CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

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July 6, 2017

Mr. Michael Magnant, Town Administrator
Town of Rye
Town Office
10 Central Road
Rye, NH 03870

RE: Grove Road Landfill
PFC Groundwater Results – May 2017
CMA #527

Dear Mr. Magnant:

Please find enclosed the groundwater monitoring results from the May 2017 water quality sampling event for perflourinated compounds (PFCs) at the Grove Road Landfill in Rye, New Hampshire. The wells were sampled on May 24, 2017 by Eastern Analytical of Concord, NH and analyzed by ALS Environmental of Kelso, WA on June 9, 2017. These reports were received by CMA Engineers on Thursday, June 29, and reported to the Rye Water District that evening, and to NHDES on Friday, June 30.

The ambient groundwater quality standard (AGQS) is 70 ng/L for either perfluorooctanoic acid (PFOA) or perfluorooctane sulfonate (PFOS), and for both PFOA and PFOS combined where these chemicals are present together.

A summary of the PFOAs detected in the Grove Road Landfill water samples is provided below:

Well Location	Perfluorooctanoic acid (PFOA) (ng/L)	Perfluorooctane sulfonic acid (PFOS) (ng/L)	PFOA + PFOS combined (ng/L)
MW-1	4.5	4.4	8.9
MW-3	6.1	8.9	15
MW-6	41	110	151

We note that CMA Engineers will provide a presentation of these results to the Board of Selectman at the meeting on Monday July 10, 2017.

We have been apprised that there was an equipment fire on the adjacent property in 2012. It is reported that the Rye Fire Department used firefighting foam to extinguish the fire. The location

of the fire is shown on the attached site plan. Due to the location of that incident, it is unlikely that the fire and use of foam played any role in the water quality results indicated at MW-6.

Resampling of certain wells on the Grove Road site is scheduled for July 11, 2017 to better define contaminant levels both upgradient and downgradient of MW-6.

Submission of the regular groundwater sampling results, in accordance with the groundwater management permit, will occur under separate cover.

If you have any questions regarding these results, please don't hesitate to contact us.

Very truly yours,

CMA ENGINEERS, INC.

Jodie Bray Strickland, P.E.
Project Engineer

Enclosures: Eastern Analytical Inc. Laboratory Report, May 24, 2017
Grove Road Landfill Site Plan

cc:
Ken Aspen, Rye Water District
Paul Rydel, P.G., NH DES

Eastern Analytical, Inc.
professional laboratory and drilling services

Paul Schmidt
CMA Engineers, Inc. (Manchester)
Langler Place, 55 South Commercial St.
Manchester , NH 03101

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID:	169122
Client Identification:	Rye - Grove Rd LF
Date Received:	5/24/2017

Dear Mr. Schmidt :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director | 6.28.17 Date | 34 # of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Portsmouth)**

Client Designation: **Rye - Grove Rd LF**

Temperature upon receipt (°C): 3.1 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
169122.01	MW-1	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.02	MW-3	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.03	MW-3D	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.04	MW-5	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.05	MW-6	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.06	MW-101	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.07	MW-102	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.08	TW 15-74	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169122.09	Trip Blank- 8260	5/24/17	5/8/17	aqueous		Adheres to Sample Acceptance Policy
169122.1	Trip Blank- 1,4 Dioxane	5/24/17	5/8/17	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:

1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5	MW-6	MW-101	MW-102
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04	169122.05	169122.06	169122.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17
Analyst:	BML	BML	BML	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1	1	1
Dichlorodifluoromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Chloromethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Vinyl chloride	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chloroethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichlorofluoromethane	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Diethyl Ether	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Acetone	< 10	< 10	< 10	< 10	< 10	< 10	< 10
1,1-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
tert-Butyl Alcohol (TBA)	< 30	< 30	< 30	< 30	< 30	< 30	< 30
Methylene chloride	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Carbon disulfide	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Ethyl-t-butyl ether(ETBE)	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Isopropyl ether(DIPE)	< 5	< 5	< 5	< 5	< 5	< 5	< 5
tert-amyl methyl ether(TAME)	< 5	< 5	< 5	< 5	< 5	< 5	< 5
trans-1,2-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2,2-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Butanone(MEK)	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Bromochloromethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Tetrahydrofuran(THF)	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Chloroform	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Carbon tetrachloride	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloropropene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Benzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dichloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Trichloroethene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Dibromomethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Bromodichloromethane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50	< 50	< 50	< 50	< 50	< 50
4-Methyl-2-pentanone(MIBK)	< 10	< 10	< 10	< 10	< 10	< 10	< 10
cis-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Toluene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,3-Dichloropropene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-Trichloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Hexanone	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Tetrachloroethene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichloropropane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Dibromochloromethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dibromoethane(EDB)	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Chlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,1,2-Tetrachloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Ethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5	MW-6	MW-101	MW-102
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04	169122.05	169122.06	169122.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17
Analyst:	BML	BML	BML	BML	BML	BML	BML
Method:	8260C	8260C	8260C	8260C	8260C	8260C	8260C
Dilution Factor:	1	1	1	1	1	1	1
mp-Xylene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
o-Xylene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Styrene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Bromoform	< 2	< 2	< 2	< 2	< 2	< 2	< 2
IsoPropylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Bromobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2,2-Tetrachloroethane	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2,3-Trichloropropane	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
n-Propylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
2-Chlorotoluene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
4-Chlorotoluene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,3,5-Trimethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
tert-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-Trimethylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
sec-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
p-Isopropyltoluene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
n-Butylbenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2-Dibromo-3-chloropropane	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Hexachlorobutadiene	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,3-Trichlorobenzene	< 1	< 1	< 1	< 1	< 1	< 1	< 1
4-Bromofluorobenzene (surr)	**96 %R**	**96 %R**	**96 %R**	**96 %R**	**97 %R**	**97 %R**	**94 %R**
1,2-Dichlorobenzene-d4 (surr)	**100 %R**	**100 %R**	**103 %R**	**100 %R**	**99 %R**	**99 %R**	**101 %R**
Toluene-d8 (surr)	**104 %R**	**103 %R**	**103 %R**	**102 %R**	**103 %R**	**103 %R**	**103 %R**
1,2-Dichloroethane-d4 (surr)	**104 %R**	**103 %R**	**103 %R**	**103 %R**	**103 %R**	**103 %R**	**105 %R**

