-73-5	3.72	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFHxA	307-24-4	5.59	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFHpA	375-85-9	3.21	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFHxS	355-46-4	12.8	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
6:2 FTS	27619-97-2	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFOA	335-67-1	17.9	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFHpS	375-92-8	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFNA	375-95-1	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFOSA	754-91-6	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFOS	1763-23-1	28.7	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFDA	335-76-2	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
8:2 FTS	39108-34-4	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
MeFOSAA	2355-31-9	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
EtFOSAA	2991-50-6	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFUnA	2058-94-8	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFDS	335-77-3	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFDoA	307-55-1	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
MeFOSA	31506-32-8	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFTriDA	72629-94-8	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFTeDA	376-06-7	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
EtFOSA	4151-50-2	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
PFHxDA	67905-19-5	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
MeFOSE	24448-09-7	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
EtFOSE	1691-99-2	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	104	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C3-PFPeA	IS	96.5	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C3-PFBS	IS	100	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFHxA	IS	99.9	70 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C4-PFHpA	IS	98.8	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
18O2-PFHxS	IS	102	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-6:2 FTS	IS	91.4	40 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFOA	IS	98.0	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C5-PFNA	IS	95.0	50 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C8-PFOSA	IS	62.4	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C8-PFOS	IS	99.7	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1

Sample ID: 2232050001	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS Location: CL Stratham Green - Well 1	Laboratory Data Matrix: Aqueous Date Collected: 22-Mar-19 10:40 Lab Sample: 1900522-02 Date Received: 26-Mar-19 09:24 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	91.1	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-8:2 FTS	IS	98.2	40 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d3-MeFOSAA	IS	83.1	50 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d5-EtFOSAA	IS	87.4	50 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFUnA	IS	94.2	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFDoA	IS	92.6	30 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d3-MeFOSA	IS	18.9	10 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFTeDA	IS	91.4	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d5-EtFOSA	IS	20.3	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
13C2-PFHxDA	IS	92.9	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d7-MeFOSE	IS	53.5	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1
d9-EtFOSE	IS	53.4	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 21:02	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: 2232050002
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900522-03	Column:	BEH C18
Project:	General PWS	Date Collected:	22-Mar-19 10:55	Date Received:	26-Mar-19 09:24		
Location:	CL Stratham Green - Well 2						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	4.83	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFPeA	2706-90-3	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFBS	375-73-5	3.73	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFHxA	307-24-4	3.83	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFHpA	375-85-9	2.26	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFHxS	355-46-4	14.0	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
6:2 FTS	27619-97-2	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFOA	335-67-1	12.4	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFHpS	375-92-8	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFNA	375-95-1	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFOSA	754-91-6	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFOS	1763-23-1	14.3	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFDA	335-76-2	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
8:2 FTS	39108-34-4	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
MeFOSAA	2355-31-9	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
EtFOSAA	2991-50-6	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFUnA	2058-94-8	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFDS	335-77-3	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFDoA	307-55-1	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
MeFOSA	31506-32-8	ND	9.91		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFTriDA	72629-94-8	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFTeDA	376-06-7	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
EtFOSA	4151-50-2	ND	9.91		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
PFHxDA	67905-19-5	ND	1.98		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
MeFOSE	24448-09-7	ND	9.91		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
EtFOSE	1691-99-2	ND	9.91		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	98.4	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C3-PFPeA	IS	90.4	60 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C3-PFBS	IS	103	60 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFHxA	IS	95.7	70 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C4-PFHpA	IS	89.8	60 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
18O2-PFHxS	IS	98.2	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-6:2 FTS	IS	93.7	40 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFOA	IS	96.2	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C5-PFNA	IS	94.4	50 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C8-PFOSA	IS	62.9	20 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C8-PFOS	IS	88.1	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1

