MINNESOTA MDH DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

Report Date: 5/21/18
Client Name: TM - MPCA - DWP Community Wells-PFC
Project Code: TM
Project Name: DWP Community Wells-PFC

Work Order Number: 18D1768

Report To: TM - MPCA - DWP Community Wells-PFC
Gary Krueger
520 Lafayette Rd
Saint Paul, MN 55155

The MDH Public Health Laboratory performs chemical, bacteriological and radiological analyses of environmental samples including water, waste water, sediment, air, soil and hazardous material. The laboratory provides testing services in accordance with standard operating procedures referencing approved methodology as defined in Standard Methods for the Examination of Water and Wastewater, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods: EPA SW-846, and 40 Code of Federal Regulation (CFR) parts 136, 141, and 261. In cases where analytes of interest do not have corresponding EPA approved methodology, the MDH Public Health Laboratory uses in-house methods that have undergone rigorous validation and documentation.

The results within this report are in compliance with the terms and conditions stated in the standard operating procedures, reference methodologies, and quality assurance project plan; unless otherwise narrated in the attached report.

Release of the data contained in this report has been authorized by laboratory management and is verified with the following signature affirmation. Thank you for using the MDH Public Health Laboratory.

Sincerely,

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Summary of Samples Received

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Work Order Comment: Samples were received in proper condition unless otherwise specified in the receiving comments.

Field ID	MDH Sample Number	Matrix	Date & Time Collected	Date & Time Received	Receipt °C
S01	18D1768-01	Drinking Water	04/30/18 10:41	04/30/18 11:06	13.6
S02	18D1768-02	Drinking Water	04/30/18 10:28	04/30/18 11:06	13.6

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

1	2	3	4

Minnesota Department of Health
Chain-of-Custody Form

Matrix: Drinking Water

Program Code	PWSID	System Name	City, Town, Township	
TM	1820029	Lakeland municipal water	Lakeland	
Date Collected (for all samples on form)	Collector ID	Collector Name (please print)	Original Sample Number	Comm. Sanitary Survey Date
4/30/18	7996	Lucas Martin		
Sample Type	Your Chlorine Residual Result	Sampler Comments		
X	mg/l			

	Field Number	Time Collected	Location ID	Sampling Point
1	LM1804068	10:41 am☒ pm☐	S01	well #1
2	LM1804067	10:28 am☒ pm☐	S02	well #2
3		am☐ pm☐		
4		am☐ pm☐		

INORGANIC	1	2	3	4
Unpreserved				
Alkalinity SM 2320B				
Bromide EPA 300.1				
Chloride EPA 300.1				
Conductivity SM 2510B				
DOC SM 5310C				
Fluoride SM 4500-F-C				
Nitrite-N SM 4500-NO2 B				
pH SM 4500-H+B				
Silica SM 4500-SiO2 C				
Sulfate EPA 300.1				
UV254 SM 5910B				
SUVA (UV abs., UV254, DOC)				
H_2SO_4 Preserved				
Ammonia-N EPA 350.1				
Nitrate+Nitrite-N SM 4500-NO3 F				
Total Phosphorus SM 4500P I				
TOC SM 5310C				

METALS	1	2	3	4
HNO_3 Preserved				
Arsenic EPA 200.8				
Copper EPA 200.8				
Iron EPA 200.7				
Lead EPA 200.8				
Manganese EPA 200.8				
Sodium EPA 200.7				
Ca as $CaCO_3$ EPA 200.7				
Mg as $CaCO_3$ EPA 200.7				
Hardness EPA 200.7				
Metals Scan (Non-Regulatory)				
IOC (As,Ba,Be,Cd,Cr,Ni,Se,Sb,Tl) EPA 200.8				
NaOH Preserved				
Cyanide, Free SM 4500-CN F				
Cyanide, Total EPA 335.4				
HNO_3/HCl Preserved				
Mercury EPA 245.2, 1631				
MICROBIOLOGY				
Sterile, $Na_2S_2O_3$				
Coliform-PA SM 9223B				
Coliform-MPN-QT SM 9223B				

