

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	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	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
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*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	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

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

Laboratory Report

Client: Cary/Apex WTP
 Attn: Rachel Monschein
 1400 Wimberly Road
 Apex, NC 27523

Report: 470855
 Priority: Standard Written
 Status: Final
 PWS ID: NC0392020

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4483720	1931569-02 RawWaterIntake	L402	11/12/19 13:50	Client	11/13/19 09:45
4483721	1931569-01 Filter Effluent	L402	11/12/19 08:30	Client	11/13/19 09:45

Report Summary

PFMOPrA is not reportable in this sample due to matrix interference.

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 Pat Muff at (574) 233-4777.

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




Authorized Signature

Title

12/12/2019

Date

Client Name: Cary/Apex WTP

Report #: 470855

Sampling Point: 1931569-02 RawWaterIntake

PWS ID: NC0392020

EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
120226-60-0	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
757124-22-4	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
27619-97-2	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
39108-34-4	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
958445-44-8	ADONA	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
73606-19-6	9Cl-PF3ONS/F-53B Major	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
83329-89-9	11Cl-PF3OUdS/F-53B Minor	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
13252-13-6	HFPO-DA/GenX	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
4151-50-2	N-ethylperfluorooctane sulfonamide (NEtFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
1691-99-2	N-ethylperfluorooctane sulfonamidoethanol	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
31506-32-8	N-methylperfluorooctane sulfonamide (NMeFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
24448-09-7	N-methylperfluorooctane sulfonamidoethanol	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
375-73-5	Perfluorobutanesulfonic acid (PFBS)	L402	---	2.0	4.7	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
375-22-4	Perfluorobutanoic acid (PFBA)	L402	---	5.0	15	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
335-76-2	Perfluorodecanoic acid (PFDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
375-85-9	Perfluoroheptanoic acid (PFHpA)	L402	---	2.0	18	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	L402	---	2.0	3.1	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
307-24-4	Perfluorohexanoic acid (PFHxA)	L402	---	2.0	25	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
307-55-1	Perfluorododecanoic acid (PFDoA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
375-95-1	Perfluorononanoic acid (PFNA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	L402	---	2.0	13	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
2991-50-6	N-ethyl Perfluorooctanesulfonamidoacetic acid	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
2355-31-9	N-methyl Perfluorooctanesulfonamidoacetic acid	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
335-67-1	Perfluorooctanoic acid (PFOA)	L402	---	2.0	9.7	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
2058-94-8	Perfluoroundecanoic acid (PFUnA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
NA	Perfluorododecanesulfonic acid (PFDoS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
335-77-3	Perfluorodecanesulfonic acid (PFDS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
67905-19-5	Perfluorohexadecanoic acid (PFHxDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
151772-58-6	Perfluoro-2-methoxyethoxyacetic acid	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
801212-59-9	Perfluoro-4-isopropoxybutanoic acid	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMOBA)	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
68259-12-1	Perfluorononanesulfonic acid (PFNS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
754-91-6	Perfluorooctane sulfonamide (PFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
2706-90-3	Perfluoropentanoic acid (PFPeA)	L402	---	2.0	24	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 01:40	4483720

