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 2021 through September 2021***
Permit No.: 6-08-04-04-GML1
FILE: 1088190/1940100783/Docs

Dear **Mr. Hutchings:**

October 25, 2021

In accordance with requirements of the above referenced discharge permit, we are providing you with the following discharge information for the period July 1, 2021 to September 30, 2021 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.

Ramboll
2090 Commonwealth Blvd.
Ann Arbor, MI 48105
USA

T 734-761-4000
F 734-761-2050
https://ramboll.com

- Periodic Report on Continued Compliance, certification
- Periodic Report on Continued Compliance 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 August 25, 2021.
- Analytical Reports provided by Merit Laboratories, Inc. for samples from the on-Site, PFAS pretreatment system collected on September 14, 2021 and September 16, 2021 during the discharge of the liquids from the on-Site, above ground collection tank through the system.
- Copy of Chain-of-Custody forms.

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 sample 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 14, 2021 and September 16, 2021 during the accumulation tank discharge. The influent sample collected on September 14, 2021 had a detection of 6,000 ng/L for PFOS.

PFOS was detected at 11 ng/L in the sample collected from the primary GAC drum on September 16, 2021. The PFAS analytical results from the secondary, tertiary, and effluent GAC drums collected on September 16, 2021 were non-detect. The primary GAC drum will remain in place for the next discharge event.

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

Yours sincerely,
RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

Clifford S. Yantz
Managing 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, 2021 through September 30, 2021

Average Volume of Daily Discharge (during reporting period): 2,325.66 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: Managing Hydrogeologist, Ramboll Americas Engineering Solutions, Inc., As agent for the RACER Trust

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

Date Signed by Authorized Representative: 10/25/21

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 - 2021 - 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	5.1	5.8	<2	7.50	0.04	38
Test Method	4500-NH3 D	10360	1664A	4500-H+ B	4500-PE	2540 D
Test Date	9/1/2021	8/31/2021	9/1/2021	8/25/2021	8/27/2021	8/26/2021
Sample Date	8/25/2021	8/25/2021	8/25/2021	8/25/2021	8/25/2021	8/25/2021
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 - 2021 - 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	0.008	0.042	0.461	<0.0002	0.140	0.017	<0.002
Test Method	200.8	200.8	200.8	245.1	200.8	200.8	1677
Test Date	8/26/2021	8/26/2021	8/26/2021	8/26/2021	8/26/2021	8/26/2021	8/27/2021
Sample Date	8/25/2021	8/25/2021	8/25/2021	8/25/2021	8/25/2021	8/25/2021	8/25/2021
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 2021
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)	(F)	pH
9/14/2021 - 9/16/2021	753,369	760,346	**6,977**	11:20 AM (9/14/21)	9:15 AM (9/16/21)	2.53	23.4	74.1	7.14

Total Discharge Volume (3 Days): 6,977
Average Discharge Volume (3 Days): 2,325.66

NOTES :

TABLE 3
RACER Trust - Coldwater Road
Pre-and Polyfluroalkyl Substances (PFAS) Sampling Results - September 2021