ORGANIC	1	2	3	4
BNA ***(Na_2SO_3/HCl)*** EPA 508.1/525.2				
Carbamates ***($Na_2S_2O_3$)*** EPA 531.1				
Glyphosate ***($Na_2S_2O_3$)*** EPA 547				
Herbicides ***(Na_2SO_3)*** EPA 515.4				
VOCs, Low Level ***(Ascorbic/HCl or HCl)*** EPA 524.2				
THMs ***(Ascorbic/HCl or HCl)*** EPA 524.2				
HAA ***(NH_4Cl)*** EPA 552.2				
PFC Expanded ***(Unpreserved)*** MDH 555	X	X		
RADIATION CHEMISTRY				
Unpreserved				
Radium-226, -228 EPA 903.0/904.0				
Gross Alpha EPA 900.0				
SUBCONTRACT				
Bromate/Bromide EPA 300.1				
Bromate EPA 300.1				
Chlorite EPA 300.1				
OTHER				

18D1768

Th… …ped these sample(s) according to instructions currently found at www.health.state.mn.us/divs/eh/water/forms/index.html.

Relinquished by: Lucas Martin Date: 4/30/18 Time: 11:06 am☒ pm☐

Accepted by: Date: 4/30/18 Time: 1106 am☐ pm☐

DEPARTMENT OF HEALTH

Sample Condition Upon Receipt

Minnesota Department of Health Public Health Laboratory

Data Entry Worksheet

18D1768

Parcel Information

Date & time of receipt: APR 30 '18 11:06

Courier: ☒ Walk-in ☐ FedEx ☐ Spee-Dee ☐ UPS ☐ USPS ☐ Other courier _____

Tracking # _____

After hours drop-off: ☐ Refrigerator (207) (186) ( ) ☐ Freezer (185) ( ) ☐ Unrefrigerated

Parcel: ☒ Plastic cooler ☐ Styrofoam/cardboard cooler ☐ Cardboard box ☐ Envelope ☐ Plastic can ☐ None ☐ Other _____

Custody seals present: ☒ No; ☐ Yes, If "Yes" Custody seals intact: ☐ Yes; ☐ No _____

Custody seal # _____ **Evidentiary samples identified:** ☒ No ☐ Yes

Packaging, Temperature & Radiochemical Information

Packing material: ☐ Bubble wrap ☐ Styrofoam ☐ Paper ☒ None ☐ Other _____

Cooling material: ☐ Wet ice (loose) ☐ Wet ice pack #( ) ☒ Gel pack #(1) ☐ Dry ice ☐ None ☐ Other _____

Condition of cooling material: ☒ Solid ☐ Partially frozen ☐ Liquid; Liquid temperature: _____ °C ☐ N/A

Representative sample temperature: 13.6 °C **IR thermometer instrument used:** A8

Samples received with evidence of freezing: ☒ No; ☐ Yes _____

Rad Chem. request received: ☒ No; ☐ Yes, If "Yes" sample survey results: ☐ < 0.5 mrem/hr ☐ ≥ 0.5 mrem/hr

Initials of person receiving parcel: _____

Chain of Custody, Sample Container & Analysis Information

Chain of custody received with sample containers: ☒ Yes ☐ No

Chain of custody type: ☒ Standard ☐ Civil ☐ Criminal ☐ Priority/Emergency ☐ Unknown

All sample containers are unique to a sample point listed on the chain of custody: ☒ Yes; ☐ No

_____

All sample containers have been collected prior to the expiration date listed on container label: ☒ Yes; ☐ No ☐ Unknown _____

All sample containers received intact: ☒ Yes; ☐ No _____

All sample containers are appropriate for requested analysis: ☒ Yes; ☐ No ☐ Unknown

_____

All analysis have been received within the specified holding time for analysis: ☒ Yes; ☐ No ☐ Unknown

_____

Sample submission details are entered in the Environmental Laboratory LIMS.

Initials of person logging in the work order request into LIMS: _____

DOC-84
Revision: 4

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Case Narrative

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name: Lakeland Municipal Water
Collected by: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/2018 13:52

Except where noted in this report, no additional comments are needed for this Work Order.