Carbon disulfide and Naphthalene exhibited recovery outside acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	TW 15-74	Trip Blank-8260
Lab Sample ID:	169122.08	169122.09
Matrix:	aqueous	aqueous
Date Sampled:	5/24/17	5/8/17
Date Received:	5/24/17	5/24/17
Units:	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17
Analyst:	BML	BML
Method:	8260C	8260C
Dilution Factor:	1	1
Dichlorodifluoromethane	< 5	< 5
Chloromethane	< 2	< 2
Vinyl chloride	< 2	< 2
Bromomethane	< 2	< 2
Chloroethane	< 5	< 5
Trichlorofluoromethane	< 5	< 5
Diethyl Ether	< 5	< 5
Acetone	< 10	< 10
1,1-Dichloroethene	< 1	< 1
tert-Butyl Alcohol (TBA)	< 30	< 30
Methylene chloride	< 5	< 5
Carbon disulfide	< 2	< 2
Methyl-t-butyl ether(MTBE)	< 1	< 1
Ethyl-t-butyl ether(ETBE)	< 5	< 5
Isopropyl ether(DIPE)	< 5	< 5
tert-amyl methyl ether(TAME)	< 5	< 5
trans-1,2-Dichloroethene	< 1	< 1
1,1-Dichloroethane	< 1	< 1
2,2-Dichloropropane	< 1	< 1
cis-1,2-Dichloroethene	< 1	< 1
2-Butanone(MEK)	< 10	< 10
Bromochloromethane	< 1	< 1
Tetrahydrofuran(THF)	< 10	< 10
Chloroform	< 1	< 1
1,1,1-Trichloroethane	< 1	< 1
Carbon tetrachloride	< 1	< 1
1,1-Dichloropropene	< 1	< 1
Benzene	< 1	< 1
1,2-Dichloroethane	< 1	< 1
Trichloroethene	< 1	< 1
1,2-Dichloropropane	< 1	< 1
Dibromomethane	< 1	< 1
Bromodichloromethane	< 0.5	< 0.5
1,4-Dioxane	< 50	< 50
4-Methyl-2-pentanone(MIBK)	< 10	< 10
cis-1,3-Dichloropropene	< 0.5	< 0.5
Toluene	< 1	< 1
trans-1,3-Dichloropropene	< 0.5	< 0.5
1,1,2-Trichloroethane	< 1	< 1
2-Hexanone	< 10	< 10
Tetrachloroethene	< 1	< 1
1,3-Dichloropropane	< 1	< 1
Dibromochloromethane	< 1	< 1
1,2-Dibromoethane(EDB)	< 2	< 2
Chlorobenzene	< 1	< 1
1,1,1,2-Tetrachloroethane	< 1	< 1
Ethylbenzene	< 1	< 1

