RAMBOLL

ENVIRONMENT
& HEALTH

Mr. Tom Hutchings
City of Flint Water Pollution
Water Pollution Control Facilities
G4652 Beecher Rd.
Flint, MI, 48532

RE: ***Discharge Permit Submittal– July 2020 through September 2020***
Permit No.: 6-08-04-04-GML1
FILE: 15388/75178/Docs

Dear **Mr. Hutchings:**

October 23, 2020

In accordance with requirements of the above referenced discharge permit, we are providing you with the following discharge information for the period July 1, 2020 to September 30, 2020 for the Coldwater Road Landfill facility, located at 6220 Horton Avenue, Flint, Michigan. In addition, we are reporting the performance of the per- and polyfluoroalkyl substances (PFAS) pretreatment system in this letter and will continue to do so as long as the pretreatment system is in operation.

- Periodic Report on Continued Compliance, certification
- Periodic Report on Continued Compliance and GSWVR Sample (Table 1)
- Daily Discharge Summary Table (Table 2)
- PFAS Sampling Results Table (Table 3)
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, above ground collection tank collected on September 8, 2020.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on September 21, 2020 and September 23, 2020 during the discharge of the liquids from the on-Site, above ground collection tank through the system.
- Copy of Chain-of-Custody forms.

Ramboll
2260 E. Saginaw Street
East Lansing, MI 48823
USA

T 414-837-3607
F 414-837-3608
https://ramboll.com

The laboratory analytical results indicate concentrations in the effluent were below the Sewer Use Permit limits for the required monitoring parameters during the discharge period.

In addition, the PFAS analytical results for the effluent were non-detect and therefore were reduced below the current EGLE Part 4, Water Quality Standards, Rule 57 Water Quality Values. Therefore, the PFAS pretreatment system is operating as designed.

Breakthrough samples were collected from GAC vessels on September 21, 2020 and September 23, 2020 during the accumulation tank discharge. The influent sample collected on September 21, 2020 had a detection of 13,000 ng/L for

PFOS. The highest detection from the primary GAC drum sample collected on September 23, 2020 was 78 ng/L for PFOS after 159 bed volumes (approximately 7,155 gallons). PFOS was detected at a concentration of 2.8 ng/L in the secondary GAC drum on September 23, 2020. The primary GAC drum will be removed from the system before the next discharge event. A new GAC drum will be placed in the quaternary (fourth) GAC drum position and the existing quaternary, tertiary (third) and secondary GAC drums will be moved up in position for the approved four-drum pretreatment system.

Please call me at 313-333-0211 if you have any questions.

Yours sincerely

Clifford S. Yantz
Senior Hydrogeologist
1943864 - MIDWEST EAST Resources 056

M 313.333.0211
Clifford.yantz@ramboll.com

cc: Mr. Kevin Forbes – Beecher Metropolitan District, Flint, MI
Mr. Jacob Runge – EGLE (via email)
Mr. David Favero – RACER Trust
Mr. Kevin Schneider – Ramboll

City of Flint
Industrial Pretreatment Program

Periodic Report on Continued Compliance

Company Name: RACER Trust, Coldwater Road
Street Address: 6220 Horton Avenue, Flint, Michigan
Permit Number: 6-08-04-04-GML1
Outfall Number: 001

Reporting Period: July 1, 2020 through September 30, 2020

Average Volume of Daily Discharge (during reporting period): 2,382.66 gallons
(Three One Day Events)

Complete the following:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name of Authorized Representative: Clifford Yantz

Title of Authorized Representative: Senior Hydrogeologist, O'Brien & Gere Engineers, Inc.
As agent for the RACER Trust

Signature of Authorized Representative: Clifford Scott Yantz as agent for RACER Trust

Date Signed by Authorized Representative: 10/23/20

If required to implement a Toxic Organics Management Plan (TOMP), complete the following:

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for total toxic organics (TTO), I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last Periodic Report on Continued Compliance. I further certify that, this facility is implementing the toxic organic management plan submitted to the control authority."

Name of Authorized Representative: N/A

Title of Authorized Representative: N/A

Signature of Authorized Representative: N/A

Date Signed by Authorized Representative: N/A

TABLES

Table 1
Periodic Report on Continued Compliance
City of Flint Sewer User Self-Monitoring Report
Third Quarter - 2020 - GSWVR Sample

RACER Trust - Coldwater Road Landfill Facility
Permit Number 6-08-04-04-GML1
6220 Horton Avenue

Analytical Parameter	Ammonia-N	BOD5	HEM	pH @ 25°C	Phosphorus	TSS
Units	mg/L	mg/L	mg/L	SU	mg/L	mg/L
Sampling Frequency	Per Batch	Per Batch	Per Batch	Per Batch	Per Batch	Per Batch
Sampling Procedure	Grab sample	Grab sample	Grab sample	Grab sample	Grab sample	Grab sample
Daily Maximum Limit	110	1196	100	NA	14	570
Maximum Limit	NA	NA	NA	10.5	NA	NA
Minimum Limit	NA	NA	NA	6	NA	NA
Test Result	0.02	<3	<2	7.30	0.03	27
Test Method	4500-NH3 D	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	9/11/2020	9/14/2020	9/14/2020	9/8/2020	9/11/2020	9/11/2020
Sample Date	9/8/2020	9/8/2020	9/8/2020	9/8/2020	9/8/2020	9/8/2020
Sample Type	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater
Test Result						
Test Method						
Test Date						
Sample Date						
Sample Type						
Test Result						
Test Method						
Test Date						
Sample Date						
Sample Type						
Average Daily Conc.						
No. of Samples						
Number of Limit Exceedances						

Table 1
Periodic Report on Continued Compliance
City of Flint Sewer User Self-Monitoring Report
Third Quarter - 2020 - GSWVR Sample

RACER Trust - Coldwater Road Landfill Facility
Permit Number 6-08-04-04-GML1
6220 Horton Avenue

Analytical Parameter	Arsenic	Chromium	Copper	Mercury	Nickel	Zinc	Cyanide, available
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Sampling Frequency	Per Batch	Per Batch	Per Batch	Per Batch	Per Batch	Per Batch	Per Batch
Sampling Procedure	Grab sample	Grab sample	Grab sample	Grab sample	Grab sample	Grab sample	Grab sample
Daily Maximum Limit	0.051	1.273	1.797	0.000012	0.543	2.626	0.165
Maximum Limit	NA	NA	NA	NA	NA	NA	NA
Minimum Limit	NA	NA	NA	NA	NA	NA	NA
Test Result	<0.002	0.009	0.069	<0.0002	0.031	0.030	<0.002
Test Method	200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	9/9/2020	9/9/2020	9/9/2020	9/9/2020	9/9/2020	9/9/2020	9/11/2020
Sample Date	9/8/2020	9/8/2020	9/8/2020	9/8/2020	9/8/2020	9/8/2020	9/8/2020
Sample Type	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater	wastewater
Test Result							
Test Method							
Test Date							
Sample Date							
Sample Type							
Test Result							
Test Method							
Test Date							
Sample Date							
Sample Type							
Average Daily Conc.							
No. of Samples							
Number of Limit Exceedances							

TABLE 2
RACER Trust - Coldwater Road
Daily Discharge Summary Table
Third Quarter 2020
6-08-04-04-GML1

Date	Beginning Flow Meter Reading	End Flow Meter Reading	Gallons Discharged	Begin Time of Discharge	End Time of Discharge	Average Flow (gal/min)	Temperature at Discharge (C)	Temperature at Discharge (F)	pH
9/21/2020 - 9/22/2020	738,923	745,528	**6,605**	8:45 AM (9/21/20)	15:00 PM (9/22/20)	3.63	18.4	65.1	7.84
9/23/2020	745,528	746,071	**543**	9:00	11:30	3.62	18.2	64.8	7.84

Total Discharge Volume (3 Days): 7,148
Average Discharge Volume (3 Days): 2,382.66

NOTES :

TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluroalkyl Substances (PFAS) Sampling Results - September 2020