Sample ID: 2232050002	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS Location: CL Stratham Green - Well 2	Laboratory Data Matrix: Aqueous Date Collected: 22-Mar-19 10:55 Lab Sample: 1900522-03 Date Received: 26-Mar-19 09:24 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	89.7	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-8:2 FTS	IS	93.8	40 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d3-MeFOSAA	IS	82.2	50 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d5-EtFOSAA	IS	86.3	50 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFUnA	IS	90.4	60 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFDoA	IS	86.0	30 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d3-MeFOSA	IS	25.9	10 - 130		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFTeDA	IS	83.6	20 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d5-EtFOSA	IS	27.9	10 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
13C2-PFHxDA	IS	68.8	20 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d7-MeFOSE	IS	53.9	10 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1
d9-EtFOSE	IS	53.6	10 - 150		B9D0034	04-Apr-19	0.252 L	05-Apr-19 21:13	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: 2232050003
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900522-04	Column:	BEH C18
Project:	General PWS	Date Collected:	22-Mar-19 10:35	Date Received:	26-Mar-19 09:24		
Location:	CL Stratham Green - Well 3						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	5.06	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFPeA	2706-90-3	2.35	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFBS	375-73-5	4.00	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFHxA	307-24-4	2.97	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFHpA	375-85-9	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFHxS	355-46-4	21.9	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
6:2 FTS	27619-97-2	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFOA	335-67-1	13.2	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFHpS	375-92-8	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFNA	375-95-1	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFOSA	754-91-6	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFOS	1763-23-1	19.1	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFDA	335-76-2	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
8:2 FTS	39108-34-4	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
MeFOSAA	2355-31-9	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
EtFOSAA	2991-50-6	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFUnA	2058-94-8	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFDS	335-77-3	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFDoA	307-55-1	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
MeFOSA	31506-32-8	ND	10.1		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFTeDA	72629-94-8	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFTeDA	376-06-7	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
EtFOSA	4151-50-2	ND	10.1		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
PFHxDA	67905-19-5	ND	2.02		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
MeFOSE	24448-09-7	ND	10.1		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
EtFOSE	1691-99-2	ND	10.1		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	99.6	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C3-PFPeA	IS	92.9	60 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C3-PFBS	IS	99.5	60 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFHxA	IS	93.5	70 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C4-PFHpA	IS	95.5	60 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
18O2-PFHxS	IS	92.1	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-6:2 FTS	IS	98.5	40 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFOA	IS	93.6	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C5-PFNA	IS	92.6	50 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C8-PFOSA	IS	66.9	20 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C8-PFOS	IS	92.6	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1

Sample ID: 2232050003	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS Location: CL Stratham Green - Well 3	Laboratory Data Matrix: Aqueous Date Collected: 22-Mar-19 10:35 Lab Sample: 1900522-04 Date Received: 26-Mar-19 09:24 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	88.0	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-8:2 FTS	IS	105	40 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d3-MeFOSAA	IS	92.8	50 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d5-EtFOSAA	IS	94.4	50 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFUnA	IS	88.9	60 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFDoA	IS	89.7	30 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d3-MeFOSA	IS	20.9	10 - 130		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFTeDA	IS	87.8	20 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d5-EtFOSA	IS	21.5	10 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
13C2-PFHxDA	IS	77.8	20 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d7-MeFOSE	IS	53.4	10 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1
d9-EtFOSE	IS	54.8	10 - 150		B9D0034	04-Apr-19	0.248 L	05-Apr-19 21:23	1

RL - Reporting limit	Results reported to RL.	When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.
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Sample ID: 2236130002
PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900522-05	Column:	BEH C18
Project:	General PWS	Date Collected:	22-Mar-19 13:05	Date Received:	26-Mar-19 09:24		
Location:	157 Portsmouth Ave						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	16.6	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFPeA	2706-90-3	59.9	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFBS	375-73-5	15.2	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFHxA	307-24-4	52.7	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFHpA	375-85-9	16.3	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFHxS	355-46-4	222	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
6:2 FTS	27619-97-2	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFOA	335-67-1	84.1	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFHpS	375-92-8	4.23	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFNA	375-95-1	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFOSA	754-91-6	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFOS	1763-23-1	206	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFDA	335-76-2	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
8:2 FTS	39108-34-4	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
MeFOSAA	2355-31-9	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
EtFOSAA	2991-50-6	2.98	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFUnA	2058-94-8	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFDS	335-77-3	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFDoA	307-55-1	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
MeFOSA	31506-32-8	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFTeDA	72629-94-8	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFTeDA	376-06-7	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
EtFOSA	4151-50-2	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
PFHxDA	67905-19-5	ND	1.94		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
MeFOSE	24448-09-7	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
EtFOSE	1691-99-2	ND	9.71		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C3-PFPeA	IS	93.0	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C3-PFBS	IS	109	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFHxA	IS	98.9	70 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C4-PFHpA	IS	95.4	60 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
18O2-PFHxS	IS	104	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-6:2 FTS	IS	107	40 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFOA	IS	92.3	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C5-PFNA	IS	87.1	50 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C8-PFOSA	IS	65.1	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C8-PFOS	IS	98.0	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1