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	TW 15-74	Trip Blank-8260
Lab Sample ID:	169122.08	169122.09
Matrix:	aqueous	aqueous
Date Sampled:	5/24/17	5/8/17
Date Received:	5/24/17	5/24/17
Units:	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17
Analyst:	BML	BML
Method:	8260C	8260C
Dilution Factor:	1	1
mp-Xylene	< 1	< 1
o-Xylene	< 1	< 1
Styrene	< 1	< 1
Bromoform	< 2	< 2
IsoPropylbenzene	< 1	< 1
Bromobenzene	< 1	< 1
1,1,2,2-Tetrachloroethane	< 1	< 1
1,2,3-Trichloropropane	< 0.5	< 0.5
n-Propylbenzene	< 1	< 1
2-Chlorotoluene	< 1	< 1
4-Chlorotoluene	< 1	< 1
1,3,5-Trimethylbenzene	< 1	< 1
tert-Butylbenzene	< 1	< 1
1,2,4-Trimethylbenzene	< 1	< 1
sec-Butylbenzene	< 1	< 1
1,3-Dichlorobenzene	< 1	< 1
p-Isopropyltoluene	< 1	< 1
1,4-Dichlorobenzene	< 1	< 1
1,2-Dichlorobenzene	< 1	< 1
n-Butylbenzene	< 1	< 1
1,2-Dibromo-3-chloropropane	< 2	< 2
1,3,5-Trichlorobenzene	< 1	< 1
1,2,4-Trichlorobenzene	< 1	< 1
Hexachlorobutadiene	< 0.5	< 0.5
Naphthalene	< 5	< 5
1,2,3-Trichlorobenzene	< 1	< 1
4-Bromofluorobenzene (surr)	**97 %R**	**96 %R**
1,2-Dichlorobenzene-d4 (surr)	**100 %R**	**101 %R**
Toluene-d8 (surr)	**103 %R**	**104 %R**
1,2-Dichloroethane-d4 (surr)	**103 %R**	**102 %R**

Carbon disulfide and Naphthalene exhibited recovery outside acceptance limits in the Quality Control sample(s). The analyte(s) were not detected in the sample(s).

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5	MW-6	MW-101	MW-102
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04	169122.05	169122.06	169122.07
Matrix:	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous	aqueous
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17	5/24/17
Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17	5/26/17
Analyst:	VG	VG	VG	VG	VG	VG	VG
Method:	8260B SIM	8260B SIM	8260B SIM	8260B SIM	8260B SIM	8260B SIM	8260B SIM
Dilution Factor:	1	1	1	1	1	1	1
1,4-Dioxane	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
4-Bromofluorobenzene (surr)	**93 %R**	**90 %R**	**91 %R**	**90 %R**	**93 %R**	**91 %R**	**92 %R**
Toluene-d8 (surr)	**96 %R**	**95 %R**	**95 %R**	**95 %R**	**96 %R**	**95 %R**	**96 %R**

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	TW 15-74	Trip Blank- 1,4 Dioxane
Lab Sample ID:	169122.08	169122.1
Matrix:	aqueous	aqueous
Date Sampled:	5/24/17	5/8/17
Date Received:	5/24/17	5/24/17
Units:	ug/L	ug/L
Date of Analysis:	5/26/17	5/26/17
Analyst:	VG	VG
Method:	8260B SIM	8260B SIM
Dilution Factor:	1	1
1,4-Dioxane	< 0.25	< 0.25
4-Bromofluorobenzene (surr)	**91 %R**	**90 %R**
Toluene-d8 (surr)	**95 %R**	**95 %R**

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5					
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17		Analysis			
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	**Units**	**Date**	**Time**	**Method**	**Analyst**
Chloride	**65**	**11**	**53**	**11**	mg/L	05/25/17	9:31	4500CIE-97	KD
Nitrate-N	**4.4**	< 0.5	**3.4**	< 0.5	mg/L	05/25/17	9:31	353.2	KD
TKN	< 0.5	< 0.5	< 0.5	< 0.5	mg/L	06/07/17	12:46	$4500N_{org}C/N$	SEL
Turbidity	**260**	**50**	**46**	**34**	NTU	05/24/17	17:00	180.1	AMB

Sample ID:	MW-6	MW-101	MW-102	TW 15-74					
Lab Sample ID:	169122.05	169122.06	169122.07	169122.08					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17		Analysis			
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	**Units**	**Date**	**Time**	**Method**	**Analyst**
Chloride	**8**	**11**	**21**	**79**	mg/L	05/25/17	9:52	4500CIE-97	KD
Nitrate-N	**0.7**	< 0.5	**0.5**	< 0.5	mg/L	05/25/17	9:52	353.2	KD
TKN	< 0.5	**4.8**	< 0.5	**1.0**	mg/L	06/07/17	13:08	$4500N_{org}C/N$	SEL
Turbidity	**7**	**40**	**110**	**120**	NTU	05/24/17	17:00	180.1	AMB

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5					
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17					
Iron	< 0.05	< 0.05	< 0.05	< 0.05	AqDis	mg/L	5/26/17	200.7	JCS
Manganese	< 0.005	< 0.005	< 0.005	< 0.005	AqDis	mg/L	5/26/17	200.7	JCS

Sample ID:	MW-6	MW-101	MW-102	TW 15-74					
Lab Sample ID:	169122.05	169122.06	169122.07	169122.08					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	**Analytical Matrix**	**Units**	**Date of Analysis**	**Method**	**Analyst**
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17					
Iron	< 0.05	**55**	< 0.05	< 0.05	AqDis	mg/L	5/26/17	200.7	JCS
Manganese	< 0.005	**0.35**	**0.038**	**0.038**	AqDis	mg/L	5/26/17	200.7	JCS