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Analytical Results

Program Code: TM
Program Name: DWP Community Wells-PFC
Collected By: Lucas Martin
Collector ID: 7996

Project ID: 1820029
Facility Name/ID: Lakeland Municipal Water
City: Lakeland
Generated: 05/21/18 13:53

MDH Sample Number: 18D1768-01

Location ID: S01
Field Name: LM1804068
Sampling Point: Well #1
QA Type: None

Collect Date: 04/30/18
Collect Time: 10:41
Matrix: Drinking Water

Field Residual Chlorine Result: None
Field Fluoride Result: None
Field pH Result: None
Field PO_4 Result: None

Results were produced by the Minnesota Department of Health, except where noted.

PFC Expanded List

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Perfluorobutanesulfonate (PFBS)		<	0.050	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluorobutanoic acid (PFBA)	WB, J	**0.012**	0.050	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluorohexanesulfonate (PFHxS)		<	0.025	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluorohexanoic acid (PFHxA)		<	0.050	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluorooctanesulfonate (PFOS)		<	0.025	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluorooctanoic acid (PFOA)		<	0.035	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555
Perfluoropentanoic acid (PFPeA)		<	0.050	ug/L	1	B8E0169	05/08/18 17:17	05/08/18 17:17	MDH 555

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Analytical Results

Program Code: TM
Program Name: DWP Community Wells-PFC
Collected By: Lucas Martin
Collector ID: 7996

Project ID: 1820029
Facility Name/ID: Lakeland Municipal Water
City: Lakeland
Generated: 05/21/18 13:53

MDH Sample Number: 18D1768-02

Location ID: S02
Field Name: LM1804067
Sampling Point: Well #2
QA Type: None

Collect Date: 04/30/18
Collect Time: 10:28
Matrix: Drinking Water

Field Residual Chlorine Result: None
Field Fluoride Result: None
Field pH Result: None
Field PO_4 Result: None

Results were produced by the Minnesota Department of Health, except where noted.

PFC Expanded List

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Perfluorobutanesulfonate (PFBS)		<	0.050	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluorobutanoic acid (PFBA)	J	**0.011**	0.050	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluorohexanesulfonate (PFHxS)		<	0.025	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluorohexanoic acid (PFHxA)		<	0.050	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluorooctanesulfonate (PFOS)		<	0.025	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluorooctanoic acid (PFOA)		<	0.035	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555
Perfluoropentanoic acid (PFPeA)		<	0.050	ug/L	1	B8E0169	05/08/18 17:50	05/08/18 17:50	MDH 555

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Batch Summary

Samples in Batch: B8E0169 - PFCs Preparation

18D1768-01 18D1768-02

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Blank (B8E0169-BLK1) **Prepared: 05/08/18 17:09 Analyzed: 05/08/18 17:09**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		<	0.050	ug/L						
Perfluorobutanoic acid (PFBA)		<	0.050	ug/L						
Perfluorohexanesulfonate (PFHxS)		<	0.025	ug/L						
Perfluorohexanoic acid (PFHxA)		<	0.050	ug/L						
Perfluorooctanesulfonate (PFOS)		<	0.025	ug/L						
Perfluorooctanoic acid (PFOA)		<	0.035	ug/L						
Perfluoropentanoic acid (PFPeA)		<	0.050	ug/L						

Blank (B8E0169-BLK2) **Prepared: 05/08/18 23:15 Analyzed: 05/08/18 23:15**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		<	0.050	ug/L						
Perfluorobutanoic acid (PFBA)		<	0.050	ug/L						
Perfluorohexanesulfonate (PFHxS)		<	0.025	ug/L						
Perfluorohexanoic acid (PFHxA)		<	0.050	ug/L						
Perfluorooctanesulfonate (PFOS)		<	0.025	ug/L						
Perfluorooctanoic acid (PFOA)		<	0.035	ug/L						
Perfluoropentanoic acid (PFPeA)		<	0.050	ug/L						