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound	Well/Sample ID:	EGLE Drinking Water Maximum Contaminant Levels (MCLs)	03-PRCC-20-INF (Influent Sample)	03-PRCC-20-PRIM (Primary GAC Drum Sample)	03-PRCC-20-PRIM-159 (Primary GAC Drum Sample after 159 Bed Volumes)	03-PRCC-20-MID-1-159 (Secondary GAC Drum Sample after 159 Bed Volumes)	03-PRCC-20-MID-2-159 (Tertiary GAC Drum Sample after 159 Bed Volumes)	03-PRCC-20-EFF-159 (Effluent Sample after 159 Bed Volumes)	FB-09-21-20 (Field Blank)
	Sample Date:		*9/21/2020*	*9/21/2020*	*9/23/2020*	*9/23/2020*	*9/23/2020*	*9/23/2020*	*9/21/2020*
Perfluorobutanoic Acid (PFBA)		--	<98 X	**12**	**15**	<10	<9.7	<9.8	<9.8
Perfluoropentanoic Acid (PFPeA)		--	<130 X	**1.2 J**	**7.4**	<4.2	<3.9	<3.9	<3.9
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)		--	<2.0 I	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorohexanoic Acid (PFHxA)		**400,000**	**110**	<2.0	**4.5**	<2.1	<1.9	<2.0	<2.0
Perfluorobutane Sulfonic Acid (PFBS)		**420**	**92**	<2.0	**3.9**	<2.1	<1.9	<2.0	<2.0
Perfluoroheptanoic Acid (PFHpA)		--	**27**	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluoropentane Sulfonic Acid (PFPeS)		--	**180**	<2.0	**3.9**	<2.1	<1.9	<2.0	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)		--	<2.0 I	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorooctanoic Acid (**PFOA**)		**8**	**91**	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid (PFHxS)		**51**	**570**	<2.0	**7.6**	<2.1	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)		--	**480**	<2.0	**5.4**	<2.1	<1.9	<2.0	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)		--	**89**	<2.0	**1.8 J**	<2.1	<1.9	<2.0	<2.0
Perfluorononanoic Acid (PFNA)		**6**	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluoroheptane Sulfonic Acid (PFHpS)		--	**110**	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorodecanoic Acid (PFDA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)		--	<3.9	<3.9	<3.8	<4.2	<3.9	<3.9	<3.9
Perfluorooctane Sulfonic Acid (**PFOS**)		**16**	**13,000**	**27**	**78**	**2.8**	<1.9	<2.0	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-LN)		--	**8,200**	**22**	**35**	<2.1	<1.9	<2.0	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-BR)		--	**5,100**	**4.6**	**42**	<2.1	<1.9	<2.0	<2.0
Perfluoroundecanoic Acid (PFUnDA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorononane Sulfonic Acid (PFNS)		--	**4.2**	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorododecanoic Acid (PFDoDA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorodecane Sulfonic Acid (PFDS)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorotridecanoic Acid (PFTrDA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorooctane Sulfonamide (FOSA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Perfluorotetradecanoic Acid (PFTeDA)		--	<3.9	<3.9	<3.8	<4.2	<3.9	<3.9	<3.9
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		--	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)		**370**	<2.0	<2.0	<1.9	<2.1	<1.9	<2.0	<2.0
Total Per-and Polyfluoroalkyl Substances		--	**14,184.2**	**40.2**	**120.3**	**2.8**	**0.0**	**0.0**	**0.0**

Notes
1) Detections in **bold**.
2) Concentrations in ng/L.
3) < = Not detected at specified reporting limit.
4) -- = Not analyzed/No criteria.
5) Dup = Duplicate sample.
6) Concentrations above the EGLE Draft Drinking Water Maximum Contaminant Levels (MCLs) are highlighted in yellow.
7) Number after Prim (Primary GAC drum), Mid (Secondary GAC drum), and Eff (Effluent sample after tertiary GAC drum) samples equals number of GAC Bed volumes discharged through the pretreatment system at the time of sample collection. One bed volume equals 45 gallons.
8) The detection of PFBA in Field Blank-062520 was caused from the centrifuge tubes leaching out PFBA during the extraction process. The 5X Rule was applied to PFBA detections. If the sample value(s) is less than 5 times the blank concentration (5X Rule), then positive results are qualified "U," undetected.
9) I - Matrix interference with internal standard.
10) J - Estimated value less than reporting limit, but greater than MDL.
11) X - Elevated reporting limit due to matrix interference.

RAMBØLL

ANALYTICAL REPORTS

Analytical Laboratory Report

Report ID: S17235.01(01)+QC01
Generated on 09/16/2020

Report to

Attention: Clifford Yantz
Ramboll
1203 Mallow St.
Wolverine Lake, MI 48350

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@obg.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S17235.01
Project: 1940075178.037.130 / Coldwater Rd. LF
Collected Date(s): 09/08/2020
Submitted Date/Time: 09/08/2020 13:30
Sampled by: Clifford Yantz
P.O. #: 12000277

Table of Contents

Maya Murshak
Technical Director

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.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

There is no additional narrative for this analytical 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

Method Summary

Method	Version
E1664A	EPA Method 1664 Revision A February 1999
E200.8	EPA Method 200.8 Revision 5.4
E245.1	EPA Method 245.1 Revision 3.0
HACH 10360	HACH 10360
OIA-1677	EPA Method OIA-1677-09
SM2540D	Standard Method 2540 D 2011
SM2550B	Standard Method 2550 B 2011
SM4500-H+ B	Standard Method 4500 H + B 2011
SM4500-NH3 D	Standard Method 4500 NH3 D 2011
SM4500-PE	Standard Method 4500 P E 2011
SW3015A	SW 846 Method 3015A Revision 1 February 2007

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S17235.01	03-PRCC-20	Wastewater	09/08/20 10:00

Analytical Laboratory Report

Lab Sample ID: S17235.01
Sample Tag: 03-PRCC-20
Collected Date/Time: 09/08/2020 10:00
Matrix: Wastewater
COC Reference: 127330

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	3.1	IR
1	250ml Plastic	H2SO4	Yes	3.1	IR
1	125ml Amber	PbCO3/NaOH	Yes	3.1	IR
1	1L Plastic	None	Yes	3.1	IR
1	32oz Glass	HCL	Yes	3.1	IR
1	500ml Plastic	None	Yes	3.1	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	09/09/20 09:30	JRH	
TBOD5 - Set*	Completed	HACH 10360	09/09/20 14:28	NAW	
Metal Digestion	Completed	SW3015A	09/09/20 11:30	CCM	

Inorganics

Method: E1664A, Run Date: 09/14/20 23:55, Analyst: PTW

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Oil & Grease n-Hexane Extract.	Not detected	2		mg/L	1		

Method: HACH 10360, Run Date: 09/14/20 12:43, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TBOD5*	Not detected	3		mg/L	1.5		

Method: SM2540D, Run Date: 09/11/20 18:30, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	27	3		mg/L	1.00		

Method: SM2550B, Run Date: 09/08/20 10:00, Analyst: CY

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field Temperature*	68	1		oF	1		

Method: SM4500-H+ B, Run Date: 09/08/20 10:00, Analyst: CY

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Field pH*	7.3	0.1		STD Units	1		

Method: SM4500-NH3 D, Run Date: 09/11/20 16:54, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)	0.02	0.02	0.003	mg/L	1	7664-41-7	

Method: SM4500-PE, Run Date: 09/11/20 15:48, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus	0.03	0.01	0.009	mg/L	1	7723-14-0	

Metals

Method: E200.8, Run Date: 09/09/20 12:48, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	Not detected	0.002		mg/L	5	7440-38-2	

Lab Sample ID: S17235.01 (continued)

Sample Tag: 03-PRCC-20

Method: E200.8, Run Date: 09/09/20 12:48, Analyst: CCM (continued)

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Chromium	0.009	0.005		mg/L	5	7440-47-3	
Copper	0.069	0.005		mg/L	5	7440-50-8	
Nickel	0.031	0.005		mg/L	5	7440-02-0	
Zinc	0.030	0.005		mg/L	5	7440-66-6	

Method: E245.1, Run Date: 09/09/20 13:36, Analyst: JRH

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Mercury	Not detected	0.0002		mg/L	1	7439-97-6	

Other / Misc.

Method: OIA-1677, Run Date: 09/11/20 12:09, Analyst: JDP

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Available Cyanide	Not detected	0.002	0.0015	mg/L	1	57-12-5	

Quality Control Report

Report ID: S17235.01(01)+QC01
Generated on 09/16/2020

Report to

Attention: Clifford Yantz
Ramboll
1203 Mallow St.
Wolverine Lake, MI 48350

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S17235.01
Project: 1940075178.037.130 / Coldwater Rd. LF
Submitted Date/Time: 09/08/2020 13:30
Sampled by: Clifford Yantz
P.O. #: 12000277

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball
Quality Assurance Manager

QC Report - Analysis Summary

Lab Sample ID: S17235.01
Sample Tag: 03-PRCC-20
Collected Date/Time: 09/08/2020 10:00
Matrix: Wastewater
COC Reference: 127330

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 D	09/11/20 16:54	AMN200911QC	AMN200911QC	No	BLK/LCS/MS/DUP
Oil & Grease n-Hexane Extract.	E1664A	09/14/20 23:55	OGHEX200914W01	OGHEX200914W01	No	BLK/LCS
TBOD5	HACH 10360	09/14/20 12:43	BOD200909	BOD200909	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	09/11/20 15:48	PHS200911QC	PHS200911QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	09/11/20 18:30	TSS200911	TSS200911	No	BLK/LCS/DUP
Metals						
Arsenic	E200.8	09/09/20 12:48	MT4-20-0909B	MTD-090920-3	No	BLK/LCS/MS/MSD
Chromium	E200.8	09/09/20 12:48	MT4-20-0909B	MTD-090920-3	No	BLK/LCS/MS/MSD
Copper	E200.8	09/09/20 12:48	MT4-20-0909B	MTD-090920-3	No	BLK/LCS/MS/MSD
Mercury	E245.1	09/09/20 13:36	HG2-HG3-20-0909A	HGD-090920-1	No	BLK/LCS/MS/MSD
Nickel	E200.8	09/09/20 12:48	MT4-20-0909B	MTD-090920-3	No	BLK/LCS/MS/MSD
Zinc	E200.8	09/09/20 12:48	MT4-20-0909B	MTD-090920-3	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	09/11/20 12:09	ACN200911-W1	ACN200911-W1	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN200911QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Ammonia-N (Undistilled)	SM4500-NH3 D	09/11/20 16:54	AMN200911QC