LABORATORY REPORT

EAI ID#: **169122**

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Grove Rd LF**

Sample ID:	MW-1	MW-3	MW-3D	MW-5				
Lab Sample ID:	169122.01	169122.02	169122.03	169122.04				
Matrix:	aqueous	aqueous	aqueous	aqueous				
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17				
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	**Units**	**Date of Analysis**	**Method**	**Analyst**
Static Water Level	**39.18**	**33.22**	**32.48**	**22.28**	ft	2/24/17	Field	JL
Field pH	**6.2**	**6.0**	**6.7**	**6.2**	SU	2/24/17	SM4500H	JL
Field Conductivity	**320**	**280**	**570**	**140**	uS/cm	2/24/17	SM2510B	JL

Sample ID:	MW-6	MW-101	MW-102	TW 15-74				
Lab Sample ID:	169122.05	169122.06	169122.07	169122.08				
Matrix:	aqueous	aqueous	aqueous	aqueous				
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17				
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	**Units**	**Date of Analysis**	**Method**	**Analyst**
Static Water Level	**29.00**	**18.75**	**9.21**	**1.73**	ft	2/24/17	Field	JL
Field pH	**6.2**	**6.5**	**6.4**	**8.9**	SU	2/24/17	SM4500H	JL
Field Conductivity	**420**	**650**	**180**	**290**	uS/cm	2/24/17	SM2510B	JL

ALS Environmental
ALS Group USA, Corp
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June 23, 2017

Analytical Report for Service Request No: K1705371

Jennifer Laramie
Eastern Analytical, Inc.
25 Chenell Dr
Concord, NH 03301

RE: 169122

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory May 26, 2017
For your reference, these analyses have been assigned our service request number **K1705371.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Chris Leaf
Project Manager

ALS Environmental
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Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

ALS Environmental

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Eastern Analytical, Inc.	**Service Request No.:**	K1705371
Project:	169122	**Date Received:**	05/26/17
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Three water samples were received for analysis at ALS Environmental on 05/26/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

No anomalies associated with the analysis of these samples were observed.

Approved by _____

ALS Environmental

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577- 7222 Fax (360)636- 1068
www.alsglobal.com

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

K170 5371

19

EAI ID# 169122

Sample ID	Date Sampled	Matrix	aParameters	Sample Notes
MW-1	5/24/2017 10:34	aqueous	Subcontract - PFCs EPA Method 537 9 Compound List (ALS)	
MW-3	5/24/2017 12:03	aqueous	Subcontract - PFCs EPA Method 537 9 Compound List (ALS)	
MW-6	5/24/2017 11:20	aqueous	Subcontract - PFCs EPA Method 537 9 Compound List (ALS)	

EAI ID# 169122 **Project State: NH**

Project ID: 98

Company ALS Environmental (WA)
Address 1317 South 13th Ave
Address Kelso, WA 98626
Account #
Phone # (360) 430-7733
Fax Number

Results Needed by: Preferred date

QC Deliverables

☒ A ☐ A+ ☐ B ☐ B+ ☐ C ☐ P

Notes about project:

Email pdf of results and invoice to customerservice@eailabs.com.

PO #:46246 **EAI ID# 169122**

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by:

5/24/17 1530 URS

Relinquished by **Date/Time** **Received by**

5/26/17

Relinquished by **Date/Time** 0920 **Received by**

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591

PC CC

Cooler Receipt and Preservation Form

Client Eastern Analytical Service Request KI7 05371

Received: 5/26/17 Opened: 5/26/17 By: LL Unloaded: 5/26/17 By: LL

1. Samples were received via? *USPS* *Fed Ex* (*UPS*) *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other*_____ *NA*
3. Were custody seals on coolers? NA Y (N) If yes, how many and where?_____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
2.7	2.7	—	—	0.0	325	169122	12X465990197033340	

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* (*Wet Ice*) *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA (Y) N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA (Y) N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA (Y) N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* (NA) Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
12. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

ALS Environmental

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Collected:**	05/24/17 10:34
Sample Matrix:	Water	**Date Received:**	05/26/17 09:20
Sample Name:	MW-1	**Units:**	ng/L
Lab Code:	K1705371-001	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluorohexanoic acid (PFHxA)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluoroheptanoic acid (PFHpA)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluorooctanoic acid (PFOA)	**4.5**	1.7	1	06/09/17 19:28	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluorobutanoic acid (PFBA)	ND U	8.6	1	06/09/17 19:28	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	4.3	1	06/09/17 19:28	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	**4.4**	4.3	1	06/09/17 19:28	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	99	50 - 150	06/09/17 19:28	
13C3-PFBS	86	50 - 150	06/09/17 19:28	
13C4-PFHpA	95	50 - 150	06/09/17 19:28	
13C2-PFHxA	84	10 - 151	06/09/17 19:28	
18O2-PFHxS	81	20 - 128	06/09/17 19:28	
13C4-PFOA	79	13 - 142	06/09/17 19:28	
13C5-PFNA	80	15 - 143	06/09/17 19:28	
13C4-PFOS	70	11 - 131	06/09/17 19:28	
13C4-PFBA	76	19 - 126	06/09/17 19:28	