LCS (B8E0169-BS1) **Prepared: 05/08/18 17:01 Analyzed: 05/08/18 17:01**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50		94	80-120		
Perfluorobutanoic acid (PFBA)		0.47	0.050	ug/L	0.5		95	80-120		
Perfluorohexanesulfonate (PFHxS)		0.51	0.025	ug/L	0.50		101	80-120		
Perfluorohexanoic acid (PFHxA)		0.47	0.050	ug/L	0.5		95	80-120		
Perfluorooctanesulfonate (PFOS)		0.48	0.025	ug/L	0.49		96	80-120		
Perfluorooctanoic acid (PFOA)		0.47	0.035	ug/L	0.5		95	80-120		
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5		94	80-120		

LCS Dup (B8E0169-BSD1) **Prepared: 05/08/18 23:06 Analyzed: 05/08/18 23:06**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50		96	80-120	2	20
Perfluorobutanoic acid (PFBA)		0.48	0.050	ug/L	0.5		95	80-120	0.8	20
Perfluorohexanesulfonate (PFHxS)		0.46	0.025	ug/L	0.50		92	80-120	10	20

FINAL REPORT

Report ID: 05212018135303

Authorized by:

The results in this report apply only to the samples analyzed.
This report must not be reproduced, except in full, without the written approval of the laboratory.

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

LCS Dup (B8E0169-BSD1) — **Prepared: 05/08/18 23:06 Analyzed: 05/08/18 23:06**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5		96	80-120	1	20
Perfluorooctanesulfonate (PFOS)		0.48	0.025	ug/L	0.49		96	80-120	0.4	20
Perfluorooctanoic acid (PFOA)		0.49	0.035	ug/L	0.5		98	80-120	3	20
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5		94	80-120	0.2	20

Duplicate (B8E0169-DUP1) — Source: 18D1768-01 — **Prepared: 05/08/18 17:34 Analyzed: 05/08/18 17:34**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		<	0.050	ug/L		<				20
Perfluorobutanoic acid (PFBA)	WB, J	0.009	0.050	ug/L		<			33	20
Perfluorohexanesulfonate (PFHxS)		<	0.025	ug/L		<				20
Perfluorohexanoic acid (PFHxA)		<	0.050	ug/L		<				20
Perfluorooctanesulfonate (PFOS)		<	0.025	ug/L		<				20
Perfluorooctanoic acid (PFOA)		<	0.035	ug/L		<				20
Perfluoropentanoic acid (PFPeA)		<	0.050	ug/L		<				20

Matrix Spike (B8E0169-MS1) — Source: 18D1768-01 — **Prepared: 05/08/18 17:26 Analyzed: 05/08/18 17:26**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50	<	94	70-130		
Perfluorobutanoic acid (PFBA)		0.49	0.050	ug/L	0.5	<	95	70-130		
Perfluorohexanesulfonate (PFHxS)		0.50	0.025	ug/L	0.50	<	100	70-130		
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5	<	96	70-130		
Perfluorooctanesulfonate (PFOS)		0.49	0.025	ug/L	0.49	<	98	70-130		
Perfluorooctanoic acid (PFOA)		0.48	0.035	ug/L	0.5	<	95	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	97	70-130		

Matrix Spike (B8E0169-MS2) — Source: 18D1768-02 — **Prepared: 05/08/18 17:58 Analyzed: 05/08/18 17:58**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.46	0.050	ug/L	0.50	<	92	70-130		
Perfluorobutanoic acid (PFBA)		0.47	0.050	ug/L	0.5	<	93	70-130		
Perfluorohexanesulfonate (PFHxS)		0.46	0.025	ug/L	0.50	<	92	70-130		
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	99	70-130		
Perfluorooctanesulfonate (PFOS)		0.47	0.025	ug/L	0.49	<	94	70-130		
Perfluorooctanoic acid (PFOA)		0.48	0.035	ug/L	0.5	<	96	70-130		

FINAL REPORT

Report ID: 05212018135303

Authorized by:

The results in this report apply only to the samples analyzed.
This report must not be reproduced, except in full, without the written approval of the laboratory.

