



Analytical Laboratory Report

Report ID: S01057.01(01)
Generated on 05/03/2019

Report to
Attention: Patrick Williford
GLWA
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Detroit, MI 48214

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Report produced by
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Report Summary
Lab Sample ID(s): S01057.01-S01057.06
Project: Monitoring
Collected Date: 04/16/2019
Submitted Date/Time: 04/18/2019 10:15
Sampled by: Unknown
P.O. #: 12299

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Maya Murshak
Technical Director



Analytical Laboratory Report

General Report Notes

Analytical results relate only to the samples tested, in the condition received by the laboratory.

Methods may be modified for improved performance.

Results reported on a dry weight basis where applicable.

'Not detected' indicates that parameter was not found at a level equal to or greater than the reporting limit (RL).

40 CFR Part 136 Table II Required Containers, Preservation Techniques and Holding Times for the Clean Water Act specify that samples for acrolein and acrylonitrile need to be preserved at a pH in the range of 4 to 5 or if not preserved, analyzed within 3 days of sampling.

QA/QC corresponding to this analytical report is a separate document with the same Merit ID reference and is available upon request.

Full accreditation certificates are available upon request. Starred (*) analytes are not NELAP accredited.

Samples are held by the lab for 30 days from the final report date unless a written request to hold longer is provided by the client.

Report shall not be reproduced except in full, without the written approval of Merit Laboratories, Inc.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)

Report Narrative

There is no additional narrative for this analytical report



Analytical Laboratory Report

Laboratory Certifications

Authority	Certification ID
Michigan DEQ	#9956
DOD ELAP/ISO 17025	#69699
WBENC	#2005110032
Ohio VAP	#CL0002
Indiana DOH	#C-MI-07
New York NELAC	#11814
North Carolina DENR	#680
North Carolina DOH	#26702
Alaska CSLAP	#17-001

Qualifier Descriptions

Qualifier	Description
!	Result is outside of stated limit criteria
B	Compound also found in associated method blank
E	Concentration exceeds calibration range
F	Analysis run outside of holding time
G	Estimated result due to extraction run outside of holding time
H	Sample submitted and run outside of holding time
I	Matrix interference with internal standard
J	Estimated value less than reporting limit, but greater than MDL
L	Elevated reporting limit due to low sample amount
M	Result reported to MDL not RDL
O	Analysis performed by outside laboratory. See attached report.
R	Preliminary result
S	Surrogate recovery outside of control limits
T	No correction for total solids
X	Elevated reporting limit due to matrix interference
Y	Elevated reporting limit due to high target concentration
b	Value detected less than reporting limit, but greater than MDL
e	Reported value estimated due to interference
j	Analyte also found in associated method blank
p	Benzo(b)Fluoranthene and Benzo(k)Fluoranthene integrated as one peak.
x	Preserved from bulk sample

Glossary of Abbreviations

Abbreviation	Description
RL/RDL	Reporting Limit
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
SW	EPA SW 846 (Soil and Wastewater) Methods
E	EPA Methods
SM	Standard Methods
LN	Linear
BR	Branched



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Method Summary

Method	Version
E537	EPA Method 537 Version 1.1 September 2009

Parameter Summary

Parameter	Synonym	Cas #
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFNA	Perfluorononanoic Acid	375-95-1
PFDA	Perfluorodecanoic Acid	335-76-2
N-MeFOSAA	N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9
EtFOSAA	N-Ethyl Perfluorooctane Sulfonamidoacetic Acid	2991-50-6
PFOS	Perfluorooctane Sulfonic Acid	1763-23-1
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFTTrDA	Perfluorotridecanoic Acid	72629-94-8
PFTeDA	Perfluorotetradecanoic Acid	376-06-7



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Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S01057.01	Water Works Park - TAP	Drinking Water	04/16/19 13:56
S01057.02	Springwells - TAP	Drinking Water	04/16/19 09:43
S01057.03	Southwest - TAP	Drinking Water	04/16/19 08:35
S01057.04	Northeast - TAP	Drinking Water	04/16/19 12:50
S01057.05	Lake Huron - TAP	Drinking Water	04/16/19 11:08
S01057.06	Field Blank	Water	04/16/19 00:01