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Collected:**	05/24/17 12:03
Sample Matrix:	Water	**Date Received:**	05/26/17 09:20
Sample Name:	MW-3	**Units:**	ng/L
Lab Code:	K1705371-002	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluorohexanoic acid (PFHxA)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluoroheptanoic acid (PFHpA)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluorooctanoic acid (PFOA)	**6.1**	1.8	1	06/09/17 19:59	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluorobutanoic acid (PFBA)	ND U	8.9	1	06/09/17 19:59	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	4.5	1	06/09/17 19:59	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	**8.9**	4.5	1	06/09/17 19:59	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	91	50 - 150	06/09/17 19:59	
13C3-PFBS	77	50 - 150	06/09/17 19:59	
13C4-PFHpA	87	50 - 150	06/09/17 19:59	
13C2-PFHxA	82	10 - 151	06/09/17 19:59	
18O2-PFHxS	76	20 - 128	06/09/17 19:59	
13C4-PFOA	79	13 - 142	06/09/17 19:59	
13C5-PFNA	80	15 - 143	06/09/17 19:59	
13C4-PFOS	71	11 - 131	06/09/17 19:59	
13C4-PFBA	77	19 - 126	06/09/17 19:59	

Analytical Report

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Collected:**	05/24/17 11:20
Sample Matrix:	Water	**Date Received:**	05/26/17 09:20
Sample Name:	MW-6	**Units:**	ng/L
Lab Code:	K1705371-003	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	**7.9**	4.5	1	06/09/17 20:10	5/30/17	
Perfluorohexanoic acid (PFHxA)	**17**	4.5	1	06/09/17 20:10	5/30/17	
Perfluoroheptanoic acid (PFHpA)	**13**	4.5	1	06/09/17 20:10	5/30/17	
Perfluorooctanoic acid (PFOA)	**41**	1.8	1	06/09/17 20:10	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	4.5	1	06/09/17 20:10	5/30/17	
Perfluorobutanoic acid (PFBA)	**11**	8.9	1	06/09/17 20:10	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	**5.6**	4.5	1	06/09/17 20:10	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	**25**	4.5	1	06/09/17 20:10	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	**110**	4.5	1	06/09/17 20:10	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	108	50 - 150	06/09/17 20:10	
13C3-PFBS	95	50 - 150	06/09/17 20:10	
13C4-PFHpA	124	50 - 150	06/09/17 20:10	
13C2-PFHxA	79	10 - 151	06/09/17 20:10	
18O2-PFHxS	85	20 - 128	06/09/17 20:10	
13C4-PFOA	84	13 - 142	06/09/17 20:10	
13C5-PFNA	85	15 - 143	06/09/17 20:10	
13C4-PFOS	70	11 - 131	06/09/17 20:10	
13C4-PFBA	78	19 - 126	06/09/17 20:10	

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ1706747-04	**Basis:**	NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluorohexanoic acid (PFHxA)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluoroheptanoic acid (PFHpA)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluorooctanoic acid (PFOA)	ND U	2.0	1	06/09/17 17:54	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluorobutanoic acid (PFBA)	ND U	10	1	06/09/17 17:54	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	5.0	1	06/09/17 17:54	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	ND U	5.0	1	06/09/17 17:54	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	114	50 - 150	06/09/17 17:54	
13C3-PFBS	98	50 - 150	06/09/17 17:54	
13C4-PFHpA	116	50 - 150	06/09/17 17:54	
13C2-PFHxA	99	10 - 151	06/09/17 17:54	
18O2-PFHxS	113	20 - 128	06/09/17 17:54	
13C4-PFOA	102	13 - 142	06/09/17 17:54	
13C5-PFNA	100	15 - 143	06/09/17 17:54	
13C4-PFOS	91	11 - 131	06/09/17 17:54	
13C4-PFBA	102	19 - 126	06/09/17 17:54	

Client: Eastern Analytical, Inc. **Service Request:** K1705371

Project:

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Extraction Method: EPA 3535A

Sample Name	Lab Code	13C2-PFHxA 10 - 151	13C3-PFBS 50 - 150	13C4-PFBA 19 - 126
Batch QC	K1705261-002	80	79	83
MW-1	K1705371-001	84	86	76
MW-3	K1705371-002	82	77	77
MW-6	K1705371-003	79	95	78
Batch QC	KQ1706747-01	96	100	98
Batch QC	KQ1706747-02	104	102	97
Lab Control Sample	KQ1706747-03	113	103	112
Method Blank	KQ1706747-04	99	98	102