Sample ID: 2236130002	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS Location: 157 Portsmouth Ave	Laboratory Data Lab Sample: 1900522-05 Date Received: 26-Mar-19 09:24 Matrix: Aqueous Date Collected: 22-Mar-19 13:05 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	89.7	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-8:2 FTS	IS	94.6	40 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d3-MeFOSAA	IS	87.7	50 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d5-EtFOSAA	IS	90.8	50 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFUnA	IS	88.0	60 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFDoA	IS	87.3	30 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d3-MeFOSA	IS	22.3	10 - 130		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFTeDA	IS	90.6	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d5-EtFOSA	IS	25.9	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
13C2-PFHxDA	IS	86.3	20 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d7-MeFOSE	IS	51.8	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1
d9-EtFOSE	IS	52.5	10 - 150		B9D0034	04-Apr-19	0.258 L	05-Apr-19 22:06	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	015
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	9618
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Sample Log-In Checklist

 Page # 1 of 1

 Vista Work Order #: 1900522 TAT std

Samples Arrival:	Date/Time 03/26/19 0924	Initials: KE	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 03/26/19 1218	Initials: KE	Location: WR-2 Shelf/Rack: A3/E5
Delivered By:	☒ FedEx ☐ UPS ☐ On Trac ☐ GSO ☐ DHL ☐ Hand Delivered ☐ Other		
Preservation:	☒ Ice ☐ Blue Ice ☐ Dry Ice ☐ None		
Temp °C: 0.9 (uncorrected)	Probe used: Y / ☒ N		Thermometer ID: FR4
Temp °C: 0.8 (corrected)			

	YES	NO	NA
Adequate Sample Volume Received?	☒		
Holding Time Acceptable?	☒		
Shipping Container(s) Intact?	☒		
Shipping Custody Seals Intact?	☒		
Shipping Documentation Present?	☒		
Airbill <u> </u> Trk # <u>7862 4065 8429</u>	☒		
Sample Container Intact?	☒		
Sample Custody Seals Intact?			☒
Chain of Custody / Sample Documentation Present?	☒		
COC Anomaly/Sample Acceptance Form completed?		☒	☒
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	☒		☒
Preservation Documented: ☐ Na ₂ S ₂ O ₃ ☒ Trizma ☐ None ☒ Yes ☐ No ☒ NA			
Shipping Container	Vista	☒ Client	☐ Retain ☒ Return ☐ Dispose

Comments:



April 15, 2019

Vista Work Order No. 1900521

Mr. Brandon Kernen
New Hampshire DES
29 Hazen Road
Concord, NH 03302

Dear Mr. Kernen,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on March 26, 2019 under your Project Name 'General PWS/ Fire Station PFAS'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,

Martha Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Work Order No. 1900521**Case Narrative****Sample Condition on Receipt:**

One aqueous sample was received in good condition and within the method temperature requirements. The sample was received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:**PFAS Isotope Dilution Method**

The sample was extracted and analyzed for a selected list of PFAS using the PFAS Isotope Dilution Method (Modified EPA Method 537). The results for PFHxS, PFOA, PFOS, MeFOSAA, and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The sample was extracted and analyzed within the method hold times.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

The labeled standard recoveries for all QC and field samples were within the acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
1900521-01	MTBE_1151	22-Mar-19 11:05	26-Mar-19 09:24	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank					PFAS Isotope Dilution Method				
Client Data					Laboratory Data				
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	B9D0034-BLK1	Column:	BEH C18		
Project:	General PWS/ Fire Station PFAS								
Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFPeA	2706-90-3	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFBS	375-73-5	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxA	307-24-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHpA	375-85-9	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxS	355-46-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
6:2 FTS	27619-97-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOA	335-67-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHpS	375-92-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFNA	375-95-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOSA	754-91-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFOS	1763-23-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDA	335-76-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
8:2 FTS	39108-34-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSAA	2355-31-9	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSAA	2991-50-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFUnA	2058-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDS	335-77-3	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFDoA	307-55-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSA	31506-32-8	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFTTrDA	72629-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFTeDA	376-06-7	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSA	4151-50-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
PFHxDA	67905-19-5	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
MeFOSE	24448-09-7	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
EtFOSE	1691-99-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	104	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C3-PFPeA	IS	98.2	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C3-PFBS	IS	101	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-PFHxA	IS	97.2	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C4-PFHpA	IS	99.6	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
18O2-PFHxS	IS	102	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-6:2 FTS	IS	101	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C2-PFOA	IS	94.6	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C5-PFNA	IS	92.2	50 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C8-PFOSA	IS	53.0	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1
13C8-PFOS	IS	99.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1

