



Jericho Underhill Water
PO Box 174 100300
Underhill, VT 05489
Atten: Michael Willard

PROJECT: WSID 5096 PFAS
WORK ORDER: 1909-24952
DATE RECEIVED: September 26, 2019
DATE REPORTED: October 17, 2019
SAMPLER: Michael Willard

VT0005096

Laboratory Report

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
Laboratory Director

Laboratory Report

DATE REPORTED: 10/17/2019

CLIENT: Jericho Underhill Water
PROJECT: WSID 5096 PFASWORK ORDER: 1909-24952
DATE RECEIVED: 09/26/2019

001 Site: Entry Point to Distribution 52 River Road Underhill Date Sampled: 9/26/19 Time: 7:53

Facility ID: TP001 Smp Pt: EP001 Categ: GE Smp Type: RT Compl Ind: Y Repl Ind: N

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
PFAS Package							
Perfluorobutanesulfonic acid PFBS	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorohexanoic acid PFHxA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
HFPO-DA	< 4.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluoroheptanoic acid PFHpA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorohexanesulfonic acid PFHxS	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
ADONA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorooctanoic acid PFOA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorononanoic acid PFNA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorooctanesulfonic acid PFOS	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorodecanoic acid PFDA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
9Cl-PF3ONS	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
NMeFOSAA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluoroundecanoic acid PFUnA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
NEtFOSAA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorododecanoic acid PFDoA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
11Cl-PF3OUdS	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorotridecanoic acid PFTTrDA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA
Perfluorotetradecanoic acid PFTA	< 2.0	ng/L	EPA 537.1	10/12/19	SUB	A	SBA

002 Site: Field Blank Date Sampled: 9/26/19 Time: 7:53

Facility ID: UNKNO Smp Pt: UNKNO Categ: UN Smp Type: UN Compl Ind: Y Repl Ind: U IN

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
No analysis							

003 Site: Trip Blank Date Sampled: 9/26/19 Time: 7:53

Facility ID: UNKNO Smp Pt: UNKNO Categ: UN Smp Type: UN Compl Ind: Y Repl Ind: U IN

Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
No analysis							

Report Summary of Qualifiers and Notes

SBA: Analysis performed by subcontracted laboratory, Alpha Analytical, Mansfield MA. Results are presented here for your convenience. Refer to the complete subcontracted report, which has been appended to this report, for detailed information regarding this result.

Endyne will submit this data electronically to the State of VT Water Supply Division in accordance with their policy and standards.



ANALYTICAL REPORT

Lab Number:	L1945274
Client:	Endyne, Inc. 160 James Brown Dr Williston, VT 05495
ATTN:	Eileen Toomey
Phone:	(802) 879-4333
Project Name:	1909-24952-W
Project Number:	Not Specified
Report Date:	10/15/19

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-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

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



Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1945274-01	1909-24952 001	DW	VT	09/26/19 07:53	09/27/19
L1945274-02	1909-24952 002 (FB)	DW	VT	09/26/19 07:53	09/27/19
L1945274-03	1909-24952 003 (TB)	DW	VT	09/26/19 07:53	09/27/19

Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

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: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

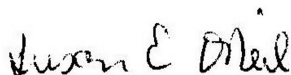
Case Narrative (continued)

Perfluorinated Alkyl Acids

The WG1293901-2/-3 LCS/LCSD RPD, associated with L1945274-01, is above the acceptance criteria for n-methyl perfluorooctanesulfonamidoacetic acid (nmefosaa) (55%).

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:



Susan O'Neil

Title: Technical Director/Representative

Date: 10/15/19

ORGANICS

SEMIVOLATILES

Project Name: 1909-24952-W**Lab Number:** L1945274**Project Number:** Not Specified**Report Date:** 10/15/19**SAMPLE RESULTS**

Lab ID: L1945274-01
 Client ID: 1909-24952 001
 Sample Location: VT

Date Collected: 09/26/19 07:53
 Date Received: 09/27/19
 Field Prep: Not Specified

Sample Depth:

Matrix: Dw
 Analytical Method: 133,537.1
 Analytical Date: 10/12/19 02:37
 Analyst: RS

Extraction Method: EPA 537
 Extraction Date: 10/09/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab						
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND		ng/l	4.00	--	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--	1
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND		ng/l	2.00	--	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--	1
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--	1
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--	1
PFOA/PFOS, Total	ND		ng/l	2.00	--	1
PFAS, Total (5)	ND		ng/l	2.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	81		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		70-130

Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 10/12/19 01:12
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 10/09/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01 Batch: WG1293901-1					
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	--
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	--
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	ND		ng/l	4.00	--
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	--
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	--
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	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	--
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	--
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND		ng/l	2.00	--
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	--
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	--
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	--
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	--
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND		ng/l	2.00	--
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	--
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	--
PFOA/PFOS, Total	ND		ng/l	2.00	--
PFAS, Total (5)	ND		ng/l	2.00	--

Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 133,537.1
Analytical Date: 10/12/19 01:12
Analyst: RS

Extraction Method: EPA 537
Extraction Date: 10/09/19 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab for sample(s): 01 Batch: WG1293901-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	78		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	86		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1909-24952-W

Lab Number: L1945274

Project Number: Not Specified

Report Date: 10/15/19

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 Batch: WG1293901-2 WG1293901-3								
Perfluorobutanesulfonic Acid (PFBS)	80		85		70-130	6		30
Perfluorohexanoic Acid (PFHxA)	97		101		70-130	10		30
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid (HFPO-DA)	110		91		70-130	3		30
Perfluoroheptanoic Acid (PFHpA)	95		94		70-130	3		30
Perfluorohexanesulfonic Acid (PFHxS)	74		80		70-130	4		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	93		93		70-130	9		30
Perfluorooctanoic Acid (PFOA)	98		102		70-130	9		30
Perfluorononanoic Acid (PFNA)	83		87		70-130	11		30
Perfluorooctanesulfonic Acid (PFOS)	64		75		70-130	9		30
Perfluorodecanoic Acid (PFDA)	83		83		70-130	17		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	88		94		70-130	5		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	55		84		70-130	55	Q	30
Perfluoroundecanoic Acid (PFUnA)	73		81		70-130	16		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	70		79		70-130	7		30
Perfluorododecanoic Acid (PFDoA)	78		82		70-130	26		30
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	80		75		70-130	10		30
Perfluorotridecanoic Acid (PFTTrDA)	86		94		70-130	15		30
Perfluorotetradecanoic Acid (PFTA)	83		97		70-130	20		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

Parameter	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>%Recovery</i> Limits	<i>RPD</i>	<i>Qual</i>	<i>RPD</i> Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 Batch: WG1293901-2 WG1293901-3								

<i>Surrogate</i>	<i>LCS</i> %Recovery	<i>Qual</i>	<i>LCSD</i> %Recovery	<i>Qual</i>	<i>Acceptance</i> Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	99		97		70-130
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-13C3-Propanoic Acid (M3HFPO-DA)	86		91		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	80		79		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	75		79		70-130

Lab Duplicate Analysis

Batch Quality Control

Project Name: 1909-24952-W

Project Number: Not Specified

Lab Number: L1945274

Report Date: 10/15/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1293901-5 QC Sample: L1945274-01 Client ID: 1909-24952 001						
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/l	NC		30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	ND	ND	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/l	NC		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/l	NC		30
4,8-Dioxa-3h-Perfluorononanoic Acid (ADONA)	ND	ND	ng/l	NC		30
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	ND	ND	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/l	NC		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid (9Cl-PF3ONS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
11-Chloroeicosafuoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30
PFOA/PFOS, Total	ND	ND	ng/l	NC		30
PFAS, Total (5)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis

Batch Quality Control

Project Name: 1909-24952-W

Project Number: Not Specified

Lab Number: L1945274

Report Date: 10/15/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537.1 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1293901-5 QC Sample: L1945274-01 Client ID: 1909-24952 001						

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		106		70-130
Tetrafluoro-2-heptafluoropropoxy-[13C3]-propanoic acid (13C3-HFPO-DA)	88		93		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	81		85		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		84		70-130

Project Name: 1909-24952-W**Lab Number:** L1945274**Project Number:** Not Specified**Report Date:** 10/15/19**Sample Receipt and Container Information**

Were project specific reporting limits specified?

YES

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

C Absent

D Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1945274-01A	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	C	NA		6.0	Y	Absent		A2-537.1(14)
L1945274-01B	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	C	NA		6.0	Y	Absent		A2-537.1(14)
L1945274-02A	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	C	NA		6.0	Y	Absent		A2-L-EXT-537(14)
L1945274-03A	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	C	NA		6.0	Y	Absent		A2-L-EXT-537(14)
L1945274-03B	2 Plastic Trizma/1 Plastic/1 H2O+Trizma	C	NA		6.0	Y	Absent		A2-L-EXT-537(14)

Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

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. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
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

Report Format: Data Usability Report



Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

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

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

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 Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- 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.

Report Format: Data Usability Report



Project Name: 1909-24952-W
Project Number: Not Specified

Lab Number: L1945274
Report Date: 10/15/19

REFERENCES

- 133 Determination of Selected Per- and Polyfluorinated Alkyl Substances in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537.1, EPA/600/R-18/352. Version 1.0, November 2018.

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.



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), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene, 1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene, 1,4-Diphenylhydrazine.

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, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-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.

Chain of Custody

L1945274

Alpha Analytical
320 Forbes Blvd
Mansfield
Ph 508-898-9222

MA 02048

STATE OF ORIGIN: _____ VERMONT

The analysis requested requires that you have and maintain NELAC certification. If you do not currently have NELAC certification in the above referenced State, and specified matrix please contact Endyne immediately at(802) 879-4333 ext 301. Thank you.

Copy of Report To		Billing Information		Project Information	
CUSTOMER:	Endyne, Inc.	BILL TO:	Endyne, Inc.	1909-24952-W	
ADDRESS:	160 James Brown Drive Williston, VT 05495	ADDRESS:	160 James Brown Drive Williston, VT 05495	TURN AROUND TIME:	
ATTENTION:	Eileen Toomey	ATTENTION:	Reporting	SPECIAL INSTRUCTIONS:	
E-MAIL:	etoomey@endynelabs.com	E-MAIL:	etoomey@endynelabs.com		
PHONE:	(802) 879-4333 x 300	PHONE:	802-879-4333 x 308		

Analysis Requested: PFAS WSID Package

PFAS WSID Package

PFAS WSID Package

Sample Identification

Matrix

DT TM Sampled

01	1909-24952	001	Entry Point to Distribution 52	001		9/26/19	7:53
				002	DW	9/26/19	7:53
-02	1909-24952	002	Field Blank	001		9/26/19	7:53
				002		9/26/19	7:53
-03	1909-24952	003	Trip Blank	001		9/26/19	7:53
				002		9/26/19	7:53

Relinquished by: (Sign, Date, Time)

Received by: (Sign, Date, Time)

[Signature] 9/26/19 17:00 T/c Mc 9-27-19 1925

9-28-19 653 Wm C... 9/27/19 1921 Page 1 of 1

WSID 5096 PFAS

Endyne Inc. COC

Prepared: 9/25/19

1909-24952



1909-24952

Jericho Underhill Water
WSID 5096 PFAS

Bill to:
Michael Willard
Jericho Underhill Water
PO Box 174
Underhill VT 05489
Ph: 802-363-4586

Report to:
Michael Willard
Jericho Underhill Water
PO Box 174
Underhill VT 05489
michaelwillard@msn.com

Cust # 100300
VT0005096
PFA0005096

Facility ID: TP001 Smp Pt: EP001 Categ: GE Smp Type: RT Repl Ind: N Compl Ind: Y/N

001 Entry Point 52 River Rd
Underhill, VT 05489
Sampled Date/Time: 09/26/19 @ 07:53

PFAS WSID Package 2 -250 ml Plastic Tris HCl/Tris, < 6C

Facility ID: UNKNO Smp Pt: UNKNO Categ: UN Smp Type: UN Repl Ind: U Compl Ind: Y/N

Field Blank Sampled Date/Time: / / @


PFAS WSID Package 1 -250 ml Plastic Tris HCl/Tris, < 6C

Facility ID: UNKNO Smp Pt: UNKNO Categ: UN Smp Type: UN Repl Ind: U Compl Ind: Y/N

Trip Blank Sampled Date/Time: / / @

PFAS WSID Package 2 -250 ml Plastic Tris HCl/Tris, < 6C

One or more sample bottles in this project must be kept refrigerated or on ice until delivery at the laboratory.

Your initials will allow Endyne to proceed with analysis if the temperature preservation requirement is not satisfied. 

Sampler: _____
Relinquished by: Michael R. Willard Date Time _____ Accepted by: E Toomey 9/26/19 @ 8:50 Date Time _____
Relinquished by: Michael R. Willard 9/26/19 8:50 Date Time _____ Received by: _____ Date Time _____

Sites/Parameters correct as listed. Client Initials _____
Client Authorization to use Subcontract lab Client Initials _____
Sample origin: VT NH NY Other
Special reporting instructions: (PO#) _____
Requested Turnaround Time: Routine: Rush Due Date _____

Delv: Client Tmpl Ck _____ Log by _____
Temp C: 14.2
Comment: _____
Lab use Only



160 James Brown Dr.
Williston, VT 05495
Ph 802-879-4333
Fax 802-879-7103

56 Etna Road
Lebanon, NH 03766
Ph 603-678-4891
Fax 603-678-4893

315 New York Rd.
Plattsburgh, NY 12903
Ph 518-563-1720
Fax 518-563-0052