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MS2) Source: 18D1768-02 **Prepared: 05/08/18 17:58 Analyzed: 05/08/18 17:58**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5	<	94	70-130		

Matrix Spike (B8E0169-MS3) Source: 18D2297-01 **Prepared: 05/08/18 18:14 Analyzed: 05/08/18 18:14**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		0.91	0.050	ug/L	0.5	0.46	91	70-130		
Perfluorohexanesulfonate (PFHxS)		0.50	0.025	ug/L	0.50	<	98	70-130		
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5	<	91	70-130		
Perfluorooctanesulfonate (PFOS)		0.59	0.025	ug/L	0.49	0.13	93	70-130		
Perfluorooctanoic acid (PFOA)		0.59	0.035	ug/L	0.5	0.10	98	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	93	70-130		

Matrix Spike (B8E0169-MS4) Source: 18D2297-02 **Prepared: 05/08/18 18:31 Analyzed: 05/08/18 18:31**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		0.75	0.050	ug/L	0.5	0.27	96	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	97	70-130		
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5	<	95	70-130		
Perfluorooctanesulfonate (PFOS)		0.46	0.025	ug/L	0.49	<	93	70-130		
Perfluorooctanoic acid (PFOA)		0.49	0.035	ug/L	0.5	<	98	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	93	70-130		

Matrix Spike (B8E0169-MS5) Source: 18D2297-03 **Prepared: 05/08/18 18:47 Analyzed: 05/08/18 18:47**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.45	0.050	ug/L	0.50	<	90	70-130		
Perfluorobutanoic acid (PFBA)		0.87	0.050	ug/L	0.5	0.39	95	70-130		
Perfluorohexanesulfonate (PFHxS)		0.46	0.025	ug/L	0.50	<	92	70-130		
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	97	70-130		
Perfluorooctanesulfonate (PFOS)		0.54	0.025	ug/L	0.49	0.082	92	70-130		
Perfluorooctanoic acid (PFOA)		0.55	0.035	ug/L	0.5	0.060	99	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	92	70-130		

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MS6) Source: 18D2297-04 **Prepared: 05/08/18 19:03 Analyzed: 05/08/18 19:03**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	95	70-130		
Perfluorobutanoic acid (PFBA)		0.76	0.050	ug/L	0.5	0.32	90	70-130		
Perfluorohexanesulfonate (PFHxS)		0.47	0.025	ug/L	0.50	<	94	70-130		
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	97	70-130		
Perfluorooctanesulfonate (PFOS)		0.51	0.025	ug/L	0.49	0.025	97	70-130		
Perfluorooctanoic acid (PFOA)		0.50	0.035	ug/L	0.5	<	95	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	94	70-130		

Matrix Spike (B8E0169-MS7) Source: 18D2297-05 **Prepared: 05/08/18 19:19 Analyzed: 05/08/18 19:19**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		0.52	0.050	ug/L	0.5	<	94	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	99	70-130		
Perfluorohexanoic acid (PFHxA)		0.46	0.050	ug/L	0.5	<	93	70-130		
Perfluorooctanesulfonate (PFOS)		0.47	0.025	ug/L	0.49	<	93	70-130		
Perfluorooctanoic acid (PFOA)		0.51	0.035	ug/L	0.5	<	102	70-130		
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5	<	95	70-130		

Matrix Spike (B8E0169-MS8) Source: 18D2297-06 **Prepared: 05/08/18 19:35 Analyzed: 05/08/18 19:35**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50	<	94	70-130		
Perfluorobutanoic acid (PFBA)		0.53	0.050	ug/L	0.5	0.054	96	70-130		
Perfluorohexanesulfonate (PFHxS)		0.48	0.025	ug/L	0.50	<	96	70-130		
Perfluorohexanoic acid (PFHxA)		0.47	0.050	ug/L	0.5	<	94	70-130		
Perfluorooctanesulfonate (PFOS)		0.49	0.025	ug/L	0.49	<	98	70-130		
Perfluorooctanoic acid (PFOA)		0.48	0.035	ug/L	0.5	<	96	70-130		
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5	<	92	70-130		

Matrix Spike (B8E0169-MS9) Source: 18D2297-07 **Prepared: 05/08/18 19:52 Analyzed: 05/08/18 19:52**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50	<	92	70-130		
Perfluorobutanoic acid (PFBA)		0.87	0.050	ug/L	0.5	0.37	100	70-130		
Perfluorohexanesulfonate (PFHxS)		0.51	0.025	ug/L	0.50	<	98	70-130		

FINAL REPORT

Report ID: 05212018135303

Authorized by:

The results in this report apply only to the samples analyzed.
This report must not be reproduced, except in full, without the written approval of the laboratory.