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Lab Sample ID: S01057.01

Sample Tag: Water Works Park - TAP

Collected Date/Time: 04/16/2019 13:56

Matrix: Drinking Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	284.72 ml	E537	04/22/19 10:20	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 04/26/19 16:34, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	



Analytical Laboratory Report

Lab Sample ID: S01057.02

Sample Tag: Springwells - TAP

Collected Date/Time: 04/16/2019 09:43

Matrix: Drinking Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	289.14 ml	E537	04/22/19 10:20	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 04/26/19 16:52, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	



Analytical Laboratory Report

Lab Sample ID: S01057.03

Sample Tag: Southwest - TAP

Collected Date/Time: 04/16/2019 08:35

Matrix: Drinking Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	275.90 ml	E537	04/22/19 10:20	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 04/26/19 17:10, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	



Analytical Laboratory Report

Lab Sample ID: S01057.04

Sample Tag: Northeast - TAP

Collected Date/Time: 04/16/2019 12:50

Matrix: Drinking Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	284.50 ml	E537	04/22/19 10:20	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 04/26/19 17:29, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	



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Lab Sample ID: S01057.05

Sample Tag: Lake Huron - TAP

Collected Date/Time: 04/16/2019 11:08

Matrix: Drinking Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	250ml Plastic	Trizma	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Sample Amount*	290.96 ml	E537	04/22/19 10:20	JGH	

Organics

PFAs Drinking Water, Method: E537, Run Date: 04/26/19 18:05, Analyst: JGH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFHxA*	Not detected	2		ng/L	1	307-24-4	
PFBS*	Not detected	2		ng/L	1	375-73-5	
PFHpA*	Not detected	2		ng/L	1	375-85-9	
PFOA	Not detected	2		ng/L	1	335-67-1	
PFHxS*	Not detected	2		ng/L	1	355-46-4	
PFNA*	Not detected	2		ng/L	1	375-95-1	
PFDA*	Not detected	2		ng/L	1	335-76-2	
N-MeFOSAA*	Not detected	2		ng/L	1	2355-31-9	
EtFOSAA*	Not detected	2		ng/L	1	2991-50-6	
PFOS	Not detected	2		ng/L	1	1763-23-1	
PFUnDA*	Not detected	2		ng/L	1	2058-94-8	
PFDoDA*	Not detected	2		ng/L	1	307-55-1	
PFTTrDA*	Not detected	2		ng/L	1	72629-94-8	
PFTeDA*	Not detected	2		ng/L	1	376-06-7	



Analytical Laboratory Report

Lab Sample ID: S01057.06

Sample Tag: Field Blank

Collected Date/Time: 04/16/2019 00:01

Matrix: Water

COC Reference: 121493

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	250ml Plastic	None	Yes	3.1	IR

Other / Misc.

Method: , Run Date: 04/19/19 12:00, Analyst: MMC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Hold until notified*	Completed				1		

Merit Laboratories Login Checklist

Lab Set ID:S01057

Client:GLWA (Great Lakes Water Authority)

Project: Monitoring

Submitted:04/18/2019 10:15 Login User: SRS

Attention: Patrick Williford

Address: GLWA

10100 E. Jefferson Avenue

Detroit, MI 48214

Phone: 313-926-8127

FAX:313-297-5860

Email: WaterQuality@glwater.org

Selection	Description	Note
Sample Receiving		
01.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples are received at 4C +/- 2C Thermometer # IR 3.1
02.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received on ice/ cooling process begun
03.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples shipped UPS
04.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples left in 24 hr. drop box
05.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Are there custody seals/tape or is the drop box locked
Chain of Custody		
06.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	COC adequately filled out Field Blank water transfer not performed, field blank not listed on COC
07.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	COC signed and relinquished to the lab
08.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample tag on bottles match COC
09.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Subcontracting needed? Subcontracted to:
Preservation		
10.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Do sample have correct chemical preservation
11.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Completed pH checks on preserved samples? (no VOAs)
12.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Did any samples need to be preserved in the lab?
Bottle Conditions		
13.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All bottles intact
14.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Appropriate analytical bottles are used
15.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Merit bottles used
16.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sufficient sample volume received
17.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	Samples require laboratory filtration
18.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Samples submitted within holding time
19.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Do water VOC or TOX bottles contain headspace

Corrective action for all exceptions is to call the client and to notify the project manager.

Client Review By: _____ Date: _____



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C.O.C. PAGE # 1 OF 1 121493

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Patrick Williford
 COMPANY: Great Lakes Water Authority
 ADDRESS: 10100 E. JEFFERSON AVENUE
 CITY: DETROIT, MI STATE: MI ZIP CODE: 48214
 PHONE NO.: 313.926.8127 P.O. NO.: 12299
 E-MAIL ADDRESS: water@QUALITY@glwater.ORG QUOTE NO.: 190305-03

CONTACT NAME: Accounts PAYABLE SAME
 COMPANY: Great Lakes Water Authority
 ADDRESS: P.O. Box 441370
 CITY: DETROIT STATE: MI ZIP CODE: 48244
 PHONE NO.: 313.964.9157 E-MAIL ADDRESS: Accounts payable@glwater.org

PROJECT NO./NAME: _____ SAMPLER(S) - PLEASE PRINT/SIGN NAME: * Williford
 TURNAROUND TIME REQUIRED: 1 DAY 2 DAYS 3 DAYS STANDARD OTHER _____
 DELIVERABLES REQUIRED: STD LEVEL II LEVEL III LEVEL IV EDD OTHER _____

MATRIX CODE: GW=GROUNWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
 SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

Containers & Preservatives

MERIT LAB NO. <small>FOR LAB USE ONLY</small>	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCl	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER
	DATE	TIME										
<u>01057.01</u>	<u>4/16/19</u>	<u>1356</u>	<u>WATER WORKS PARK - TAP</u>	<u>DW</u>	<u>2</u>							<u>X</u>
<u>.02</u>	<u>4/16/19</u>	<u>943</u>	<u>SPRINGWELLS - TAP</u>	<u>DW</u>	<u>2</u>							<u>X</u>
<u>.03</u>	<u>4/16/19</u>	<u>835</u>	<u>SOUTHWEST - TAP</u>	<u>DW</u>	<u>2</u>							<u>X</u>
<u>.04</u>	<u>4/16/19</u>	<u>1250</u>	<u>NORTHEAST - TAP</u>	<u>DW</u>	<u>2</u>							<u>X</u>
<u>.05</u>	<u>4/16/19</u>	<u>1108</u>	<u>LAKE HURON - TAP</u>	<u>DW</u>	<u>2</u>							<u>X</u>

PFAS #537

Certifications	
<input type="checkbox"/> OHIO VAP	<input type="checkbox"/> Drinking Water
<input type="checkbox"/> DoD	<input type="checkbox"/> NPDES
Project Locations	
<input checked="" type="checkbox"/> Detroit	<input type="checkbox"/> New York
<input checked="" type="checkbox"/> Other <u>Metro Detroit</u>	
Special Instructions	

RELINQUISHED BY: * Williford Sampler DATE: 4-16-19 TIME: 1412
 RECEIVED BY: W. Williford DATE: 4-16-19 TIME: 1412
 RELINQUISHED BY: OPS DATE: 4/18/19 TIME: 1015
 RECEIVED BY: Samuelson DATE: 4/18/19 TIME: 1015

RELINQUISHED BY: W. Williford DATE: 4-17-19 TIME: 0800
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. SEAL INTACT INITIALS NOTES: TEMP. ON ARRIVAL _____
 YES NO
 SEAL NO. SEAL INTACT INITIALS
 YES NO 3.1

PLEASE NOTE: SIGNING ACKNOWLEDGES ADHERENCE TO MERIT'S SAMPLE ACCEPTANCE POLICY ON REVERSE SIDE