Client: Eastern Analytical, Inc. **Service Request:** K1705371

Project:

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Extraction Method: EPA 3535A

Sample Name	Lab Code	13C4-PFHpA 50 - 150	13C4-PFOA 13 - 142	13C4-PFOS 11 - 131
Batch QC	K1705261-002	99	82	70
MW-1	K1705371-001	95	79	70
MW-3	K1705371-002	87	79	71
MW-6	K1705371-003	124	84	70
Batch QC	KQ1706747-01	123	95	83
Batch QC	KQ1706747-02	124	94	91
Lab Control Sample	KQ1706747-03	126	107	102
Method Blank	KQ1706747-04	116	102	91

Client: Eastern Analytical, Inc. **Service Request:** K1705371

Project:

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Extraction Method: EPA 3535A

Sample Name	Lab Code	13C5-PFNA 15 - 143	13C5-PFPeA 50 - 150	18O2-PFHxS 20 - 128
Batch QC	K1705261-002	84	94	88
MW-1	K1705371-001	80	99	81
MW-3	K1705371-002	80	91	76
MW-6	K1705371-003	85	108	85
Batch QC	KQ1706747-01	97	117	105
Batch QC	KQ1706747-02	99	124	102
Lab Control Sample	KQ1706747-03	112	127	117
Method Blank	KQ1706747-04	100	114	113

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:	169122	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	06/9/17
		Date Extracted:	05/30/17

Duplicate Matrix Spike Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name:	Batch QC	**Units:**	ng/L
Lab Code:	K1705261-002	**Basis:**	NA
Analysis Method:	PFC/537M		
Prep Method:	EPA 3535A		

		Matrix Spike KQ1706747-01			Duplicate Matrix Spike KQ1706747-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Perfluoropentanoic acid (PFPeA)	ND U	117	143	82	110	143	77	50-150	6	30
Perfluorohexanoic acid (PFHxA)	2.1 J	131	143	90	129	143	89	68-141	1	30
Perfluoroheptanoic acid (PFHpA)	ND U	105	143	73	99.8	143	70	50-150	5	30
Perfluorooctanoic acid (PFOA)	0.74 J	132	143	92	134	143	93	72-130	2	30
Perfluorononanoic acid (PFNA)	ND U	121	143	84	124	143	87	77-127	2	30
Perfluorobutanoic acid (PFBA)	1.1 J	151	143	105	152	143	106	76-136	<1	30
Perfluorobutane sulfonic acid (PFBS)	ND U	98.6	127	78	100	127	79	70-127	2	30
Perfluorohexane sulfonic acid (PFHxS)	1.2 J	114	130	86	111	130	84	71-130	2	30
Perfluorooctane sulfonic acid (PFOS)	5.5 J	121	133	87	110	133	79	74-135	9	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:	169122	**Date Analyzed:**	06/09/17
Sample Matrix:	Water	**Date Extracted:**	05/30/17

Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method:	PFC/537M	**Units:**	ng/L
Prep Method:	EPA 3535A	**Basis:**	NA
		Analysis Lot:	549216

Lab Control Sample
KQ1706747-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Perfluorobutane sulfonic acid (PFBS)	111	142	78	50-150
Perfluorobutanoic acid (PFBA)	161	160	101	76-136
Perfluoroheptanoic acid (PFHpA)	120	160	75	50-150
Perfluorohexane sulfonic acid (PFHxS)	112	146	77	71-130
Perfluorohexanoic acid (PFHxA)	145	160	90	68-141
Perfluorononanoic acid (PFNA)	129	160	81	77-127
Perfluorooctane sulfonic acid (PFOS)	119	149	80	74-135
Perfluorooctanoic acid (PFOA)	148	160	92	72-130
Perfluoropentanoic acid (PFPeA)	136	160	85	50-150

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Analyzed:**	06/09/17 17:54
Sample Matrix:	Water	**Date Extracted:**	05/30/17

Method Blank Summary

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name:	Method Blank	**Instrument ID:**	K-LCMS-06
Lab Code:	KQ1706747-04	**File ID:**	J:\LCMS06\Data\060917_2_b1\060917_320.D\
Analysis Method:	PFC/537M	**Analysis Lot:**	549216
Prep Method:	EPA 3535A	**Extraction Lot:**	289099

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Lab Control Sample	KQ1706747-03	J:\LCMS06\Data\060917_2_b1\060917_321.D\	06/09/17 18:04
Batch QC	K1705261-002	J:\LCMS06\Data\060917_2_b1\060917_323.D\	06/09/17 18:25
Batch QC	KQ1706747-01	J:\LCMS06\Data\060917_2_b1\060917_324.D\	06/09/17 18:36
Batch QC	KQ1706747-02	J:\LCMS06\Data\060917_2_b1\060917_325.D\	06/09/17 18:46
MW-1	K1705371-001	J:\LCMS06\Data\060917_2_b1\060917_329.D\	06/09/17 19:28
MW-3	K1705371-002	J:\LCMS06\Data\060917_2_b1\060917_332.D\	06/09/17 19:59
MW-6	K1705371-003	J:\LCMS06\Data\060917_2_b1\060917_333.D\	06/09/17 20:10