Inorganics, Prep Batch ID: BOD200909

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	TBOD5	HACH 10360	09/14/20 12:43	BOD200909

Inorganics, Prep Batch ID: OGHEX200914W01

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Oil & Grease n-Hexane Extract.	E1664A	09/14/20 23:55	OGHEX200914W01

Inorganics, Prep Batch ID: PHS200911QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Total Phosphorus	SM4500-PE	09/11/20 15:48	PHS200911QC

Inorganics, Prep Batch ID: TSS200911

Surrogates: No, QC Types: BLK/LCS/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Total Suspended Solids	SM2540D	09/11/20 18:30	TSS200911

Metals, Prep Batch ID: HGD-090920-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Mercury	E245.1	09/09/20 13:36	HG2-HG3-20-0909A

Metals, Prep Batch ID: MTD-090920-3

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Arsenic	E200.8	09/09/20 12:48	MT4-20-0909B
S17235.01	Chromium	E200.8	09/09/20 12:48	MT4-20-0909B
S17235.01	Copper	E200.8	09/09/20 12:48	MT4-20-0909B
S17235.01	Nickel	E200.8	09/09/20 12:48	MT4-20-0909B
S17235.01	Zinc	E200.8	09/09/20 12:48	MT4-20-0909B

Other / Misc., Prep Batch ID: ACN200911-W1

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17235.01	Available Cyanide	OIA-1677	09/11/20 12:09	ACN200911-W1

Inorganics, Prep Batch ID: AMN200911QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Blank (BLK)

Lab Sample ID: AMN200911QC.LRB1

Run in Batch: AMN200911QC, Run Date: 09/11/2020 11:05, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Ammonia-N (Undistilled)		ND	0.02	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: AMN200911QC.LCS1

Run in Batch: AMN200911QC, Run Date: 09/11/2020 12:11, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		102	90	110

Matrix Spike (MS)

Lab Sample ID: AMN200911QC.MS1, Parent Sample ID: S17294.05

Run in Batch: AMN200911QC, Run Date: 09/11/2020 19:30, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		93	80	120

Matrix Spike (MS)

Lab Sample ID: AMN200911QC.MS2, Parent Sample ID: S17294.06

Run in Batch: AMN200911QC, Run Date: 09/11/2020 19:47, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		96	80	120

Duplicate (DUP)

Lab Sample ID: AMN200911QC.DP1, Parent Sample ID: S17260.01

Run in Batch: AMN200911QC, Run Date: 09/11/2020 12:55, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		6.3	20

Inorganics, Prep Batch ID: BOD200909

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: BOD200909.LRB1

Run in Batch: BOD200909, Run Date: 09/14/2020 12:43, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD200909.LCS1

Run in Batch: BOD200909, Run Date: 09/14/2020 12:43, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		94.5	51	166

Duplicate (DUP)

Lab Sample ID: BOD200909.DP1, Parent Sample ID: S17264.02

Run in Batch: BOD200909, Run Date: 09/14/2020 12:43, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		19.2	20

Inorganics, Prep Batch ID: OGHEX200914W01

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEX200914W01.LRB3

Run in Batch: OGHEX200914W01, Run Date: 09/14/2020 23:55, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Oil & Grease n-Hexane Extract.		ND	1	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX200914W01.LCS1

Run in Batch: OGHEX200914W01, Run Date: 09/14/2020 23:55, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		96	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX200914W01.LCS2

Run in Batch: OGHEX200914W01, Run Date: 09/14/2020 23:55, Prep Date: 09/14/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		86	78	114

Inorganics, Prep Batch ID: PHS200911QC

Surrogates: No, QC Types: BLK/LCS/MS/DUP

Blank (BLK)

Lab Sample ID: PHS200911QC.LRB1

Run in Batch: PHS200911QC, Run Date: 09/11/2020 11:49, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

Blank (BLK)

Lab Sample ID: PHS200911QC.LRB2

Run in Batch: PHS200911QC, Run Date: 09/11/2020 11:56, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Total Phosphorus		ND	0.01	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: PHS200911QC.LCS1

Run in Batch: PHS200911QC, Run Date: 09/11/2020 12:03, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		97	90	110

Matrix Spike (MS)

Lab Sample ID: PHS200911QC.MS1, Parent Sample ID: S17064.01

Run in Batch: PHS200911QC, Run Date: 09/11/2020 16:24, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		99	80	120

Duplicate (DUP)

Lab Sample ID: PHS200911QC.DP1, Parent Sample ID: S17038.02

Run in Batch: PHS200911QC, Run Date: 09/11/2020 16:20, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		7.2	20

Inorganics, Prep Batch ID: TSS200911

Surrogates: No, QC Types: BLK/LCS/DUP

Blank (BLK)

Lab Sample ID: TSS200911.LRB1

Run in Batch: TSS200911, Run Date: 09/11/2020 18:30, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1.00

Analyte	Flags	Conc	RDL	Units
Total Suspended Solids		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: TSS200911.LCS1

Run in Batch: TSS200911, Run Date: 09/11/2020 18:30, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 10.0

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		91.5	81.4	112

Duplicate (DUP)

Lab Sample ID: TSS200911.DP1, Parent Sample ID: S17286.01

Run in Batch: TSS200911, Run Date: 09/11/2020 18:30, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 6.67

Analyte	Flags	RPD	RPD CL
Total Suspended Solids	*	6.7	5

Metals, Prep Batch ID: HGD-090920-1

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: HG2-HG3-20-0909A.044

Run in Batch: HG2-HG3-20-0909A, Run Date: 09/09/2020 13:23, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.05	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG2-HG3-20-0909A.043

Run in Batch: HG2-HG3-20-0909A, Run Date: 09/09/2020 13:22, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		93	85	115

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-20-0909A.052, Parent Sample ID: S17235.01

Run in Batch: HG2-HG3-20-0909A, Run Date: 09/09/2020 13:38, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		84	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-20-0909A.053, Parent Sample ID: HG2-HG3-20-0909A.052

Run in Batch: HG2-HG3-20-0909A, Run Date: 09/09/2020 13:40, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		90	80	120	7	20

Metals, Prep Batch ID: MTD-090920-3

Surrogates: No, QC Types: BLK/LCS/MS/MSD

Blank (BLK)

Lab Sample ID: MT4-20-0909B.022.LRB

Run in Batch: MT4-20-0909B, Run Date: 09/09/2020 12:46, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Arsenic		ND	0.0004	mg/L
Chromium		ND	0.001	mg/L
Copper		ND	0.001	mg/L
Nickel		ND	0.001	mg/L
Zinc		ND	0.001	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: MT4-20-0909B.020.LCS

Run in Batch: MT4-20-0909B, Run Date: 09/09/2020 12:41, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		107	85	115
Chromium		103	85	115
Copper		102	85	115
Nickel		106	85	115
Zinc		105	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-20-0909B.038.MS, Parent Sample ID: S17235.01

Run in Batch: MT4-20-0909B, Run Date: 09/09/2020 13:03, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		106	75	125
Chromium		106	75	125
Copper		98	75	125
Nickel		102	75	125
Zinc		102	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-20-0909B.039.MSD, Parent Sample ID: MT4-20-0909B.038.MS

Run in Batch: MT4-20-0909B, Run Date: 09/09/2020 13:04, Prep Date: 09/09/2020, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		104	75	125	3	20
Chromium		106	75	125	0	20
Copper		100	75	125	2	20
Nickel		103	75	125	0	20
Zinc		107	75	125	4	20

Other / Misc., Prep Batch ID: ACN200911-W1

Surrogates: No, QC Types: BLK/LCS/MS/MSD/DUP

Blank (BLK)

Lab Sample ID: ACN200911-W1.LRB1

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 11:58, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Available Cyanide		ND	0.002	mg/L

Blank (BLK)

Lab Sample ID: ACN200911-W1.LRB2

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 12:45, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Available Cyanide		ND	0.002	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: ACN200911-W1.LCS1

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 12:03, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		99	88	109

Matrix Spike (MS)

Lab Sample ID: ACN200911-W1.MS1, Parent Sample ID: S17235.01

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 12:15, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		82	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN200911-W1.MSD1, Parent Sample ID: ACN200911-W1.MS1

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 12:17, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		84	82	130	2	15

Duplicate (DUP)

Lab Sample ID: ACN200911-W1.DP1, Parent Sample ID: S17235.01

Run in Batch: ACN200911-W1, Run Date: 09/11/2020 12:11, Prep Date: 09/11/2020, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Available Cyanide		<1	15

Merit Laboratories Login Checklist

Lab Set ID: S17235
Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)
Project: 1940075178.037.130 / Coldwater Rd. LF
Submitted: 09/08/2020 13:30 Login User: SRS

Attention: Clifford Yantz
Address: Ramboll
1203 Mallow St.
Wolverine Lake, MI 48350