Sample ID: Method Blank					PFAS Isotope Dilution Method					
Client Data Name: New Hampshire DES Project: General PWS/ Fire Station PFAS					Laboratory Data Lab Sample: B9D0034-BLK1 Column: BEH C18					
Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution	
13C2-PFDA	IS	86.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-8:2 FTS	IS	95.6	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d3-MeFOSAA	IS	82.8	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d5-EtFOSAA	IS	88.5	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFUnA	IS	85.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFDoA	IS	81.6	30 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d3-MeFOSA	IS	19.6	10 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFTeDA	IS	89.8	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d5-EtFOSA	IS	22.6	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
13C2-PFHxDA	IS	88.2	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d7-MeFOSE	IS	45.1	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	
d9-EtFOSE	IS	42.3	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:30	1	

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

Sample ID: OPR						PFAS Isotope Dilution Method					
Client Data						Laboratory Data					
Name:	New Hampshire DES	Matrix:	Aqueous			Lab Sample:	B9D0034-BS1	Column:	BEH C18		
Project:	General PWS/ Fire Station PFAS										
Analyte	CAS Number	Amt Found (ng/L)	Spike Amt	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	42.7	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFPeA	2706-90-3	41.4	40.0	104	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFBS	375-73-5	42.8	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxA	307-24-4	42.6	40.0	106	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHpA	375-85-9	42.0	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxS	355-46-4	42.2	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
6:2 FTS	27619-97-2	43.4	40.0	108	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOA	335-67-1	42.7	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHpS	375-92-8	43.5	40.0	109	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFNA	375-95-1	44.3	40.0	111	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOSA	754-91-6	45.2	40.0	113	70 - 130	Q	B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFOS	1763-23-1	42.2	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDA	335-76-2	46.1	40.0	115	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
8:2 FTS	39108-34-4	46.4	40.0	116	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSAA	2355-31-9	41.2	40.0	103	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSAA	2991-50-6	43.1	40.0	108	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFUnA	2058-94-8	42.0	40.0	105	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDS	335-77-3	38.3	40.0	95.8	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFDoA	307-55-1	40.0	40.0	100	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSA	31506-32-8	235	200	117	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFTTrDA	72629-94-8	42.3	40.0	106	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFTeDA	376-06-7	44.9	40.0	112	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSA	4151-50-2	247	200	123	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
PFHxDA	67905-19-5	42.8	40.0	107	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
MeFOSE	24448-09-7	238	200	119	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
EtFOSE	1691-99-2	229	200	114	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
Labeled Standards	Type			% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS			99.2	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C3-PFPeA	IS			99.6	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C3-PFBS	IS			96.9	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFHxA	IS			104	70- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C4-PFHpA	IS			103	60- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
18O2-PFHxS	IS			98.6	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-6:2 FTS	IS			100	40- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFOA	IS			102	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1

Sample ID: OPR					PFAS Isotope Dilution Method				
Client Data Name: New Hampshire DES Project: General PWS/ Fire Station PFAS Matrix: Aqueous					Laboratory Data Lab Sample: B9D0034-BS1 Column: BEH C18				
Labeled Standards	Type	% Rec	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C5-PFNA	IS	88.4	50- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C8-PFOSA	IS	48.0	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C8-PFOS	IS	98.0	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFDA	IS	84.4	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-8:2 FTS	IS	90.4	40- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d3-MeFOSAA	IS	85.2	50- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d5-EtFOSAA	IS	82.5	50- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFUnA	IS	88.3	60- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFDoA	IS	90.6	30- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d3-MeFOSA	IS	22.2	10- 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFTeDA	IS	85.0	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d5-EtFOSA	IS	25.6	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
13C2-PFHxDA	IS	84.6	20- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d7-MeFOSE	IS	41.5	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1
d9-EtFOSE	IS	42.0	10- 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:20	1

Sample ID: MTBE_1151

PFAS Isotope Dilution Method

Client Data				Laboratory Data			
Name:	New Hampshire DES	Matrix:	Aqueous	Lab Sample:	1900521-01	Column:	BEH C18
Project:	General PWS/ Fire Station PFAS	Date Collected:	22-Mar-19 11:05	Date Received:	26-Mar-19 09:24		
Location:	Mech Room Fire Station						