Client:	Eastern Analytical, Inc.	**Service Request:**	K1705371
Project:		**Date Analyzed:**	06/09/17 18:04
Sample Matrix:	Water	**Date Extracted:**	05/30/17

Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name:	Lab Control Sample	**Instrument ID:**	K-LCMS-06
Lab Code:	KQ1706747-03	**File ID:**	J:\LCMS06\Data\060917_2_b1\060917_321.D\
Analysis Method:	PFC/537M	**Analysis Lot:**	549216
Prep Method:	EPA 3535A	**Extraction Lot:**	289099

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1706747-04	J:\LCMS06\Data\060917_2_b1\060917_320.D\	06/09/17 17:54
Batch QC	K1705261-002	J:\LCMS06\Data\060917_2_b1\060917_323.D\	06/09/17 18:25
Batch QC	KQ1706747-01	J:\LCMS06\Data\060917_2_b1\060917_324.D\	06/09/17 18:36
Batch QC	KQ1706747-02	J:\LCMS06\Data\060917_2_b1\060917_325.D\	06/09/17 18:46
MW-1	K1705371-001	J:\LCMS06\Data\060917_2_b1\060917_329.D\	06/09/17 19:28
MW-3	K1705371-002	J:\LCMS06\Data\060917_2_b1\060917_332.D\	06/09/17 19:59
MW-6	K1705371-003	J:\LCMS06\Data\060917_2_b1\060917_333.D\	06/09/17 20:10

CHAIN-OF-CUSTODY RECORD

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professional laboratory services

169122

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aSampleID	Date/Time	aMatrix	Parameters	Sample Notes	# of containers
MW-1	05/24/2017 10:34	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane, PFCs 537		10
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					
MW-3	05/24/2017 12:03	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane, PFCs 537		10
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					
MW-3D	05/24/2017 12:11	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane		8
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					
MW-5	05/24/2017 12:33	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane		8
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					
MW-6	05/24/2017 11:20	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane, PFCs 537		10
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					
MW-101	05/24/2017 10:56	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane		8
preservative: HCL HNO3 H2SO4 NaOH MEOH Na2S2O3 ICE					

aClientID Rye - Grove Rd LF
nProjectID 98 **nYearMonth** 2017.04
Client (Pro Mgr) Paul Schmidt
Customer CMA Engineers, Inc. (Manchester)
Address Langler Place, 55 South Commercial
City Manchester **NH** 03101
Phone 603-627-0708
Fax

Results Needed by: Preferred date _____

Notes about project

Dissolved metals field filtered, preserved with Nitric Acid.

Invoice town directly

PFC's by EPA 537 (9 compound list)

ReportingOptions
☒ HC ☐ NO FAX ☐ EDD Disk
☐ Fax ☐ No partial FAX ☒ EDD emai

PO# _____
Quote# _____

Ice: Y☒ N☐ **Temperature** 3.1 °C

Samples Collected by: JL (EAI)

Relinquished by	Date/Time	Received by
[signature]	05/24/2017 1615	[signature]
Relinquished by	Date/Time	Received by

CHAIN-OF-CUSTODY RECORD

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169122 34

aSampleID	Date/Time	aMatrix	Parameters	Sample Notes	# of containers
MW-102	05/24/2017 13:20	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane		8
preservative: (HCL) (HNO3) (H2SO4) NaOH MEOH $Na_2S_2O_3$ (ICE)					
TW 15-74	05/24/2017 13:02	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, Turbidity, SWL, VOC NH Full List 8260B, 1,4 Dioxane		8
preservative: (HCL) (HNO3) (H2SO4) NaOH MEOH $Na_2S_2O_3$ (ICE)					

aClientID Rye - Grove Rd LF
nProjectID 98 **nYearMonth** 2017.04
Client (Pro Mgr) Paul Schmidt
Customer CMA Engineers, Inc. (Manchester)
Address Langler Place, 55 South Commercial
City Manchester **NH** 03101
Phone 603-627-0708
Fax

Results Needed by: Preferred date _____

Notes about project

Dissolved metals field filtered, preserved with Nitric Acid.

Invoice town directly

PFC's by EPA 537 (9 compound list)

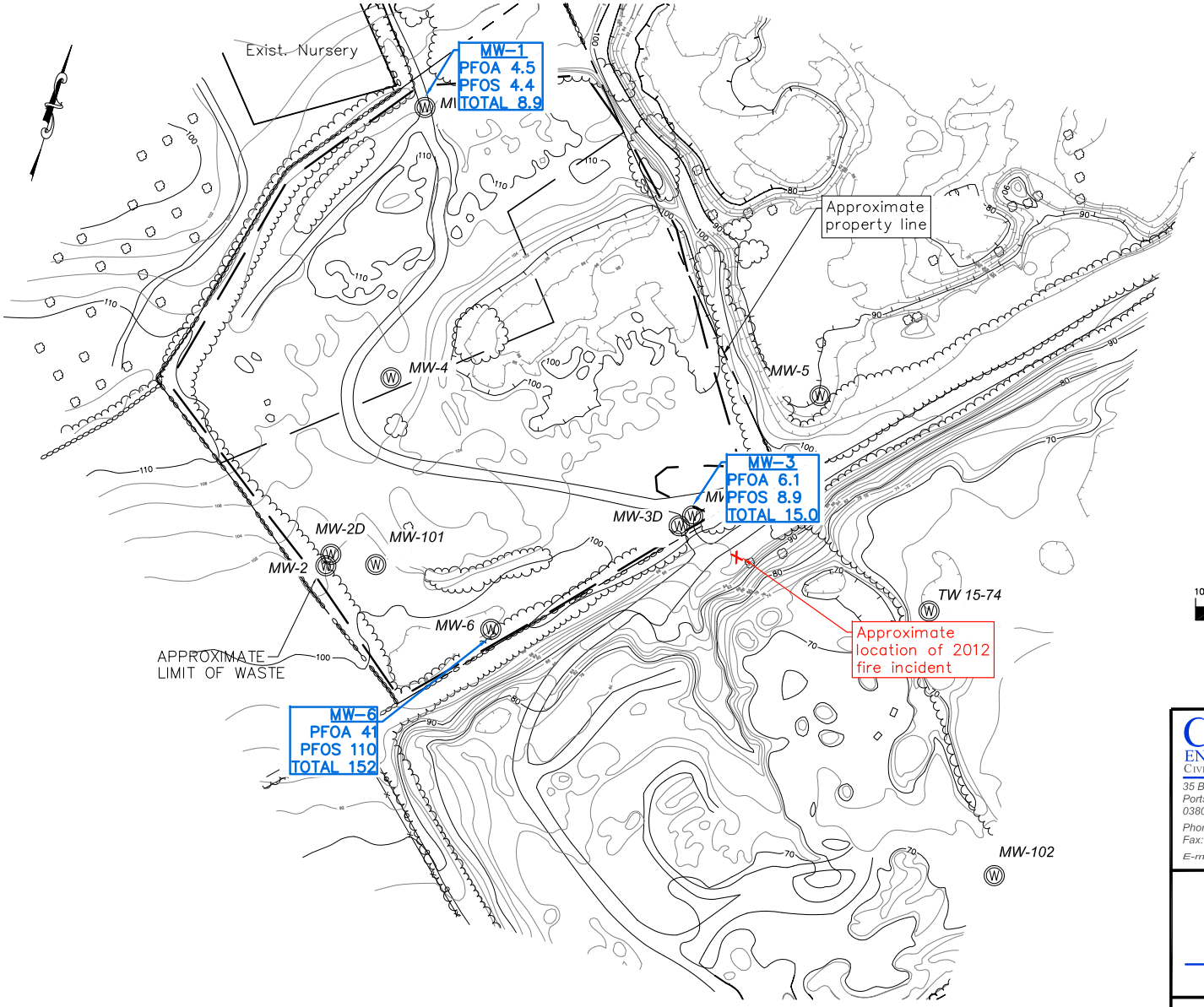
ReportingOptions
☒ HC ☐ NO FAX ☐ EDD Disk
☐ Fax ☐ No partial FAX ☒ EDD emai

PO# _____
Quote# _____
Temperature ____ °C

Ice: Y☒ N☐

Samples Collected by: JL (EAH)

Relinquished by	Date/Time	Received by
[signature]	05/24/2017 1615	
Relinquished by	Date/Time	Received by



Notes:

1. Base topography by Eastern Topographics, Inc. and provided by Roy F. Weston, Inc.
2. Property line survey based on survey performed by Richard P. Millette and Assoc. Imported onto plan using common monitoring points.

Legend:

- 80 — 10' Contour
- Edge of Pavement
- Treeline
- MW-5 (W) Groundwater Monitoring Well

MAY 2017
PFC Data

100 0 50 100 200
(in feet)
1 inch = 100 ft.

CMA ENGINEERS
CIVIL/ENVIRONMENTAL ENGINEERS

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Portsmouth, New Hampshire
03801-3819
Phone: 603/431-6196
Fax: 603/431-5376
E-mail: info@cmaengineers.com

Lafayette Center
Storer Street Building, Suite 208
Kennebunk, Maine 04043
Phone: 207/985-8717
Fax: 207/985-5520

Town of Rye, NH
Grove Road Landfill
Rye, New Hampshire

- Site Plan -

Figure 1