Sampling Point: 1931569-01 Filter Effluent

PWS ID: NC0392020

EEA Methods									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
120226-60-0	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
757124-22-4	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
27619-97-2	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
39108-34-4	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
958445-44-8	ADONA	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
73606-19-6	9Cl-PF3ONS/F-53B Major	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
83329-89-9	11Cl-PF3OUdS/F-53B Minor	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
13252-13-6	HFPO-DA/GenX	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
4151-50-2	N-ethylperfluorooctane sulfonamide (NEtFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
1691-99-2	N-ethylperfluorooctane sulfonamidoethanol	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
31506-32-8	N-methylperfluorooctane sulfonamide (NMeFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
24448-09-7	N-methylperfluorooctane sulfonamidoethanol	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
375-73-5	Perfluorobutanesulfonic acid (PFBS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
375-22-4	Perfluorobutanoic acid (PFBA)	L402	---	5.0	14	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
335-76-2	Perfluorodecanoic acid (PFDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
375-85-9	Perfluoroheptanoic acid (PFHpA)	L402	---	2.0	4.4	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
307-24-4	Perfluorohexanoic acid (PFHxA)	L402	---	2.0	12	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
307-55-1	Perfluorododecanoic acid (PFDoA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
375-95-1	Perfluorononanoic acid (PFNA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
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2991-50-6	N-ethyl Perfluorooctanesulfonamidoacetic acid	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
2355-31-9	N-methyl Perfluorooctanesulfonamidoacetic acid	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
335-67-1	Perfluorooctanoic acid (PFOA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
72629-94-8	Perfluorotridecanoic acid (PFTTrDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
2058-94-8	Perfluoroundecanoic acid (PFUnA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
NA	Perfluorododecanesulfonic acid (PFDoS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
335-77-3	Perfluorodecanesulfonic acid (PFDS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
375-92-8	Perfluoroheptanesulfonic acid (PFHpS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
67905-19-5	Perfluorohexadecanoic acid (PFHxDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
151772-58-6	Perfluoro-2-methoxyethoxyacetic acid	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
801212-59-9	Perfluoro-4-isopropoxybutanoic acid	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMOBA)	L402	---	5.0	< 5.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
68259-12-1	Perfluorononanesulfonic acid (PFNS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
754-91-6	Perfluorooctane sulfonamide (PFOSA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
2706-90-3	Perfluoropentanoic acid (PFPeA)	L402	---	2.0	18	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
2706-91-4	Perfluoropentanesulfonic acid (PFPeS)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721
376-06-7	Perfluorotetradecanoic acid (PFTeDA)	L402	---	2.0	< 2.0	ng/L	11/19/19 08:25	11/27/19 02:06	4483721

† 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:	*	^	!

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.



Eaton Analytical

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South Bend, IN 46617
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F: 1.574.233.8207

Order # **369502**
Batch # **470855**

www.eatonanalytical.com

CHAIN OF CUSTODY RECORD

Shaded area for EEA use only

REPORT TO: Rachel Monschien 1400 Wimberly Rd Apex NC 27523		SAMPLER (Signature) <i>EM Rhee</i>		PWS ID # NC0392020	STATE (sample origin) NC	PROJECT NAME PFAS'S Special	PO#	# OF CONTAINERS	MATRIX CODE	TURNAROUND TIME
TOWN OF CARY FINANCE: A.P P.O. BOX 8005 CARY, NC 27512-8005		COMPLIANCE MONITORING		POPULATION SERVED >100,000	SOURCE WATER JORDAN LAKE	SAMPLE REMARKS	CHLORINATED YES NO			
LAB Number		COLLECTION		SAMPLING SITE		TEST NAME				
	DATE	TIME	AM	PM						
1	4/18/20	1:30	X		931519-02 RAW WATER INTAKE (WET WELL)					
2	4/18/20	8:30	X		931519-01 FILTER EFFLUENT					
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										

RELINQUISHED BY: (Signature) <i>EM Rhee</i>	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME	LAB COMMENTS
	11/13/19	AM				
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME	LAB COMMENTS
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED FOR LABORATORY BY:	DATE	TIME	CONDITIONS UPON RECEIPT (check one):
			<i>CBent</i>	11/13/19	AM	<input type="checkbox"/> Iced <input type="checkbox"/> Wet/Blue <input checked="" type="checkbox"/> Ambient °C Upon Receipt <i>0.4</i> N/A

MATRIX CODES:
 DW-DRINKING WATER
 RW-REAGENT WATER
 GW-GROUND WATER
 EW-EXPOSURE WATER
 SW-SURFACE WATER
 WW-WASTE WATER

TURN-AROUND TIME (TAT) - SURCHARGES
 SW = Standard Written: (15 working days) 0%
 RW* = Rush Verbal: (5 working days) 50%
 RW* = Rush Written: (5 working days) 75%
 * Please call, expedited service not available for all testing

IV* = Immediate Verbal: (3 working days) 100%
IW* = Immediate Written: (3 working days) 125%
SP* = Weekend, Holiday CALL
STAT* = Less than 48 hours CALL

Samples received unannounced with less than 48 hours holding time remaining may be subject to additional charges.