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MS9) Source: 18D2297-07 **Prepared: 05/08/18 19:52 Analyzed: 05/08/18 19:52**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	93	70-130		
Perfluorooctanesulfonate (PFOS)		0.56	0.025	ug/L	0.49	0.097	93	70-130		
Perfluorooctanoic acid (PFOA)		0.56	0.035	ug/L	0.5	0.084	94	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	93	70-130		

Matrix Spike (B8E0169-MSA) Source: 18D2297-08 **Prepared: 05/08/18 20:08 Analyzed: 05/08/18 20:08**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.46	0.050	ug/L	0.50	<	92	70-130		
Perfluorobutanoic acid (PFBA)		0.89	0.050	ug/L	0.5	0.42	94	70-130		
Perfluorohexanesulfonate (PFHxS)		0.52	0.025	ug/L	0.50	<	101	70-130		
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	96	70-130		
Perfluorooctanesulfonate (PFOS)		0.55	0.025	ug/L	0.49	0.081	93	70-130		
Perfluorooctanoic acid (PFOA)		0.53	0.035	ug/L	0.5	0.064	92	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	92	70-130		

Matrix Spike (B8E0169-MSB) Source: 18D2297-09 **Prepared: 05/08/18 20:24 Analyzed: 05/08/18 20:24**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.45	0.050	ug/L	0.50	<	89	70-130		
Perfluorobutanoic acid (PFBA)		0.90	0.050	ug/L	0.5	0.43	95	70-130		
Perfluorohexanesulfonate (PFHxS)		0.47	0.025	ug/L	0.50	<	94	70-130		
Perfluorohexanoic acid (PFHxA)		0.51	0.050	ug/L	0.5	<	99	70-130		
Perfluorooctanesulfonate (PFOS)		0.56	0.025	ug/L	0.49	0.081	95	70-130		
Perfluorooctanoic acid (PFOA)		0.57	0.035	ug/L	0.5	0.071	100	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	93	70-130		

Matrix Spike (B8E0169-MSC) Source: 18D2297-10 **Prepared: 05/08/18 20:40 Analyzed: 05/08/18 20:40**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.45	0.050	ug/L	0.50	<	90	70-130		
Perfluorobutanoic acid (PFBA)		0.47	0.050	ug/L	0.5	<	93	70-130		
Perfluorohexanesulfonate (PFHxS)		0.48	0.025	ug/L	0.50	<	97	70-130		
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	99	70-130		
Perfluorooctanesulfonate (PFOS)		0.46	0.025	ug/L	0.49	<	92	70-130		
Perfluorooctanoic acid (PFOA)		0.49	0.035	ug/L	0.5	<	99	70-130		

FINAL REPORT

Report ID: 05212018135303

Authorized by:

The results in this report apply only to the samples analyzed.
This report must not be reproduced, except in full, without the written approval of the laboratory.

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MSC) Source: 18D2297-10 **Prepared: 05/08/18 20:40 Analyzed: 05/08/18 20:40**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5	<	95	70-130		

Matrix Spike (B8E0169-MSD) Source: 18D2297-11 **Prepared: 05/08/18 20:57 Analyzed: 05/08/18 20:57**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		0.65	0.050	ug/L	0.5	0.18	94	70-130		
Perfluorohexanesulfonate (PFHxS)		0.46	0.025	ug/L	0.50	<	93	70-130		
Perfluorohexanoic acid (PFHxA)		0.47	0.050	ug/L	0.5	<	95	70-130		
Perfluorooctanesulfonate (PFOS)		0.48	0.025	ug/L	0.49	<	97	70-130		
Perfluorooctanoic acid (PFOA)		0.50	0.035	ug/L	0.5	<	100	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	95	70-130		