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@obg.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 3.1
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[X] Yes	[ ] No	[ ] N/A	Do sample have correct chemical preservation	
11.	[X] Yes	[ ] No	[ ] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] 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: _____

Merit Laboratories Bottle Preservation Check

Lab Set ID: S17235 Submitted: 09/08/2020 13:30

Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)

Project: 1940075178.037.130 / Coldwater Rd. LF

Initial Preservation Check: 09/08/2020 13:38 SRS

Preservation Recheck (E200.8): N/A

Attention: Clifford Yantz
Address: Ramboll
1203 Mallow St.
Wolverine Lake, MI 48350

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@obg.com

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S17235.01	125ml Plastic HNO3	<2			
S17235.01	250ml Plastic H2SO4	<2			
S17235.01	32oz Glass HCl	5	1.0	<2	Lot# 58306
S17235.01	125ml Amber PbCO3/NaOH	>12			

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

127330

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: ~~Ramboll~~ Clifford S. Yantz
COMPANY: Ramboll
ADDRESS: 1203 Mallow St.
CITY: Wolverine Lake STATE: MI ZIP CODE: 48390
PHONE NO.: 3133330211 FAX NO.: P.O. NO.:
E-MAIL ADDRESS: Clifford.yantz@Ramboll.com QUOTE NO.:

INVOICE TO

CONTACT NAME: X SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: 1940075178.037.130 / Coldwater Rd LF
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Clifford Yantz / Clifford Yantz

TURNAROUND TIME REQUIRED ☐ 1 DAY ☐ 2 DAYS ☐ 3 DAYS X STANDARD ☐ OTHER

DELIVERABLES REQUIRED ☐ STD X LEVEL II ☐ LEVEL III ☐ LEVEL IV ☐ EDD ☐ OTHER

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

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES
Project Locations
☐ Detroit ☐ New York
☐ Other
Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	Total Metals	Available Cyanide	BOD / TSS	Ammonia-Nitrogen	Total Phosphorus	FOG (Hex-Ext.)
17235.01	9/8/20	10:00	03-PRCC-20	WW	6	2	1	1	1				X	X	X	X	X	X

Metals: As, Cr, Cu, Hg, Ni, Zn

Analyze per City of Flint, including QC Report

Field PH 7.3
Field Temp.

RELINQUISHED BY: SIGNATURE/ORGANIZATION	Clifford Yantz / Ramboll X Sampler	DATE 9/8/20	TIME 11:37
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 9/8/20	TIME 11:37
RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE 9/8/20	TIME 13:12
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE 9/8/20	TIME 1330

RELINQUISHED BY: SIGNATURE/ORGANIZATION		DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION		DATE	TIME

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS
SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 3.1

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

Rev. 5.18.12

Analytical Laboratory Report

Revised Report

Report ID: S17686.01(02)
Generated on 10/06/2020
Replaces report S17686.01(01) generated on 10/06/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@obg.com

Report produced by

Merit Laboratories, Inc.
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Contacts for report questions:
John Laverty (johnlaverty@meritlabs.com)
Barbara Ball (bball@meritlabs.com)

Report Summary

Lab Sample ID(s): S17686.01-S17686.07
Project: RACER Coldwater Rd
Collected Date(s): 09/21/2020 - 09/23/2020
Submitted Date/Time: 09/23/2020 14:30
Sampled by: Willl Laughner / Cliff Yantz
P.O. #: 12000277

Table of Contents

Maya Murshak
Technical Director

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.

Limits for drinking water samples, are listed as the MCL Limits (Maximum Contaminant Level Concentrations)
PFAS requirement: Section 9.3.8 of U.S. EPA Method 537.1 states "If the method analyte(s) found in the Field Sample is present in the FRB at a concentration greater than 1/3 the MRL, then all samples collected with that FRB are invalid and must be recollected and reanalyzed."
Samples submitted without an accompanying FRB may not be acceptable for compliance purposes.

Report Narrative

Sample tags and collection times switched for samples .02 and .03

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
Pennsylvania DEP	#68-05884

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

Method Summary

Method	Version
ASTMD7979-19M	ASTM Method D7979 - 19 Modified (Isotopic Dilution)

Parameter Summary

Parameter	Synonym	Cas #
PFBA	Perfluorobutanoic Acid	375-22-4
PFPeA	Perfluoropentanoic Acid	2706-90-3
4:2 FTSA	4:2 Fluorotelomer Sulfonic Acid	757124-72-4
PFHxA	Perfluorohexanoic Acid	307-24-4
PFBS	Perfluorobutane sulfonic Acid	375-73-5
PFHpA	Perfluoroheptanoic Acid	375-85-9
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4
6:2 FTSA	6:2 Fluorotelomer Sulfonic Acid	27619-97-2
PFOA	Perfluorooctanoic Acid	335-67-1
PFHxS	Perfluorohexane Sulfonic Acid	355-46-4
PFHxS-LN	Perfluorohexane Sulfonic Acid - LN	355-46-4-LN
PFHxS-BR	Perfluorohexane Sulfonic Acid - BR	355-46-4-BR
PFNA	Perfluorononanoic Acid	375-95-1
8:2 FTSA	8:2 Fluorotelomer Sulfonic Acid	39108-34-4
PFHpS	Perfluoroheptane Sulfonic Acid	375-92-8
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
PFOS-LN	Perfluorooctane Sulfonic Acid - LN	1763-23-1-LN
PFOS-BR	Perfluorooctane Sulfonic Acid - BR	1763-23-1-BR
PFUnDA	Perfluoroundecanoic Acid	2058-94-8
PFNS	Perfluorononane Sulfonic Acid	68259-12-1
PFDoDA	Perfluorododecanoic Acid	307-55-1
PFDS	Perfluorodecane Sulfonic Acid	335-77-3
PFTrDA	Perfluorotridecanoic Acid	72629-94-8
FOSA	Perfluorooctane Sulfonamide	754-91-6
PFTeDA	Perfluorotetradecanoic Acid	376-06-7
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone1-sulfonic acid	756426-58-1
ADONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4
HFPO-DA	Hexafluoropropylene oxide dimer	13252-13-6

Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S17686.01	FB-09-21-20	Water	09/21/20 08:30
S17686.02	03-PRCC-20-INF	Liquid	09/21/20 09:00
S17686.03	03-PRCC-20-PRIM	Liquid	09/21/20 08:45
S17686.04	03-PRCC-20-EFF-159	Liquid	09/23/20 10:54
S17686.05	03-PRCC-20-MID-1-159	Liquid	09/23/20 10:57
S17686.06	03-PRCC-20-MID-2-159	Liquid	09/23/20 11:02
S17686.07	03-PRCC-20-PRIM-159	Liquid	09/23/20 11:05

Lab Sample ID: S17686.01
Sample Tag: FB-09-21-20
Collected Date/Time: 09/21/2020 08:30
Matrix: Water
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.49/6.88/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 20:11, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.96	13252-13-6	

Lab Sample ID: S17686.02
Sample Tag: 03-PRCC-20-INF
Collected Date/Time: 09/21/2020 09:00
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.46/6.85/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 20:31, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	98	9.8	ng/L	1.96	375-22-4	X
PFPeA*	Not detected	130	0.98	ng/L	1.96	2706-90-3	X
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	I
PFHxA*	110	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	92	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	27	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	180	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	I
PFOA*	91	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	570	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	480	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	89	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	110	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	13,000	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	8,200	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	5,100	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	4.2	2.0	1.4	ng/L	1.96	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.96	13252-13-6	

X-Elevated reporting limit due to matrix interference
I-Matrix interference with internal standard

Lab Sample ID: S17686.03
Sample Tag: 03-PRCC-20-PRIM
Collected Date/Time: 09/21/2020 08:45
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.45/6.87/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 20:50, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	12	9.9	9.9	ng/L	1.97	375-22-4	
PFPeA*	1.2	3.9	0.99	ng/L	1.97	2706-90-3	J
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.97	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.97	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.97	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.97	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.97	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.97	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.97	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.97	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.97	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.97	375-95-1	
8:2 FTSA*	Not detected	2.0	0.99	ng/L	1.97	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.97	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.97	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.97	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.97	2991-50-6	
PFOS*	27	2.0	1.9	ng/L	1.97	1763-23-1	
PFOS-LN*	22	2.0	1.9	ng/L	1.97	1763-23-1-LN	
PFOS-BR*	4.6	2.0	1.9	ng/L	1.97	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.97	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.97	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.97	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.97	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.97	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.97	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.97	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.97	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.97	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.97	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.97	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Lab Sample ID: S17686.04
Sample Tag: 03-PRCC-20-EFF-159
Collected Date/Time: 09/23/2020 10:54
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.42/6.82/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 21:10, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.96	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.96	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.96	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	2.0	2.0	ng/L	1.96	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.96	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.96	375-95-1	
8:2 FTSA*	Not detected	2.0	0.98	ng/L	1.96	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.96	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.96	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.96	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.96	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.96	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.96	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.96	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.96	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.96	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.96	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.96	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.96	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.96	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.96	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.96	919005-14-4	
HFPO-DA*	Not detected	2.0	2.0	ng/L	1.96	13252-13-6	

Lab Sample ID: S17686.05
Sample Tag: 03-PRCC-20-MID-1-159
Collected Date/Time: 09/23/2020 10:57
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.25/6.97/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 21:29, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2.08	375-22-4	
PFPeA*	Not detected	4.2	1.0	ng/L	2.08	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.08	757124-72-4	
PFHxA*	Not detected	2.1	1.5	ng/L	2.08	307-24-4	
PFBS*	Not detected	2.1	1.5	ng/L	2.08	375-73-5	
PFHpA*	Not detected	2.1	1.5	ng/L	2.08	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.08	2706-91-4	
6:2 FTSA*	Not detected	2.1	2.1	ng/L	2.08	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.08	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.08	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.08	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.08	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.08	375-95-1	
8:2 FTSA*	Not detected	2.1	1.0	ng/L	2.08	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.08	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.08	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.08	2355-31-9	
EtFOSAA*	Not detected	4.2	2.1	ng/L	2.08	2991-50-6	
PFOS*	2.8	2.1	2.0	ng/L	2.08	1763-23-1	
PFOS-LN*	Not detected	2.1	2.0	ng/L	2.08	1763-23-1-LN	
PFOS-BR*	Not detected	2.1	2.0	ng/L	2.08	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.08	2058-94-8	
PFNS*	Not detected	2.1	1.5	ng/L	2.08	68259-12-1	
PFDoDA*	Not detected	2.1	1.7	ng/L	2.08	307-55-1	
PFDS*	Not detected	2.1	1.5	ng/L	2.08	335-77-3	
PFTrDA*	Not detected	2.1	1.2	ng/L	2.08	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.08	754-91-6	
PFTeDA*	Not detected	4.2	1.9	ng/L	2.08	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.08	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.08	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.08	919005-14-4	
HFPO-DA*	Not detected	2.1	2.1	ng/L	2.08	13252-13-6	

Lab Sample ID: S17686.06
Sample Tag: 03-PRCC-20-MID-2-159
Collected Date/Time: 09/23/2020 11:02
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.59/6.92/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 21:49, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.94	375-22-4	
PFPeA*	Not detected	3.9	0.97	ng/L	1.94	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.6	ng/L	1.94	757124-72-4	
PFHxA*	Not detected	1.9	1.4	ng/L	1.94	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.94	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.94	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.94	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.94	27619-97-2	
PFOA*	Not detected	1.9	1.6	ng/L	1.94	335-67-1	
PFHxS*	Not detected	1.9	1.6	ng/L	1.94	355-46-4	
PFHxS-LN*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.6	ng/L	1.94	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.94	375-95-1	
8:2 FTSA*	Not detected	1.9	0.97	ng/L	1.94	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.94	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.94	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.94	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.94	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.94	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.94	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.94	68259-12-1	
PFDoDA*	Not detected	1.9	1.6	ng/L	1.94	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.94	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.94	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.94	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.94	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.94	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.94	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.94	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.94	13252-13-6	

Lab Sample ID: S17686.07
Sample Tag: 03-PRCC-20-PRIM-159
Collected Date/Time: 09/23/2020 11:05
Matrix: Liquid
COC Reference: 125020

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.4	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.63/6.89/11	ASTMD7979-19M	09/29/20 15:00	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 09/29/20 22:08, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	15	9.6	9.6	ng/L	1.92	375-22-4	
PFPeA*	7.4	3.8	0.96	ng/L	1.92	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.92	757124-72-4	
PFHxA*	4.5	1.9	1.3	ng/L	1.92	307-24-4	
PFBS*	3.9	1.9	1.3	ng/L	1.92	375-73-5	
PFHpA*	Not detected	1.9	1.3	ng/L	1.92	375-85-9	
PFPeS*	3.9	1.9	1.7	ng/L	1.92	2706-91-4	
6:2 FTSA*	Not detected	1.9	1.9	ng/L	1.92	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.92	335-67-1	
PFHxS*	7.6	1.9	1.5	ng/L	1.92	355-46-4	
PFHxS-LN*	5.4	1.9	1.5	ng/L	1.92	355-46-4-LN	
PFHxS-BR*	1.8	1.9	1.5	ng/L	1.92	355-46-4-BR	J
PFNA*	Not detected	1.9	1.7	ng/L	1.92	375-95-1	
8:2 FTSA*	Not detected	1.9	0.96	ng/L	1.92	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.92	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.92	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.92	2355-31-9	
EtFOSAA*	Not detected	3.8	1.9	ng/L	1.92	2991-50-6	
PFOS*	78	1.9	1.9	ng/L	1.92	1763-23-1	
PFOS-LN*	35	1.9	1.9	ng/L	1.92	1763-23-1-LN	
PFOS-BR*	42	1.9	1.9	ng/L	1.92	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.3	ng/L	1.92	2058-94-8	
PFNS*	Not detected	1.9	1.3	ng/L	1.92	68259-12-1	
PFDoDA*	Not detected	1.9	1.5	ng/L	1.92	307-55-1	
PFDS*	Not detected	1.9	1.3	ng/L	1.92	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.92	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.92	754-91-6	
PFTeDA*	Not detected	3.8	1.7	ng/L	1.92	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.92	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.3	ng/L	1.92	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.92	919005-14-4	
HFPO-DA*	Not detected	1.9	1.9	ng/L	1.92	13252-13-6	

J-Estimated value less than reporting limit, but greater than MDL

Merit Laboratories Login Checklist

Lab Set ID: S17686
Client: OBG02 (O'Brien & Gere Engineers, Inc. - East Lansing, MI)
Project: RACER Coldwater Rd
Submitted: 09/23/2020 14:30 Login User: SRS

Attention: Clifford Yantz
Address: O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

Phone: 313-333-0211 FAX:
Email: Clifford.Yantz@obg.com

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 4.4
02.	[X] Yes	[ ] No	[ ] N/A	Received on ice/ cooling process begun	
03.	[ ] Yes	[X] No	[ ] N/A	Samples shipped	
04.	[ ] Yes	[X] No	[ ] N/A	Samples left in 24 hr. drop box	
05.	[ ] Yes	[ ] No	[X] N/A	Are there custody seals/tape or is the drop box locked	
Chain of Custody					
06.	[X] Yes	[ ] No	[ ] N/A	COC adequately filled out	
07.	[X] Yes	[ ] No	[ ] N/A	COC signed and relinquished to the lab	
08.	[X] Yes	[ ] No	[ ] N/A	Sample tag on bottles match COC	
09.	[ ] Yes	[X] No	[ ] N/A	Subcontracting needed? Subcontacted to:	
Preservation					
10.	[ ] Yes	[ ] No	[X] N/A	Do sample have correct chemical preservation	
11.	[ ] Yes	[ ] No	[X] N/A	Completed pH checks on preserved samples? (no VOAs)	
12.	[ ] Yes	[X] No	[ ] N/A	Did any samples need to be preserved in the lab?	
Bottle Conditions					
13.	[X] Yes	[ ] No	[ ] N/A	All bottles intact	
14.	[X] Yes	[ ] No	[ ] N/A	Appropriate analytical bottles are used	
15.	[X] Yes	[ ] No	[ ] N/A	Merit bottles used	
16.	[X] Yes	[ ] No	[ ] N/A	Sufficient sample volume received	
17.	[ ] Yes	[X] No	[ ] N/A	Samples require laboratory filtration	
18.	[X] Yes	[ ] No	[ ] N/A	Samples submitted within holding time	
19.	[ ] Yes	[ ] No	[X] 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: _____

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

125020

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford S. Yantz
COMPANY: OBG, Part of Ramboll
ADDRESS: 2260 East Saginaw
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 313 333 0211 FAX NO.: — P.O. NO.:
E-MAIL ADDRESS: Clifford.Yantz@ramboll.com QUOTE NO.:

INVOICE TO

CONTACT NAME: ☒ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: RACER Coldwater Rd
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Will Laughner / Cliff Yantz

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=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (7979)
176860.01	9/21/20	08:30	FB-09-21-20	GW	3	X							X
.02	↓	08:45	03-PRLL-20-PRIM	L	3	X							X
.03	↓	09:00	03-PRLL-20-INF	L	3	X							X
.04	9/23/20	10:54	03-PRLL-20-EFF-159	L	3	X							X
.05	↓	10:57	03-PRLL-20-MID-1-159	L	3	X							X
.06	↓	11:02	03-PRLL-20-MID-2-159	L	3	X							X
.07	↓	11:05	03-PRLL-20-PRIM-159	L	3	X							X

Special Instructions: ASTM D7979 low level reporting limit with estimated values

WHL

			DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION		☒ Sampler	9/23/20	1305
RECEIVED BY: SIGNATURE/ORGANIZATION			9/23/20	1305
RELINQUISHED BY: SIGNATURE/ORGANIZATION			9/23/20	1430
RECEIVED BY: SIGNATURE/ORGANIZATION			9/23/20	1430

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 4.4

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

Rev. 5.18.12

Quality Control Report

Report ID: QC-S17686-01
Generated on 10/06/2020

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
2260 East Saginaw Street
East Lansing, MI 48823

Phone: 313-333-0211 FAX:

Report Produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S17686.01-S17686.07
Project: RACER Coldwater Rd
Submitted Date/Time: 09/23/2020 14:30
Sampled by: Willl Laughner / Cliff Yantz
P.O. #: 12000277

QC Report Sections

Report Flag Descriptions

*: QC result is outside of indicated control limits
W: Surrogate result not applicable due to sample dilution

I certify that this data package is in compliance with the terms and conditions of the program, and project, and contractual requirements both technically and for completeness. Release of the data contained in this hardcopy data package and its computer-readable data submitted has been authorized by the Quality Assurance Manager and his/her designee, as verified by the following signature.

Barbara Ball

Barbara Ball
Quality Assurance Manager

Lab Sample ID: S17686.01
Sample Tag: FB-09-21-20
Collected Date/Time: 09/21/2020 08:30
Matrix: Water
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 20:11	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S17686.02
Sample Tag: 03-PRCC-20-INF
Collected Date/Time: 09/21/2020 09:00
Matrix: Liquid
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 20:31	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S17686.03
Sample Tag: 03-PRCC-20-PRIM
Collected Date/Time: 09/21/2020 08:45
Matrix: Liquid
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 20:50	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S17686.04
Sample Tag: 03-PRCC-20-EFF-159
Collected Date/Time: 09/23/2020 10:54
Matrix: Liquid
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 21:10	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S17686.05
Sample Tag: 03-PRCC-20-MID-1-159
Collected Date/Time: 09/23/2020 10:57
Matrix: Liquid
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 21:29	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S17686.06
Sample Tag: 03-PRCC-20-MID-2-159
Collected Date/Time: 09/23/2020 11:02
Matrix: Liquid
COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 21:49	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

Lab Sample ID: S17686.07

Sample Tag: 03-PRCC-20-PRIM-159

Collected Date/Time: 09/23/2020 11:05

Matrix: Liquid

COC Reference: 125020

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	09/29/20 22:08	AK200929A	PF200929W1	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF200929W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S17686.01	28 PFAs	ASTMD7979-19M	09/29/20 20:11	AK200929A
S17686.02	28 PFAs	ASTMD7979-19M	09/29/20 20:31	AK200929A
S17686.03	28 PFAs	ASTMD7979-19M	09/29/20 20:50	AK200929A
S17686.04	28 PFAs	ASTMD7979-19M	09/29/20 21:10	AK200929A
S17686.05	28 PFAs	ASTMD7979-19M	09/29/20 21:29	AK200929A
S17686.06	28 PFAs	ASTMD7979-19M	09/29/20 21:49	AK200929A
S17686.07	28 PFAs	ASTMD7979-19M	09/29/20 22:08	AK200929A

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.01

Sample Tag: FB-09-21-20

Collected Date/Time: 09/21/2020 08:30

Matrix: Water

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 20:11, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**84.0**	50.0	150.0
M2-6:2FTSA		**97.0**	50.0	150.0
M2-8:2FTSA		**106.7**	50.0	150.0
M2PFTeDA		**128.3**	12.0	218.0
M3PFBS		**94.1**	50.0	150.0
M3PFHxS		**95.0**	50.0	150.0
M4PFHpA		**99.5**	50.0	150.0
M5PFHxA		**101.4**	50.0	150.0
M5PFPeA		**98.6**	50.0	150.0
M6PFDA		**105.9**	50.0	150.0
M7PFUnDA		**108.8**	50.0	150.0
M8FOSA		**98.8**	50.0	150.0
M8PFOA		**108.3**	50.0	150.0
M8PFOS		**95.2**	50.0	150.0
M9-PFNA		**105.6**	50.0	150.0
MPFBA		**100.0**	50.0	150.0
MPFDoDA		**106.4**	50.0	150.0
d3N-MeFOSAA		**123.6**	50.0	150.0
d5EtFOSAA		**107.2**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.02

Sample Tag: 03-PRCC-20-INF

Collected Date/Time: 09/21/2020 09:00

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 20:31, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA	*	**213.0**	50.0	150.0
M2-6:2FTSA	*	**163.7**	50.0	150.0
M2-8:2FTSA		**92.3**	50.0	150.0
M2PFTeDA		**149.7**	12.0	218.0
M3PFBS		**96.2**	50.0	150.0
M3PFHxS		**107.0**	50.0	150.0
M4PFHpA		**107.3**	50.0	150.0
M5PFHxA		**101.5**	50.0	150.0
M5PFPeA		**93.7**	50.0	150.0
M6PFDA		**102.1**	50.0	150.0
M7PFUnDA		**128.7**	50.0	150.0
M8FOSA		**99.6**	50.0	150.0
M8PFOA		**115.2**	50.0	150.0
M8PFOS		**84.3**	50.0	150.0
M9-PFNA		**109.8**	50.0	150.0
MPFBA		**58.3**	50.0	150.0
MPFDoDA		**113.4**	50.0	150.0
d3N-MeFOSAA		**119.3**	50.0	150.0
d5EtFOSAA		**113.4**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.03

Sample Tag: 03-PRCC-20-PRIM

Collected Date/Time: 09/21/2020 08:45

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 20:50, Matrix: WW, Dilution: 1.97

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**90.7**	50.0	150.0
M2-6:2FTSA		**94.7**	50.0	150.0
M2-8:2FTSA		**88.7**	50.0	150.0
M2PFTeDA		**133.6**	12.0	218.0
M3PFBS		**97.3**	50.0	150.0
M3PFHxS		**99.6**	50.0	150.0
M4PFHpA		**104.4**	50.0	150.0
M5PFHxA		**103.5**	50.0	150.0
M5PFPeA		**100.6**	50.0	150.0
M6PFDA		**99.0**	50.0	150.0
M7PFUnDA		**118.0**	50.0	150.0
M8FOSA		**100.2**	50.0	150.0
M8PFOA		**114.9**	50.0	150.0
M8PFOS		**87.8**	50.0	150.0
M9-PFNA		**107.6**	50.0	150.0
MPFBA		**101.8**	50.0	150.0
MPFDoDA		**111.2**	50.0	150.0
d3N-MeFOSAA		**109.2**	50.0	150.0
d5EtFOSAA		**100.1**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.04

Sample Tag: 03-PRCC-20-EFF-159

Collected Date/Time: 09/23/2020 10:54

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 21:10, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**99.3**	50.0	150.0
M2-6:2FTSA		**109.2**	50.0	150.0
M2-8:2FTSA		**110.1**	50.0	150.0
M2PFTeDA		**141.8**	12.0	218.0
M3PFBS		**107.3**	50.0	150.0
M3PFHxS		**110.6**	50.0	150.0
M4PFHpA		**99.0**	50.0	150.0
M5PFHxA		**107.1**	50.0	150.0
M5PFPeA		**105.0**	50.0	150.0
M6PFDA		**111.7**	50.0	150.0
M7PFUnDA		**116.9**	50.0	150.0
M8FOSA		**105.9**	50.0	150.0
M8PFOA		**114.9**	50.0	150.0
M8PFOS		**95.1**	50.0	150.0
M9-PFNA		**111.7**	50.0	150.0
MPFBA		**106.8**	50.0	150.0
MPFDoDA		**107.8**	50.0	150.0
d3N-MeFOSAA		**118.6**	50.0	150.0
d5EtFOSAA		**105.2**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.05

Sample Tag: 03-PRCC-20-MID-1-159

Collected Date/Time: 09/23/2020 10:57

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 21:29, Matrix: WW, Dilution: 2.08

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**89.6**	50.0	150.0
M2-6:2FTSA		**89.5**	50.0	150.0
M2-8:2FTSA		**102.5**	50.0	150.0
M2PFTeDA		**152.5**	12.0	218.0
M3PFBS		**95.6**	50.0	150.0
M3PFHxS		**93.9**	50.0	150.0
M4PFHpA		**105.3**	50.0	150.0
M5PFHxA		**105.9**	50.0	150.0
M5PFPeA		**99.2**	50.0	150.0
M6PFDA		**105.4**	50.0	150.0
M7PFUnDA		**109.9**	50.0	150.0
M8FOSA		**105.2**	50.0	150.0
M8PFOA		**118.1**	50.0	150.0
M8PFOS		**91.9**	50.0	150.0
M9-PFNA		**108.7**	50.0	150.0
MPFBA		**103.0**	50.0	150.0
MPFDoDA		**111.7**	50.0	150.0
d3N-MeFOSAA		**118.3**	50.0	150.0
d5EtFOSAA		**105.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.06

Sample Tag: 03-PRCC-20-MID-2-159

Collected Date/Time: 09/23/2020 11:02

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 21:49, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**86.2**	50.0	150.0
M2-6:2FTSA		**92.9**	50.0	150.0
M2-8:2FTSA		**99.7**	50.0	150.0
M2PFTeDA		**143.0**	12.0	218.0
M3PFBS		**101.5**	50.0	150.0
M3PFHxS		**99.8**	50.0	150.0
M4PFHpA		**107.7**	50.0	150.0
M5PFHxA		**107.8**	50.0	150.0
M5PFPeA		**99.9**	50.0	150.0
M6PFDA		**93.9**	50.0	150.0
M7PFUnDA		**117.2**	50.0	150.0
M8FOSA		**108.4**	50.0	150.0
M8PFOA		**119.1**	50.0	150.0
M8PFOS		**90.9**	50.0	150.0
M9-PFNA		**108.1**	50.0	150.0
MPFBA		**103.0**	50.0	150.0
MPFDoDA		**108.3**	50.0	150.0
d3N-MeFOSAA		**121.7**	50.0	150.0
d5EtFOSAA		**110.5**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S17686.07

Sample Tag: 03-PRCC-20-PRIM-159

Collected Date/Time: 09/23/2020 11:05

Matrix: Liquid

COC Reference: 125020

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK200929A, Run Date: 09/29/2020 22:08, Matrix: WW, Dilution: 1.92

Internal Standard	Flags	**%Rec**	LCL	UCL
M2-4:2FTSA		**95.0**	50.0	150.0
M2-6:2FTSA		**94.4**	50.0	150.0
M2-8:2FTSA		**109.9**	50.0	150.0
M2PFTeDA		**134.7**	12.0	218.0
M3PFBS		**101.7**	50.0	150.0
M3PFHxS		**107.6**	50.0	150.0
M4PFHpA		**105.2**	50.0	150.0
M5PFHxA		**102.8**	50.0	150.0
M5PFPeA		**100.1**	50.0	150.0
M6PFDA		**99.8**	50.0	150.0
M7PFUnDA		**114.8**	50.0	150.0
M8FOSA		**105.4**	50.0	150.0
M8PFOA		**113.0**	50.0	150.0
M8PFOS		**96.7**	50.0	150.0
M9-PFNA		**98.9**	50.0	150.0
MPFBA		**104.0**	50.0	150.0
MPFDoDA		**104.5**	50.0	150.0
d3N-MeFOSAA		**118.5**	50.0	150.0
d5EtFOSAA		**108.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF200929W1

QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK200929A_LL.BLK200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 19:32, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**98.1**	50.0	150.0
M2-6:2FTSA		**100.7**	50.0	150.0
M2-8:2FTSA		**107.5**	50.0	150.0
M2PFTeDA		**141.5**	12.0	218.0
M3PFBS		**103.5**	50.0	150.0
M3PFHxS		**98.0**	50.0	150.0
M4PFHpA		**99.2**	50.0	150.0
M5PFHxA		**106.2**	50.0	150.0
M5PFPeA		**102.2**	50.0	150.0
M6PFDA		**92.8**	50.0	150.0
M7PFUnDA		**115.1**	50.0	150.0
M8FOSA		**105.5**	50.0	150.0
M8PFOA		**113.1**	50.0	150.0
M8PFOS		**102.9**	50.0	150.0
M9-PFNA		**110.5**	50.0	150.0
MPFBA		**105.6**	50.0	150.0
MPFDoDA		**105.6**	50.0	150.0
d3N-MeFOSAA		**109.1**	50.0	150.0
d5EtFOSAA		**104.0**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 18:53, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**94.3**	50.0	150.0
M2-6:2FTSA		**101.1**	50.0	150.0
M2-8:2FTSA		**99.6**	50.0	150.0
M2PFTeDA		**108.3**	12.0	218.0
M3PFBS		**96.1**	50.0	150.0
M3PFHxS		**98.7**	50.0	150.0
M4PFHpA		**106.0**	50.0	150.0
M5PFHxA		**98.7**	50.0	150.0
M5PFPeA		**100.5**	50.0	150.0
M6PFDA		**106.6**	50.0	150.0
M7PFUnDA		**106.9**	50.0	150.0
M8FOSA		**101.2**	50.0	150.0
M8PFOA		**113.7**	50.0	150.0
M8PFOS		**94.4**	50.0	150.0
M9-PFNA		**105.4**	50.0	150.0
MPFBA		**102.0**	50.0	150.0
MPFDoDA		**95.7**	50.0	150.0
d3N-MeFOSAA		**148.6**	50.0	150.0
d5EtFOSAA		**94.1**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200929A_LL.LCSD200929A, Parent Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 19:13, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**96.8**	50.0	150.0
M2-6:2FTSA		**98.8**	50.0	150.0
M2-8:2FTSA		**108.5**	50.0	150.0
M2PFTeDA		**137.1**	12.0	218.0
M3PFBS		**101.3**	50.0	150.0
M3PFHxS		**98.1**	50.0	150.0
M4PFHpA		**102.7**	50.0	150.0
M5PFHxA		**102.1**	50.0	150.0
M5PFPeA		**100.8**	50.0	150.0
M6PFDA		**95.6**	50.0	150.0
M7PFUnDA		**110.6**	50.0	150.0
M8FOSA		**97.5**	50.0	150.0
M8PFOA		**115.0**	50.0	150.0
M8PFOS		**100.9**	50.0	150.0
M9-PFNA		**108.9**	50.0	150.0
MPFBA		**103.6**	50.0	150.0
MPFDoDA		**107.0**	50.0	150.0
d3N-MeFOSAA		**100.2**	50.0	150.0
d5EtFOSAA		**107.0**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK200929A_LL.1783302M, Parent Sample ID: S17833.01

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 23:26, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**88.8**	50.0	150.0
M2-6:2FTSA		**98.6**	50.0	150.0
M2-8:2FTSA		**111.6**	50.0	150.0
M2PFTeDA		**125.3**	12.0	218.0
M3PFBS		**101.7**	50.0	150.0
M3PFHxS		**101.4**	50.0	150.0
M4PFHpA		**103.9**	50.0	150.0
M5PFHxA		**105.9**	50.0	150.0
M5PFPeA		**104.3**	50.0	150.0
M6PFDA		**100.2**	50.0	150.0
M7PFUnDA		**109.3**	50.0	150.0
M8FOSA		**106.4**	50.0	150.0
M8PFOA		**122.4**	50.0	150.0
M8PFOS		**96.6**	50.0	150.0
M9-PFNA		**106.9**	50.0	150.0
MPFBA		**107.0**	50.0	150.0
MPFDoDA		**104.7**	50.0	150.0
d3N-MeFOSAA		**109.1**	50.0	150.0
d5EtFOSAA		**114.8**	50.0	150.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK200929A_LL.1783303N, Parent Sample ID: AK200929A_LL.1783302M

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 23:46, Prep Date: 09/29/2020, Matrix: WW, Dilution: 2.06

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**89.5**	50.0	150.0
M2-6:2FTSA		**99.3**	50.0	150.0
M2-8:2FTSA		**114.5**	50.0	150.0
M2PFTeDA		**159.4**	12.0	218.0
M3PFBS		**103.3**	50.0	150.0
M3PFHxS		**111.1**	50.0	150.0
M4PFHpA		**104.9**	50.0	150.0
M5PFHxA		**110.1**	50.0	150.0
M5PFPeA		**105.6**	50.0	150.0
M6PFDA		**93.5**	50.0	150.0
M7PFUnDA		**118.0**	50.0	150.0
M8FOSA		**110.1**	50.0	150.0
M8PFOA		**116.1**	50.0	150.0
M8PFOS		**94.4**	50.0	150.0
M9-PFNA		**114.8**	50.0	150.0
MPFBA		**106.9**	50.0	150.0
MPFDoDA		**110.5**	50.0	150.0
d3N-MeFOSAA		**121.3**	50.0	150.0
d5EtFOSAA		**104.5**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF200929W1

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Blank (BLK)

