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 Analytical Laboratory and Environmental Services
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034
 Printed: 06/19/19 Page 1 of 1
 NLS Project: 322299
 NLS Customer: 29246
 Fax: 715 365 8630 Phone: 715 362 4731

Client: Rhinelander Water Utility
 Attn: Tim Kingman
 135 South Stevens Street
 Rhinelander, WI 54501 3434

Project: Investigative Samples

1553 S Onieda NLS ID: 1123997

COC: 210480:1 Matrix: DW
 Collected: 05/30/19 10:10 Received: 05/30/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					06/14/19	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					06/03/19	EPA 537	721026460

1549 S Onieda NLS ID: 1123998

COC: 210480:2 Matrix: DW
 Collected: 05/30/19 10:01 Received: 05/30/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					06/14/19	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					06/03/19	EPA 537	721026460

1409 Phillips NLS ID: 1123999

COC: 210480:3 Matrix: DW
 Collected: 05/30/19 09:29 Received: 05/30/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					06/14/19	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					06/03/19	EPA 537	721026460

3401 Fox Ranch Rd NLS ID: 1124000

COC: 210480:4 Matrix: DW
 Collected: 05/30/19 09:01 Received: 05/30/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					06/14/19	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					06/03/19	EPA 537	721026460

3400 Fox Ranch Rd NLS ID: 1124001

COC: 210480:5 Matrix: DW
 Collected: 05/30/19 09:15 Received: 05/30/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Perfluorinated Chemicals by EPA Method 537 Rev 1.1	see attached					06/14/19	EPA 537 Rev 1.1	721026460
Solid Phase Extraction by EPA Method 537	yes					06/03/19	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

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Customer: Rhinelander Water Utility NLS Project: 322299

Project Description: Investigative Samples

Project Title: Template: 537PPT Printed: 06/19/2019 08:40

Sample: 1123997 1553 S Onieda Collected: 05/30/19 Analyzed: 06/14/19 - Analytes: 12

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	[3.77]	ppt	1	1.3	4.0		J BD
perfluoroheptanoic acid (PFHpA)	3.11	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	2.8	8.8		
perfluorooctanoic acid (PFOA)	8.02	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 (PFDoA)	ND	ppt	1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt	1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt	1	2.8	8.9		
C13-PFHxA (SURR)	72.033%		1				S
C13-PFDA (SURR)	79.978%		1				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.

BD = Compound was detected in the laboratory method blank.

perfluorohexanoic acid (PFHxA) detected at 1.9 ppt.

Sample: 1123998 1549 S Onieda Collected: 05/30/19 Analyzed: 06/14/19 - Analytes: 12

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	8.29	ppt	1	1.3	4.0		BD
perfluoroheptanoic acid (PFHpA)	5.78	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	2.8	8.8		
perfluorooctanoic acid (PFOA)	6.45	ppt	1	1.2	3.9		
perfluorononanoic acid (PFNA)	ND	ppt	1	1.5	4.9		
perfluorooctanesulfonic acid (PFOS)	[2.67]	ppt	1	1.7	5.3		J
perfluorodecanoic acid (PFDA)	ND	ppt	1	0.90	2.7		
perfluoroundecanoic acid (PFUnA)	ND	ppt	1	1.0	3.0		
perfluorododecanoic acid (PFDoA)	ND	ppt	1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt	1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt	1	2.8	8.9		
C13-PFHxA (SURR)	78.141%		1				S
C13-PFDA (SURR)	89.499%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

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BD = Compound was detected in the laboratory method blank.

perfluorohexanoic acid (PFHxA) detected at 1.9 ppt.

The PFOA branch isotope peak is included in the PFOA calculation per EPA directive.

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

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Customer: Rhinelander Water Utility NLS Project: 322299

Project Description: Investigative Samples

Project Title: Template: 537PPT Printed: 06/19/2019 08:40

Sample: 1123999 1409 Phillips Collected: 05/30/19 Analyzed: 06/14/19 - Analytes: 12

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	[2.38]	ppt	1	1.3	4.0		J BD
perfluoroheptanoic acid (PFHpA)	[1.61]	ppt	1	0.80	2.6		J
perfluorohexanesulfonic acid (PFHxS)	ND	ppt	1	2.8	8.8		
perfluorooctanoic acid (PFOA)	[3.88]	ppt	1	1.2	3.9		J
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 (PFDoA)	ND	ppt	1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt	1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt	1	2.8	8.9		
C13-PFHxA (SURR)	78.521%		1				S
C13-PFDA (SURR)	89.085%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

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BD = Compound was detected in the laboratory method blank.

perfluorohexanoic acid (PFHxA) detected at 1.9 ppt.

Sample: 1124000 3401 Fox Ranch Rd Collected: 05/30/19 Analyzed: 06/14/19 - Analytes: 12

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	28.4	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	49.9	ppt	1	1.3	4.0		BD
perfluoroheptanoic acid (PFHpA)	15.9	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	590	ppt	2	5.6	18		
perfluorooctanoic acid (PFOA)	25.2	ppt	1	1.2	3.9		
perfluorononanoic acid (PFNA)	ND	ppt	1	1.5	4.9		
perfluorooctanesulfonic acid (PFOS)	79.6	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 (PFDoA)	ND	ppt	1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt	1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt	1	2.8	8.9		
C13-PFHxA (SURR)	86.067%		1				S
C13-PFDA (SURR)	91.256%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

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BD = Compound was detected in the laboratory method blank.

perfluorohexanoic acid (PFHxA) detected at 1.9 ppt.

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

Customer: Rhinelander Water Utility NLS Project: 322299

Project Description: Investigative Samples

Project Title: Template: 537PPT Printed: 06/19/2019 08:40

Sample: 1124001 3400 Fox Ranch Rd Collected: 05/30/19 Analyzed: 06/14/19 - Analytes: 12

ANALYTE NAME	RESULT	UNITS WWB	DIL	LOD	LOQ	MCL	Note
perfluorobutanesulfonic acid (PFBS)	ND	ppt	1	6.6	21		
perfluorohexanoic acid (PFHxA)	[2.08]	ppt	1	1.3	4.0		J BD
perfluoroheptanoic acid (PFHpA)	ND	ppt	1	0.80	2.6		
perfluorohexanesulfonic acid (PFHxS)	[7.25]	ppt	1	2.8	8.8		J
perfluorooctanoic acid (PFOA)	[1.72]	ppt	1	1.2	3.9		J
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 (PFDoA)	ND	ppt	1	1.9	6.1		
perfluorotridecanoic acid (PFTrDA)	ND	ppt	1	3.2	10		
perfluorotetradecanoic acid (PFTA)	ND	ppt	1	2.8	8.9		
C13-PFHxA (SURR)	81.66%		1				S
C13-PFDA (SURR)	84.665%		1				S

NOTES APPLICABLE TO THIS ANALYSIS:

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BD = Compound was detected in the laboratory method blank.

perfluorohexanoic acid (PFHxA) detected at 1.9 ppt.