Matrix Spike Dup (B8E0169-MSD1) Source: 18D1768-01 **Prepared: 05/08/18 17:42 Analyzed: 05/08/18 17:42**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.45	0.050	ug/L	0.50	<	91	70-130	4	20
Perfluorobutanoic acid (PFBA)		0.49	0.050	ug/L	0.5	<	96	70-130	1	20
Perfluorohexanesulfonate (PFHxS)		0.48	0.025	ug/L	0.50	<	96	70-130	5	20
Perfluorohexanoic acid (PFHxA)		0.49	0.050	ug/L	0.5	<	97	70-130	1	20
Perfluorooctanesulfonate (PFOS)		0.48	0.025	ug/L	0.49	<	97	70-130	1	20
Perfluorooctanoic acid (PFOA)		0.48	0.035	ug/L	0.5	<	96	70-130	1	20
Perfluoropentanoic acid (PFPeA)		0.47	0.050	ug/L	0.5	<	95	70-130	2	20

Matrix Spike (B8E0169-MSE) Source: 18E0031-01 **Prepared: 05/08/18 21:13 Analyzed: 05/08/18 21:13**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50	<	95	70-130		
Perfluorobutanoic acid (PFBA)		1.8	0.050	ug/L	0.5	1.3	90	70-130		
Perfluorohexanesulfonate (PFHxS)		0.50	0.025	ug/L	0.50	<	100	70-130		
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5	<	90	70-130		
Perfluorooctanesulfonate (PFOS)		0.46	0.025	ug/L	0.49	<	93	70-130		
Perfluorooctanoic acid (PFOA)		0.50	0.035	ug/L	0.5	<	95	70-130		
Perfluoropentanoic acid (PFPeA)		0.53	0.050	ug/L	0.5	0.067	93	70-130		

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MSF) Source: 18E0031-02 **Prepared: 05/08/18 21:29 Analyzed: 05/08/18 21:29**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.47	0.050	ug/L	0.50	<	93	70-130		
Perfluorobutanoic acid (PFBA)		1.4	0.050	ug/L	0.5	0.93	99	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	98	70-130		
Perfluorohexanoic acid (PFHxA)		0.46	0.050	ug/L	0.5	<	88	70-130		
Perfluorooctanesulfonate (PFOS)		0.47	0.025	ug/L	0.49	<	94	70-130		
Perfluorooctanoic acid (PFOA)		0.52	0.035	ug/L	0.5	0.043	96	70-130		
Perfluoropentanoic acid (PFPeA)		0.53	0.050	ug/L	0.5	0.053	95	70-130		

Matrix Spike (B8E0169-MSG) Source: 18E0031-03 **Prepared: 05/08/18 21:45 Analyzed: 05/08/18 21:45**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		1.7	0.050	ug/L	0.5	1.3	81	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	97	70-130		
Perfluorohexanoic acid (PFHxA)		0.48	0.050	ug/L	0.5	<	92	70-130		
Perfluorooctanesulfonate (PFOS)		0.48	0.025	ug/L	0.49	<	95	70-130		
Perfluorooctanoic acid (PFOA)		0.54	0.035	ug/L	0.5	0.039	101	70-130		
Perfluoropentanoic acid (PFPeA)		0.53	0.050	ug/L	0.5	0.066	92	70-130		

Matrix Spike (B8E0169-MSH) Source: 18E0033-01 **Prepared: 05/08/18 22:01 Analyzed: 05/08/18 22:01**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.49	0.050	ug/L	0.50	<	97	70-130		
Perfluorobutanoic acid (PFBA)		0.56	0.050	ug/L	0.5	0.085	95	70-130		
Perfluorohexanesulfonate (PFHxS)		0.46	0.025	ug/L	0.50	<	91	70-130		
Perfluorohexanoic acid (PFHxA)		0.45	0.050	ug/L	0.5	<	90	70-130		
Perfluorooctanesulfonate (PFOS)		0.49	0.025	ug/L	0.49	<	98	70-130		
Perfluorooctanoic acid (PFOA)		0.47	0.035	ug/L	0.5	<	95	70-130		
Perfluoropentanoic acid (PFPeA)		0.49	0.050	ug/L	0.5	<	95	70-130		