Analyte	CAS Number	Conc. (ng/L)	RL	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBA	375-22-4	6.72	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFPeA	2706-90-3	20.1	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFBS	375-73-5	4.61	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFHxA	307-24-4	21.3	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFHpA	375-85-9	11.1	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFHxS	355-46-4	57.6	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
6:2 FTS	27619-97-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFOA	335-67-1	33.4	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFHpS	375-92-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFNA	375-95-1	2.11	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFOSA	754-91-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFOS	1763-23-1	149	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFDA	335-76-2	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
8:2 FTS	39108-34-4	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
MeFOSAA	2355-31-9	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
EtFOSAA	2991-50-6	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFUnA	2058-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFDS	335-77-3	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFDoA	307-55-1	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
MeFOSA	31506-32-8	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFTriDA	72629-94-8	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFTeDA	376-06-7	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
EtFOSA	4151-50-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
PFHxDA	67905-19-5	ND	2.00		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
MeFOSE	24448-09-7	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
EtFOSE	1691-99-2	ND	10.0		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBA	IS	101	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C3-PFPeA	IS	97.0	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C3-PFBS	IS	96.4	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFHxA	IS	96.6	70 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C4-PFHpA	IS	99.6	60 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
18O2-PFHxS	IS	98.3	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-6:2 FTS	IS	94.9	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFOA	IS	93.7	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C5-PFNA	IS	95.2	50 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C8-PFOSA	IS	57.3	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C8-PFOS	IS	92.7	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1

Sample ID: MTBE_1151	PFAS Isotope Dilution Method
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Client Data Name: New Hampshire DES Project: General PWS/ Fire Station PFAS Location: Mech Room Fire Station	Laboratory Data Lab Sample: 1900521-01 Date Received: 26-Mar-19 09:24 Matrix: Aqueous Date Collected: 22-Mar-19 11:05 Column: BEH C18
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Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C2-PFDA	IS	85.2	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-8:2 FTS	IS	98.9	40 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d3-MeFOSAA	IS	88.7	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d5-EtFOSAA	IS	86.4	50 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFUnA	IS	89.9	60 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFDoA	IS	89.2	30 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d3-MeFOSA	IS	22.4	10 - 130		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFTeDA	IS	89.5	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d5-EtFOSA	IS	25.5	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
13C2-PFHxDA	IS	87.1	20 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d7-MeFOSE	IS	57.0	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1
d9-EtFOSE	IS	54.5	10 - 150		B9D0034	04-Apr-19	0.250 L	05-Apr-19 20:41	1

RL - Reporting limit

Results reported to RL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank
Conc.	Concentration
D	Dilution
DL	Detection limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limits of Detection
LOQ	Limits of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
NA	Not applicable
ND	Not Detected
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	015
Texas Commission on Environmental Quality	T104704189-19-10
Virginia Department of General Services	9618
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

Sample Log-In Checklist

Vista Work Order #: 1900521 Page # 1 of 1
 TAT std

Samples Arrival:	Date/Time 03/26/19 0924	Initials: KE	Location: WR-2 Shelf/Rack: NA
Logged In:	Date/Time 03/26/19 1136	Initials: KE	Location: WR-2 Shelf/Rack: A3/E5
Delivered By:	☒ FedEx	☐ UPS	☐ On Trac
	☐ GSO	☐ DHL	☐ Hand Delivered
Preservation:	☒ Ice	☐ Blue Ice	☐ Dry Ice
	☐ None		
Temp °C: 0.9 (uncorrected)	Probe used: Y / ☒ N		Thermometer ID: IR-4
Temp °C: 0.8 (corrected)			

	YES	NO	NA
Adequate Sample Volume Received?	☒		
Holding Time Acceptable?	☒		
Shipping Container(s) Intact?	☒		
Shipping Custody Seals Intact?	☒		
Shipping Documentation Present?	☒		
Airbill <u> </u> Trk # <u>7862 4065 8429</u>	☒		
Sample Container Intact?	☒		
Sample Custody Seals Intact?			☒
Chain of Custody / Sample Documentation Present?	☒		
COC Anomaly/Sample Acceptance Form completed?		☒	☒
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	☒		☒
Preservation Documented:	☒ Yes	☐ No	☒ NA
Shipping Container	☐ Vista	☒ Client	☐ Retain
	☒ Return	☐ Dispose	

Comments: