APPENDIX B –Laboratory Results

ANALYTICAL REPORT

Lab Number:	L1725482
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	BARNSTABLE
Project Number:	20107
Report Date:	08/17/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1725482-01	RAW-2	DW	MAITEL	07/25/17 11:00	07/25/17
L1725482-02	FILTER A-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-03	FILTER C-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-04	FILTER E-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-05	FILTER F-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-06	UV-2	DW	MATTEL	07/25/17 11:00	07/25/17

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: BARNSTABLE **Lab Number:** L1725482
Project Number: 20107 **Report Date:** 08/17/17

Case Narrative (continued)

Sample Receipt

The samples were not appropriately preserved for the 522 analysis; the analysis was cancelled at the client's request.

Semivolatile Organics

The surrogate recovery is outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda). The results of the original analysis are reported.

L1725482-01: 136%

L1725482-04: 139%

L1725482-05: 131%

L1725482-06: 142%

The internal standard (IS) response for 13C2-PFOA and 13C-PFOS were above the acceptance criteria; however, re-analysis achieved similar results.

L1725482-01: 131%/178%

L1725482-04: 183%/195%

L1725482-05: 168%/181%

L1725482-06: 178%/186%

WG1027227-2/-3: 132%/131%

WG1027227-1: The surrogate recoveries are above the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (132%) and perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (153%).

The WG1027227-2 LCS recovery is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (145%).

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: Cristin Walker

Title: Technical Director/Representative Date: 08/17/17

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-01
Client ID: RAW-2
Sample Location: MAITEL

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/16/17 09:24
Analyst: AR

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 07/31/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	18.6		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	83.2		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	128		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**136**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		70-130

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-04
Client ID: FILTER E-2
Sample Location: MATTEL

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/16/17 09:33
Analyst: AR

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 07/31/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**139**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-05
Client ID: FILTER F-2
Sample Location: MATTEL

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/16/17 09:43
Analyst: AR

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 07/31/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**131**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	107		70-130

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-06
Client ID: UV-2
Sample Location: MATTEL

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/16/17 09:52
Analyst: AR

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 07/31/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	19.0		ng/l	1.92	--	1
Perfluorooctanesulfonic Acid (PFOS)	90.6		ng/l	1.92	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	118		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		70-130

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/16/17 09:15
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 07/31/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,04-06 Batch: WG1027227-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**153**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 20107

Lab Number: L1725482

Report Date: 08/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,04-06 Batch: WG1027227-2 WG1027227-3								
Perfluorooctanoic Acid (PFOA)	**146**	Q	129		70-130	12		30
Perfluorooctanesulfonic Acid (PFOS)	126		117		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	129		125		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**132**	Q	**131**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		96		70-130

METALS

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-01
Client ID: RAW-2
Sample Location: MAITEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	07/26/17 10:00	07/27/17 17:20	EPA 3005A	19,200.7	PS
Manganese, Total	0.1154		mg/l	0.0010	--	1	07/26/17 10:00	07/27/17 15:31	EPA 3005A	3,200.8	AM

Project Name: BARNSTABLE
Lab Number: L1725482
Project Number: 20107
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-02
Client ID: FILTER A-2
Sample Location: MATTEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	07/26/17 10:00	07/27/17 17:25	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	07/26/17 10:00	07/27/17 17:25	EPA 3005A	19,200.7	PS

Project Name: BARNSTABLE
Lab Number: L1725482
Project Number: 20107
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-03
Client ID: FILTER C-2
Sample Location: MATTEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	07/26/17 10:00	07/27/17 17:30	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	07/26/17 10:00	07/27/17 17:30	EPA 3005A	19,200.7	PS

Project Name: BARNSTABLE **Lab Number:** L1725482

Project Number: 20107 **Report Date:** 08/17/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1025831-1										
Iron, Total	ND		mg/l	0.050	--	1	07/26/17 10:00	07/27/17 15:53	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	07/26/17 10:00	07/27/17 15:53	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1025832-1										
Manganese, Total	ND		mg/l	0.0010	--	1	07/26/17 10:00	07/27/17 15:06	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 20107

Lab Number: L1725482

Report Date: 08/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1025831-2								
Iron, Total	102		-		85-115	-		
Manganese, Total	100		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1025832-2								
Manganese, Total	106		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1025831-3 QC Sample: L1725414-01 Client ID: MS Sample												
Iron, Total	0.592	1	1.65	106		-	-		75-125	-		20
Manganese, Total	0.159	0.5	0.669	102		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1025831-7 QC Sample: L1725501-03 Client ID: MS Sample												
Iron, Total	0.905	1	2.00	110		-	-		75-125	-		20
Manganese, Total	0.036	0.5	0.551	103		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1025832-3 QC Sample: L1725414-01 Client ID: MS Sample												
Manganese, Total	0.1609	0.5	0.7088	110		-	-		70-130	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1025831-8 QC Sample: L1725501-03 Client ID: DUP Sample						
Iron, Total	0.905	0.907	mg/l	0		20

INORGANICS
&
MISCELLANEOUS

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-01
Client ID: RAW-2
Sample Location: MAITEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	07/26/17 18:30	44,180.1	AS
Alkalinity, Total	10.0		mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR
pH (H)	5.4		SU	-	NA	1	-	07/26/17 10:50	121,4500H+-B	LH

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-02
Client ID: FILTER A-2
Sample Location: MATTEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	07/25/17 17:18	44,180.1	AS
Alkalinity, Total	47.6		mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

SAMPLE RESULTS

Lab ID: L1725482-03
Client ID: FILTER C-2
Sample Location: MATTEL
Matrix: Dw

Date Collected: 07/25/17 11:00
Date Received: 07/25/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	07/25/17 17:18	44,180.1	AS
Alkalinity, Total	48.4		mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR

Project Name: BARNSTABLE
Project Number: 20107
Lab Number: L1725482
Report Date: 08/17/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02-03 Batch: WG1025618-1										
Turbidity	ND		NTU	0.20	--	1	-	07/25/17 17:18	44,180.1	AS
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1025882-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1026055-1										
Turbidity	ND		NTU	0.20	--	1	-	07/26/17 18:30	44,180.1	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE

Project Number: 20107

Lab Number: L1725482

Report Date: 08/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 Batch: WG1025618-2								
Turbidity	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1025859-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1025882-2								
Alkalinity, Total	104		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1026055-2								
Turbidity	100		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1025882-4 QC Sample: L1725482-01 Client ID: RAW-2												
Alkalinity, Total	10.0	100	109	99		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-03 QC Batch ID: WG1025618-3 QC Sample: L1725501-05 Client ID: DUP Sample						
Turbidity	0.20	0.25	NTU	**22**	Q	13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1025859-2 QC Sample: L1725482-01 Client ID: RAW-2						
pH (H)	5.4	5.5	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1025882-3 QC Sample: L1725482-01 Client ID: RAW-2						
Alkalinity, Total	10.0	10.1	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1026055-3 QC Sample: L1725644-05 Client ID: DUP Sample						
Turbidity	3.4	3.5	NTU	3		13

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

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(*)
L1725482-01A	Plastic 120ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		MN-2008T(180),FE-UI(180)
L1725482-01B	Plastic 250ml unpreserved/No Headspace	A	NA		3.9	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1725482-01C	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-01D	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-01E	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-01F	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-02A	Plastic 120ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		FE-UI(180),MN-UI(180)
L1725482-02B	Plastic 120ml unpreserved	A	7	7	3.9	Y	Absent		TURB-180(2)
L1725482-02C	Plastic 250ml unpreserved/No Headspace	A	NA		3.9	Y	Absent		ALK-T-2320(14)
L1725482-03A	Plastic 120ml HNO3 preserved	A	<2	<2	3.9	Y	Absent		FE-UI(180),MN-UI(180)
L1725482-03B	Plastic 120ml unpreserved	A	7	7	3.9	Y	Absent		TURB-180(2)
L1725482-03C	Plastic 250ml unpreserved/No Headspace	A	NA		3.9	Y	Absent		ALK-T-2320(14)
L1725482-04A	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-04B	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-04C	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-04D	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-04E	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-05A	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-05B	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-05C	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-05D	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-05E	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE
Project Number: 20107

Lab Number: L1725482
Report Date: 08/17/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1725482-06A	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-06B	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-06C	Plastic 250ml Trizma preserved	A	NA		3.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1725482-06D	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-06E	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	3.9	N	Absent		HOLD-522(28)

Container Comments

L1725482-01F	Cannot be perserve in Login
L1725482-01G	Cannot be perserve in Login
L1725482-04D	Cannot be perserve in Login
L1725482-04E	Cannot be perserve in Login
L1725482-05D	Cannot be perserve in Login
L1725482-05E	Cannot be perserve in Login
L1725482-06D	Cannot be perserve in Login
L1725482-06E	Cannot be perserve in Login

*Values in parentheses indicate holding time in days

Project Name:	BARNSTABLE	**Lab Number:**	L1725482
Project Number:	20107	**Report Date:**	08/17/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	BARNSTABLE	**Lab Number:**	L1725482
Project Number:	20107	**Report Date:**	08/17/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name: BARNSTABLE **Lab Number:** L1725482

Project Number: 20107 **Report Date:** 08/17/17

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/25/17

ALPHA Job #: L1725482

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Client Information

Client: BLUELEAF Inc

Address: 57 DRESSER HILL RD
CHARLTON MA 01507

Phone: 508-248-7094

Fax:

Email: egrotton@blueleafwater.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: BARNSTABLE

Project Location: MAINE

Project #: 20107

Project Manager: ERIK GROTTON

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE

MS/MSD (at unit cost) will be omitted unless you check here: ☐

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Fe, Mn	TURB, DTY, PH, ALK	TURB, DTY, ALK	1-4 Dioxane	PFOC, PFOA	Sample Specific Comments	TOTAL # BOTTLES
25482-01	RAW-2	7/25	11:00AM	W	BJS	1	1		1	1		4
02	FILTER A-2	↓	↓	↓	↓	1		1				2
03	FILTER C-2	↓	↓	↓	↓	1		1				2
04	FILTER E-2	↓	↓	↓	↓				1	1		2
05	FILTER F-2	↓	↓	↓	↓				1	1		2
06	UV-2	↓	↓	↓	↓				1	1		2

Container Type	P
Preservative	C

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/25/17 13:00	[signature] AAL	7/25/17 13:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 101-09 (rev. 27-SEP-10)

ANALYTICAL REPORT

Lab Number:	L1726662
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELLS
Project Number:	20107
Report Date:	08/08/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726662-01	FILTER A CBW	DW	BARNSTABLE, MA	07/28/17 09:30	08/02/17
L1726662-02	FILTER A SSN	DW	BARNSTABLE, MA	07/31/17 10:20	08/02/17
L1726662-03	FILTER C CBW	DW	BARNSTABLE, MA	07/28/17 09:30	08/02/17
L1726662-04	FILTER C SSN	DW	BARNSTABLE, MA	07/31/17 10:20	08/02/17

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	MAHER WELLS	**Lab Number:**	L1726662
Project Number:	20107	**Report Date:**	08/08/17

Case Narrative (continued)

Chlorine, Total Residual

L1726662-01 through -04 were analyzed with the method required holding time exceeded.

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: Amita Naik

Title: Technical Director/Representative Date: 08/08/17

METALS

Project Name: MAHER WELLS
Lab Number: L1726662
Project Number: 20107
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-01
Client ID: FILTER A CBW
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/28/17 09:30
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	7.10		mg/l	0.050	--	1	08/03/17 16:11	08/04/17 15:20	EPA 3005A	19,200.7	PS
Manganese, Total	3.32		mg/l	0.010	--	1	08/03/17 16:11	08/04/17 15:20	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Lab Number: L1726662
Project Number: 20107
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-02
Client ID: FILTER A SSN
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/31/17 10:20
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.173		mg/l	0.050	--	1	08/03/17 16:11	08/04/17 15:24	EPA 3005A	19,200.7	PS
Manganese, Total	0.099		mg/l	0.010	--	1	08/03/17 16:11	08/04/17 15:24	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Lab Number: L1726662
Project Number: 20107
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-03
Client ID: FILTER C CBW
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/28/17 09:30
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	8.20		mg/l	0.050	--	1	08/03/17 16:11	08/04/17 15:28	EPA 3005A	19,200.7	PS
Manganese, Total	3.74		mg/l	0.010	--	1	08/03/17 16:11	08/04/17 15:28	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Lab Number: L1726662
Project Number: 20107
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-04
Client ID: FILTER C SSN
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/31/17 10:20
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.080		mg/l	0.050	--	1	08/03/17 16:11	08/04/17 15:32	EPA 3005A	19,200.7	PS
Manganese, Total	0.137		mg/l	0.010	--	1	08/03/17 16:11	08/04/17 15:32	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1028642-1										
Iron, Total	ND		mg/l	0.050	--	1	08/03/17 16:11	08/04/17 14:17	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/03/17 16:11	08/04/17 14:17	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1726662

Report Date: 08/08/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1028642-2								
Iron, Total	110		-		85-115	-		
Manganese, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028642-3 QC Sample: L1726569-01 Client ID: MS Sample												
Iron, Total	16.6	1	17.6	100		-	-		75-125	-		20
Manganese, Total	1.58	0.5	2.06	96		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1028642-7 QC Sample: L1726739-01 Client ID: MS Sample												
Iron, Total	0.215	1	1.30	108		-	-		75-125	-		20
Manganese, Total	0.057	0.5	0.535	96		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-01
Client ID: FILTER A CBW
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/28/17 09:30
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	32.		mg/l	10	NA	2	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	0.36		mg/l	0.02	--	1	-	08/02/17 22:52	121,4500CL-D	AS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-02
Client ID: FILTER A SSN
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/31/17 10:20
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/02/17 22:52	121,4500CL-D	AS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-03
Client ID: FILTER C CBW
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/28/17 09:30
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	78.		mg/l	10	NA	2	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/02/17 22:52	121,4500CL-D	AS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

SAMPLE RESULTS

Lab ID: L1726662-04
Client ID: FILTER C SSN
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 07/31/17 10:20
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/02/17 22:52	121,4500CL-D	AS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1726662
Report Date: 08/08/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1028281-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/02/17 22:52	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1028365-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1726662

Report Date: 08/08/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1028281-2								
Chlorine, Total Residual	93		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028281-4 QC Sample: L1726725-02 Client ID: MS Sample												
Chlorine, Total Residual	ND	0.248	ND	**0**	Q	-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028281-3 QC Sample: L1726725-01 Client ID: DUP Sample						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1028365-2 QC Sample: L1726662-03 Client ID: FILTER C CBW						
Solids, Total Suspended	78	73	mg/l	7		29

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1726662
Report Date: 08/08/17

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(*)
L1726662-01A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1726662-01B	Plastic 250ml unpreserved	A	7	7	5.6	Y	Absent		TRC-4500(1)
L1726662-01C	Plastic 950ml unpreserved	A	7	7	5.6	Y	Absent		TSS-2540(7)
L1726662-02A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1726662-02B	Plastic 250ml unpreserved	A	7	7	5.6	Y	Absent		TRC-4500(1)
L1726662-02C	Plastic 950ml unpreserved	A	7	7	5.6	Y	Absent		TSS-2540(7)
L1726662-03A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1726662-03B	Plastic 250ml unpreserved	A	7	7	5.6	Y	Absent		TRC-4500(1)
L1726662-03C	Plastic 950ml unpreserved	A	7	7	5.6	Y	Absent		TSS-2540(7)
L1726662-04A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1726662-04B	Plastic 250ml unpreserved	A	7	7	5.6	Y	Absent		TRC-4500(1)
L1726662-04C	Plastic 950ml unpreserved	A	7	7	5.6	Y	Absent		TSS-2540(7)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELLS	**Lab Number:**	L1726662
Project Number:	20107	**Report Date:**	08/08/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1726662
Project Number:	20107	**Report Date:**	08/08/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1726662
Project Number:	20107	**Report Date:**	08/08/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 8/2/17

ALPHA Job #: L1726662

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: BLUELEAF INC
Address: 57 DRESSER HILL RD
CHARLTON MA 01507
Phone: 508 248 7094
Email: egrotton@blueleafinc.com

Project Information

Project Name: MAITER WELLS
Project Location: BARNSTABLE MA
Project #: 20107
Project Manager: ERIK GROTTON
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due:

Additional Project Information:

Report Information - Data Deliverables

☒ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☒ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
FE, Mn (TOTAL)
TSS
CHLORIDE
RES. Dual (CT)

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
26662-01	FILTER A CBW	7/28	9:30	DW	BJS		3
-02	FILTER A SSW	7/31	10:20	DW	CAW		3
-03	FILTER C CBW	7/28	9:30	DW	BJS		3
-04	FILTER C SSW	7/31	10:20	DW	CAW		3

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/17 1403		8/2/17 14:03

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1726666
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	08/23/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726666-01	RAW-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-02	FILTER A-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-03	FILTER B-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-04	FILTER C-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-05	FILTER D-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-06	FILTER B-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-07	FILTER D-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-08	FILTER B-1 (DAY 7)	WATER	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-09	FILTER D-1 (DAY 7)	WATER	BARNSTABLE, MA	08/02/17 09:00	08/02/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELL PILOT **Lab Number:** L1726666
Project Number: 20107 **Report Date:** 08/23/17

Case Narrative (continued)

Report Submission

The analyses of Bromate and Haloacetic Acids were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Volatile Organics by Method 524

WG1030986: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was canceled; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

Total Metals

The WG1030338-2 LCS recovery, associated with L1726666-02 through -05, is above the acceptance criteria for aluminum (118%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

Chlorine, Total Residual

The WG1030455-4 MS recovery (52%), performed on L1726666-07, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

Anions by Ion Chromatography

The WG1029082-3 MS recovery, performed on L1726666-01, is outside the acceptance criteria for chloride (83%); however, the associated LCS recovery is within criteria. No further action was taken.

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: Kara Lindquist

Title: Technical Director/Representative Date: 08/23/17

ORGANICS

VOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-01
Client ID: RAW-1
Sample Location: BARNSTABLE, MA

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Matrix: Dw
Analytical Method: 16,524.2
Analytical Date: 08/10/17 17:30
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	ND		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	95		80-120

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-08
Client ID: FILTER B-1 (DAY 7)
Sample Location: BARNSTABLE, MA

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 16,524.2
Analytical Date: 08/11/17 16:08
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Chloroform	ND		ug/l	0.50	--	1
Bromodichloromethane	1.4		ug/l	0.50	--	1
Dibromochloromethane	2.4		ug/l	0.50	--	1
Bromoform	1.2		ug/l	0.50	--	1
THMs, Total	5.0		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	105		80-120
4-Bromofluorobenzene	95		80-120

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-09
Client ID: FILTER D-1 (DAY 7)
Sample Location: BARNSTABLE, MA

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Matrix: Water
Analytical Method: 16,524.2
Analytical Date: 08/11/17 14:57
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Chloroform	ND		ug/l	0.50	--	1
Bromodichloromethane	0.86		ug/l	0.50	--	1
Dibromochloromethane	2.2		ug/l	0.50	--	1
Bromoform	1.5		ug/l	0.50	--	1
THMs, Total	4.6		ug/l	0.50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	104		80-120
4-Bromofluorobenzene	93		80-120

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 08/11/17 07:14
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08-09 Batch: WG1030986-10					
Methyl tert butyl ether	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
THMs, Total	ND		ug/l	0.50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	102		80-120
4-Bromofluorobenzene	94		80-120

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 08/10/17 11:35
Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1030986-4					
Methyl tert butyl ether	ND		ug/l	0.50	--
Chloroform	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
Dibromochloromethane	ND		ug/l	0.50	--
Bromoform	ND		ug/l	0.50	--
THMs, Total	ND		ug/l	0.50	--
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichlorobenzene-d4	96		80-120
4-Bromofluorobenzene	93		80-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1030986-3								
Methyl tert butyl ether	98		-		70-130	-		20
Chloroform	105		-		70-130	-		20
Bromodichloromethane	108		-		70-130	-		20
Dibromochloromethane	105		-		70-130	-		20
Bromoform	102		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	96				80-120
4-Bromofluorobenzene	99				80-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08-09 Batch: WG1030986-9								
Methyl tert butyl ether	95		-		70-130	-		20
Chloroform	102		-		70-130	-		20
Bromodichloromethane	98		-		70-130	-		20
Dibromochloromethane	95		-		70-130	-		20
Bromoform	90		-		70-130	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4	100				80-120
4-Bromofluorobenzene	99				80-120

METALS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-01
Client ID: RAW-1
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Antimony, Total	ND		mg/l	0.0040	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Arsenic, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Barium, Total	0.0102		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Beryllium, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Cadmium, Total	ND		mg/l	0.0002	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Calcium, Total	4.86		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Chromium, Total	ND		mg/l	0.0030	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Copper, Total	ND		mg/l	0.010	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Iron, Total	0.060		mg/l	0.050	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Magnesium, Total	2.76		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Manganese, Total	0.042		mg/l	0.010	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Mercury, Total	ND		mg/l	0.0002	--	1	08/03/17 11:38	08/03/17 15:24	EPA 245.1	3,245.1	MG
Nickel, Total	ND		mg/l	0.0020	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Potassium, Total	ND		mg/l	2.50	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Selenium, Total	ND		mg/l	0.0050	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Silver, Total	ND		mg/l	0.007	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Sodium, Total	13.9		mg/l	2.00	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Thallium, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Zinc, Total	ND		mg/l	0.050	--	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	23.5		mg/l	0.660	NA	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Dissolved Metals - Mansfield Lab											
Iron, Dissolved	ND		mg/l	0.050	--	1	08/04/17 14:30	08/08/17 14:21	EPA 3005A	19,200.7	PS
Manganese, Dissolved	0.043		mg/l	0.010	--	1	08/04/17 14:30	08/08/17 14:21	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1726666
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-02
Client ID: FILTER A-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Calcium, Total	4.56		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Sodium, Total	13.8		mg/l	2.00	--	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	22.0		mg/l	0.660	NA	1	08/09/17 12:10	08/09/17 19:49	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1726666
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-03
Client ID: FILTER B-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Calcium, Total	4.49		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Sodium, Total	13.5		mg/l	2.00	--	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	21.6		mg/l	0.660	NA	1	08/09/17 12:10	08/09/17 19:53	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-04
Client ID: FILTER C-1
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Calcium, Total	4.60		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Sodium, Total	13.6		mg/l	2.00	--	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	22.2		mg/l	0.660	NA	1	08/09/17 12:10	08/09/17 19:57	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1726666
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-05
Client ID: FILTER D-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Calcium, Total	4.52		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Sodium, Total	13.4		mg/l	2.00	--	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	22.1		mg/l	0.660	NA	1	08/09/17 12:10	08/09/17 20:13	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1028413-1										
Antimony, Total	ND		mg/l	0.0040	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Arsenic, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Barium, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Beryllium, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Cadmium, Total	ND		mg/l	0.0002	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Chromium, Total	ND		mg/l	0.0030	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Nickel, Total	ND		mg/l	0.00200	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Selenium, Total	ND		mg/l	0.0050	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Thallium, Total	ND		mg/l	0.0010	--	1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1028415-1										
Aluminum, Total	ND		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Calcium, Total	ND		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Copper, Total	ND		mg/l	0.010	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Iron, Total	ND		mg/l	0.050	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Magnesium, Total	ND		mg/l	0.100	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Manganese, Total	ND		mg/l	0.010	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Potassium, Total	ND		mg/l	2.50	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Silver, Total	ND		mg/l	0.007	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Sodium, Total	ND		mg/l	2.00	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Zinc, Total	ND		mg/l	0.050	--	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1028415-1										
Hardness	ND		mg/l	0.660	NA	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1028518-1										
Mercury, Total	ND		mg/l	0.0002	--	1	08/03/17 11:38	08/03/17 15:01	3,245.1	MG

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1029006-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	08/04/17 14:30	08/08/17 13:47	19,200.7	PS
Manganese, Dissolved	ND		mg/l	0.010	--	1	08/04/17 14:30	08/08/17 13:47	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02-05 Batch: WG1030338-1										
Aluminum, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Calcium, Total	ND		mg/l	0.100	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Copper, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Sodium, Total	ND	mg/l	2.00	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 02-05 Batch: WG1030338-1										
Hardness	ND		mg/l	0.660	NA	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1028413-2								
Antimony, Total	111		-		85-115	-		
Arsenic, Total	105		-		85-115	-		
Barium, Total	109		-		85-115	-		
Beryllium, Total	102		-		85-115	-		
Cadmium, Total	108		-		85-115	-		
Chromium, Total	113		-		85-115	-		
Nickel, Total	112		-		85-115	-		
Selenium, Total	109		-		85-115	-		
Thallium, Total	105		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1028415-2								
Aluminum, Total	115		-		85-115	-		
Calcium, Total	94		-		85-115	-		
Copper, Total	103		-		85-115	-		
Iron, Total	112		-		85-115	-		
Magnesium, Total	101		-		85-115	-		
Manganese, Total	106		-		85-115	-		
Potassium, Total	99		-		85-115	-		
Silver, Total	107		-		85-115	-		
Sodium, Total	99		-		85-115	-		
Zinc, Total	111		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery		LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1028415-2						
Hardness	98		-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1028518-2						
Mercury, Total	108		-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1029006-2						
Iron, Dissolved	113		-	85-115	-	
Manganese, Dissolved	105		-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 02-05 Batch: WG1030338-2						
Aluminum, Total	**118**	Q	-	85-115	-	
Calcium, Total	99		-	85-115	-	
Copper, Total	108		-	85-115	-	
Iron, Total	112		-	85-115	-	
Manganese, Total	107		-	85-115	-	
Sodium, Total	100		-	85-115	-	
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 02-05 Batch: WG1030338-2						
Hardness	99		-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028413-3 QC Sample: L1726599-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5009	100		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1228	102		-	-		70-130	-		20
Barium, Total	0.0984	2	2.010	96		-	-		70-130	-		20
Beryllium, Total	ND	0.05	0.0563	113		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.0533	104		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1932	97		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4752	95		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1342	112		-	-		70-130	-		20
Thallium, Total	ND	0.12	0.1132	94		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028413-5 QC Sample: L1726600-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5478	110		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1216	101		-	-		70-130	-		20
Barium, Total	0.0386	2	2.103	103		-	-		70-130	-		20
Beryllium, Total	ND	0.05	0.0585	117		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.0567	111		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2106	105		-	-		70-130	-		20
Nickel, Total	0.0027	0.5	0.5248	104		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1124	94		-	-		70-130	-		20
Thallium, Total	ND	0.12	0.1182	98		-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028415-3 QC Sample: L1726599-01 Client ID: MS Sample										
Aluminum, Total	ND	2	2.43	122		-	-	75-125	-	20
Calcium, Total	72.3	10	80.6	83		-	-	75-125	-	20
Copper, Total	ND	0.25	0.283	113		-	-	75-125	-	20
Iron, Total	0.114	1	1.23	112		-	-	75-125	-	20
Magnesium, Total	15.6	10	24.9	93		-	-	75-125	-	20
Manganese, Total	0.989	0.5	1.49	100		-	-	75-125	-	20
Potassium, Total	14.5	10	25.0	105		-	-	75-125	-	20
Silver, Total	ND	0.05	0.055	110		-	-	75-125	-	20
Sodium, Total	523	10	515	**0**	Q	-	-	75-125	-	20
Zinc, Total	ND	0.5	0.539	108		-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028415-3 QC Sample: L1726599-01 Client ID: MS Sample										
Hardness	245	66.2	304	89		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028518-3 QC Sample: L1726599-01 Client ID: MS Sample										
Mercury, Total	ND	0.005	0.0046	91		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028518-5 QC Sample: L1726745-01 Client ID: MS Sample										
Mercury, Total	ND	0.005	0.0049	97		-	-	70-130	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1029006-3 QC Sample: L1726916-01 Client ID: MS Sample										
Iron, Dissolved	ND	1	1.13	113		-	-	75-125	-	20
Manganese, Dissolved	ND	0.5	0.524	105		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02-05 QC Batch ID: WG1030338-3 QC Sample: L1726830-02 Client ID: MS Sample										
Aluminum, Total	ND	2	2.46	123		-	-	75-125	-	20
Calcium, Total	147	10	150	**30**	Q	-	-	75-125	-	20
Copper, Total	ND	0.25	0.287	115		-	-	75-125	-	20
Iron, Total	ND	1	1.14	114		-	-	75-125	-	20
Manganese, Total	0.094	0.5	0.615	104		-	-	75-125	-	20
Sodium, Total	662	10	627	**0**	Q	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 02-05 QC Batch ID: WG1030338-3 QC Sample: L1726830-02 Client ID: MS Sample										
Hardness	420	66.2	459	**59**	Q	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028413-4 QC Sample: L1726599-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028415-4 QC Sample: L1726599-01 Client ID: DUP Sample						
Iron, Total	0.114	0.095	mg/l	18		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028518-4 QC Sample: L1726599-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1028518-6 QC Sample: L1726745-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02-05 QC Batch ID: WG1030338-4 QC Sample: L1726830-02 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-01
Client ID: RAW-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
Odor @ 60 C	NO ODOR		TON	1	--	1	-	08/02/17 20:30	30,2150B	AS
Color, True	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	15.0		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	130		mg/l	2.0	--	1	-	08/02/17 20:51	121,4500CO2-D	MR
Solids, Total Dissolved	42.		mg/l	10	--	1	-	08/03/17 13:35	121,2540C	DW
Cyanide, Total	ND		mg/l	0.005	--	1	08/03/17 10:45	08/03/17 14:30	121,4500CN-CE	LK
Fluoride	ND		mg/l	0.20	--	1	08/09/17 16:53	08/09/17 19:30	121,4500F-C	MM
pH (H)	6.4		SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.25		mg/l	0.10	--	1	-	08/02/17 21:06	44,353.2	MR
Total Organic Carbon	0.510		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/02/17 18:00	08/02/17 21:44	121,5540C	CW
Bacteria in Water - Westborough Lab										
Coliform, Total	Positive		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatography - Westborough Lab										
Chloride	22.0		mg/l	0.500	--	1	-	08/03/17 18:20	44,300.0	AU
Sulfate	10.0		mg/l	1.00	--	1	-	08/03/17 18:20	44,300.0	AU

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-02
Client ID: FILTER A-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	41.1		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	200		mg/l	2.0	--	1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9		SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26		mg/l	0.10	--	1	-	08/02/17 21:13	44,353.2	MR
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatography - Westborough Lab										
Chloride	22.6		mg/l	0.500	--	1	-	08/03/17 18:32	44,300.0	AU
Sulfate	9.56		mg/l	1.00	--	1	-	08/03/17 18:32	44,300.0	AU

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-03
Client ID: FILTER B-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	42.7		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	190		mg/l	2.0	--	1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.8		SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.27		mg/l	0.10	--	1	-	08/02/17 21:15	44,353.2	MR
Total Organic Carbon	0.510		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG
Dissolved Organic Carbon	ND		mg/l	1.0	--	1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatography - Westborough Lab										
Chloride	22.6		mg/l	0.500	--	1	-	08/03/17 18:44	44,300.0	AU
Sulfate	9.54		mg/l	1.00	--	1	-	08/03/17 18:44	44,300.0	AU

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-04
Client ID: FILTER C-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	43.2		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	200		mg/l	2.0	--	1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9		SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26		mg/l	0.10	--	1	-	08/02/17 21:16	44,353.2	MR
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatography - Westborough Lab										
Chloride	22.5		mg/l	0.500	--	1	-	08/03/17 18:56	44,300.0	AU
Sulfate	9.54		mg/l	1.00	--	1	-	08/03/17 18:56	44,300.0	AU

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-05
Client ID: FILTER D-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND		A.P.C.U.	5.0	--	1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	41.1		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	180		mg/l	2.0	--	1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9		SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26		mg/l	0.10	--	1	-	08/02/17 21:17	44,353.2	MR
Total Organic Carbon	0.520		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG
Dissolved Organic Carbon	ND		mg/l	1.0	--	1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
Bacteria in Water - Westborough Lab										
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatography - Westborough Lab										
Chloride	22.5		mg/l	0.500	--	1	-	08/03/17 19:08	44,300.0	AU
Sulfate	9.54		mg/l	1.00	--	1	-	08/03/17 19:08	44,300.0	AU

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-06
Client ID: FILTER B-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Simulated Distribution System - Westborough Lab										
Chlorine Dose	ND		mg Cl2/L	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Time	168		hours	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Initial	6.8		SU	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Final	7.19		SU	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Initial	20		deg. C	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Final	20		deg. C	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Initial	N/A		mg/l	.05	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final (as Total)	0.560		mg/l	0.050	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final (as Free)	ND		mg/l	0.050	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
General Chemistry - Westborough Lab										
Chlorine, Total Residual	0.56		mg/l	0.04	--	2	-	08/09/17 17:21	121,4500CL-D	AS
Chlorine, Residual Free	ND		mg/l	0.05	--	1	-	08/09/17 17:21	121,4500CL-D	AS
pH (H)	7.2		SU	-	NA	1	-	08/09/17 19:56	121,4500H+-B	AS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1726666-07
Client ID: FILTER D-1
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/02/17 09:00
Date Received: 08/02/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Simulated Distribution System - Westborough Lab										
Chlorine Dose	ND		mg Cl2/L	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Time	168		hours	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Initial	6.9		SU	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Final	7.1		SU	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Initial	20		deg. C	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Final	20		deg. C	-	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Initial	N/A		mg/l	.05	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final (as Total)	0.270		mg/l	0.050	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final (as Free)	ND		mg/l	0.050	--	1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
General Chemistry - Westborough Lab										
Chlorine, Total Residual	0.27		mg/l	0.02	--	1	-	08/09/17 17:21	121,4500CL-D	AS
Chlorine, Residual Free	ND		mg/l	0.05	--	1	-	08/09/17 17:21	121,4500CL-D	AS
pH (H)	7.1		SU	-	NA	1	-	08/09/17 19:56	121,4500H+-B	AS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1726666
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Bacteria in Water - Westborough Lab for sample(s): 01-05 Batch: WG1028244-1										
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1028252-1										
Odor	NO ODOR		TON	1	--	1	-	08/02/17 20:30	30,2150B	AS
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1028253-1										
Nitrogen, Nitrate	ND		mg/l	0.10	--	1	-	08/02/17 20:48	44,353.2	MR
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1028277-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG1028289-1										
Turbidity	ND		NTU	0.20	--	1	-	08/02/17 23:39	44,180.1	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1028299-1										
Surfactants, MBAS	ND		mg/l	0.050	--	1	08/02/17 18:00	08/02/17 21:39	121,5540C	CW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1028387-1										
Solids, Total Dissolved	ND		mg/l	10	--	1	-	08/03/17 13:35	121,2540C	DW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1028503-1										
Cyanide, Total	ND		mg/l	0.005	--	1	08/03/17 10:45	08/03/17 14:16	121,4500CN-CE	LK
Anions by Ion Chromatography - Westborough Lab for sample(s): 01-05 Batch: WG1029082-1										
Chloride	ND		mg/l	0.500	--	1	-	08/03/17 17:56	44,300.0	AU
Sulfate	ND		mg/l	1.00	--	1	-	08/03/17 17:56	44,300.0	AU
General Chemistry - Westborough Lab for sample(s): 01,03,05 Batch: WG1029445-1										
Total Organic Carbon	ND		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG
General Chemistry - Westborough Lab for sample(s): 03,05 Batch: WG1029602-1										
Dissolved Organic Carbon	ND		mg/l	1.0	--	1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1030446-1										
Fluoride	ND		mg/l	0.20	--	1	08/09/17 16:53	08/09/17 19:30	121,4500F-C	MM
General Chemistry - Westborough Lab for sample(s): 06-07 Batch: WG1030455-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	08/09/17 17:21	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 06-07 Batch: WG1030456-1										
Chlorine, Residual Free	ND		mg/l	0.05	--	1	-	08/09/17 17:21	121,4500CL-D	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1028243-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1028253-2								
Nitrogen, Nitrate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1028277-2								
Alkalinity, Total	106		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG1028289-2								
Turbidity	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1028299-2								
Surfactants, MBAS	100		-		65-126	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1028387-2								
Solids, Total Dissolved	108		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1028503-2								
Cyanide, Total	90		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date: 08/23/17

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-05 Batch: WG1029082-2					
Chloride	102	-	90-110	-	
Sulfate	103	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 Batch: WG1029445-2					
Total Organic Carbon	97	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 03,05 Batch: WG1029602-2					
Dissolved Organic Carbon	97	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1030446-2					
Fluoride	93	-	78-115	-	
General Chemistry - Westborough Lab Associated sample(s): 06-07 Batch: WG1030455-2					
Chlorine, Total Residual	109	-	90-110	-	
General Chemistry - Westborough Lab Associated sample(s): 06-07 Batch: WG1030456-2					
Chlorine, Residual Free	105	-		-	
General Chemistry - Westborough Lab Associated sample(s): 06-07 Batch: WG1030501-1					
pH	100	-	99-101	-	5

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028253-4 QC Sample: L1726666-01 Client ID: RAW-1												
Nitrogen, Nitrate	0.25	4	4.2	99		-	-		83-113	-		6
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028277-4 QC Sample: L1726666-01 Client ID: RAW-1												
Alkalinity, Total	15.0	100	114	99		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028299-4 QC Sample: L1726521-06 Client ID: MS Sample												
Surfactants, MBAS	0.140	0.4	0.440	75		-	-		52-157	-		32
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028503-4 QC Sample: L1726676-01 Client ID: MS Sample												
Cyanide, Total	0.034	0.2	0.226	96		-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1029082-3 QC Sample: L1726666-01 Client ID: RAW-1												
Chloride	22.0	4	25.3	**83**	Q	-	-		90-110	-		18
Sulfate	10.0	8	18.0	100		-	-		90-110	-		20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG1029445-4 QC Sample: L1726601-01 Client ID: MS Sample												
Total Organic Carbon	7.31	8	14.9	95		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 03,05 QC Batch ID: WG1029602-4 QC Sample: L1726666-05 Client ID: FILTER D-1												
Dissolved Organic Carbon	ND	4	4.8	119		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1030446-4 QC Sample: L1726666-01 Client ID: RAW-1												
Fluoride	ND	1	1.0	102		-	-		69-124	-		13
General Chemistry - Westborough Lab Associated sample(s): 06-07 QC Batch ID: WG1030455-4 QC Sample: L1726666-07 Client ID: FILTER D-1												
Chlorine, Total Residual	0.27	0.248	0.40	**52**	Q	-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028243-2 QC Sample: L1726666-05 Client ID: FILTER D-1						
pH (H)	6.9	6.9	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028252-2 QC Sample: L1726666-01 Client ID: RAW-1						
Odor	NO ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028253-3 QC Sample: L1726666-01 Client ID: RAW-1						
Nitrogen, Nitrate	0.25	0.26	mg/l	4		6
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028275-1 QC Sample: L1726666-01 Client ID: RAW-1						
Carbon Dioxide	130	120	mg/l	8		
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028277-3 QC Sample: L1726666-01 Client ID: RAW-1						
Alkalinity, Total	15.0	15.1	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028287-2 QC Sample: L1726666-05 Client ID: FILTER D-1						
Color, Apparent	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028288-1 QC Sample: L1726666-05 Client ID: FILTER D-1						
Color, True	ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1028289-3 QC Sample: L1726739-01 Client ID: DUP Sample						
Turbidity	1.7	1.6	NTU	6		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028299-3 QC Sample: L1726521-06 Client ID: DUP Sample						
Surfactants, MBAS	0.140	0.160	mg/l	13		32

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028387-3 QC Sample: L1726721-01 Client ID: DUP Sample					
Solids, Total Dissolved	89000	90000	mg/l	1	10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028503-3 QC Sample: L1726666-01 Client ID: RAW-1					
Cyanide, Total	ND	ND	mg/l	NC	30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1029082-4 QC Sample: L1726666-01 Client ID: RAW-1					
Chloride	22.0	22.0	mg/l	0	18
Sulfate	10.0	9.69	mg/l	3	20
General Chemistry - Westborough Lab Associated sample(s): 01,03,05 QC Batch ID: WG1029445-3 QC Sample: L1726601-01 Client ID: DUP Sample					
Total Organic Carbon	7.31	7.17	mg/l	2	20
General Chemistry - Westborough Lab Associated sample(s): 03,05 QC Batch ID: WG1029602-3 QC Sample: L1726666-03 Client ID: FILTER B-1					
Dissolved Organic Carbon	ND	ND	mg/l	NC	20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1030446-3 QC Sample: L1726666-01 Client ID: RAW-1					
Fluoride	ND	ND	mg/l	NC	13
General Chemistry - Westborough Lab Associated sample(s): 06-07 QC Batch ID: WG1030455-3 QC Sample: L1726666-06 Client ID: FILTER B-1					
Chlorine, Total Residual	0.56	0.58	mg/l	4	20
General Chemistry - Westborough Lab Associated sample(s): 06-07 QC Batch ID: WG1030456-3 QC Sample: L1726666-07 Client ID: FILTER D-1					
Chlorine, Residual Free	ND	ND	mg/l	NC	

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 06-07 QC Batch ID: WG1030501-2 QC Sample: L1727578-01 Client ID: DUP Sample					
pH	7.4	7.4	SU	0	5

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

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(*)
L1726666-01A	Vial HCl preserved	A	NA		4.7	Y	Absent		524.2(14)
L1726666-01B	Vial HCl preserved	A	NA		4.7	Y	Absent		524.2(14)
L1726666-01C	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-01D	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-01E	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-01F	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-01G	Plastic 250ml NaOH preserved	A	>12	>12	4.7	Y	Absent		TCN-4500(14)
L1726666-01H	Plastic 250ml unpreserved/No Headspace	A	NA		4.7	Y	Absent		ALK-T-2320(14),CO2(1)
L1726666-01J	Plastic 120ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),NI-2008T(180),ZN-UI(180),BE-2008T(180),K-UI(180),FE-UI(180),HARDU(180),MG-UI(180),AS-2008T(180),HG-U(28),SE-2008T(180),AL-UI(180),BA-2008T(180),MN-UI(180),NA-UI(180),CR-2008T(180),CU-UI(180),SB-2008T(180),TL-2008T(180)
L1726666-01K	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		-
L1726666-01L	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.7	Y	Absent		SUB-BROMATE(0)
L1726666-01M	Plastic 950ml unpreserved	A	7	7	4.7	Y	Absent		F-4500(28),SO4-300(28),CL-300(28),TURB-180(2),MBAS-5540(2),NO3-353(2),PH-4500(.01),TDS-2540(7)
L1726666-01N	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		COLOR-T-2120(2),COLOR-A-2120(2),ODOR-2150(1)
L1726666-01X	Plastic 250ml HNO3 preserved Filtrates	A	<2	<2	4.7	Y	Absent		FE-RI(180),MN-RI(180)
L1726666-02A	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-02B	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-02C	Plastic 120ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL-UI(180),MN-UI(180),CU-UI(180)
L1726666-02D	Plastic 250ml unpreserved/No Headspace	A	NA		4.7	Y	Absent		ALK-T-2320(14),CO2(1)

*Values in parentheses indicate holding time in days

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726666-02E	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)
L1726666-02F	Amber 500ml unpreserved	A	7	7	4.7	Y	Absent		COLOR-T-2120(2),COLOR-A-2120(2)
L1726666-03A	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-03B	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-03C	Plastic 120ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL-UI(180),MN-UI(180),CU-UI(180)
L1726666-03D	Plastic 250ml unpreserved/No Headspace	A	NA		4.7	Y	Absent		ALK-T-2320(14),CO2(1)
L1726666-03E	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)
L1726666-03F	Amber 500ml unpreserved	A	7	7	4.7	Y	Absent		COLOR-T-2120(2),COLOR-A-2120(2),DOC-5310(28)
L1726666-03G	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-03H	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-03J	Vial H2SO4 preserved	A	N/A	N/A	4.7	Y	Absent		HOLD-WETCHEM(0)
L1726666-03K	Vial H2SO4 preserved	A	N/A	N/A	4.7	Y	Absent		HOLD-WETCHEM(0)
L1726666-03L	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.7	Y	Absent		SUB-BROMATE(0)
L1726666-03X	Vial H2SO4 preserved split	A	NA		4.7	Y	Absent		DOC-5310(28)
L1726666-03X1	Vial H2SO4 preserved split	A	NA		4.7	Y	Absent		DOC-5310(28)
L1726666-04A	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-04B	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-04C	Plastic 120ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL-UI(180),MN-UI(180),CU-UI(180)
L1726666-04D	Plastic 250ml unpreserved/No Headspace	A	NA		4.7	Y	Absent		ALK-T-2320(14),CO2(1)
L1726666-04E	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)
L1726666-04F	Amber 500ml unpreserved	A	7	7	4.7	Y	Absent		COLOR-T-2120(2),COLOR-A-2120(2)
L1726666-05A	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-05B	Bacteria Cup Na2S2O3 preserved	A	NA		4.7	Y	Absent		T-COLI-C(1.25)
L1726666-05C	Plastic 120ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL-UI(180),MN-UI(180),CU-UI(180)
L1726666-05D	Plastic 250ml unpreserved/No Headspace	A	NA		4.7	Y	Absent		ALK-T-2320(14),CO2(1)
L1726666-05E	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1726666
Report Date: 08/23/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726666-05F	Amber 500ml unpreserved	A	7	7	4.7	Y	Absent		COLOR-T-2120(2),COLOR-A-2120(2),DOC-5310(28)
L1726666-05G	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-05H	Vial H2SO4 preserved	A	NA		4.7	Y	Absent		TOC-5310(28)
L1726666-05J	Vial H2SO4 preserved	A	N/A	N/A	4.7	Y	Absent		HOLD-WETCHEM(0)
L1726666-05K	Vial H2SO4 preserved	A	N/A	N/A	4.7	Y	Absent		HOLD-WETCHEM(0)
L1726666-05L	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.7	Y	Absent		SUB-BROMATE(0)
L1726666-05X	Vial H2SO4 preserved split	A	NA		4.7	Y	Absent		DOC-5310(28)
L1726666-05X1	Vial H2SO4 preserved split	A	NA		4.7	Y	Absent		DOC-5310(28)
L1726666-06A	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		SDS(1)
L1726666-06B	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		SDS(1)
L1726666-07A	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		SDS(1)
L1726666-07B	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		SDS(1)
L1726666-08X	Vial NH4Cl preserved split	A	N/A	N/A	4.7	Y	Absent		SUB-HAA(9)
L1726666-08X1	Vial NH4Cl preserved split	A	N/A	N/A	4.7	Y	Absent		SUB-HAA(9)
L1726666-08Y	Vial Ascorbic Acid/HCl preserved	A	NA		4.7	Y	Absent		524-THM(14)
L1726666-08Y1	Vial Ascorbic Acid/HCl preserved	A	NA		4.7	Y	Absent		524-THM(14)
L1726666-09X	Vial NH4Cl preserved split	A	N/A	N/A	4.7	Y	Absent		SUB-HAA(9)
L1726666-09X1	Vial NH4Cl preserved split	A	N/A	N/A	4.7	Y	Absent		SUB-HAA(9)
L1726666-09Y	Vial Ascorbic Acid/HCl preserved	A	NA		4.7	Y	Absent		524-THM(14)
L1726666-09Y1	Vial Ascorbic Acid/HCl preserved	A	NA		4.7	Y	Absent		524-THM(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1726666
Project Number:	20107	**Report Date:**	08/23/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1726666
Project Number:	20107	**Report Date:**	08/23/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1726666
Project Number:	20107	**Report Date:**	08/23/17

REFERENCES

3	Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
8	Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.
16	Methods for the Determination of Organic Compounds in Drinking Water - Supplement II. EPA/600/R-92/129, August 1992.
19	Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
30	Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
44	Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
121	Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 2

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/2/17

ALPHA Job #: L1726666

Client Information

Client: Bluelenf Inc
Address: 57 Dresser Hill Rd
Charlton, MA 01507
Phone: (508) 248-7094
Fax:
Email: egratton@bluelenfwater.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Gratton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: pH, TDS, Sol. Turb, Cl, F, Co2, NO3, Temp, Conductivity, Foam	Dissolved Fe, Mn	Fe, Mn, TOC, SEC, Hardness	TCN	Alkalinity	Total Coliform	TOC	MTBE	Color (Std)	pH, Turb, Co2, NO3, Temp, Sol.	Fe, Mn, Ca, Na, Cl, Al, Cu, Hardness	Color	Sample Specific Comments	TOTAL # BOTTLES
26666-01	Raw-1	8/2/17	9:00	DW	ARD	1	1	1	1	1	2	2	2	1					13
02	Filter A-1									1	2				1	1	1		6
03	Filter B-1									1	2	2			1	1	1		13
04	Filter C-1									1	2				1	1	1		6
05	Filter D-1									1	2	2			1	1	1		13

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Container Type	P													
Preservative														

Relinquished By:	Date/Time	Received By:	Date/Time
	8/2/17 14:03	CMason	8/2/17 14:03

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

MANSFIELD CHAIN OF CUSTODY

PAGE 2 OF 2

Date Rec'd in Lab: 8/2/17

ALPHA Job #: L1726666

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Blueleaf Inc
Address: 57 Dresser Hill Rd
Charlton, MA 01507
Phone: (508) 248-7094
Fax:
Email: egrotton@blueleafwater.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ANALYSIS: DOC; SDS (THM, HAAS); Bromate — See Ethan Leighton For SDS parameters

SAMPLE HANDLING
Filtration ________
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	DOC	SDS (THM, HAAS)	Bromate	Sample Specific Comments	TOTAL # BOTTLES
	Raw-1	8/2/17	9:00	DW	ARD			1		13
	Filter A-1	↓	↓	↓	↓					6
26666-06	Filter B-1	↓	↓	↓	↓	2	2	1		13
	Filter C-1	↓	↓	↓	↓					6
07	Filter D-1	↓	↓	↓	↓	2	2	1		13

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/2/17 14:03	[signature]	8/2/17 14:03

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 101-09 (rev. 27-SEP-10)

SUB UPS: **Eurofins, Indiana** RS

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1726666

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Karyn Raymond

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L1726666** on this report.

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-1	08/02/17	09:00	DW		X		1
	FILTER B-1	08/02/17	09:00	DW		X		1
	FILTER D-1	08/02/17	09:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	EDA		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

SUB COURIER: Granite State, NH

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1726666 on this report.

Date Rec'd in Lab:

ALPHA Job #: L1726666

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	HAA	Sample Specific Comments	TOTAL # BOTTLES
	FILTER B-1 (DAY 7)	8/2/17	09:00	DW		X		2
	FILTER D-1 (DAY 7)	8/2/17	09:00	DW		X		2

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	V	-	-	-	-	-	-	-	-	-	-	-	
Preservative	J	-	-	-	-	-	-	-	-	-	-	-	

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

SUB COURIER: Granite State, NH

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab | ALPHA Job #: L1726666

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information — ☐ FAX ☐ EMAIL ☐ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information — ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1726666 on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	HAA	Sample Specific Comments	TOTAL # BOTTLES
	FILTER B-1 (DAY 7)	8/2/17	09:00	DW		x		2
	FILTER D-1 (DAY 7)	8/2/17	09:00	DW		x		2

Container Type	V	-	-	-	-	-	-	-	-	-	-	-	
Preservative	J	-	-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/10/17		8/10/17 805
	8/10/17 1105		8/10/17 14:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

4.4

FORM NO: 01-01(I)
Rev. 30-JUL-07)

eurofins | Eaton Analytical

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

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LABORATORY CASE NARRATIVE

Client: Alpha Analytical Report #: 394723CN

All method QC was within acceptance limits.

Note: This report was amended on 08/23/17 to report results on EEA generic report format, at the request of the client.

08/23/2017

Authorized Signature Title Date

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytica

Attn: Karyn Raymond
Eight Walkup Drive
Westborough, MA 01581

Report: 394723
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3748604	L1726666-Raw-1	317.0	08/02/17 09:00	Client	08/04/17 09:45
3748605	L1726666-Filter B-1	317.0	08/02/17 09:00	Client	08/04/17 09:45
3748606	L1726666-Filter D-1	317.0	08/02/17 09:00	Client	08/04/17 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

08/23/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytica
Report #: 394723

Client Name: Alpha Analytica

Report #: 394723

Sampling Point: L1726666-Raw-1

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/08/17 09:15	3748604

Sampling Point: L1726666-Filter B-1

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/08/17 10:05	3748605

Sampling Point: L1726666-Filter D-1

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/08/17 11:20	3748606

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytica Report #: 394723

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SDB UPS: Eurofins, Indiana (KY)

324343

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CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1726666

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Karyn Raymond

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 394723

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L1726666** on this report.

Wet

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE												TOTAL # BOTTLES
	RAW-1 3748604	08/02/17	09:00	DW		X												1
	FILTER B-1 605	08/02/17	09:00	DW		X												1
	FILTER D-1 606	08/02/17	09:00	DW		X												1

Container Type: P - - - - - - - - - - -

Preservative: EDA - - - - - - - - - - -

Serial_No:08231715:28

LEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
IA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/3/17	KDW	8-4-17 09:15

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

(M NO: 01-01)
30-JUL-07

Page 7 of 7

GRANITE STATE ANALYTICAL SERVICES, LLC
22 Manchester Road, Unit 2, Derry, NH 03038
Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837
http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 08/21/2017
CLIENT NAME: Alpha Analytical
CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1708-01534-001
SAMPLED BY: Client-Customer
SAMPLE ADDRESS: L1726666
Filter B-1 (Day 7)
MA
LOCATION:

Legend
Passes ✓
Fails EPA Primary ⊗
Fails EPA Secondary ▼
Fails State Guideline ✕
Attention ⚠

DATE AND TIME COLLECTED: 08/02/2017 9:00AM
DATE AND TIME RECEIVED: 08/10/2017 2:05PM
ANALYSIS PACKAGE: HAA GSA
RECEIPT TEMPERATURE: ON ICE 4.4° CELSIUS
CLIENT JOB #

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Date Extracted	-					No Limit	EPA 552.2	ND-NH	08/15/17 9:30AM
Dibromoacetic Acid*	1.3	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 1:58AM
Dichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 1:58AM
Monobromoacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 1:58AM
Monochloroacetic Acid*	<2	ug/L			2	No Limit	EPA 552.2	BM-NH	08/17/17 1:58AM
Total Haloacetic Acids*	1.3	ug/L	✓		1	60 ug/L	EPA 552.2	BM-NH	08/17/17 1:58AM
Trichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 1:58AM
2,3-Dibromopropionic Acid	100	%				No Limit	EPA 552.2 - SS	BM-NH	08/17/17 1:58AM

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

*** MA Certified Analysis**

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

This analysis meets Commonwealth of Massachusetts requirements except as noted.
State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |

GRANITE STATE ANALYTICAL SERVICES, LLC
22 Manchester Road, Unit 2, Derry, NH 03038
Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837
http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

DATE PRINTED: 08/21/2017
CLIENT NAME: Alpha Analytical
CLIENT ADDRESS: 8 Walkup Dr.
Westborough, MA 01581

SAMPLE ID#: 1708-01534-002
SAMPLED BY: Client-Customer
SAMPLE ADDRESS: L1726666
Filter D-1 (Day 7)
MA
LOCATION:

DATE AND TIME COLLECTED: 08/02/2017 9:00AM
DATE AND TIME RECEIVED: 08/10/2017 2:05PM
ANALYSIS PACKAGE: HAA GSA
RECEIPT TEMPERATURE: ON ICE 4.4° 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 552.2	ND-NH	08/15/17 9:30AM
Dibromoacetic Acid*	1.3	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 2:38AM
Dichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 2:38AM
Monobromoacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 2:38AM
Monochloroacetic Acid*	<2	ug/L			2	No Limit	EPA 552.2	BM-NH	08/17/17 2:38AM
Total Haloacetic Acids*	1.3	ug/L	✓		1	60 ug/L	EPA 552.2	BM-NH	08/17/17 2:38AM
Trichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH	08/17/17 2:38AM
2,3-Dibromopropionic Acid	103	%				No Limit	EPA 552.2 - SS	BM-NH	08/17/17 2:38AM

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

*** MA Certified Analysis**

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

This analysis meets Commonwealth of Massachusetts requirements except as noted.
State Certifications: | NH 1015 | MA M-NH003 | ME NH00003 | RI 101513 | VT VT-101507 |

ANALYTICAL REPORT

Lab Number:	L1726977
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	BARNSTABLE, MA
Project Number:	Not Specified
Report Date:	08/21/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726977-01	RAW 3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-02	FILTER A3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-03	FILTER C3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-04	FILTER E3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-05	FILTER F3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-06	UV 3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-07	FIELD BLANK	WATER	BARNSTABLE, MA	08/03/17 10:00	08/03/17

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	BARNSTABLE, MA	**Lab Number:**	L1726977
Project Number:	Not Specified	**Report Date:**	08/21/17

Case Narrative (continued)

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with [ice] and delivered directly from the sampling site.

Perfluorinated Alkyl Acids

L1726977-05, -06, and -07: The surrogate recovery was outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda); however, re-analysis achieved similar results: 133%, 153%, and 142%, respectively. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1726977-01, -04, -05, and -06, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031620-3 LCSD recovery, associated with L1726977-07, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/21/17

ORGANICS

SEMIVOLATILES

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-01
Client ID: RAW 3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/10/17 20:44
Analyst: TJ

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.628		ug/l	0.160	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	85		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-01
Client ID: RAW 3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 23:33
Analyst: AR

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	16.9		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	80.2		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	117		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-04
Client ID: FILTER E3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/10/17 21:27
Analyst: TJ

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.299		ug/l	0.160	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	97		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-04
Client ID: FILTER E3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 23:42
Analyst: AR

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	121		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	125		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-05
Client ID: FILTER F3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/10/17 22:10
Analyst: TJ

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.279		ug/l	0.163	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	94		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-05 R
Client ID: FILTER F3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 23:51
Analyst: AR

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	123		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**133**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-06
Client ID: UV 3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/10/17 22:32
Analyst: TJ

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.691		ug/l	0.163	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	103		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-06 R
Client ID: UV 3
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/19/17 00:00
Analyst: AR

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.5		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	91.0		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**153**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	119		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-07 R
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Water
Analytical Method: 122,537
Analytical Date: 08/19/17 00:10
Analyst: AR

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	117		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 08/10/17 12:20
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01,04-06 Batch: WG1030897-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/18/17 22:19
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,04-06 Batch: WG1031619-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/18/17 22:19
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 07 Batch: WG1031620-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01,04-06 Batch: WG1030897-2 WG1030897-3								
1,4-Dioxane	94		98		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	110		111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,04-06 Batch: WG1031619-2 WG1031619-3								
Perfluorooctanoic Acid (PFOA)	128		**133**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**135**	Q	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 07 Batch: WG1031620-2 WG1031620-3								
Perfluorooctanoic Acid (PFOA)	128		**133**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**135**	Q	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s): 01,04-06	QC Batch ID: WG1030897-5	QC Sample: L1726977-04	Client ID: FILTER E3								
1,4-Dioxane	0.299	10.9	9.91	88		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	98				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01,04-06 QC Batch ID: WG1030897-4 QC Sample: L1726977-01 Client ID: RAW 3						
1,4-Dioxane	0.628	0.721	ug/l	14		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	85		101		70-130

METALS

Project Name: BARNSTABLE, MA
Project Number: Not Specified
Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-01
Client ID: RAW 3
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.058		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 20:22	EPA 3005A	19,200.7	PS
Manganese, Total	0.040		mg/l	0.0010	--	1	08/09/17 12:10	08/10/17 09:50	EPA 3005A	3,200.8	AM

Project Name: BARNSTABLE, MA
Project Number: Not Specified
Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-02
Client ID: FILTER A3
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 20:26	EPA 3005A	19,200.7	PS
Manganese, Total	0.0026		mg/l	0.0010	--	1	08/09/17 12:10	08/10/17 09:54	EPA 3005A	3,200.8	AM

Project Name: BARNSTABLE, MA
Project Number: Not Specified
Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-03
Client ID: FILTER C3
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 20:30	EPA 3005A	19,200.7	PS
Manganese, Total	0.0030		mg/l	0.0010	--	1	08/09/17 12:10	08/10/17 09:58	EPA 3005A	3,200.8	AM

Project Name: BARNSTABLE, MA
Project Number: Not Specified
Lab Number: L1726977
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1030329-1										
Manganese, Total	ND		mg/l	0.0010	--	1	08/09/17 12:10	08/10/17 09:26	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1030338-1										
Iron, Total	ND		mg/l	0.050	--	1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1030329-2								
Manganese, Total	114		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1030338-2								
Iron, Total	112		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1030329-3 QC Sample: L1726830-02 Client ID: MS Sample												
Manganese, Total	0.0913	0.5	0.6372	109		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1030338-3 QC Sample: L1726830-02 Client ID: MS Sample												
Iron, Total	ND	1	1.14	114		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1030338-4 QC Sample: L1726830-02 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-01
Client ID: RAW 3
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	15.5		mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA
pH (H)	5.8		SU	-	NA	1	-	08/04/17 07:55	121,4500H+-B	VB

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-02
Client ID: FILTER A3
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	43.5		mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-03
Client ID: FILTER C3
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/03/17 10:00
Date Received: 08/03/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	42.0		mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA

Project Name: BARNSTABLE, MA
Project Number: Not Specified
Lab Number: L1726977
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1028787-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1028860-1										
Turbidity	ND		NTU	0.20	--	1	-	08/04/17 05:30	44,180.1	VB

Lab Control Sample Analysis

Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1028787-2								
Alkalinity, Total	105		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1028860-2								
Turbidity	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1028873-1								
pH	100		-		99-101	-		5

Matrix Spike Analysis
Batch Quality Control

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1028787-4 QC Sample: L1726977-02 Client ID: FILTER A3												
Alkalinity, Total	43.5	100	140	96		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1028787-3 QC Sample: L1726977-02 Client ID: FILTER A3						
Alkalinity, Total	43.5	42.6	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1028860-3 QC Sample: L1726977-01 Client ID: RAW 3						
Turbidity	ND	ND	NTU	NC		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1028873-2 QC Sample: L1726916-01 Client ID: DUP Sample						
pH	7.8	7.8	SU	0		5

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726977-01A	Plastic 120ml HNO3 preserved	A	<2	<2	7.4	Y	Absent		MN-2008T(180),FE-UI(180)
L1726977-01B	Plastic 250ml unpreserved/No Headspace	A	NA		7.4	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1726977-01C	Plastic 250ml Trizma preserved	A	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-01D	Plastic 250ml Trizma preserved	A	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-01E	Plastic 250ml Trizma preserved	A	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-01F	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1726977-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1726977-02A	Plastic 120ml HNO3 preserved	A	<2	<2	7.4	Y	Absent		MN-2008T(180),FE-UI(180)
L1726977-02B	Plastic 120ml unpreserved	A	7	7	7.4	Y	Absent		TURB-180(2)
L1726977-02C	Plastic 250ml unpreserved/No Headspace	A	NA		7.4	Y	Absent		ALK-T-2320(14)
L1726977-03A	Plastic 120ml HNO3 preserved	A	<2	<2	7.4	Y	Absent		MN-2008T(180),FE-UI(180)
L1726977-03B	Plastic 120ml unpreserved	A	7	7	7.4	Y	Absent		TURB-180(2)
L1726977-03C	Plastic 250ml unpreserved/No Headspace	A	NA		7.4	Y	Absent		ALK-T-2320(14)
L1726977-04A	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-04B	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-04C	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-04D	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)
L1726977-04E	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)
L1726977-05A	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-05B	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-05C	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-05D	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: BARNSTABLE, MA
Project Number: Not Specified

Lab Number: L1726977
Report Date: 08/21/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1726977-05E	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)
L1726977-06A	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-06B	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-06C	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1726977-06D	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)
L1726977-06E	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	8.0	Y	Absent		A2-14DIOXANE-522(28)
L1726977-07A	Plastic 250ml Trizma preserved	B	NA		8.0	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	BARNSTABLE, MA	**Lab Number:**	L1726977
Project Number:	Not Specified	**Report Date:**	08/21/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	BARNSTABLE, MA	**Lab Number:**	L1726977
Project Number:	Not Specified	**Report Date:**	08/21/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE_____ OF _____

Date Rec'd in Lab: 8-3-17

ALPHA Job #: L1726977

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Client Information

Client: BLUELEAF INC.
Address: 57 PRESSER HILL RD
CHARLTON, MA 01507
Phone: (508) 294-3714
Email: egrotton@blueleafwater.com

Additional Project Information:

Project Information

Project Name: BARNSTABLE, MA
Project Location: BARNSTABLE, MA
Project #:
Project Manager: ERIK GROTTON
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

Report Information - Data Deliverables

☐ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______________ Criteria ______________

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Fe (total), Mn (total); Alk, ~~[illegible]~~, turbidity; 1,4-dioxane; PFOC/PFOA; pH

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Fe (total), Mn (total)	Alk, turbidity	1,4-dioxane	PFOC/PFOA	pH	Sample Comments	TOTAL # BOTTLES
26977-01	RAW 3	8/3/17	10:00	DW	CAW	X	X	X	X	X		7
-02	FILTER A 3	↓	↓	↓	↓	X	X					3
-03	FILTER C 3	↓	↓	↓	↓	X	X					3
-04	FILTER E 3	↓	↓	↓	↓			X	X			5
-05	FILTER F 3	↓	↓	↓	↓			X	X			5
-06	UV 3	↓	↓	↓	↓			X	X			5
-07	Field Blank	↓	↓	↓	↓				X			2

(30)

Container Type
Preservative

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/3/17 15:49	Will AAL	8/3/17 1549

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYTICAL REPORT

Lab Number:	L1727204
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELLS
Project Number:	20107
Report Date:	08/21/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1727204-01	RAW 4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-02	FILTER A4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-03	FILTER C4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-04	UV EFF4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-05	FILTER E4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-06	FILTER F4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

Case Narrative (continued)

Perfluorinated Alkyl Acids

L1727204-04 and -06: The surrogate recovery was outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda); however, re-analysis achieved similar results: 137% and 136%, respectively. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1727204-01, -04, -05, and -06, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 08/21/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-01
Client ID: RAW 4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 00:22
Analyst: TJ

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.590		ug/l	0.156	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	86		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-01
Client ID: RAW 4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 22:28
Analyst: AR

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	18.2		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	87.8		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-04
Client ID: UV EFF4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 00:44
Analyst: TJ

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.633		ug/l	0.156	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	93		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-04
Client ID: UV EFF4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 22:46
Analyst: AR

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	16.7		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	68.9		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**137**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	115		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-05
Client ID: FILTER E4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 01:28
Analyst: TJ

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.316		ug/l	0.156	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	91		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-05
Client ID: FILTER E4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 23:05
Analyst: AR

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	126		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	128		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-06
Client ID: FILTER F4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 01:50
Analyst: TJ

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.309		ug/l	0.153	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	95		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-06
Client ID: FILTER F4
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/18/17 23:14
Analyst: AR

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.92	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.92	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	127		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**136**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 08/10/17 12:20
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01,04-06 Batch: WG1030897-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112		70-130

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/18/17 22:19
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,04-06 Batch: WG1031619-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01,04-06 Batch: WG1030897-2 WG1030897-3								
1,4-Dioxane	94		98		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	110		111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,04-06 Batch: WG1031619-2 WG1031619-3								
Perfluorooctanoic Acid (PFOA)	128		**133**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**135**	Q	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

Report Date: 08/21/17

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 EPA 537 - Mansfield Lab EFF4	Associated sample(s): 01,04-06		QC Batch ID: WG1031619-5			QC Sample: L1727204-04			Client ID: UV			
Perfluorooctanoic Acid (PFOA)	16.7	37	67.9	**138**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	68.9	34.3	117	**140**	Q	-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**151**	Q			70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,04-06 QC Batch ID: WG1031619-4 QC Sample: L1727204-01 Client ID: RAW 4						
Perfluorooctanoic Acid (PFOA)	18.2	18.9	ng/l	4		30
Perfluorooctanesulfonic Acid (PFOS)	87.8	84.8	ng/l	3		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		123		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		126		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		95		70-130

METALS

Project Name: MAHER WELLS
Lab Number: L1727204
Project Number: 20107
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-01
Client ID: RAW 4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.063		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 13:57	EPA 3005A	19,200.7	PS
Manganese, Total	0.044		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 13:57	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Lab Number: L1727204
Project Number: 20107
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-02
Client ID: FILTER A4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 14:02	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 14:02	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Lab Number: L1727204
Project Number: 20107
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-03
Client ID: FILTER C4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 14:07	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 14:07	EPA 3005A	19,200.7	PS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1029844-1										
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1029844-2								
Iron, Total	111		-		85-115	-		
Manganese, Total	107		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1029844-3 QC Sample: L1727176-02 Client ID: MS Sample												
Iron, Total	0.863	1	1.99	113		-	-		75-125	-		20
Manganese, Total	0.129	0.5	0.662	107		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1029844-7 QC Sample: L1727337-01 Client ID: MS Sample												
Iron, Total	ND	1	1.16	116		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.555	111		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-01
Client ID: RAW 4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	15.7		mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
pH (H)	6.3		SU	-	NA	1	-	08/06/17 16:20	121,4500H+-B	JC

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-02
Client ID: FILTER A4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	43.6		mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
pH (H)	6.9		SU	-	NA	1	-	08/06/17 16:20	121,4500H+-B	JC

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-03
Client ID: FILTER C4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.23		NTU	0.20	--	1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	43.6		mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
pH (H)	6.9		SU	-	NA	1	-	08/06/17 16:20	121,4500H+-B	JC

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-05
Client ID: FILTER E4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Total Organic Carbon	ND		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-06
Client ID: FILTER F4
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/04/17 10:00
Date Received: 08/04/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Total Organic Carbon	ND		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1727204
Report Date: 08/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1029164-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1029169-1										
Turbidity	ND		NTU	0.20	--	1	-	08/05/17 05:26	44,180.1	KA
General Chemistry - Westborough Lab for sample(s): 05-06 Batch: WG1029445-1										
Total Organic Carbon	ND		mg/l	0.500	--	1	-	08/07/17 13:03	121,5310C	AG

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

Report Date: 08/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1029164-2								
Alkalinity, Total	107		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1029169-2								
Turbidity	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1029386-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 05-06 Batch: WG1029445-2								
Total Organic Carbon	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1029164-4 QC Sample: L1727204-02 Client ID: FILTER A4												
Alkalinity, Total	43.6	100	143	99		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 05-06 QC Batch ID: WG1029445-4 QC Sample: L1726601-01 Client ID: MS Sample												
Total Organic Carbon	7.31	8	14.9	95		-	-		80-120	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1029164-3 QC Sample: L1727204-02 Client ID: FILTER A4						
Alkalinity, Total	43.6	42.8	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1029169-3 QC Sample: L1727204-03 Client ID: FILTER C4						
Turbidity	0.23	0.23	NTU	0		13
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1029386-2 QC Sample: L1727204-01 Client ID: RAW 4						
pH (H)	6.3	6.3	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 05-06 QC Batch ID: WG1029445-3 QC Sample: L1726601-01 Client ID: DUP Sample						
Total Organic Carbon	7.31	7.17	mg/l	2		20

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1727204-01A	Plastic 120ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		FE-UI(180),MN-UI(180)
L1727204-01B	Plastic 250ml unpreserved/No Headspace	A	NA		5.1	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1727204-01C	Plastic 250ml Trizma preserved	A	NA		5.1	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-01D	Plastic 250ml Trizma preserved	A	NA		5.1	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-01E	Plastic 250ml Trizma preserved	A	NA		5.1	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-01F	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-02A	Plastic 120ml unpreserved	A	8	8	5.1	Y	Absent		TURB-180(2),PH-4500(.01)
L1727204-02B	Plastic 120ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		FE-UI(180),MN-UI(180)
L1727204-02C	Plastic 250ml unpreserved/No Headspace	A	NA		5.1	Y	Absent		ALK-T-2320(14)
L1727204-03A	Plastic 120ml unpreserved	A	8	8	5.1	Y	Absent		TURB-180(2),PH-4500(.01)
L1727204-03B	Plastic 120ml HNO3 preserved	A	<2	<2	5.1	Y	Absent		FE-UI(180),MN-UI(180)
L1727204-03C	Plastic 250ml unpreserved/No Headspace	A	NA		5.1	Y	Absent		ALK-T-2320(14)
L1727204-04A	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-04B	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-04C	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-04D	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-04E	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-05A	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-05B	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-05C	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-05D	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1727204
Report Date: 08/21/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1727204-05E	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-05F	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-05G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-05H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-06A	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-06B	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-06C	Vial H2SO4 preserved	A	NA		5.1	Y	Absent		TOC-5310(28)
L1727204-06D	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-06E	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-06F	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1727204-06G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)
L1727204-06H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.1	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELLS	**Lab Number:**	L1727204
Project Number:	20107	**Report Date:**	08/21/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1727204
Project Number:	20107	**Report Date:**	08/21/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1727204
Project Number:	20107	**Report Date:**	08/21/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

MANSFIELD CHAIN OF CUSTODY

PAGE_____ OF _____

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 8/4/17

ALPHA Job #: L1727204 ~~L1729CS~~

Client Information

Client: Blueleaf Inc
Address: 57 Dresser Hill Rd
Charlton, MA 01507
Phone: (508) 248-7094
Fax:
Email: egrotton@blueleafwater.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Maher Wells
Project Location: Barnstable MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ANALYSIS: Fe, Mn (Total) | pH, Turb, Alk | Alk | Turb | 1,4-Dioxane | PFOC/PFOA | TOC

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Fe, Mn (Total)	pH, Turb, Alk	Alk	Turb	1,4-Dioxane	PFOC/PFOA	TOC	Sample Specific Comments	TOTAL # BOTTLES
27204-01	Raw 4	8/4/17	10:00	DW	CAW	1	1			2	3			7
-02	Filter A4	↓	↓	↓	↓	1		1	1					3
-03	Filter C4					1		1	1					3
-04	UV Eff 4									2	3			5
-05	Filter E4									2	3	2		~~8~~ 7
-06	Filter F4									2	3	2		~~8~~ 7

Container Type	P	P	P	P	A	P	A
Preservative	C	A	A	A	O	O	D

Relinquished By:	Date/Time	Received By:	Date/Time
	8/4/17 1702		8/4/17 1702

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

ANALYTICAL REPORT

Lab Number:	L1727347
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	08/23/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1727347-01	RAW-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-02	TROJAN-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-03	FILTER-E-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-04	FILTER-F-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-05	FIELD BLANK	WATER	BARNSTABLE, MA	08/07/17 11:30	08/07/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELL PILOT **Lab Number:** L1727347
Project Number: 20107 **Report Date:** 08/23/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with melted ice and delivered directly from the sampling site.
L1727347-01, -02, -03 and -04: The sample was received above the appropriate pH for the 1,4 Dioxane by EPA 522 analysis.

Perfluorinated Alkyl Acids by EPA 537

L1727347-01: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (15%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (11%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (52%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.
L1727347-02: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (4%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (3%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (32%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.
L1727347-03: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (0%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (3%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (39%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.
L1727347-04: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (15%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (4%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (41%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.
L1727347-05: The surrogate recovery was outside the acceptance criteria; however, re-analysis achieved

Project Name: MAHER WELL PILOT **Lab Number:** L1727347
Project Number: 20107 **Report Date:** 08/23/17

Case Narrative (continued)

similar results: perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (146%). The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1727347-01 through -04, is outside the acceptance criteria for individual target compounds; however, re-analysis achieved similar results. The results of the associated samples are reported; however, all results are considered to have a potentially high bias for perfluorooctanoic acid (pfoa) (133%).

The WG1031620-3 LCSD recovery, associated with L1727347-05, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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: Kara Lindquist

Title: Technical Director/Representative Date: 08/23/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-01
Client ID: RAW-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 02:12
Analyst: TJ

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.594		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	87		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-01
Client ID: RAW-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/19/17 00:19
Analyst: AR

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	86.2		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**15**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**11**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**52**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-02
Client ID: TROJAN-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 02:33
Analyst: TJ

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	87		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-02
Client ID: TROJAN-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/19/17 00:28
Analyst: AR

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	89.5		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**4**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**3**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**32**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-03
Client ID: FILTER-E-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 02:55
Analyst: TJ

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.214		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	90		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-03
Client ID: FILTER-E-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/19/17 00:37
Analyst: AR

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**0**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**3**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**39**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-04
Client ID: FILTER-F-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/11/17 03:17
Analyst: TJ

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.238		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	88		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-04
Client ID: FILTER-F-5
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/19/17 00:46
Analyst: AR

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**15**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**4**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**41**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-05 R
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Water
Analytical Method: 122,537
Analytical Date: 08/19/17 00:56
Analyst: AR

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	129		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**146**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	114		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 08/10/17 12:20
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 08/10/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1030897-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	112		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/18/17 22:19
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-04 Batch: WG1031619-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/18/17 22:19
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 05 Batch: WG1031620-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1030897-2 WG1030897-3								
1,4-Dioxane	94		98		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	110		111		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1031619-2 WG1031619-3								
Perfluorooctanoic Acid (PFOA)	128		**133**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**135**	Q	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 05 Batch: WG1031620-2 WG1031620-3								
Perfluorooctanoic Acid (PFOA)	128		**133**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		**132**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**135**	Q	**142**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

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 EPA 537 - Mansfield Lab	Associated sample(s): 01-04		QC Batch ID: WG1031619-5			QC Sample: L1727204-04			Client ID: MS Sample			
Perfluorooctanoic Acid (PFOA)	16.7	37	67.9	**138**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	68.9	34.3	117	**140**	Q	-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**151**	Q			70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1031619-4 QC Sample: L1727204-01 Client ID: DUP Sample						
Perfluorooctanoic Acid (PFOA)	18.2	18.9	ng/l	4		30
Perfluorooctanesulfonic Acid (PFOS)	87.8	84.8	ng/l	3		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		123		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		126		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		95		70-130

METALS

Project Name: MAHER WELL PILOT
Lab Number: L1727347
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-01
Client ID: RAW-5
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.080		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 15:03	EPA 3005A	19,200.7	PS
Manganese, Total	0.051		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 15:03	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1727347
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-02
Client ID: TROJAN-5
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.081		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 15:08	EPA 3005A	19,200.7	PS
Manganese, Total	0.053		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 15:08	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1727347
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-03
Client ID: FILTER-E-5
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 15:13	EPA 3005A	19,200.7	PS
Manganese, Total	0.060		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 15:13	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1727347
Project Number: 20107
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-04
Client ID: FILTER-F-5
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 15:17	EPA 3005A	19,200.7	PS
Manganese, Total	0.058		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 15:17	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1029844-1										
Iron, Total	ND		mg/l	0.050	--	1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1029844-2								
Iron, Total	111		-		85-115	-		
Manganese, Total	107		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029844-3 QC Sample: L1727176-02 Client ID: MS Sample												
Iron, Total	0.863	1	1.99	113		-	-		75-125	-		20
Manganese, Total	0.129	0.5	0.662	107		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1029844-7 QC Sample: L1727337-01 Client ID: MS Sample												
Iron, Total	ND	1	1.16	116		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.555	111		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: L1727347-01
Client ID: RAW-5
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/07/17 11:30
Date Received: 08/07/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.22		NTU	0.20	--	1	-	08/07/17 23:13	44,180.1	JC
Alkalinity, Total	15.2		mg CaCO3/L	2.00	NA	1	-	08/08/17 09:02	121,2320B	BR
pH (H)	6.0		SU	-	NA	1	-	08/08/17 02:27	121,4500H+-B	VB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1727347
Report Date: 08/23/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1029718-1										
Turbidity	ND		NTU	0.20	--	1	-	08/07/17 23:13	44,180.1	JC
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1029847-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/08/17 09:02	121,2320B	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1029718-2								
Turbidity	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1029743-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1029847-2								
Alkalinity, Total	105		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1029847-4 QC Sample: L1727173-01 Client ID: MS Sample												
Alkalinity, Total	105	100	205	100		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1029718-3 QC Sample: L1727347-01 Client ID: RAW-5						
Turbidity	0.22	0.22	NTU	0		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1029743-2 QC Sample: L1727253-01 Client ID: DUP Sample						
pH	7.4	7.3	SU	1		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1029847-3 QC Sample: L1727173-01 Client ID: DUP Sample						
Alkalinity, Total	105	103	mg CaCO3/L	2		10

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1727347-01A	Plastic 250ml unpreserved/No Headspace	B	NA		12.8	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1727347-01B	Plastic 120ml Other preserved (sub-lab)	B	7	7	12.8	Y	Absent		SUB-BROMATE(0)
L1727347-01C	Plastic 120ml HNO3 preserved	B	<2	<2	12.8	Y	Absent		FE-UI(180),MN-UI(180)
L1727347-01D	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-01E	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-01F	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-01G	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-01H	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-02A	Plastic 120ml Other preserved (sub-lab)	B	7	7	12.8	Y	Absent		SUB-BROMATE(0)
L1727347-02B	Plastic 120ml HNO3 preserved	B	<2	<2	12.8	Y	Absent		FE-UI(180),MN-UI(180)
L1727347-02C	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-02D	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-02E	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-02F	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-02G	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-03A	Plastic 120ml Other preserved (sub-lab)	B	7	7	12.8	Y	Absent		SUB-BROMATE(0)
L1727347-03B	Plastic 120ml HNO3 preserved	B	<2	<2	12.8	Y	Absent		FE-UI(180),MN-UI(180)
L1727347-03C	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-03D	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-03E	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-03F	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-03G	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1727347
Report Date: 08/23/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1727347-04A	Plastic 120ml Other preserved (sub-lab)	B	7	7	12.8	Y	Absent		SUB-BROMATE(0)
L1727347-04B	Plastic 120ml HNO3 preserved	B	<2	<2	12.8	Y	Absent		FE-UI(180),MN-UI(180)
L1727347-04C	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-04D	Amber 500ml NaSulfite/NaHSO4 preserved	B	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-04E	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-04F	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-04G	Plastic 250ml Trizma preserved	B	NA		12.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1727347-05A	Plastic 250ml Trizma preserved	A	NA		11.2	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1727347
Project Number:	20107	**Report Date:**	08/23/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1727347
Project Number:	20107	**Report Date:**	08/23/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1727347
Project Number:	20107	**Report Date:**	08/23/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 8/7/17

ALPHA Job #: L1727347

Client Information

Client: Bluelect, Inc.
Address: 57 Dresser Hill Rd
Charlton, MA 01507
Phone: 774 200 8029
Email: egrotton@bluelectwater.com

Additional Project Information:

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ____________ Criteria ____________

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB/PEST	TPH	Total Fe + Mn	Alk, pH, Turb	Bromate	1,4 Dioxane	PFOC/PFOA	Sample Comments	TOTAL # BOTTLES
27347-01	Raw-5	8/7/17	11:30	DW	ARD									X	X	X	X	X		8
-02	Trojan-5	↓	↓	↓	↓									X		X	X	X		7
-03	Filter E-5	↓	↓	↓	↓									X		X	X	X		7
-04	Filter F-5	↓	↓	↓	↓									X		X	X	X		7
-05	Field Blank	↓	↓	↓	↓													X		

Container Type
Preservative

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/7/17 1842	[signature]	8/7/17 1842

FORM NO: 01-01 (rev. 12-Mar-2012)

RS

SUB UPS: Eurofins, IN

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1727347

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information — ☐ FAX ☐ EMAIL ☐ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information — ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # L1727347 on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
	RAW-5	8/7/17	11 30	DW		X		3
	TROJAN-5	8/7/17	11 30	DW		X		3
	FILTER-E-5	8/7/17	11 30	DW		X		3
	FILTER-F-5	8/7/17	11 30	DW		X		3

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	T		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

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LABORATORY CASE NARRATIVE

Client: Alpha Analytical Report #: 395104CN

All method QC was within acceptance limits.

Note: This report was amended on 08/23/17 to report results on EEA generic report format, at the request of the client.

08/23/2017

Authorized Signature Title Date

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110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 395104
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3751821	L1727347-1/Raw-5	317.0	08/07/17 11:30	Client	08/09/17 10:00
3751822	L1727347-2/Trojan-5	317.0	08/07/17 11:30	Client	08/09/17 10:00
3751823	L1727347-3/Filter-E-5	317.0	08/07/17 11:30	Client	08/09/17 10:00
3751824	L1727347-4/Filter-F-5	317.0	08/07/17 11:30	Client	08/09/17 10:00

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

08/23/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 395104

Client Name: Alpha Analytical

Report #: 395104

Sampling Point: L1727347-1/Raw-5

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/11/17 03:35	3751821

Sampling Point: L1727347-2/Trojan-5

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/11/17 04:00	3751822

Sampling Point: L1727347-3/Filter-E-5

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/11/17 04:25	3751823

Sampling Point: L1727347-4/Filter-F-5

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/11/17 04:50	3751824

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 395104

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

KD

SUB UPS: Eurofins, IN

324562
3 95104

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1727347

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # L1727347 on this report.

wet

ANALYSIS

Client Provided Sample Container

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
37515821	RAW-5 L1727347-1	8/7/17	11 30	DW		X		3
822	TROJAN-5 -2	8/7/17	11 30	DW		X		3
823	FILTER-E-5 -3	8/7/17	11 30	DW		X		3
824	FILTER-F-5 -4	8/7/17	11 30	DW		X		3

Container Type	P		-	-	-	-	-	-	-	-	-	
Preservative	T		-	-	-	-	-	-	-	-	-	

Serial_No:08231715:30

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/8/17	KDenw 8-9-17	1000

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

ANALYTICAL REPORT

Lab Number:	L1728130
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	08/28/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1728130-01	RAW-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-02	TROJAN-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-03	FILTER E-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-04	FILTER F-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-05	FIELD BLANK	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1728130
Project Number:	20107	**Report Date:**	08/28/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Perfluorinated Alkyl Acids

The WG1034331-2/-3 LCS/LCSD recoveries, associated with L1728130-01 through -05, were outside the acceptance criteria for individual target compounds; however, re-analysis achieved similar results. The results of the re-analysis are reported; however, all results are considered to have a potentially high bias for perfluorooctanoic acid (pfoa) (134%/150%) and perfluorooctanesulfonic acid (pfos) (LCSD at 142%).

The WG1034331-5 MS recovery, performed on L1728130-02, is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (133%).

The surrogate recovery for the WG1034331-4 Laboratory Duplicate, performed on L1728130-01, is outside the acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (133%). The native sample has acceptable surrogate recoveries, and the duplicate RPDs are within method criteria; therefore, no further action was taken.

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: Michelle M. Morris

Title: Technical Director/Representative Date: 08/28/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-01
Client ID: RAW-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/15/17 15:59
Analyst: WR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/15/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.661		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-01
Client ID: RAW-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 09:32
Analyst: AR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	21.3		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	93.4		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-02
Client ID: TROJAN-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/15/17 16:21
Analyst: WR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/15/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	101		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-02
Client ID: TROJAN-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 09:51
Analyst: AR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	21.6		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	99.3		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	104		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-03
Client ID: FILTER E-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/15/17 16:44
Analyst: WR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/15/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.411		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	101		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-03
Client ID: FILTER E-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 10:09
Analyst: AR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-04
Client ID: FILTER F-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/16/17 11:52
Analyst: WR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/15/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.416		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	102		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-04
Client ID: FILTER F-6
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 10:18
Analyst: AR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.67	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.67	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 10:27
Analyst: AR

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.39	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.39	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 08/15/17 11:23
Analyst: WR

Extraction Method: EPA 522
Extraction Date: 08/15/17 10:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1032071-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	109		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/25/17 09:23
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/22/17 18:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-05 Batch: WG1034331-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

Report Date: 08/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1032071-2 WG1032071-3								
1,4-Dioxane	100		99		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	112		109		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

Report Date: 08/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1034331-2 WG1034331-3								
Perfluorooctanoic Acid (PFOA)	**134**	Q	**150**	Q	70-130	11		30
Perfluorooctanesulfonic Acid (PFOS)	126		**142**	Q	70-130	12		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		117		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		121		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		106		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1032071-5 QC Sample: L1728130-02 Client ID: TROJAN-6												
1,4-Dioxane	ND	0.962	0.850	88		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	90				70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

Report Date: 08/28/17

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 EPA 537 - Mansfield Lab	Associated sample(s): 01-05		QC Batch ID: WG1034331-5			QC Sample: L1728130-02			Client ID: TROJAN-6			
Perfluorooctanoic Acid (PFOA)	21.6	34.5	67.5	**133**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	99.3	31.9	134	109		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	110				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1032071-4 QC Sample: L1728130-01 Client ID: RAW-6						
1,4-Dioxane	0.661	0.534	ug/l	21		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	106		85		70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1034331-4 QC Sample: L1728130-01 Client ID: RAW-6						
Perfluorooctanoic Acid (PFOA)	21.3	23.7	ng/l	11		30
Perfluorooctanesulfonic Acid (PFOS)	93.4	98.4	ng/l	5		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	**118**		**133**	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		113		70-130

METALS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-01
Client ID: RAW-6
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.057		mg/l	0.050	--	1	08/14/17 16:30	08/15/17 16:09	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010	--	1	08/14/17 16:30	08/15/17 16:09	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Lab Number: L1728130
Project Number: 20107
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-02
Client ID: TROJAN-6
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.057		mg/l	0.050	--	1	08/14/17 16:30	08/15/17 16:27	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010	--	1	08/14/17 16:30	08/15/17 16:27	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Lab Number: L1728130
Project Number: 20107
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-03
Client ID: FILTER E-6
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/14/17 16:30	08/15/17 16:32	EPA 3005A	19,200.7	AB
Manganese, Total	0.052		mg/l	0.010	--	1	08/14/17 16:30	08/15/17 16:32	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Lab Number: L1728130
Project Number: 20107
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-04
Client ID: FILTER F-6
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/14/17 16:30	08/15/17 16:37	EPA 3005A	19,200.7	AB
Manganese, Total	0.053		mg/l	0.010	--	1	08/14/17 16:30	08/15/17 16:37	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1031804-1										
Iron, Total	ND		mg/l	0.050	--	1	08/14/17 16:30	08/15/17 15:32	19,200.7	AB
Manganese, Total	ND		mg/l	0.010	--	1	08/14/17 16:30	08/15/17 15:32	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

Report Date: 08/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1031804-2								
Iron, Total	109		-		85-115	-		
Manganese, Total	101		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1031804-3 QC Sample: L1728111-01 Client ID: MS Sample												
Iron, Total	0.231	1	1.29	106		-	-		75-125	-		20
Manganese, Total	0.035	0.5	0.541	101		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1031804-7 QC Sample: L1728163-01 Client ID: MS Sample												
Iron, Total	0.069	1	1.17	110		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.518	104		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-01
Client ID: RAW-6
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/11/17 09:00
Date Received: 08/11/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	ND		NTU	0.20	--	1	-	08/12/17 04:33	44,180.1	VB
Alkalinity, Total	14.4		mg CaCO3/L	2.00	NA	1	-	08/12/17 03:30	121,2320B	VB
pH (H)	6.2		SU	-	NA	1	-	08/12/17 03:05	121,4500H+-B	VB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1728130
Report Date: 08/28/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1031349-1										
Turbidity	ND		NTU	0.20	--	1	-	08/12/17 04:33	44,180.1	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1031355-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/12/17 03:30	121,2320B	VB

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

Report Date: 08/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1031335-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1031349-2								
Turbidity	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1031355-2								
Alkalinity, Total	106		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1031355-4 QC Sample: L1728130-01 Client ID: RAW-6												
Alkalinity, Total	14.4	100	112	98		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1031335-2 QC Sample: L1728194-01 Client ID: DUP Sample						
pH	6.8	6.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1031349-3 QC Sample: L1728116-01 Client ID: DUP Sample						
Turbidity	5.4	5.2	NTU	4		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1031355-3 QC Sample: L1728130-01 Client ID: RAW-6						
Alkalinity, Total	14.4	14.3	mg CaCO3/L	1		10

Project Name: MAHER WELL PILOT
Project Number: 20107

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Report Date: 08/28/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1728130-01A	Plastic 120ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-UI(180),MN-UI(180)
L1728130-01B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.3	Y	Absent		SUB-BROMATE(0)
L1728130-01C	Plastic 250ml unpreserved/No Headspace	B	NA		3.5	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1728130-01D	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-01E	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-01F	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-02A	Plastic 120ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-UI(180),MN-UI(180)
L1728130-02B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.3	Y	Absent		SUB-BROMATE(0)
L1728130-02D	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-02E	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-02F	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-02G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-02H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-03A	Plastic 120ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-UI(180),MN-UI(180)
L1728130-03B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.3	Y	Absent		SUB-BROMATE(0)
L1728130-03D	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-03E	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-03F	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-03G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-03H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1728130
Report Date: 08/28/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1728130-04A	Plastic 120ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-UI(180),MN-UI(180)
L1728130-04B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.3	Y	Absent		SUB-BROMATE(0)
L1728130-04D	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-04E	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-04F	Plastic 250ml Trizma preserved	A	NA		5.3	Y	Absent		A2-537-PFOA/PFOS(14)
L1728130-04G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-04H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.3	Y	Absent		A2-14DIOXANE-522(28)
L1728130-05A	Plastic 250ml Trizma preserved	B	NA		3.5	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1728130
Project Number:	20107	**Report Date:**	08/28/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1728130
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Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1728130
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REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 8/11/17

ALPHA Job #: L1728130

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Gotton
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Bluleaf, Inc.
Address: 57 Dresser Hill Rd.
Charlton, MA 01507
Phone: 774 200 8029
Email: egrotton@bluleafwater.com

Additional Project Information:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ____ Criteria ____

Turn-Around Time

☐ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS (MCP)	METALS (RCRA)	EPH	VPH	PCB/PEST	TPH	Total Fe + Mn	Alk, pH, Turbidity	Bromate	1,4 Dioxane	PFOS / PFOA	Sample Comments	TOTAL # BOTTLES
28130-01	Raw-6	8/11/17	9:00	DW	ARD									X	X	X	X	X		8
02	Trojan-6	↓	↓	↓	↓									X		X	X	X		7
03	Filter E-6	↓	↓	↓	↓									X		X	X	X		7
04	Filter F-6	↓	↓	↓	↓									X		X	X	X		7
05	Field Blank	↓	↓	↓	↓													X		1

Container Type
Preservative

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/11/17 13:31	[signature] AAL	8/11/17 1331

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1728130

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1728130 on this report.

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE												Sample Specific Comments	TOTAL # BOTTLES
	RAW-6	8/11/17	09:00	DW		x													1
	TROJAN-6	8/11/17	09:00	DW		x													1
	FILTER E-6	8/11/17	09:00	DW		x													1
	FILTER F-6	8/11/17	09:00	DW		x													1

PLEASE ANSWER QUESTIONS ABOVE!

Container Type	A		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

IS YOUR PROJECT MA MCP or CT RCP?

FORM NO: 01-01(I) (rev. 5-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

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110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 395883
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3759110	L1728130-1/RAW-6	317.0	08/11/17 09:00	Client	08/17/17 09:45
3759111	L1728130-2/TROJAN-6	317.0	08/11/17 09:00	Client	08/17/17 09:45
3759112	L1728130-3/FILTER E-6	317.0	08/11/17 09:00	Client	08/17/17 09:45
3759113	L1728130-4/FILTER F-6	317.0	08/11/17 09:00	Client	08/17/17 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

08/23/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 395883

Client Name: Alpha Analytical

Report #: 395883

Sampling Point: L1728130-1/RAW-6

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/18/17 07:19	3759110

Sampling Point: L1728130-2/TROJAN-6

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/18/17 07:44	3759111

Sampling Point: L1728130-3/FILTER E-6

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/18/17 08:09	3759112

Sampling Point: L1728130-4/FILTER F-6

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/18/17 08:34	3759113

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 395883

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

PUB UPS:EUROFINS,IN

325023

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1728130

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #: 395883

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1728130 on this report.

Wt 1.6 °C

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
37591 10	RAW-6 L1728130-1	8/11/17	09:00	DW		x		1
11	TROJAN-6 -2	8/11/17	09:00	DW		x		1
12	FILTER E-6 -3	8/11/17	09:00	DW		x		1
13	FILTER F-6 -4	8/11/17	09:00	DW		x		1

Container Type	A		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

FORM NO: 01-01(I) (rev. 30-JUL-07)

Relinquished By:	Date/Time	Received By:	Date/Time
	8/14/17	KDW 8-17-17	0945

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

ANALYTICAL REPORT

Lab Number:	L1729058
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	09/12/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1729058-01	RAW-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-02	TROJAN-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-03	FILTER E-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-04	FILTER F-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-05	FIELD BLANK	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site.

Perfluorinated Alkyl Acids

The WG1034748-2/-3 LCS/LCSD recoveries, associated with L1729058-01 through -05, are outside the acceptance criteria for individual target compounds. The results of the associated samples are reported; however, all results are considered to have a potentially high bias for perfluorooctanoic acid (pfoa) (140%/145%) and perfluorooctanesulfonic acid (pfos) (140%/140%).

The WG1034748-5 MS recovery, performed on L1729058-02, is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (135%).

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: Kara Lindquist

Title: Technical Director/Representative Date: 09/12/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-01
Client ID: RAW-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/23/17 19:17
Analyst: TJ

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/23/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.518		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	94		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-01
Client ID: RAW-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 11:23
Analyst: AR

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.5		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	82.3		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-02
Client ID: TROJAN-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/23/17 19:39
Analyst: TJ

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/23/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	97		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-02
Client ID: TROJAN-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 11:41
Analyst: AR

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	22.0		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	87.9		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	97		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-03
Client ID: FILTER E-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/23/17 20:02
Analyst: TJ

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/23/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.204		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	98		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-03
Client ID: FILTER E-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 11:59
Analyst: AR

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	122		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-04
Client ID: FILTER F-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 08/23/17 20:25
Analyst: TJ

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 08/23/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.209		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	95		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-04
Client ID: FILTER F-7
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 12:09
Analyst: AR

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	115		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	127		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	119		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 08/25/17 12:18
Analyst: AR

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 08/23/17 06:15
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 08/23/17 06:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1034633-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	104		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 08/25/17 11:13
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/23/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-05 Batch: WG1034748-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

Report Date: 09/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1034633-2 WG1034633-3								
1,4-Dioxane	92		95		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	107		109		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

Report Date: 09/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1034748-2 WG1034748-3								
Perfluorooctanoic Acid (PFOA)	**140**	Q	**145**	Q	70-130	4		30
Perfluorooctanesulfonic Acid (PFOS)	**140**	Q	**140**	Q	70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		103		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	111		110		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		112		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

Report Date: 09/12/17

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 EPA 537 - Mansfield Lab	Associated sample(s): 01-05		QC Batch ID: WG1034748-5			QC Sample: L1729058-02			Client ID: TROJAN-7			
Perfluorooctanoic Acid (PFOA)	22.0	34.5	68.7	**135**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	87.9	31.9	129	129		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	116				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1034748-4 QC Sample: L1729058-01 Client ID: RAW-7						
Perfluorooctanoic Acid (PFOA)	20.5	20.3	ng/l	1		30
Perfluorooctanesulfonic Acid (PFOS)	82.3	81.3	ng/l	1		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		109		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		119		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		103		70-130

METALS

Project Name: MAHER WELL PILOT
Lab Number: L1729058
Project Number: 20107
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-01
Client ID: RAW-7
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.062		mg/l	0.050	--	1	08/22/17 10:00	08/22/17 22:32	EPA 3005A	19,200.7	PS
Manganese, Total	0.050		mg/l	0.010	--	1	08/22/17 10:00	08/22/17 22:32	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1729058
Project Number: 20107
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-02
Client ID: TROJAN-7
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.072		mg/l	0.050	--	1	08/22/17 10:00	08/22/17 22:36	EPA 3005A	19,200.7	PS
Manganese, Total	0.051		mg/l	0.010	--	1	08/22/17 10:00	08/22/17 22:36	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1729058
Project Number: 20107
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-03
Client ID: FILTER E-7
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/22/17 10:00	08/22/17 22:40	EPA 3005A	19,200.7	PS
Manganese, Total	0.052		mg/l	0.010	--	1	08/22/17 10:00	08/22/17 22:40	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Lab Number: L1729058
Project Number: 20107
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-04
Client ID: FILTER F-7
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/22/17 10:00	08/22/17 22:56	EPA 3005A	19,200.7	PS
Manganese, Total	0.051		mg/l	0.010	--	1	08/22/17 10:00	08/22/17 22:56	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1034149-1										
Iron, Total	ND		mg/l	0.050	--	1	08/22/17 10:00	08/22/17 21:10	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	08/22/17 10:00	08/22/17 21:10	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

Report Date: 09/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1034149-2								
Iron, Total	111		-		85-115	-		
Manganese, Total	105		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1034149-3 QC Sample: L1729109-01 Client ID: MS Sample												
Iron, Total	ND	1	1.16	116		-	-		75-125	-		20
Manganese, Total	0.010	0.5	0.538	106		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1034149-7 QC Sample: L1729308-01 Client ID: MS Sample												
Iron, Total	8.67	1	9.50	83		-	-		75-125	-		20
Manganese, Total	2.27	0.5	2.72	90		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1034149-8 QC Sample: L1729308-01 Client ID: DUP Sample						
Iron, Total	8.67	8.89	mg/l	3		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-01
Client ID: RAW-7
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/18/17 09:00
Date Received: 08/18/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.22		NTU	0.20	--	1	-	08/19/17 01:09	44,180.1	VB
Alkalinity, Total	13.1		mg CaCO3/L	2.00	NA	1	-	08/19/17 01:05	121,2320B	VB
pH (H)	6.2		SU	-	NA	1	-	08/19/17 08:01	121,4500H+-B	VB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729058
Report Date: 09/12/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033535-1										
Turbidity	ND		NTU	0.20	--	1	-	08/19/17 01:09	44,180.1	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1033537-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/19/17 01:05	121,2320B	VB

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

Report Date: 09/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033534-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033535-2								
Turbidity	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1033537-2								
Alkalinity, Total	107		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033537-4 QC Sample: L1729058-01 Client ID: RAW-7												
Alkalinity, Total	13.1	100	113	100		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033534-2 QC Sample: L1729058-01 Client ID: RAW-7						
pH (H)	6.2	6.2	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033535-3 QC Sample: L1729058-01 Client ID: RAW-7						
Turbidity	0.22	0.20	NTU	10		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1033537-3 QC Sample: L1729058-01 Client ID: RAW-7						
Alkalinity, Total	13.1	13.2	mg CaCO3/L	1		10

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1729058-01A	Plastic 120ml HNO3 preserved	B	<2	<2	7.8	Y	Absent		FE-UI(180),MN-UI(180)
L1729058-01B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.8	Y	Absent		SUB-BROMATE(0)
L1729058-01C	Plastic 250ml unpreserved/No Headspace	B	NA		7.8	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1729058-01D	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-01E	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-01F	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-01G	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-01H	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-02A	Plastic 120ml HNO3 preserved	B	<2	<2	7.8	Y	Absent		FE-UI(180),MN-UI(180)
L1729058-02B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.8	Y	Absent		SUB-BROMATE(0)
L1729058-02D	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-02E	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-02F	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-02G	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-02H	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-03A	Plastic 120ml HNO3 preserved	B	<2	<2	7.8	Y	Absent		FE-UI(180),MN-UI(180)
L1729058-03B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.8	Y	Absent		SUB-BROMATE(0)
L1729058-03D	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-03E	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-03F	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-03G	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-03H	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1729058-04A	Plastic 120ml HNO3 preserved	B	<2	<2	7.8	Y	Absent		FE-UI(180),MN-UI(180)
L1729058-04B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.8	Y	Absent		SUB-BROMATE(0)
L1729058-04D	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-04E	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-04F	Plastic 250ml Trizma preserved	B	NA		7.8	Y	Absent		A2-537-PFOA/PFOS(14)
L1729058-04G	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-04H	Amber 500ml NaSulfite/NaHSO4 preserved	B	<4	<4	7.8	Y	Absent		A2-14DIOXANE-522(28)
L1729058-05A	Plastic 250ml Trizma preserved	A	NA		8.9	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729058
Project Number:	20107	**Report Date:**	09/12/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729058
Project Number:	20107	**Report Date:**	09/12/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729058
Project Number:	20107	**Report Date:**	09/12/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

Serial_No:09121714:48

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 8/18/17

ALPHA Job #: L1729058

Client Information

Client: Bluleaf, Inc.
Address: 57 Dresser Hill Rd. Charlton, MA 01507
Phone: 774 200 8029
Email: egrotton@blueleafwater.com

Additional Project Information:

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2 | SVOC: ☐ ABN ☐ PAH | METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15 | METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13 | EPH: ☐ Ranges & Targets ☐ Ranges Only | VPH: ☐ Ranges & Targets ☐ Ranges Only | ☐ PCB ☐ PEST | TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB/PEST	TPH	Total Fe + Mn	Alk, pH, Turb	Bromate	1,4 Dioxane	PFOC, PFOA	Sample Comments	TOTAL # BOTTLES
29058-01	Raw - 7	8/18/17	9:00	DW	ARD									X	X	X	X	X		8
-02	Trojan - 7	↓	↓	↓	↓									X		X	X	X		7
-03	Filter E - 7	↓	↓	↓	↓									X		X	X	X		7
-04	Filter F - 7	↓	↓	↓	↓									X		X	X	X		7
-05	Field Blank	↓	↓	↓	↓													X		

Container Type	
Preservative	

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/18/17 13:15	[signature]	8/18/17 13:15

FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, IN

CHAIN OF CUSTODY

ALPHA ANALYTICAL
Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1729058 on this report.

Date Rec'd in Lab:

ALPHA Job #:L1729058

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-7	8/18/17	09:00	DW		x		1
	TROJAN-7	8/18/17	09:00	DW		x		1
	FILTER E-7	8/18/17	09:00	DW		x		1
	FILTER F-7	8/18/17	09:00	DW		x		1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 396213
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3762640	L1729058 RAW-7	317.0	08/18/17 09:00	Client	08/22/17 09:45
3762641	L1729058 TROJAN-7	317.0	08/18/17 09:00	Client	08/22/17 09:45
3762642	L1729058 FILTER E-7	317.0	08/18/17 09:00	Client	08/22/17 09:45
3762643	L1729058 FILTER F-7	317.0	08/18/17 09:00	Client	08/22/17 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Jim Van Fleit ASM

09/05/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 396213

Client Name: Alpha Analytical Report #: 396213

Sampling Point: L1729058 RAW-7 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/24/17 09:23	3762640

Sampling Point: L1729058 TROJAN-7 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/24/17 09:48	3762641

Sampling Point: L1729058 FILTER E-7 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/25/17 01:44	3762642

Sampling Point: L1729058 FILTER F-7 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	08/25/17 02:09	3762643

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 396213

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN

396213 325296

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1729058

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1729058 on this report.

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
3762640	RAW-7	8/18/17	09:00	DW		X		1
641	TROJAN-7	8/18/17	09:00	DW		X		1
642	FILTER E-7	8/18/17	09:00	DW		X		1
643	FILTER F-7	8/18/17	09:00	DW		X		1
							0.6°C wet	

Container Type: P - - - - - - - - - - -

Preservative: O - - - - - - - - - - -

Serial_No:09121714:48

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
			8-22-17 0945

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO. 01-01(I) (rev. 30-Jul-07)

ANALYTICAL REPORT

Lab Number:	L1729617
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	09/13/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1729617-01	RAW-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-02	TROJAN -8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-03	FILTER E-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-04	FILTER F-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-05	FIELD BLANK	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELL PILOT **Lab Number:** L1729617
Project Number: 20107 **Report Date:** 09/13/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Perfluorinated Alkyl Acids

The WG1036202-3 LCSD recovery, associated with L1729617-01 through -05, is outside the individual acceptance criteria for perfluorooctanesulfonic acid (pfos) (134%). The results of the associated samples are reported.

The WG1036202-5 MS recovery, performed on L1729617-02, is outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (136%).

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 09/13/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-01
Client ID: RAW-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/06/17 17:28
Analyst: TJ

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/05/17 09:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.553		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	103		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-01
Client ID: RAW-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/12/17 11:31
Analyst: AR

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.4		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	77.1		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-02
Client ID: TROJAN -8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/06/17 18:21
Analyst: TJ

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/05/17 09:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	99		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-02
Client ID: TROJAN -8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/12/17 11:50
Analyst: AR

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.7		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	85.7		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	99		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-03
Client ID: FILTER E-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/06/17 19:17
Analyst: TJ

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/05/17 09:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	99		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-03
Client ID: FILTER E-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/12/17 12:59
Analyst: AR

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	102		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-04
Client ID: FILTER F-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/06/17 19:46
Analyst: TJ

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/05/17 09:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	100		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-04
Client ID: FILTER F-8
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/12/17 13:08
Analyst: AR

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/12/17 13:18
Analyst: AR

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	116		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/12/17 11:22
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 08/28/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-05 Batch: WG1036202-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	107		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	101		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 09/05/17 11:24
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 09/05/17 09:30

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1038558-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	102		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729617

Report Date: 09/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1036202-2 WG1036202-3								
Perfluorooctanoic Acid (PFOA)	116		127		70-130	9		30
Perfluorooctanesulfonic Acid (PFOS)	128		**134**	Q	70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		112		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	99		98		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		107		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729617

Report Date: 09/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1038558-2 WG1038558-3								
1,4-Dioxane	74		75		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	81		82		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

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 EPA 537 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1036202-5 QC Sample: L1729617-02 Client ID: TROJAN -8												
Perfluorooctanoic Acid (PFOA)	20.7	34.5	64.4	127		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	85.7	31.9	129	**136**	Q	-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	119				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109				70-130

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1038558-5 QC Sample: L1729617-02 Client ID: TROJAN -8												
1,4-Dioxane	ND	9.8	8.49	87		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,4-Dioxane-d8	102				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1036202-4 QC Sample: L1729617-01 Client ID: RAW-8						
Perfluorooctanoic Acid (PFOA)	17.4	18.9	ng/l	8		30
Perfluorooctanesulfonic Acid (PFOS)	77.1	75.0	ng/l	3		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113		113		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116		108		70-130

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1038558-4 QC Sample: L1729617-01 Client ID: RAW-8						
1,4-Dioxane	0.553	0.643	ug/l	15		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	103		105		70-130

METALS

Project Name: MAHER WELL PILOT
Lab Number: L1729617
Project Number: 20107
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-01
Client ID: RAW-8
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.087		mg/l	0.050	--	1	08/24/17 15:05	08/29/17 11:25	EPA 3005A	19,200.7	AM
Manganese, Total	0.050		mg/l	0.010	--	1	08/24/17 15:05	08/29/17 11:25	EPA 3005A	19,200.7	AM

Project Name: MAHER WELL PILOT
Lab Number: L1729617
Project Number: 20107
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-02
Client ID: TROJAN -8
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.082		mg/l	0.050	--	1	08/24/17 15:05	08/29/17 12:13	EPA 3005A	19,200.7	AM
Manganese, Total	0.053		mg/l	0.010	--	1	08/24/17 15:05	08/29/17 12:13	EPA 3005A	19,200.7	AM

Project Name: MAHER WELL PILOT
Lab Number: L1729617
Project Number: 20107
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-03
Client ID: FILTER E-8
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/24/17 15:05	08/29/17 12:17	EPA 3005A	19,200.7	AM
Manganese, Total	0.052		mg/l	0.010	--	1	08/24/17 15:05	08/29/17 12:17	EPA 3005A	19,200.7	AM

Project Name: MAHER WELL PILOT
Lab Number: L1729617
Project Number: 20107
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-04
Client ID: FILTER F-8
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/24/17 15:05	08/29/17 12:42	EPA 3005A	19,200.7	AM
Manganese, Total	0.051		mg/l	0.010	--	1	08/24/17 15:05	08/29/17 12:42	EPA 3005A	19,200.7	AM

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1035157-1										
Iron, Total	ND		mg/l	0.050	--	1	08/24/17 15:05	08/29/17 09:39	19,200.7	AM
Manganese, Total	ND		mg/l	0.010	--	1	08/24/17 15:05	08/29/17 09:39	19,200.7	AM

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729617

Report Date: 09/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1035157-2								
Iron, Total	113		-		85-115	-		
Manganese, Total	103		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1035157-3 QC Sample: L1729408-01 Client ID: MS Sample												
Iron, Total	0.063	1	1.19	113		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.524	105		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1035157-7 QC Sample: L1729713-01 Client ID: MS Sample												
Iron, Total	0.182	1	1.29	111		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.532	106		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-01
Client ID: RAW-8
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/23/17 09:00
Date Received: 08/23/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.39		NTU	0.20	--	1	-	08/24/17 11:40	44,180.1	LH
Alkalinity, Total	13.1		mg CaCO3/L	2.00	NA	1	-	08/24/17 10:30	121,2320B	BR
pH (H)	5.4		SU	-	NA	1	-	08/23/17 19:30	121,4500H+-B	CW

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1729617
Report Date: 09/13/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1035022-1										
Turbidity	ND		NTU	0.20	--	1	-	08/24/17 11:40	44,180.1	LH
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1035099-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/24/17 10:30	121,2320B	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729617

Report Date: 09/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1034871-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1035022-2								
Turbidity	108		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1035099-2								
Alkalinity, Total	104		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1035099-4 QC Sample: L1729654-01 Client ID: MS Sample												
Alkalinity, Total	45.5	100	145	100		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1034871-2 QC Sample: L1729676-01 Client ID: DUP Sample						
pH	4.8	4.9	SU	2		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1035022-3 QC Sample: L1729617-01 Client ID: RAW-8						
Turbidity	0.39	0.37	NTU	5		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1035099-3 QC Sample: L1729654-01 Client ID: DUP Sample						
Alkalinity, Total	45.5	44.8	mg CaCO3/L	2		10

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1729617-01A	Plastic 120ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		FE-UI(180),MN-UI(180)
L1729617-01B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.0	Y	Absent		SUB-BROMATE(0)
L1729617-01C	Plastic 250ml unpreserved/No Headspace	A	NA		5.0	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1729617-01D	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-01E	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-01F	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-02A	Plastic 120ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		FE-UI(180),MN-UI(180)
L1729617-02B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.0	Y	Absent		SUB-BROMATE(0)
L1729617-02D	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-02E	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-02F	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-02G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-02H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-03A	Plastic 120ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		FE-UI(180),MN-UI(180)
L1729617-03B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.0	Y	Absent		SUB-BROMATE(0)
L1729617-03D	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-03E	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-03F	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-03G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-03H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1729617
Report Date: 09/13/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1729617-04A	Plastic 120ml HNO3 preserved	A	<2	<2	5.0	Y	Absent		FE-UI(180),MN-UI(180)
L1729617-04B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.0	Y	Absent		SUB-BROMATE(0)
L1729617-04D	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-04E	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-04F	Plastic 250ml Trizma preserved	A	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)
L1729617-04G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-04H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	5.0	Y	Absent		A2-14DIOXANE-522(28)
L1729617-05A	Plastic 250ml Trizma preserved	B	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729617
Project Number:	20107	**Report Date:**	09/13/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729617
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Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1729617
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REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 08/23/17

ALPHA Job #: L1729617

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Blueleaf, Inc.
Address: 57 Dresser Hill Rd, Charlton, MA 01507
Phone: 774 200 8029
Email: egrotton@blueleafwater.com

Additional Project Information:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program ______ Criteria ______

Turn-Around Time

☐ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Total Fe + Mn	Alk, pH, Turbidity	Bromate	1,4 Dioxane	PFOS, PFOA	Sample Comments	TOTAL # BOTTLES
29617-01	RAW-8	8/23/17	9:00	DW	ARD	X	X	X	X	X		8
02	Trojan-8	↓	↓	↓	↓	X		X	X	X		7
03	Filter E-8	↓	↓	↓	↓	X		X	X	X		7
04	Filter F-8	↓	↓	↓	↓	X		X	X	X		7
05	Field Blank	↓	↓	↓	↓					X		1

Container Type:
Preservative:

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	8/23/17 13:13	[signature] AAL	8/23/17 1313

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: **Eurofins, IN** (DM)

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L172 9617

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L172 9617** on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-8	8/23/17	09:00	DW		X		1
	TROJAN -8	8/23/17	09:00	DW		X		1
	FILTER E-8	8/23/17	09:00	DW		X		1
	FILTER F-8	8/23/17	09:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	TRIZMA		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT
MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

SUB UPS: **Eurofins, IN** (DM)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L172 9617** on this report.

Date Rec'd in Lab:

ALPHA Job #:L172 9617

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-8	8/23/17	09:00	DW		X		1
	TROJAN -8	8/23/17	09:00	DW		X		1
	FILTER E-8	8/23/17	09:00	DW		X		1
	FILTER F-8	8/23/17	09:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	TRIZMA		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/24/17 09:30		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

Shipment Receipt

Transaction Date: 24 Aug 2017 **Tracking Number:** 1ZE306540198407005

1 ADDRESS INFORMATION

Ship To:
Eurofins Eaton Analytical
110 South Hill Street
SOUTH BEND IN 466172702
Telephone:574-233-4777

Ship From:
Walkup
Login Dept Westboro
8 Walkup Dr
Westborough MA 01581
Telephone:508-898-9220
email:login@alphalab.com

Return Address:
Walkup
Login Dept Westboro
8 Walkup Dr
Westborough MA 01581
Telephone:508-898-9220 email:login@alphalab.com

2 PACKAGE INFORMATION

	WEIGHT	DIMENSIONS / PACKAGING	DECLARED VALUE	REFERENCE NUMBERS
1.	11.0 lbs (15.0 lbs billable)	14 x 14 x 10in. Other Packaging	100.00 USD	

3 UPS SHIPPING SERVICE AND SHIPPING OPTIONS

Service: UPS Next Day Air
Guaranteed By: 10:30 AM Friday, Aug 25, 2017
Shipping Fees Subtotal: 145.17 USD

Transportation	137.93 USD
Fuel Surcharge	7.24 USD
Declared Value	
Package 1	0.00 USD

4 PAYMENT INFORMATION

Bill Shipping Charges to: Shipper's Account E30654

Shipping Charges:	145.17 USD
A discount has been applied to the Daily rates for this shipment	
Negotiated Charges:	53.46 USD
Subtotal Shipping Charges:	53.46 USD
Total Charges:	53.46 USD

Note: This document is not an invoice. Your final invoice may vary from the displayed reference rates.

* For delivery and guarantee information, see the UPS Service Guide ({0}). To speak to a customer service representative, call 1-800-PICK-UPS for domestic services and 1-800-782-7892 for international services.

eurofins | Eaton Analytical

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 396593
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3766097	Raw-8/L1729617-1	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766098	Trojan-8/L1729617-2	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766099	Filter E-8/L1729617-3	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766100	Filter F-8/L1729617-4	317.0	08/23/17 09:00	Client	08/25/17 10:00

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Jim Van Fleit ASM

09/07/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 396593

Client Name: Alpha Analytical Report #: 396593

Sampling Point: Raw-8/L1729617-1 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/05/17 20:25	3766097

Sampling Point: Trojan-8/L1729617-2 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/05/17 20:50	3766098

Sampling Point: Filter E-8/L1729617-3 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/05/17 21:15	3766099

Sampling Point: Filter F-8/L1729617-4 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/05/17 21:40	3766100

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 396593

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN (DM)

325522

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CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L172 9617 396593

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L172 9617** on this report.

ANALYSIS

BROMATE | wet 1.8

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-8 -1	8/23/17	09:00	DW		X	3766097	1
	TROJAN -8 -2	8/23/17	09:00	DW		X	098	1
	FILTER E-8 -3	8/23/17	09:00	DW		X	099	1
	FILTER F-8 -4	8/23/17	09:00	DW		X	100	1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	TRIZMA		-	-	-	-	-	-	-	-	-	-

Serial_No:09131714:42

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT A MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
GW	8/24/17 09:30	KDW	8-25-17 1000

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

Page 51 of 51

FORM NO: 01-01 (rev. 30-JUL-07)

ANALYTICAL REPORT

Lab Number:	L1730552
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELLS
Project Number:	20107
Report Date:	09/18/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1730552-01	RAW-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-02	TROJAN-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-03	FILTER E-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-04	FILTER F-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-05	FIELD BLANK	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.
Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

Some samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in coolers with ice and delivered directly from the sampling site.

Perfluorinated Alkyl Acids

The WG1037665-2/-3 LCS/LCSD recoveries, associated with L1730552-01 through -05, are outside the individual acceptance criteria for perfluorooctanoic acid (pfoa) (146%/136%) and perfluorooctanesulfonic acid (pfos) (143%/135%). The results of the associated samples are reported.
The WG1037665-5 MS recoveries, performed on L1730552-02, are outside the acceptance criteria for perfluorooctanoic acid (pfoa) (133%) and perfluorooctanesulfonic acid (pfos) (135%).

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:  Kelly Stenstrom

Title: Technical Director/Representative Date: 09/18/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-01
Client ID: RAW-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/12/17 19:20
Analyst: TJ

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/12/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.461		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	91		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-01
Client ID: RAW-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/06/17 19:45
Analyst: AR

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.7		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	72.5		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-02
Client ID: TROJAN-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/12/17 19:44
Analyst: TJ

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/12/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	93		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-02
Client ID: TROJAN-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/06/17 20:03
Analyst: AR

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.4		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	73.0		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	120		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	90		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	94		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-03
Client ID: FILTER E-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/12/17 20:07
Analyst: TJ

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/12/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	97		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-03
Client ID: FILTER E-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/06/17 20:22
Analyst: AR

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	121		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	87		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-04
Client ID: FILTER F-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/12/17 20:30
Analyst: TJ

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/12/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	76		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-04
Client ID: FILTER F-9
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/06/17 20:31
Analyst: AR

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	114		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	86		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	100		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/06/17 20:40
Analyst: AR

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	81		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/06/17 19:17
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 09/01/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01-05 Batch: WG1037665-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	129		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	87		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 09/12/17 12:49
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 09/12/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1040812-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	85		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

Report Date: 09/18/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 Batch: WG1037665-2 WG1037665-3								
Perfluorooctanoic Acid (PFOA)	**146**	Q	**136**	Q	70-130	7		30
Perfluorooctanesulfonic Acid (PFOS)	**143**	Q	**135**	Q	70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	120		115		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		85		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		100		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

Report Date: 09/18/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1040812-2 WG1040812-3								
1,4-Dioxane	80		79		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	77		77		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

Report Date: 09/18/17

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 EPA 537 - Mansfield Lab	Associated sample(s): 01-05		QC Batch ID: WG1037665-5			QC Sample: L1730552-02			Client ID: TROJAN-9			
Perfluorooctanoic Acid (PFOA)	20.4	34.5	66.4	**133**	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	73.0	31.9	116	**135**	Q	-	-		70-130	-		30

Surrogate	*MS % Recovery*	*MS Qualifier*	*MSD % Recovery*	*MSD Qualifier*	*Acceptance Criteria*
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	115				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1037665-4 QC Sample: L1730552-01 Client ID: RAW-9						
Perfluorooctanoic Acid (PFOA)	20.7	20.3	ng/l	2		30
Perfluorooctanesulfonic Acid (PFOS)	72.5	69.7	ng/l	4		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		112		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		80		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		84		70-130

METALS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-01
Client ID: RAW-9
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.089		mg/l	0.050	--	1	08/31/17 14:20	09/06/17 18:10	EPA 3005A	19,200.7	AB
Manganese, Total	0.053		mg/l	0.010	--	1	08/31/17 14:20	09/06/17 18:10	EPA 3005A	19,200.7	AB

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-02
Client ID: TROJAN-9
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.086		mg/l	0.050	--	1	08/31/17 14:20	09/06/17 18:15	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010	--	1	08/31/17 14:20	09/06/17 18:15	EPA 3005A	19,200.7	AB

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-03
Client ID: FILTER E-9
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.148		mg/l	0.050	--	1	08/31/17 14:20	09/06/17 18:19	EPA 3005A	19,200.7	AB
Manganese, Total	0.087		mg/l	0.010	--	1	08/31/17 14:20	09/06/17 18:19	EPA 3005A	19,200.7	AB

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-04
Client ID: FILTER F-9
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	08/31/17 14:20	09/06/17 18:24	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010	--	1	08/31/17 14:20	09/06/17 18:24	EPA 3005A	19,200.7	AB

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1037419-1										
Iron, Total	ND		mg/l	0.050	--	1	08/31/17 14:20	09/06/17 16:56	19,200.7	AB
Manganese, Total	ND		mg/l	0.010	--	1	08/31/17 14:20	09/06/17 16:56	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

Report Date: 09/18/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1037419-2								
Iron, Total	104		-		85-115	-		
Manganese, Total	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1037419-3 QC Sample: L1730578-01 Client ID: MS Sample												
Iron, Total	0.053	1	1.11	106		-	-		75-125	-		20
Manganese, Total	0.010	0.5	0.508	100		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1037419-7 QC Sample: L1730611-01 Client ID: MS Sample												
Iron, Total	0.082	1	1.16	108		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.518	104		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-01
Client ID: RAW-9
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 08/30/17 09:00
Date Received: 08/30/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.30		NTU	0.20	--	1	-	08/31/17 04:15	44,180.1	VB
Alkalinity, Total	13.8		mg CaCO3/L	2.00	NA	1	-	09/01/17 19:30	121,2320B	MR
pH (H)	6.1		SU	-	NA	1	-	08/31/17 06:23	121,4500H+-B	VB

Project Name: MAHER WELLS
Project Number: 20107
Lab Number: L1730552
Report Date: 09/18/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1037180-1										
Turbidity	ND		NTU	0.20	--	1	-	08/31/17 04:15	44,180.1	VB
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1037999-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/01/17 19:30	121,2320B	MR

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

Report Date: 09/18/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1037180-2								
Turbidity	94		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1037205-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1037999-2								
Alkalinity, Total	106		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1037999-4 QC Sample: L1730202-01 Client ID: MS Sample												
Alkalinity, Total	419	100	519	100		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1037180-3 QC Sample: L1730515-01 Client ID: DUP Sample						
Turbidity	0.24	0.22	NTU	9		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1037205-2 QC Sample: L1730526-01 Client ID: DUP Sample						
pH	6.7	6.7	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1037999-3 QC Sample: L1730202-01 Client ID: DUP Sample						
Alkalinity, Total	419	423	mg CaCO3/L	1		10

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1730552-01A	Plastic 120ml HNO3 preserved	B	<2	<2	7.4	Y	Absent		FE-UI(180),MN-UI(180)
L1730552-01B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.4	Y	Absent		SUB-BROMATE(0)
L1730552-01C	Plastic 250ml unpreserved/No Headspace	B	NA		7.4	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1730552-01D	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-01E	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-01F	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-01G	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-01H	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-02A	Plastic 120ml HNO3 preserved	B	<2	<2	7.4	Y	Absent		FE-UI(180),MN-UI(180)
L1730552-02B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.4	Y	Absent		SUB-BROMATE(0)
L1730552-02D	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-02E	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-02F	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-02G	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-02H	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-03A	Plastic 120ml HNO3 preserved	B	<2	<2	7.4	Y	Absent		FE-UI(180),MN-UI(180)
L1730552-03B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.4	Y	Absent		SUB-BROMATE(0)
L1730552-03D	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-03E	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-03F	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-03G	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-03H	Amber 500ml NaSulfite/NaHSO4 preserved	B	4	4	7.4	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELLS
Project Number: 20107

Lab Number: L1730552
Report Date: 09/18/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1730552-04A	Plastic 120ml HNO3 preserved	B	<2	<2	7.4	Y	Absent		FE-UI(180),MN-UI(180)
L1730552-04B	Plastic 120ml Other preserved (sub-lab)	B	7	7	7.4	Y	Absent		SUB-BROMATE(0)
L1730552-04D	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-04E	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-04F	Plastic 250ml Trizma preserved	B	NA		7.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1730552-04G	Amber 500ml NaSulfite/NaHSO4 preserved	B	3	3	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-04H	Amber 500ml NaSulfite/NaHSO4 preserved	B	3	3	7.4	Y	Absent		A2-14DIOXANE-522(28)
L1730552-05A	Plastic 250ml Trizma preserved	A	NA		4.2	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELLS	**Lab Number:**	L1730552
Project Number:	20107	**Report Date:**	09/18/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1730552
Project Number:	20107	**Report Date:**	09/18/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELLS	**Lab Number:**	L1730552
Project Number:	20107	**Report Date:**	09/18/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 8/30/17

ALPHA Job #: L1730552

ALPHA ANALYTICAL

8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220

320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Project Information

Project Name: Maher Wells

Project Location: Barnstable, MA

Project #: 20107

Project Manager: Erik Gratton

ALPHA Quote #:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Blueleaf, Inc.

Address: 57 Dresser Hill Rd
Charlton, MA 01507

Phone: 774 230 8029

Email: egratton@blueleafwater.com

Turn-Around Time

☒ Standard ☐ RUSH *(only confirmed if pre-approved!)*

Date Due:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Total Fe + Mn
Alk, pH, Turb
14 Dioxane
PFOS / PFOA
Bromide

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments	TOTAL # BOTTLES
30552-01	Raw-9	8/30	9:00	DW	ARD		8
02	Trojan-9	↓	↓	↓	↓		7
03	Filter E-9						7
04	Filter F-9						7
05	Field Blank						1

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
8/30/17	16:25	ARD	8/30/17 1625

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, IN

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1730552

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1730552 on this report.

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
	RAW-9	8/30/17	09:00	W		X		1
	TROJAN-9	8/30/17	09:00	W		X		1
	FILTER E-9	8/30/17	09:00	W		X		1
	FILTER F-9	8/30/17	09:00	W		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	A		-	-	-	-	-	-	-	-	-	-	

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 397084
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3770528	Raw-9/L1730552-1	317.0	08/30/17 09:00	Client	09/01/17 09:45
3770529	Trojan-9/L1730552-2	317.0	08/30/17 09:00	Client	09/01/17 09:45
3770530	Filter E-9/L1730552-3	317.0	08/30/17 09:00	Client	09/01/17 09:45
3770531	Filter F-9/L1730552-4	317.0	08/30/17 09:00	Client	09/01/17 09:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

09/07/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 397084

Client Name: Alpha Analytical Report #: 397084

Sampling Point: Raw-9/L1730552-1 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/06/17 03:05	3770528

Sampling Point: Trojan-9/L1730552-2 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/06/17 03:30	3770529

Sampling Point: Filter E-9/L1730552-3 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/06/17 03:55	3770530

Sampling Point: Filter F-9/L1730552-4 PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/06/17 04:20	3770531

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 397084

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN

IM

325912

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1730552

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — ☐ FAX ☐ ADEx

Data Deliverables — ☐ EMAIL ☐ Add'l Deliverables

Billing Information — ☐ Same as Client info PO #: 397084

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1730552 on this report.

WT

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
3770528	RAW-9 L1730552-1	8/30/17	09:00	W		X		1
S24	TROJAN-9 -2	8/30/17	09:00	W		X		1
S30	FILTER E-9 -3	8/30/17	09:00	W		X		1
S31	FILTER F-9 -4	8/30/17	09:00	W		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	A		-	-	-	-	-	-	-	-	-	-

Serial_No:09181716:2B

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	8/31/17	KDunn 9-1-17	0945

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 6 JUL-07)

ANALYTICAL REPORT

Lab Number:	L1731241
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WALL PILOT
Project Number:	20107
Report Date:	09/21/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1731241-01	RAW-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-02	TROJAN-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-03	FILTER E-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-04	FILTER F-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-05	FIELD BLANK	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analysis of 1,4-Dioxane by Method 522 was received unpreserved.

Perfluorinated Alkyl Acids

L1731241-05: The surrogate recovery is above the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (135%). Since the sample was non-detect for all target analytes, re-analysis was not required.

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: Kelly Stenstrom

Title: Technical Director/Representative Date: 09/21/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-01
Client ID: RAW-10
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 20:43
Analyst: TJ

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.407		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	85		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-01
Client ID: RAW-10
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/19/17 21:32
Analyst: AR

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/13/17 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.8		ng/l	1.67	--	1
Perfluorooctanesulfonic Acid (PFOS)	68.5		ng/l	1.67	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-02
Client ID: TROJAN-10
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 21:07
Analyst: TJ

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	79		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-03
Client ID: FILTER E-10
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/19/17 21:50
Analyst: AR

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/13/17 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-04
Client ID: FILTER F-10
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/19/17 22:09
Analyst: AR

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/13/17 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.67	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.67	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	114		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	107		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/19/17 23:34
Analyst: AR

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/13/17 17:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	**135**	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	120		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/19/17 21:22
Analyst: AR

Extraction Method: EPA 537
Extraction Date: 09/13/17 17:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,03-05 Batch: WG1041285-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	112		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	117		70-130

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 09/20/17 12:09
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-02 Batch: WG1043746-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	81		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

Report Date: 09/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG1041285-2 WG1041285-3								
Perfluorooctanoic Acid (PFOA)	103		115		70-130	11		30
Perfluorooctanesulfonic Acid (PFOS)	101		109		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108		110		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	110		110		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	115		115		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

Report Date: 09/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-02 Batch: WG1043746-2 WG1043746-3								
1,4-Dioxane	76		81		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	74		82		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

Report Date: 09/21/17

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 EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1041285-5 QC Sample: L1731241-03 Client ID: FILTER E-10												
Perfluorooctanoic Acid (PFOA)	ND	34.5	34.7	101		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	31.9	34.1	107		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	110				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1041285-4 QC Sample: L1731241-01 Client ID: RAW-10						
Perfluorooctanoic Acid (PFOA)	17.8	18.7	ng/l	5		30
Perfluorooctanesulfonic Acid (PFOS)	68.5	69.5	ng/l	1		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108		108		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		108		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		107		70-130

METALS

Project Name: MAHER WALL PILOT
Lab Number: L1731241
Project Number: 20107
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-01
Client ID: RAW-10
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.087		mg/l	0.050	--	1	09/08/17 15:30	09/11/17 23:48	EPA 3005A	19,200.7	AB
Manganese, Total	0.052		mg/l	0.010	--	1	09/08/17 15:30	09/11/17 23:48	EPA 3005A	19,200.7	AB

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-02
Client ID: TROJAN-10
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.085		mg/l	0.050	--	1	09/08/17 15:30	09/11/17 23:53	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010	--	1	09/08/17 15:30	09/11/17 23:53	EPA 3005A	19,200.7	AB

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-03
Client ID: FILTER E-10
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/08/17 15:30	09/12/17 00:17	EPA 3005A	19,200.7	AB
Manganese, Total	0.058		mg/l	0.010	--	1	09/08/17 15:30	09/12/17 00:17	EPA 3005A	19,200.7	AB

Project Name: MAHER WALL PILOT
Lab Number: L1731241
Project Number: 20107
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-04
Client ID: FILTER F-10
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/08/17 15:30	09/12/17 00:21	EPA 3005A	19,200.7	AB
Manganese, Total	0.048		mg/l	0.010	--	1	09/08/17 15:30	09/12/17 00:21	EPA 3005A	19,200.7	AB

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1039812-1										
Iron, Total	ND		mg/l	0.050	--	1	09/08/17 15:30	09/11/17 22:20	19,200.7	AB
Manganese, Total	ND		mg/l	0.010	--	1	09/08/17 15:30	09/11/17 22:20	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

Report Date: 09/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1039812-2								
Iron, Total	106		-		85-115	-		
Manganese, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1039812-3 QC Sample: L1731307-01 Client ID: MS Sample												
Iron, Total	0.167	1	1.22	105		-	-		75-125	-		20
Manganese, Total	0.013	0.5	0.522	102		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1039812-7 QC Sample: L1731371-01 Client ID: MS Sample												
Iron, Total	33.6	1	31.5	**0**	Q	-	-		75-125	-		20
Manganese, Total	0.382	0.5	0.829	89		-	-		75-125	-		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-01
Client ID: RAW-10
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/06/17 09:30
Date Received: 09/06/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.49		NTU	0.20	--	1	-	09/07/17 17:01	44,180.1	AS
Alkalinity, Total	13.2		mg CaCO3/L	2.00	NA	1	-	09/07/17 09:14	121,2320B	BR
pH (H)	5.6		SU	-	NA	1	-	09/07/17 12:00	121,4500H+-B	UN

Project Name: MAHER WALL PILOT
Project Number: 20107
Lab Number: L1731241
Report Date: 09/21/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1039332-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/07/17 09:14	121,2320B	BR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1039460-1										
Turbidity	ND		NTU	0.20	--	1	-	09/07/17 17:01	44,180.1	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

Report Date: 09/21/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1039324-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1039332-2								
Alkalinity, Total	105		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1039460-2								
Turbidity	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1039332-4 QC Sample: L1731153-02 Client ID: MS Sample												
Alkalinity, Total	138	100	236	98		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1039324-2 QC Sample: L1731330-01 Client ID: DUP Sample						
pH	8.1	8.1	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1039332-3 QC Sample: L1731153-01 Client ID: DUP Sample						
Alkalinity, Total	88.1	89.8	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1039460-3 QC Sample: L1731241-01 Client ID: RAW-10						
Turbidity	0.49	0.51	NTU	4		13

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1731241-01A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1731241-01B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.6	Y	Absent		SUB-BROMATE(0)
L1731241-01C	Plastic 250ml unpreserved/No Headspace	A	NA		5.6	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1731241-01D	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-01E	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-01F	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-02A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1731241-02B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.6	Y	Absent		SUB-BROMATE(0)
L1731241-02G	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-02H	Amber 500ml NaSulfite/NaHSO4 preserved	A	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-03A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1731241-03B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.6	Y	Absent		SUB-BROMATE(0)
L1731241-03D	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-03E	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-03F	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-04A	Plastic 120ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		FE-UI(180),MN-UI(180)
L1731241-04B	Plastic 120ml Other preserved (sub-lab)	A	7	7	5.6	Y	Absent		SUB-BROMATE(0)
L1731241-04D	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-04E	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1731241-04F	Plastic 250ml Trizma preserved	A	NA		5.6	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name: MAHER WALL PILOT
Project Number: 20107

Lab Number: L1731241
Report Date: 09/21/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1731241-05A	Plastic 250ml Trizma preserved	B	NA		5.0	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WALL PILOT	**Lab Number:**	L1731241
Project Number:	20107	**Report Date:**	09/21/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WALL PILOT	**Lab Number:**	L1731241
Project Number:	20107	**Report Date:**	09/21/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WALL PILOT	**Lab Number:**	L1731241
Project Number:	20107	**Report Date:**	09/21/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 09/06/17

ALPHA Job #: L1731241

WESTBORO, MA
TEL: 508-898-9220
FAX: 508-898-9193

MANSFIELD, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Client Information

Client: Blueleaf, Inc.
Address: 57 Dresser Hill Rd, Charlton, MA 01507
Phone: 774 200 8029
Fax:
Email: egrotton@blueleafwater.com

☐ These samples have been previously analyzed by Alpha

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: Time:

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ANALYSIS: Total Fe + Mn; Alk, pH, Turb; Bromate; 1,4 Dioxane; PFOC/PFOA

SAMPLE HANDLING
Filtration ______
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total Fe + Mn	Alk, pH, Turb	Bromate	1,4 Dioxane	PFOC/PFOA	Sample Specific Comments	TOTAL # BOTTLES
31241-01	Raw - 10	9/6/17	9:30	DW	ARD	X	X	X	X	X		8
02	Trojan - 10	↓	↓	↓	↓	X		X	X			4
03	Filter E - 10	↓	↓	↓	↓	X		X		X		5
04	Filter F - 10	↓	↓	↓	↓	X		X		X		5
05	Field Blank	↓	↓	↓	↓	~~X~~				X		1

Container Type
Preservative

Relinquished By:	Date/Time		Received By:	Date/Time
[signature]	9/6/17	13:27	[signature] AAL	9/6/17 1327

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

MANSFIELD CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 09/06/17

ALPHA Job #: L1731241

Client Information

Client: Blueleaf, Inc.
Address: 57 Dresser Hill Rd.
Charlton, MA 01507
Phone: 774 200 8029
Fax:
Email: egrotton@blueleafwater.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: Total Fe + Mn	Alk, pH, Turb	Bromide, Tc	1,4 Dioxane 8270C-SIM 0.4	SAMPLE HANDLING	TOTAL # BOTTLES
31241-01	Raw - 10	9/6/17	9:30	DW	AED	X	X	X	X	X	8
02	Trojan - 10					X		X	X		4
03	Filter E - 10					X		X		X	5
04	Filter F - 10					X		X		X	5
05	Field Blank	↓	↓	↓	↓	X					1

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
9/6/17	13:27	AAL	9/6/17 1327

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

SUB UPS: **Eurofins, IN**

CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com
☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)
Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job # **L1731241** on this report.

Date Rec'd in Lab:

ALPHA Job #:L1731241

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?
☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE												Sample Specific Comments	TOTAL # BOTTLES
	RAW-10	9/6/17	09:30	DW		X													1
	TROJAN-10	9/6/17	09:30	DW		X													1
	FILTER E-10	9/6/17	09:30	DW		X													1
	FILTER F-10	9/6/17	09:30	DW		X													1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	EDA		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

SUB UPS: **Eurofins, IN**

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1731241

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L1731241** on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE												TOTAL # BOTTLES
	RAW-10	9/6/17	09:30	DW		X												1
	TROJAN-10	9/6/17	09:30	DW		X												1
	FILTER E-10	9/6/17	09:30	DW		X												1
	FILTER F-10	9/6/17	09:30	DW		X												1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	EDA		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
AAR	9/7/17		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I)
(rev. 30-JUL-07)

Shipment Receipt

Transaction Date: 07 Sep 2017 **Tracking Number:** 1ZE306540198685876

1 ADDRESS INFORMATION

Ship To:
Eurofins Eaton Analytical
110 South Hill Street
SOUTH BEND IN 466172702
Telephone:574-233-4777

Ship From:
Walkup
Login Dept Westboro
8 Walkup Dr
Westborough MA 01581
Telephone:508-898-9220
email:login@alphalab.com

Return Address:
Walkup
Login Dept Westboro
8 Walkup Dr
Westborough MA 01581
Telephone:508-898-9220 email:login@alphalab.com

2 PACKAGE INFORMATION

	WEIGHT	DIMENSIONS / PACKAGING	DECLARED VALUE	REFERENCE NUMBERS
1.	31.0 lbs (31.0 lbs billable)	18 x 16 x 13in. Other Packaging	100.00 USD	

3 UPS SHIPPING SERVICE AND SHIPPING OPTIONS

Service: UPS Next Day Air
Guaranteed By: 10:30 AM Friday, Sep 8, 2017
Shipping Fees Subtotal: 224.84 USD

Transportation	213.62 USD
Fuel Surcharge	11.22 USD
Declared Value	
Package 1	0.00 USD

4 PAYMENT INFORMATION

Bill Shipping Charges to: Shipper's Account E30654

Shipping Charges:	224.84 USD
A discount has been applied to the Daily rates for this shipment **Negotiated Charges:**	83.19 USD
Subtotal Shipping Charges:	83.19 USD
Total Charges:	83.19 USD

Note: This document is not an invoice. Your final invoice may vary from the displayed reference rates.

* For delivery and guarantee information, see the UPS Service Guide ({0}). To speak to a customer service representative, call 1-800-PICK-UPS for domestic services and 1-800-782-7892 for international services.

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 397615
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3774352	L1731241-1/Raw-10	317.0	09/06/17 09:30	Client	09/11/17 08:45
3774353	L1731241-2/Trojan-10	317.0	09/06/17 09:30	Client	09/11/17 08:45
3774354	L1731241-3/Filter E-10	317.0	09/06/17 09:30	Client	09/11/17 08:45
3774355	L1731241-4/Filter F-10	317.0	09/06/17 09:30	Client	09/11/17 08:45

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

09/15/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 397615

Client Name: Alpha Analytical

Report #: 397615

Sampling Point: L1731241-1/Raw-10

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/13/17 09:34	3774352

Sampling Point: L1731241-2/Trojan-10

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/13/17 09:59	3774353

Sampling Point: L1731241-3/Filter E-10

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/13/17 10:24	3774354

Sampling Point: L1731241-4/Filter F-10

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/13/17 10:49	3774355

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 397615

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: **Eurofins, IN**

397615

326246

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:L1731241

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program *Criteria*

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job # **L1731241** on this report.

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

wet 2.8 °C

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	BROMATE	Sample Specific Comments	TOTAL # BOTTLES
	RAW-10	9/6/17	09:30	DW		X	377352	1
	TROJAN-10	9/6/17	09:30	DW		X	353	1
	FILTER E-10	9/6/17	09:30	DW		X	354	1
	FILTER F-10	9/6/17	09:30	DW		X	355	1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	EDA		-	-	-	-	-	-	-	-	-	-

EASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT A MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
AAR	9/7/17	KDW	9-8-17 0846

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

ANALYTICAL REPORT

Lab Number:	L1732361
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	10/03/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1732361-01	RAW-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-02	TROJAN-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-03	FILTER E-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-04	FILTER F-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1732361
Project Number:	20107	**Report Date:**	10/03/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

L1732361-01 and -02: One of the sample vials was received above the appropriate pH for the 1,4-Dioxane analysis.

Perfluorinated Alkyl Acids

The surrogate recovery for the following samples was outside the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa); however, re-analysis achieved similar results. The results of the original analyses are reported:

L1732361-01: 146%

L1732361-03: 144%

L1732361-04: 147%

WG1043307-5:165%

WG1043307-4: 178%

WG1043307-1: The surrogate recovery for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (132%) is outside the acceptance criteria; however, since the sample was non-detect for all target analytes associated with this surrogate, re-analysis was not required.

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:  Kelly Stenstrom

Title: Technical Director/Representative Date: 10/03/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-01
Client ID: RAW-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 21:54
Analyst: TJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.152		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	91		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-01
Client ID: RAW-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 23:08
Analyst: AJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/19/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.2		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	72.8		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	92		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**146**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-02
Client ID: TROJAN-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 22:18
Analyst: TJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	83		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-03
Client ID: FILTER E-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 22:41
Analyst: TJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	96		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-03
Client ID: FILTER E-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 23:38
Analyst: AJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/19/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	100		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	121		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**144**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-04
Client ID: FILTER F-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/20/17 23:28
Analyst: TJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	75		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-04
Client ID: FILTER F-11
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/27/17 00:08
Analyst: AJ

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/19/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**147**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/26/17 22:53
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 09/19/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,03-04 Batch: WG1043307-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	122		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**132**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 09/20/17 12:09
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 09/20/17 11:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1043746-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	81		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

Report Date: 10/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG1043307-2 WG1043307-3								
Perfluorooctanoic Acid (PFOA)	113		119		70-130	5		30
Perfluorooctanesulfonic Acid (PFOS)	104		111		70-130	7		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		98		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	126		128		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

Report Date: 10/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1043746-2 WG1043746-3								
1,4-Dioxane	76		81		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	74		82		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

Report Date: 10/03/17

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 EPA 537 - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG1043307-5 QC Sample: L1732361-03 Client ID: FILTER E-11												
Perfluorooctanoic Acid (PFOA)	ND	34.5	40.4	117		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	31.9	33.8	106		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**165**	Q			70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	100				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG1043307-4 QC Sample: L1732361-01 Client ID: RAW-11						
Perfluorooctanoic Acid (PFOA)	20.2	19.9	ng/l	1		30
Perfluorooctanesulfonic Acid (PFOS)	72.8	84.2	ng/l	15		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	92		99		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		115		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**146**	Q	**178**	Q	70-130

METALS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-01
Client ID: RAW-11
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.096		mg/l	0.050	--	1	09/18/17 17:55	09/21/17 11:43	EPA 3005A	19,200.7	PS
Manganese, Total	0.048		mg/l	0.010	--	1	09/18/17 17:55	09/21/17 11:43	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-02
Client ID: TROJAN-11
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.120		mg/l	0.050	--	1	09/18/17 17:55	09/21/17 16:35	EPA 3005A	19,200.7	PS
Manganese, Total	0.048		mg/l	0.010	--	1	09/18/17 17:55	09/21/17 16:35	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-03
Client ID: FILTER E-11
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/18/17 17:55	09/21/17 16:40	EPA 3005A	19,200.7	PS
Manganese, Total	0.042		mg/l	0.010	--	1	09/18/17 17:55	09/21/17 16:40	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-04
Client ID: FILTER F-11
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/18/17 17:55	09/21/17 16:44	EPA 3005A	19,200.7	PS
Manganese, Total	0.041		mg/l	0.010	--	1	09/18/17 17:55	09/21/17 16:44	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1042851-1										
Iron, Total	ND		mg/l	0.050	--	1	09/18/17 17:55	09/21/17 11:35	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	09/18/17 17:55	09/21/17 11:35	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

Report Date: 10/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1042851-2								
Iron, Total	106		-		85-115	-		
Manganese, Total	100		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1042851-3 QC Sample: L1732361-01 Client ID: RAW-11												
Iron, Total	0.096	2	2.24	107		-	-		75-125	-		20
Manganese, Total	0.048	1	1.04	99		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1042851-7 QC Sample: L1732582-01 Client ID: MS Sample												
Iron, Total	1.53	2	3.82	114		-	-		75-125	-		20
Manganese, Total	0.042	1	1.08	104		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1042851-4 QC Sample: L1732361-01 Client ID: RAW-11						
Iron, Total	0.096	0.091	mg/l	5		20
Manganese, Total	0.048	0.047	mg/l	3		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: L1732361-01
Client ID: RAW-11
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/13/17 10:00
Date Received: 09/13/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.52		NTU	0.20	--	1	-	09/14/17 20:35	44,180.1	AS
Alkalinity, Total	13.2		mg CaCO3/L	2.00	NA	1	-	09/13/17 23:11	121,2320B	MR
pH (H)	6.4		SU	-	NA	1	-	09/14/17 12:25	121,4500H+-B	JT

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1732361
Report Date: 10/03/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1041435-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/13/17 23:11	121,2320B	MR
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1041871-1										
Turbidity	ND		NTU	0.20	--	1	-	09/14/17 20:35	44,180.1	AS

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

Report Date: 10/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1041435-2								
Alkalinity, Total	105		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1041762-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1041871-2								
Turbidity	110		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1041435-4 QC Sample: L1732333-01 Client ID: MS Sample												
Alkalinity, Total	40.4	100	139	99		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1041435-3 QC Sample: L1732333-01 Client ID: DUP Sample						
Alkalinity, Total	40.4	39.8	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1041762-2 QC Sample: L1732444-01 Client ID: DUP Sample						
pH	7.4	7.4	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1041871-3 QC Sample: L1732361-01 Client ID: RAW-11						
Turbidity	0.52	0.48	NTU	8		13

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

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(*)
L1732361-01A	Plastic 120ml HNO3 preserved	A	<2	<2	4.9	Y	Absent		FE-UI(180),MN-UI(180)
L1732361-01B	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.9	Y	Absent		SUB-BROMATE()
L1732361-01C	Plastic 250ml unpreserved/No Headspace	A	NA		4.9	Y	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1732361-01D	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-01E	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-01F	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.9	N	Absent		A2-14DIOXANE-522(28)
L1732361-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)
L1732361-02A	Plastic 120ml HNO3 preserved	A	<2	<2	4.9	Y	Absent		FE-UI(180),MN-UI(180)
L1732361-02B	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.9	Y	Absent		SUB-BROMATE()
L1732361-02G	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.9	N	Absent		A2-14DIOXANE-522(28)
L1732361-02H	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)
L1732361-03A	Plastic 120ml HNO3 preserved	A	<2	<2	4.9	Y	Absent		FE-UI(180),MN-UI(180)
L1732361-03B	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.9	Y	Absent		SUB-BROMATE()
L1732361-03D	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-03E	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-03F	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-03G	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)
L1732361-03H	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)
L1732361-04A	Plastic 120ml HNO3 preserved	A	<2	<2	4.9	Y	Absent		FE-UI(180),MN-UI(180)
L1732361-04B	Plastic 120ml Other preserved (sub-lab)	A	7	7	4.9	Y	Absent		SUB-BROMATE()
L1732361-04D	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-04E	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1732361-04F	Plastic 250ml Trizma preserved	A	NA		4.9	Y	Absent		A2-537-PFOA/PFOS(14)
L1732361-04G	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)
L1732361-04H	Amber 500ml NaSulfite/NaHSO4 preserved	A	3	3	4.9	Y	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1732361
Project Number:	20107	**Report Date:**	10/03/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1732361
Project Number:	20107	**Report Date:**	10/03/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1732361
Project Number:	20107	**Report Date:**	10/03/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 9/13/17

ALPHA Job #: L1732361

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Bluelect, Inc.
Address: 57 Dresser Hill Rd. Charlton MA 01507
Phone: 508 294 3714
Email: egrotton@bluelectwater.com

Additional Project Information:

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 20107
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☒ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Total Fe + Mn	pH, Alky, Turbidity	Bromate	1,4 Dioxane	PFOS/PFOA	Sample Comments	TOTAL # BOTTLES
32361-01	Raw-11	9/13/17	10:00	DW	AHD									X	X	X	X	X		8
02	Trojan-11	↓	↓	↓	↓									X		X	X			4
03	Filter E-11													X		X	X	X		7
04	Filter F-11													X		X	X	X		7

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

	Container Type																			
	Preservative																			

Relinquished By:	Date/Time	Received By:	Date/Time
	9/13/17 14:15	AM	9/13/17 14:15

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, IN

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1732361

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1732361 on this report.

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
	RAW-11	9/13/17	10:00	DW		X		1
	TROJAN-11	9/13/17	10:00	DW		X		1
	FILTER E-11	9/13/17	10:00	DW		X		1
	FILTER F-11	9/13/17	10:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	9/14/17		

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I)
(rev. 30-JUL-07)

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LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 398081
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3778988	L1732361-1/Raw-11	317.0	09/13/17 10:00	Client	09/15/17 09:30
3778989	L1732361-2/Trojan-11	317.0	09/13/17 10:00	Client	09/15/17 09:30
3778990	L1732361-3/Filter E-11	317.0	09/13/17 10:00	Client	09/15/17 09:30
3778991	L1732361-4/Filter F-11	317.0	09/13/17 10:00	Client	09/15/17 09:30

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

09/26/2017

Authorized Signature | Title | Date

Client Name: Alpha Analytical
Report #: 398081

Client Name: Alpha Analytical

Report #: 398081

Sampling Point: L1732361-1/Raw-11

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/21/17 23:40	3778988

Sampling Point: L1732361-2/Trojan-11

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/22/17 00:05	3778989

Sampling Point: L1732361-3/Filter E-11

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/22/17 00:30	3778990

Sampling Point: L1732361-4/Filter F-11

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	09/22/17 00:55	3778991

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 398081

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN

3 98081 326 719

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1732361

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Report Information — ☐ FAX ☐ EMAIL ☐ ADEx ☐ Add'l Deliverables

Data Deliverables

Billing Information — ☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☐ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1732361 on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done ☐ Not Needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
3778988	RAW-11 L1732361-1	9/13/17	10:00	DW		X		1
989	TROJAN-11 -2	9/13/17	10:00	DW		X		1
990	FILTER E-11 -3	9/13/17	10:00	DW		X		1
991	FILTER F-11 -4	9/13/17	10:00	DW		X		1
	West							

Container Type	P		-	-	-	-	-	-	-	-	-	-	
Preservative	O		-	-	-	-	-	-	-	-	-	-	

Serial_No:10031711:57

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	9/14/17	KDW	9-15-17 0930

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 30-JUL-07)

ANALYTICAL REPORT

Lab Number:	L1733478
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	MAHER WELL PILOT
Project Number:	20107
Report Date:	10/09/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1733478-01	RAW-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-02	TROJAN-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-03	FILTER E-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-04	FILTER F-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-05	FIELD BLANK	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1733478
Project Number:	20107	**Report Date:**	10/09/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: MAHER WELL PILOT **Lab Number:** L1733478
Project Number: 20107 **Report Date:** 10/09/17

Case Narrative (continued)

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The samples were received via Client in coolers with ice; however, the ice was melted in one cooler and that sample was above the required temperature range. Per client authorization of the exceedance, all requested analyses were performed.

L1733478-01 through -04: The samples were received above the appropriate pH for the 1,4-Dioxane analysis.

Perfluorinated Alkyl Acids

L1733478-03 and -05: The surrogate recovery was outside the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (138% and 157%, respectively); however, re-analysis achieved similar results. The results of the original analysis are reported.

The surrogate recovery for the WG1044670-3 LCSD, associated with L1733478-01, -03, -04, and -05, is below the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (63%). The associated LCS spike compounds are within overall acceptance criteria, therefore, no further action was taken.

Turbidity

The WG1043901-3 Laboratory Duplicate RPD (14%), performed on L1733478-01, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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: Kara Lindquist

Title: Technical Director/Representative Date: 10/09/17

ORGANICS

SEMIVOLATILES

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-01
Client ID: RAW-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/22/17 18:07
Analyst: TJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/22/17 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.412		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	87		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-01
Client ID: RAW-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 20:53
Analyst: AJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/22/17 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	18.3		ng/l	1.67	--	1
Perfluorooctanesulfonic Acid (PFOS)	67.6		ng/l	1.67	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	102		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-02
Client ID: TROJAN-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/22/17 18:32
Analyst: TJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/22/17 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	89		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-03
Client ID: FILTER E-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/22/17 18:57
Analyst: TJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/22/17 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	86		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-03
Client ID: FILTER E-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 21:08
Analyst: AJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/22/17 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	99		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**138**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-04
Client ID: FILTER F-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 09/22/17 19:22
Analyst: TJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 09/22/17 05:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	87		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-04
Client ID: FILTER F-12
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 21:23
Analyst: AJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/22/17 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	125		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-05
Client ID: FIELD BLANK
Sample Location: BARNSTABLE, MA

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 09/26/17 21:38
Analyst: AJ

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 09/22/17 14:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.92	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.92	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	120		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**157**	Q	70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 09/22/17 06:26
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 09/22/17 05:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1044549-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	87		70-130

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 09/26/17 17:52
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 09/22/17 14:00

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,03-05 Batch: WG1044670-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1733478

Report Date: 10/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1044549-2 WG1044549-3								
1,4-Dioxane	88		91		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	89		86		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1733478

Report Date: 10/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG1044670-2 WG1044670-3								
Perfluorooctanoic Acid (PFOA)	110		111		70-130	1		30
Perfluorooctanesulfonic Acid (PFOS)	108		112		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	98		95		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		106		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		**63**	Q	70-130

METALS

Project Name: MAHER WELL PILOT
Lab Number: L1733478
Project Number: 20107
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-01
Client ID: RAW-12
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.069		mg/l	0.050	--	1	09/27/17 10:30	09/28/17 12:47	EPA 3005A	19,200.7	PS
Manganese, Total	0.053		mg/l	0.010	--	1	09/27/17 10:30	09/28/17 12:47	EPA 3005A	19,200.7	PS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-02
Client ID: TROJAN-12
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.090		mg/l	0.050	--	1	09/27/17 10:30	09/28/17 18:14	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010	--	1	09/27/17 10:30	09/28/17 18:14	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-03
Client ID: FILTER E-12
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/27/17 10:30	09/28/17 18:19	EPA 3005A	19,200.7	AB
Manganese, Total	0.045		mg/l	0.010	--	1	09/27/17 10:30	09/28/17 18:19	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-04
Client ID: FILTER F-12
Sample Location: BARNSTABLE, MA
Matrix: Dw
Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	09/27/17 10:30	09/28/17 18:24	EPA 3005A	19,200.7	AB
Manganese, Total	0.046		mg/l	0.010	--	1	09/27/17 10:30	09/28/17 18:24	EPA 3005A	19,200.7	AB

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1045862-1										
Iron, Total	ND		mg/l	0.050	--	1	09/27/17 10:30	09/28/17 12:37	19,200.7	PS
Manganese, Total	ND		mg/l	0.010	--	1	09/27/17 10:30	09/28/17 12:37	19,200.7	PS

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1733478

Report Date: 10/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1045862-2								
Iron, Total	106		-		85-115	-		
Manganese, Total	101		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1045862-3 QC Sample: L1733478-01 Client ID: RAW-12												
Iron, Total	0.069	1	1.09	102		-	-		75-125	-		20
Manganese, Total	0.053	0.5	0.540	97		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1045862-7 QC Sample: L1733492-01 Client ID: MS Sample												
Iron, Total	ND	1	1.09	109		-	-		75-125	-		20
Manganese, Total	ND	0.5	0.505	101		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1045862-4 QC Sample: L1733478-01 Client ID: RAW-12						
Iron, Total	0.069	0.066	mg/l	4		20
Manganese, Total	0.053	0.054	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-01
Client ID: RAW-12
Sample Location: BARNSTABLE, MA
Matrix: Dw

Date Collected: 09/20/17 09:00
Date Received: 09/20/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.20		NTU	0.20	--	1	-	09/20/17 22:30	44,180.1	CW
Alkalinity, Total	13.5		mg CaCO3/L	2.00	NA	1	-	09/21/17 09:12	121,2320B	BR
pH (H)	6.2		SU	-	NA	1	-	09/20/17 21:20	121,4500H+-B	CW

Project Name: MAHER WELL PILOT
Project Number: 20107
Lab Number: L1733478
Report Date: 10/09/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1043901-1										
Turbidity	ND		NTU	0.20	--	1	-	09/20/17 22:30	44,180.1	CW
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1044033-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/21/17 09:12	121,2320B	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1733478

Report Date: 10/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1043899-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1043901-2								
Turbidity	97		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1044033-2								
Alkalinity, Total	104		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1044033-4 QC Sample: L1733478-01 Client ID: RAW-12												
Alkalinity, Total	13.5	100	113	100		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1043899-2 QC Sample: L1733428-01 Client ID: DUP Sample						
pH	7.5	7.5	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1043901-3 QC Sample: L1733478-01 Client ID: RAW-12						
Turbidity	0.20	0.23	NTU	**14**	Q	13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1044033-3 QC Sample: L1733478-01 Client ID: RAW-12						
Alkalinity, Total	13.5	13.3	mg CaCO3/L	1		10

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1733478-01A	Plastic 250ml HNO3 preserved	B	<2	<2	4.6	Y	Absent		FE-UI(180),MN-UI(180)
L1733478-01B	Plastic 250ml unpreserved	B	7	7	4.6	Y	Absent		TURB-180(2),PH-4500(.01)
L1733478-01C	Plastic 250ml unpreserved/No Headspace	B	NA		4.6	Y	Absent		ALK-T-2320(14)
L1733478-01D	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-01E	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-01F	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-01G	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-01H	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-02A	Plastic 250ml HNO3 preserved	B	<2	<2	4.6	Y	Absent		FE-UI(180),MN-UI(180)
L1733478-02B	Plastic 120ml Other preserved (sub-lab)	B	7	7	4.6	Y	Absent		SUB-BROMATE()
L1733478-02G	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-02H	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-03A	Plastic 250ml HNO3 preserved	B	<2	<2	4.6	Y	Absent		FE-UI(180),MN-UI(180)
L1733478-03D	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-03E	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-03F	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-03G	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-03H	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-04A	Plastic 250ml HNO3 preserved	B	<2	<2	4.6	Y	Absent		FE-UI(180),MN-UI(180)
L1733478-04D	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-04E	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)
L1733478-04F	Plastic 250ml Trizma preserved	B	NA		4.6	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name: MAHER WELL PILOT
Project Number: 20107

Lab Number: L1733478
Report Date: 10/09/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1733478-04G	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-04H	Amber 500ml NaSulfite/NaHSO4 preserved	B	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-05D	Plastic 250ml Trizma preserved	A	NA		8.3	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1733478
Project Number:	20107	**Report Date:**	10/09/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1733478
Project Number:	20107	**Report Date:**	10/09/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	MAHER WELL PILOT	**Lab Number:**	L1733478
Project Number:	20107	**Report Date:**	10/09/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL
World Class Chemistry
8 Walkup Drive
Westboro, MA 01581
Tel: 508-898-9220
320 Forbes Blvd
Mansfield, MA 02048
Tel: 508-822-9300

Date Rec'd in Lab: 9/20/17

ALPHA Job #: L1733478

Client Information

Client: Bluelect, Inc.
Address: 57 Dresser Hill Rd.
Charlton MA 01507
Phone: 774 200 9029
Email: egrotton@bluelectwater.com

Additional Project Information:

Project Information

Project Name: Maher Well Pilot
Project Location: Barnstable, MA
Project #: 2017
Project Manager: Erik Grotton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due:

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☐ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Total Fe + Mn	1,4 Dioxane	PFAS / PFOA	Bromate	Sample Comments	TOTAL # BOTTLES
33478-01	Raw-12	9/20	9:00	DW	ARD									X	X	X	X		8
02	Trip-12	↓	↓	↓	↓									X		X	X		4
03	Filter E-12													X		X	X		6
04	Filter F-12													X		X	X		6
05	Field Blank																X		1

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H= $Na_2S_2O_3$
I= Ascorbic Acid
J= NH_4Cl
K= Zn Acetate
O= Other

	Container Type	Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	9/20/17 13:22	ARD	9/20/17 1322

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, IN (WM)

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1733478

Client Information

Client: Alpha Analytical Lab
Address: 8 Walkup Drive
Westborough, Ma 01581
Phone: 508-898-9220
Fax:
Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:
Project Location: MA
Project #:
Project Manager: Ethan Leighton
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:
Please reference Alpha Job #L1733478 on this report.

ANALYSIS

SAMPLE HANDLING
Filtration
☐ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
	TROJAN-12	9/20/17	09:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

S YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I)
rev. 30-JUL-07)

eurofins | Eaton Analytical

LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

eurofins | Eaton Analytical

STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

eurofins | Eaton Analytical

110 South Hill Street
South Bend, IN 46617
Tel: (574) 233-4777
Fax: (574) 233-8207
1 800 332 4345

Laboratory Report

Client: Alpha Analytical

Attn: Ethan Leighton
35 Whitney Road
Suite 5
Mahwah, NJ 07430

Report: 398717
Priority: Standard Written
Status: Final
PWS ID: Not Supplied

Sample Information

EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3784545	L1733478/Trojan-12	317.0	09/20/17 09:00	Client	09/22/17 10:00

Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Fleit ASM

Authorized Signature | Title

10/06/2017

Date

Client Name: Alpha Analytical
Report #: 398717

Client Name: Alpha Analytical

Report #: 398717

Sampling Point: L1733478/Trojan-12

PWS ID: Not Supplied

General Chemistry									
Analyte ID #	**Analyte**	**Method**	**Reg Limit**	**MRL†**	**Result**	**Units**	**Preparation Date**	**Analyzed Date**	**EEA ID #**
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L	---	10/03/17 13:38	3784545

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

Client Name: Alpha Analytical Report #: 398717

Lab Definitions

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

Laboratory Duplicate (LD) - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB) - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN (WM)

327136

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193

Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #: L1733478 398717

Client Information

Client: Alpha Analytical Lab

Address: 8 Walkup Drive

Westborough, Ma 01581

Phone: 508-898-9220

Fax:

Email: subreports@alphalab.com

☐ These samples have been Previously analyzed by Alpha

Project Information

Project Name:

Project Location: MA

Project #:

Project Manager: Ethan Leighton

ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Report Information — Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program Criteria

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☐ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please reference Alpha Job #L1733478 on this report.

Wet ice

ANALYSIS

SAMPLE HANDLING

Filtration

☐ Done

☐ Not Needed

☐ Lab to do

Preservation

☐ Lab to do

(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Bromate	Sample Specific Comments	TOTAL # BOTTLES
3784 545	TROJAN-12	9/20/17	09:00	DW		X		1

Container Type	P		-	-	-	-	-	-	-	-	-	-
Preservative	O		-	-	-	-	-	-	-	-	-	-

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP *or* CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/21/17	KRun	9-22-17 1000

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 31-JUL-07)

ANALYTICAL REPORT

Lab Number:	L1734538
Client:	Blueleaf Incorporated 57 Dresser Hill Road Charlton, MA 01507
ATTN:	Erik Grotton
Phone:	(508) 248-7094
Project Name:	Not Specified
Project Number:	20107
Report Date:	10/11/17

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1734538-01	RAW-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-02	TROJAN-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-03	FILTER E-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-04	FILTER F-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-05	FIELD BLANK	DW	Not Specified	09/27/17 10:00	09/27/17

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

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. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated 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.

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 table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

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 Client Service Representative 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 Client Services at 800-624-9220 with any questions.

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

Case Narrative (continued)

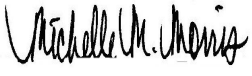
Sample Receipt

L1734538-01, -03 and -04: The sample was received above the appropriate pH for 1,4 Dioxane by EPA 522 analysis.

Perfluorinated Alkyl Acids

L1734538-01: The surrogate recovery was below the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (69%); however, the sample was extracted as the WG1047952-4 batch duplicate with all criteria met. The results of both analyses are reported.

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:  Michelle M. Morris

Title: Technical Director/Representative Date: 10/11/17

ORGANICS

SEMIVOLATILES

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-01
Client ID: RAW-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 10/02/17 19:31
Analyst: TJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 10/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.403		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	84		70-130

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-01
Client ID: RAW-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 10/10/17 18:38
Analyst: AJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 10/02/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.0		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	65.4		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	74		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	79		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**69**	Q	70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-02
Client ID: TROJAN-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 10/02/17 19:53
Analyst: TJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 10/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	83		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-03
Client ID: FILTER E-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 10/02/17 20:15
Analyst: TJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 10/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	83		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-03
Client ID: FILTER E-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 10/10/17 19:08
Analyst: AJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 10/02/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	81		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	82		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-04
Client ID: FILTER F-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 120,522
Analytical Date: 10/02/17 20:38
Analyst: TJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 522
Extraction Date: 10/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	86		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-04
Client ID: FILTER F-13
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 10/10/17 19:38
Analyst: AJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 10/02/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	81		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-05
Client ID: FIELD BLANK
Sample Location: Not Specified

Matrix: Dw
Analytical Method: 122,537
Analytical Date: 10/10/17 19:53
Analyst: AJ

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified
Extraction Method: EPA 537
Extraction Date: 10/02/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85	--	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	85		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	89		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522
Analytical Date: 10/02/17 10:22
Analyst: TJ

Extraction Method: EPA 522
Extraction Date: 10/02/17 09:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by EPA 522 - Mansfield Lab for sample(s): 01-04 Batch: WG1047881-1					
1,4-Dioxane	ND		ug/l	0.150	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	71		70-130

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537
Analytical Date: 10/10/17 17:23
Analyst: AJ

Extraction Method: EPA 537
Extraction Date: 10/02/17 15:30

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab for sample(s): 01,03-05 Batch: WG1047952-1					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	--
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 20107

Lab Number: L1734538

Report Date: 10/11/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04 Batch: WG1047881-2 WG1047881-3								
1,4-Dioxane	85		87		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	72		76		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 20107

Lab Number: L1734538

Report Date: 10/11/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 Batch: WG1047952-2 WG1047952-3								
Perfluorooctanoic Acid (PFOA)	91		98		70-130	7		30
Perfluorooctanesulfonic Acid (PFOS)	96		112		70-130	15		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	78		80		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88		87		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		88		70-130

Matrix Spike Analysis

Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

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 EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1047952-5 QC Sample: L1734538-03 Client ID: FILTER E-13												
Perfluorooctanoic Acid (PFOA)	ND	1.72	1.59J	92		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	1.6	1.15J	72		-	-		70-130	-		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	83				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83				70-130

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 01,03-05 QC Batch ID: WG1047952-4 QC Sample: L1734538-01 Client ID: RAW-13						
Perfluorooctanoic Acid (PFOA)	17.0	17.4	ng/l	2		30
Perfluorooctanesulfonic Acid (PFOS)	65.4	68.1	ng/l	4		30

Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	74		82		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	79		84		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	**69**	Q	83		70-130

METALS

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-01
Client ID: RAW-13
Sample Location: Not Specified
Matrix: Dw
Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.065		mg/l	0.050	--	1	10/11/17 10:30	10/11/17 14:21	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010	--	1	10/11/17 10:30	10/11/17 14:21	EPA 3005A	19,200.7	AB

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-02
Client ID: TROJAN-13
Sample Location: Not Specified
Matrix: Dw
Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	0.092		mg/l	0.050	--	1	10/11/17 10:30	10/11/17 14:45	EPA 3005A	19,200.7	AB
Manganese, Total	0.049		mg/l	0.010	--	1	10/11/17 10:30	10/11/17 14:45	EPA 3005A	19,200.7	AB

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-03
Client ID: FILTER E-13
Sample Location: Not Specified
Matrix: Dw
Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	10/11/17 10:30	10/11/17 14:50	EPA 3005A	19,200.7	AB
Manganese, Total	0.044		mg/l	0.010	--	1	10/11/17 10:30	10/11/17 14:50	EPA 3005A	19,200.7	AB

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-04
Client ID: FILTER F-13
Sample Location: Not Specified
Matrix: Dw
Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	ND		mg/l	0.050	--	1	10/11/17 10:30	10/11/17 14:54	EPA 3005A	19,200.7	AB
Manganese, Total	0.045		mg/l	0.010	--	1	10/11/17 10:30	10/11/17 14:54	EPA 3005A	19,200.7	AB

Project Name: Not Specified
Project Number: 20107
Lab Number: L1734538
Report Date: 10/11/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1049200-1										
Iron, Total	ND		mg/l	0.050	--	1	10/11/17 10:30	10/11/17 14:12	19,200.7	AB
Manganese, Total	ND		mg/l	0.010	--	1	10/11/17 10:30	10/11/17 14:12	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 20107

Lab Number: L1734538

Report Date: 10/11/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1049200-2								
Iron, Total	102		-		85-115	-		
Manganese, Total	98		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1049200-3 QC Sample: L1734538-01 Client ID: RAW-13												
Iron, Total	0.065	1	1.10	104		-	-		75-125	-		20
Manganese, Total	0.051	0.5	0.546	99		-	-		75-125	-		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1049200-4 QC Sample: L1734538-01 Client ID: RAW-13						
Iron, Total	0.065	0.063	mg/l	3		20
Manganese, Total	0.051	0.049	mg/l	4		20

INORGANICS
&
MISCELLANEOUS

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-01
Client ID: RAW-13
Sample Location: Not Specified
Matrix: Dw

Date Collected: 09/27/17 10:00
Date Received: 09/27/17
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Turbidity	0.31		NTU	0.20	--	1	-	09/27/17 18:32	44,180.1	AS
Alkalinity, Total	13.0		mg CaCO3/L	2.00	NA	1	-	09/28/17 09:25	121,2320B	BR
pH (H)	5.8		SU	-	NA	1	-	09/27/17 18:12	121,4500H+-B	AS

Project Name:

Project Number: 20107

Lab Number: L1734538

Report Date: 10/11/17

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1046336-1										
Turbidity	ND		NTU	0.20	--	1	-	09/27/17 18:32	44,180.1	AS
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1046547-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	09/28/17 09:25	121,2320B	BR

Lab Control Sample Analysis

Batch Quality Control

Project Name: Not Specified

Project Number: 20107

Lab Number: L1734538

Report Date: 10/11/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1046332-1								
pH	100		-		99-101	-		5
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1046336-2								
Turbidity	102		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1046547-2								
Alkalinity, Total	104		-		90-110	-		10

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1046547-4 QC Sample: L1734538-01 Client ID: RAW-13												
Alkalinity, Total	13.0	100	112	99		-	-		86-116	-		10

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1046332-2 QC Sample: L1734538-01 Client ID: RAW-13						
pH (H)	5.8	5.8	SU	0		5
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1046336-3 QC Sample: L1734538-01 Client ID: RAW-13						
Turbidity	0.31	0.33	NTU	6		13
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1046547-3 QC Sample: L1734538-01 Client ID: RAW-13						
Alkalinity, Total	13.0	12.7	mg CaCO3/L	2		10

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

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(*)
L1734538-01A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		FE-UI(180),MN-UI(180)
L1734538-01B	Plastic 250ml unpreserved	A	7	7	4.4	Y	Absent		TURB-180(2),PH-4500(.01)
L1734538-01C	Plastic 250ml unpreserved/No Headspace	A	NA		4.4	Y	Absent		ALK-T-2320(14)
L1734538-01D	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-01E	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-01F	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-01G	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-01H	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-02A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		FE-UI(180),MN-UI(180)
L1734538-02G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	4.4	Y	Absent		A2-14DIOXANE-522(28)
L1734538-02H	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	4.4	Y	Absent		A2-14DIOXANE-522(28)
L1734538-03A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		FE-UI(180),MN-UI(180)
L1734538-03D	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-03E	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-03F	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-03G	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-03H	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-04A	Plastic 250ml HNO3 preserved	A	<2	<2	4.4	Y	Absent		FE-UI(180),MN-UI(180)
L1734538-04D	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-04E	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-04F	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)
L1734538-04G	Amber 500ml NaSulfite/NaHSO4 preserved	A	<4	<4	4.4	Y	Absent		A2-14DIOXANE-522(28)
L1734538-04H	Amber 500ml NaSulfite/NaHSO4 preserved	A	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)

*Values in parentheses indicate holding time in days

Project Name: Not Specified
Project Number: 20107

Lab Number: L1734538
Report Date: 10/11/17

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1734538-05A	Plastic 250ml Trizma preserved	A	NA		4.4	Y	Absent		A2-537-PFOA/PFOS(14)

*Values in parentheses indicate holding time in days

Project Name:	Not Specified	**Lab Number:**	L1734538
Project Number:	20107	**Report Date:**	10/11/17

GLOSSARY

Acronyms

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).
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.
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.
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 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.

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

Report Format: Data Usability Report

Project Name:	Not Specified	**Lab Number:**	L1734538
Project Number:	20107	**Report Date:**	10/11/17

Data Qualifiers

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.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

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.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

Project Name:	Not Specified	**Lab Number:**	L1734538
Project Number:	20107	**Report Date:**	10/11/17

REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

120 Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

122 Determination of Selected Perfluorintated 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 it's 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: 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 300: DW: Bromide
EPA 6860: NPW and SCM: Perchlorate
EPA 9010: NPW and SCM: Amenable Cyanide Distillation
EPA 9012B: NPW: Total Cyanide
EPA 9050A: NPW: Specific Conductance
SM3500: NPW: Ferrous Iron
SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility
SM 2540D: TSS
EPA 3005A NPW
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: 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**
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, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **SM4500NO3-F, EPA 353.2**: Nitrate-N**, EPA 351.1, 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 624: Volatile Halocarbons & Aromatics,
EPA 608: 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: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E.**

Mansfield Facility:

Drinking Water
EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. **EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. **EPA 245.1** Hg.

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, Pb, Mn, Ni, Se, Ag, TL, Zn.
EPA 245.1 Hg.
SM2340B

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

MANSFIELD CHAIN OF CUSTODY

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ALPHA ANALYTICAL
WESTBORO, MA TEL: 508-898-9220 FAX: 508-898-9193
MANSFIELD, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 9/27/17

ALPHA Job #: L1734538

Client Information

Client: Blueleaf, Inc.
Address: 57 Dresser Hill Rd.
Charlton, MA 01507
Phone: 774 200 8029
Fax:
Email: cgrotton@blueleafwater.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name:
Project Location:
Project #:
Project Manager:
ALPHA Quote #:

Turn-Around Time

☐ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX ☐ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Other Project Specific Requirements/Comments/Detection Limits:

PLEASE NOTE
MS/MSD (at unit cost) will be omitted unless you check here: ☐

ANALYSIS: Total Fe, Mn | pH, Alky, Turb | 1,4 Dioxane | PFOS/PFOA

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total Fe, Mn	pH, Alky, Turb	1,4 Dioxane	PFOS/PFOA	Sample Specific Comments	TOTAL # BOTTLES
34558-01	Raw-13	9/27	10:00	DW	AZD	X	X	X	X		8
02	Trojan-13	↓	↓	↓	↓	X		X			3
03	Filter E-13					X		X	X		6
04	Filter F-13					X		X	X		6
05	Field Blank								X		1

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	9/27/17 14:11	AAL	9/27/17 14:11

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.