Matrix Spike (B8E0169-MSI) Source: 18E0033-02 **Prepared: 05/08/18 22:18 Analyzed: 05/08/18 22:18**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.46	0.050	ug/L	0.50	<	91	70-130		
Perfluorobutanoic acid (PFBA)		0.55	0.050	ug/L	0.5	0.077	95	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	98	70-130		

FINAL REPORT

Report ID: 05212018135303

Authorized by:

The results in this report apply only to the samples analyzed.
This report must not be reproduced, except in full, without the written approval of the laboratory.

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Program Code: TM	Project ID: 1820029
Program Name: DWP Community Wells-PFC	Facility Name/ID: Lakeland Municipal Water
Collected By: Lucas Martin	City: Lakeland
Collector ID: 7996	Generated: 05/21/18 13:53

Results were produced by Minnesota Department of Health, except where noted.

Batch B8E0169 - PFCs Preparation

Matrix Spike (B8E0169-MSI) Source: 18E0033-02 **Prepared: 05/08/18 22:18 Analyzed: 05/08/18 22:18**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorohexanoic acid (PFHxA)		0.45	0.050	ug/L	0.5	<	90	70-130		
Perfluorooctanesulfonate (PFOS)		0.44	0.025	ug/L	0.49	<	89	70-130		
Perfluorooctanoic acid (PFOA)		0.48	0.035	ug/L	0.5	<	96	70-130		
Perfluoropentanoic acid (PFPeA)		0.46	0.050	ug/L	0.5	<	90	70-130		

Matrix Spike (B8E0169-MSJ) Source: 18E0035-01 **Prepared: 05/08/18 22:34 Analyzed: 05/08/18 22:34**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.46	0.050	ug/L	0.50	<	92	70-130		
Perfluorobutanoic acid (PFBA)		0.58	0.050	ug/L	0.5	0.11	94	70-130		
Perfluorohexanesulfonate (PFHxS)		0.49	0.025	ug/L	0.50	<	97	70-130		
Perfluorohexanoic acid (PFHxA)		0.47	0.050	ug/L	0.5	<	94	70-130		
Perfluorooctanesulfonate (PFOS)		0.47	0.025	ug/L	0.49	<	94	70-130		
Perfluorooctanoic acid (PFOA)		0.49	0.035	ug/L	0.5	<	98	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	94	70-130		

Matrix Spike (B8E0169-MSK) Source: 18E0035-02 **Prepared: 05/08/18 22:50 Analyzed: 05/08/18 22:50**

Analyte	Analyte Qualifier(s)	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Perfluorobutanesulfonate (PFBS)		0.48	0.050	ug/L	0.50	<	96	70-130		
Perfluorobutanoic acid (PFBA)		0.60	0.050	ug/L	0.5	0.14	92	70-130		
Perfluorohexanesulfonate (PFHxS)		0.48	0.025	ug/L	0.50	<	96	70-130		
Perfluorohexanoic acid (PFHxA)		0.47	0.050	ug/L	0.5	<	95	70-130		
Perfluorooctanesulfonate (PFOS)		0.46	0.025	ug/L	0.49	<	92	70-130		
Perfluorooctanoic acid (PFOA)		0.49	0.035	ug/L	0.5	<	97	70-130		
Perfluoropentanoic acid (PFPeA)		0.48	0.050	ug/L	0.5	<	95	70-130		

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health

Minnesota Department of Health
Public Health Laboratory
Environmental Laboratory Section
601 Robert St. N., P.O. Box 64899
St. Paul, MN 55164-0899
651-201-5300

Final Report
Quality Control

Data Qualifiers and Definitions

WB	Relative percent difference exceeded the laboratory acceptance limit. Result less than 5 times the RL.
J	Analyte was present between the method detection limit and reporting limit and should be considered an estimated value.
Dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
%REC	Percent Recovery

Authorized by:

Paul Moyer, Environmental Laboratory Manager
Public Health Laboratory, Minnesota Department of Health