



Environmental Chemists, Inc.

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ANALYTICAL & CONSULTING CHEMISTS

info@environmentalchemists.com

September 8, 2017

Brunswick County Public Utilities
Post Office Box 249
Bolivia, NC 28422
Attn: Glenn Walker

Report #2017-13134

Enclosed please find your analytical report.

Sincerely,

A handwritten signature in cursive script that reads "Tammy Duran".
Tammy Duran

Environmental Chemists, Inc.

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Environmental Chemists
 Attn: Ray Porter
 6602 Windmill Way
 Wilmington, NC 28405

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI000034

Printed: 09/07/17 Page 1 of 1
 NLS Project: 286320
 NLS Customer: 96259
 Fax: 910 392 4424 Phone: 910 392 0223

Project: GenX Investigative DW Samples

31464 NLS ID: 1015246

Matrix: DW

Collected: 08/31/17 09:23 Received: 09/01/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	EPA 537	721026460

31463 NLS ID: 1015247

Matrix: DW

Collected: 08/31/17 09:21 Received: 09/01/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	EPA 537	721026460

31462 NLS ID: 1015248

Matrix: DW

Collected: 08/31/17 09:15 Received: 09/01/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	EPA 537	721026460

31461 NLS ID: 1015249

Matrix: DW

Collected: 08/31/17 09:15 Received: 09/01/17

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Solid Phase Extraction by EPA Method 537	yes					09/05/17	EPA 537	721026460
GenX and PFCs by EPA 537	see attached					09/06/17	EPA 537	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation"; Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.
 ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = Limit of Quantitation NA = Not Applicable
 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

ANALYTICAL RESULTS: Perfluorinated Chemicals by EPA 537 Rev 1.1 Safe Drinking Water Analysis

Customer: Environmental Chemists NLS Project: 286320
 Project Description: GenX Investigative DW Samples
 Project Title: Template: 537PPTGENX Printed: 09/07/2017 17:22

Sample: 1015246_31464 Collected: 08/31/17 Analyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	[3.82]	ppt		1	1.3	4.0		J
perfluoro-2-propoxypropanoic acid (GenX)	39.8	ppt		1	0.73	2.3		
perfluorothepanoic acid (PFHpA)	3.55	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[3.1]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	4.76	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	ND	ppt		1	1.5	4.9		
perfluorooctanesulfonic acid (PFOS)	5.66	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	ND	ppt		1	0.90	2.7		
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDDa)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	78.213%							S
C13-PFDA (SURR)	88.239%							S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.
 S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 1015247_31463 Collected: 08/31/17 Analyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	ND	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	10.2	ppt		1	0.73	2.3		
perfluorothepanoic acid (PFHpA)	[1.09]	ppt		1	0.80	2.6		J
perfluorohexanesulfonic acid (PFHxS)	ND	ppt		1	2.8	8.8		
perfluorooctanoic acid (PFOA)	ND	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	ND	ppt		1	1.5	4.9		
perfluorooctanesulfonic acid (PFOS)	ND	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	ND	ppt		1	0.90	2.7		
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDDa)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	76.161%							S
C13-PFDA (SURR)	85.182%							S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.
 S = This compound is a surrogate used to evaluate the quality control of a method.

The PFOA branch isotope peak is included in the PFOA calculation per EPA directive. GenX analysis performed by Modified EPA Method 537.

ANALYTICAL RESULTS: Perfluorinated Chemicals by EPA 537 Rev 1.1 Safe Drinking Water Analysis

Customer: Environmental Chemists NLS Project: 286320

Project Description: GenX Investigative DW Samples

Project Title: Template: 537PPTGENX Printed: 09/07/2017 17:22

Sample: 1015248 31462 Collected: 08/31/17 Analyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	16.6	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	22.9	ppt		1	0.73	2.3		
perfluorooctanoic acid (PFHxA)	13.5	ppt		1	0.80	2.6		J
perfluorohexanesulfonic acid (PFHxS)	[6.11]	ppt		1	2.8	8.8		
perfluorooctanoic acid (PFOA)	8.06	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	[1.61]	ppt		1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	8.01	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[0.97]	ppt		1	0.90	2.7		J
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDoA)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	85.394%							S
C13-PFDA (SURR)	94.617%							S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.
 S = This compound is a surrogate used to evaluate the quality control of a method.

Sample: 1015249 31461 Collected: 08/31/17 Analyzed: 09/06/17 - Analytes: 13

ANALYTE NAME	RESULT	UNITS	WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt		1	6.6	21		
perfluorohexanoic acid (PFHxA)	18.4	ppt		1	1.3	4.0		
perfluoro-2-propoxypropanoic acid (GenX)	24.3	ppt		1	0.73	2.3		
perfluorooctanoic acid (PFHxA)	15.8	ppt		1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[7.34]	ppt		1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	11	ppt		1	1.2	3.9		
perfluorononanoic acid (PFNA)	[2.33]	ppt		1	1.5	4.9		J
perfluorooctanesulfonic acid (PFOS)	13.3	ppt		1	1.7	5.3		
perfluorodecanoic acid (PFDA)	[1.48]	ppt		1	0.90	2.7		J
perfluoroundecanoic acid (PFUnA)	ND	ppt		1	1.0	3.0		
perfluorododecanoic acid (PFDoA)	ND	ppt		1	1.9	6.1		
perfluorotridecanoic acid (PFTDA)	ND	ppt		1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt		1	2.8	8.9		
C13-PFHxA (SURR)	81.429%							S
C13-PFDA (SURR)	93.827%							S

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.
 S = This compound is a surrogate used to evaluate the quality control of a method.