Lab Sample ID: AK200929A_LL.BLK200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 19:32, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Analyte	Flags	Conc	RDL	Units
PFBA		ND	10	ng/l
PFPeA		ND	4	ng/l
4:2 FTSA		ND	2	ng/l
PFHxA		ND	2	ng/l
PFBS		ND	2	ng/l
HFPO-DA		ND	2	ng/l
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
ADONA		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
PFDA		ND	2	ng/l
PFOS-BR		ND	2	ng/l
PFOS		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS-LN		ND	2	ng/l
PFUnDA		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
PFNS		ND	2	ng/l
PFDoDA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTrDA		ND	2	ng/l
11CL-PF3OUdS		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 18:53, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		100.0	70.0	130.0
PFPeA		99.1	70.0	130.0
4:2 FTSA		91.3	70.0	130.0
PFHxA		101.0	70.0	130.0
PFBS		106.0	70.0	130.0
HFPO-DA		109.0	70.0	130.0
PFHpA		81.3	70.0	130.0
PFPeS		108.0	70.0	130.0
ADONA		94.4	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF200929W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 18:53, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		91.6	70.0	130.0
PFOA		90.1	70.0	130.0
PFHxS		102.0	70.0	130.0
PFNA		107.0	70.0	130.0
8:2 FTSA		87.5	70.0	130.0
PFHpS		103.0	70.0	130.0
N-MeFOSAA		91.9	70.0	130.0
PFDA		88.8	70.0	130.0
PFOS		96.1	70.0	130.0
EtFOSAA		102.0	70.0	130.0
PFUnDA		100.0	70.0	130.0
9CL-PF3ONS		88.1	70.0	130.0
PFNS		97.7	70.0	130.0
PFDoDA		93.3	70.0	130.0
PFDS		97.3	70.0	130.0
PFTrDA		85.8	70.0	130.0
11CL-PF3OUdS		97.1	70.0	130.0
FOSA		95.4	70.0	130.0
PFTeDA		101.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK200929A_LL.LCSD200929A, Parent Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 19:13, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		98.7	70.0	130.0	1.3	30.0
PFPeA		98.3	70.0	130.0	0.8	30.0
4:2 FTSA		91.1	70.0	130.0	0.2	30.0
PFHxA		96.4	70.0	130.0	4.7	30.0
PFBS		102.0	70.0	130.0	3.8	30.0
HFPO-DA		99.5	70.0	130.0	9.1	30.0
PFHpA		86.6	70.0	130.0	6.3	30.0
PFPeS		97.8	70.0	130.0	9.9	30.0
ADONA		90.7	70.0	130.0	4.0	30.0
6:2 FTSA		101.0	70.0	130.0	9.8	30.0
PFOA		93.1	70.0	130.0	3.3	30.0
PFHxS		102.0	70.0	130.0	0.0	30.0
PFNA		91.7	70.0	130.0	15.4	30.0
8:2 FTSA		82.4	70.0	130.0	6.0	30.0
PFHpS		101.0	70.0	130.0	2.0	30.0
N-MeFOSAA		106.0	70.0	130.0	14.2	30.0
PFDA		100.0	70.0	130.0	11.9	30.0
PFOS		86.4	70.0	130.0	10.6	30.0
EtFOSAA		91.1	70.0	130.0	11.3	30.0
PFUnDA		97.9	70.0	130.0	2.1	30.0
9CL-PF3ONS		83.3	70.0	130.0	5.6	30.0
PFNS		88.6	70.0	130.0	9.8	30.0

Organics - Volatiles, Prep Batch ID: PF200929W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK200929A_LL.LCSD200929A, Parent Sample ID: AK200929A_LL.LCS200929A

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 19:13, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		82.8	70.0	130.0	11.9	30.0
PFDS		93.5	70.0	130.0	4.0	30.0
PFTrDA		90.5	70.0	130.0	5.3	30.0
11CL-PF3OUdS		92.6	70.0	130.0	4.7	30.0
FOSA		102.0	70.0	130.0	6.7	30.0
PFTeDA		93.7	70.0	130.0	7.5	30.0

Matrix Spike (MS)

Lab Sample ID: AK200929A_LL.1783302M, Parent Sample ID: S17833.01

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 23:26, Prep Date: 09/29/2020, Matrix: WW, Dilution: 1.94

Analyte	Flags	% Rec	LCL	UCL
PFBA		96.9	70.0	130.0
PFPeA		97.9	70.0	130.0
4:2 FTSA		89.7	70.0	130.0
PFHxA		90.7	70.0	130.0
PFBS		101.0	70.0	130.0
PFHpA		90.7	70.0	130.0
PFPeS		100.0	70.0	130.0
6:2 FTSA		99.0	70.0	130.0
PFOA		90.7	70.0	130.0
PFHxS		95.9	70.0	130.0
PFNA		103.1	70.0	130.0
8:2 FTSA		78.4	70.0	130.0
PFHpS		103.1	70.0	130.0
PFDA		103.1	70.0	130.0
N-MeFOSAA		100.0	70.0	130.0
EtFOSAA		86.6	70.0	130.0
PFOS		102.1	70.0	130.0
PFUnDA		103.1	70.0	130.0
PFNS		99.0	70.0	130.0
PFDoDA		85.6	70.0	130.0
PFDS		103.1	70.0	130.0
PFTrDA		88.7	70.0	130.0
FOSA		97.9	70.0	130.0
PFTeDA		93.8	70.0	130.0
11CL-PF3OUdS		91.8	70.0	130.0
9CL-PF3ONS		91.8	70.0	130.0
ADONA		88.7	70.0	130.0
HFPO-DA		102.1	70.0	130.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK200929A_LL.1783303N, Parent Sample ID: AK200929A_LL.1783302M

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 23:46, Prep Date: 09/29/2020, Matrix: WW, Dilution: 2.06

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		97.1	70.0	130.0	6.2	30.0
PFPeA		97.1	70.0	130.0	5.1	30.0

Organics - Volatiles, Prep Batch ID: PF200929W1 (continued)

Surrogates: Yes, QC Types: BLK/LCS/LCSD/MS/MSD

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: AK200929A_LL.1783303N, Parent Sample ID: AK200929A_LL.1783302M

Run in Batch: AK200929A_LL, Run Date: 09/29/2020 23:46, Prep Date: 09/29/2020, Matrix: WW, Dilution: 2.06

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
4:2 FTSA		91.3	70.0	130.0	7.7	30.0
PFHxA		92.2	70.0	130.0	7.7	30.0
PFBS		97.1	70.0	130.0	2.0	30.0
PFHpA		88.3	70.0	130.0	3.4	30.0
PFPeS		106.8	70.0	130.0	12.6	30.0
6:2 FTSA		97.1	70.0	130.0	4.1	30.0
PFOA		91.3	70.0	130.0	6.6	30.0
PFHxS		86.4	70.0	130.0	4.4	30.0
PFNA		92.2	70.0	130.0	5.1	30.0
8:2 FTSA		78.6	70.0	130.0	6.4	30.0
PFHpS		92.2	70.0	130.0	5.1	30.0
PFDA		97.1	70.0	130.0	0.0	30.0
N-MeFOSAA		92.2	70.0	130.0	2.1	30.0
EtFOSAA		106.8	70.0	130.0	26.8	30.0
PFOS		97.1	70.0	130.0	1.0	30.0
PFUnDA		94.2	70.0	130.0	3.0	30.0
PFNS		106.8	70.0	130.0	13.6	30.0
PFDoDA		89.3	70.0	130.0	10.3	30.0
PFDS		106.8	70.0	130.0	9.5	30.0
PFTrDA		95.1	70.0	130.0	13.0	30.0
FOSA		97.1	70.0	130.0	5.1	30.0
PFTeDA		97.1	70.0	130.0	9.4	30.0
11CL-PF3OUdS		106.8	70.0	130.0	21.1	30.0
9CL-PF3ONS		97.1	70.0	130.0	11.6	30.0
ADONA		89.3	70.0	130.0	6.7	30.0
HFPO-DA		97.1	70.0	130.0	1.0	30.0

Merit Laboratories, Inc.
2680 East Lansing Dr., East Lansing, MI 48823
Phone (517) 332-0167 Fax (517) 332-4034
www.meritlabs.com

C.O.C. PAGE # 1 OF 1

125020

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford S. Yantz
COMPANY: OBG, Part of Ramboll
ADDRESS: 2260 East Saginaw
CITY: East Lansing STATE: MI ZIP CODE: 48823
PHONE NO.: 313 333 0211 FAX NO.: — P.O. NO.:
E-MAIL ADDRESS: Clifford.Yantz@ramboll.com QUOTE NO.:

INVOICE TO

CONTACT NAME: ☒ SAME
COMPANY:
ADDRESS:
CITY: STATE: ZIP CODE:
PHONE NO.: E-MAIL ADDRESS:

PROJECT NO./NAME: RACER Coldwater Rd
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Will Laughner / Cliff Yantz

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=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID SL=SLUDGE DW=DRINKING WATER O=OIL WP=WIPE A=AIR W=WASTE

ANALYSIS (ATTACH LIST IF MORE SPACE IS REQUIRED)

Certifications
☐ OHIO VAP ☐ Drinking Water
☐ DoD ☐ NPDES

Project Locations
☐ Detroit ☐ New York
☐ Other

Special Instructions

MERIT LAB NO. (FOR LAB USE ONLY)	YEAR DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (7979)
176860.01	9/21/20	08:30	FB-09-21-20	GW	3	X							X
.02	↓	08:45	03-PRLL-20-PRIM	L	3	X							X
.03	↓	09:00	03-PRLL-20-INF	L	3	X							X
.04	9/23/20	10:54	03-PRLL-20-EFF-159	L	3	X							X
.05	↓	10:57	03-PRLL-20-MID-1-159	L	3	X							X
.06	↓	11:02	03-PRLL-20-MID-2-159	L	3	X							X
.07	↓	11:05	03-PRLL-20-PRIM-159	L	3	X							X

Special Instructions: ASTM D7979 low level reporting limit with estimated values

WHL

			DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION		☒ Sampler	9/23/20	1305
RECEIVED BY: SIGNATURE/ORGANIZATION			9/23/20	1305
RELINQUISHED BY: SIGNATURE/ORGANIZATION			9/23/20	1430
RECEIVED BY: SIGNATURE/ORGANIZATION			9/23/20	1430

RELINQUISHED BY: SIGNATURE/ORGANIZATION — DATE — TIME
RECEIVED BY: SIGNATURE/ORGANIZATION — DATE — TIME

SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS
SEAL NO. — SEAL INTACT YES ☐ NO ☐ — INITIALS

NOTES: TEMP. ON ARRIVAL 4.4

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

Rev. 5.18.12