Coldwater Road - PFAS Pretreatment System Samples

Perfluorinated Compound	Well/Sample ID:	EGLE Drinking Water Maximum Contaminant Levels (MCLs)	EGLE Rule 57 Surface Water Quality Values - Non-Drinking Water	03-PRCC-21-INF (Influent Sample)	03-PRCC-21-PRIM (Primary GAC Drum Sample)	03-PRCC-21-PRIM-155 (Primary GAC Drum Sample after 155 Bed Volumes)	03-PRCC-21-MID-1-155 (Secondary GAC Drum Sample after 155 Bed Volumes)	03-PRCC-21-MID-2-155 (Tertiary GAC Drum Sample after 155 Bed Volumes)	03-PRCC-21-EFF-155 (Effluent Sample after 155 Bed Volumes)
	Sample Date:			*9/14/2021*	*9/14/2021*	*9/16/2021*	*9/16/2021*	*9/16/2021*	*9/16/2021*
Perfluorobutanoic Acid (PFBA)		--	--	<9.8 I	**15**	<10	<9.7	<11	<9.8
Perfluoropentanoic Acid (PFPeA)		--	--	<69 X	**2.4 J**	<4.0	<3.9	<4.3	<3.9
4:2 Fluorotelomer Sulfonic Acid (4:2 FTSA)		--	--	<2.0 I	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorohexanoic Acid (PFHxA)		**400,000**	--	<88 X	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorobutane Sulfonic Acid (PFBS)		**420**	--	**88**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluoroheptanoic Acid (PFHpA)		--	--	**24**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluoropentane Sulfonic Acid (PFPeS)		--	--	**160**	<1.9	<2.0	<1.9	<2.1	<2.0
6:2 Fluorotelomer Sulfonic Acid (6:2 FTSA)		--	--	<3.9	<3.9	<4.0	<3.9	<4.3	<3.9
Perfluorooctanoic Acid (**PFOA**)		**8**	**12,000**	**70**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorohexane Sulfonic Acid (PFHxS)		**51**	--	**440**	**1.6 J**	<2.0	<1.9	<2.1	<2.0
Perfluorohexane Sulfonic Acid - LN (PFHxS-LN)		--	--	**360**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorohexane Sulfonic Acid - BR (PFHxS-BR)		--	--	**79**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorononanoic Acid (PFNA)		**6**	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
8:2 Fluorotelomer Sulfonic Acid (8:2 FTSA)		--	--	<3.9	<3.9	<4.0	<3.9	<4.3	<3.9
Perfluoroheptane Sulfonic Acid (PFHpS)		--	--	**98**	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorodecanoic Acid (PFDA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
N-methyl Perfluorooctanesulfonamidoacetic Acid (N-MeFOSAA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
N-Ethyl Perfluorooctane Sulfonamidoacetic Acid (EtFOSAA)		--	--	<3.9	<3.9	<4.0	<3.9	<4.3	<3.9
Perfluorooctane Sulfonic Acid (**PFOS**)		**16**	**12**	**6,000**	**12**	**11**	<1.9	<2.1	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-LN)		--	--	**3,600**	**5.7**	**8.8**	<1.9	<2.1	<2.0
Perfluorooctane Sulfonic Acid (**PFOS**-BR)		--	--	**2,200**	**6.4**	**2.5**	<1.9	<2.1	<2.0
Perfluoroundecanoic Acid (PFUnDA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorononane Sulfonic Acid (PFNS)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorododecanoic Acid (PFDoDA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorodecane Sulfonic Acid (PFDS)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorotridecanoic Acid (PFTrDA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorooctane Sulfonamide (FOSA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Perfluorotetradecanoic Acid (PFTeDA)		--	--	<3.9	<3.9	<4.0	<3.9	<4.3	<3.9
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
9-chlorohexadecafluoro-3-oxanone1-sulfonic acid (9Cl-PF3ONS)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
4,8-dioxa-3H-perfluorononanoic acid (ADONA)		--	--	<2.0	<1.9	<2.0	<1.9	<2.1	<2.0
Hexafluoropropylene oxide dimer (HFPO-DA)		**370**	--	<9.8	<9.7	<10	<9.7	<11	<9.8
Total Per-and Polyfluroalkyl Substances		--	--	**6,880.0**	**31.0**	**11.0**	**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 Drinking Water Maximum Contaminant Levels (MCLs) and/or Rule 57 Surface water quality values 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) I - Matrix interference with internal standard.
9) J - Estimated value less than reporting limit, but greater than MDL.
10) X - Elevated reporting limit due to matrix interference.

ANALYTICAL REPORTS

Analytical Laboratory Report

Report ID: S27511.01(01)+QC01
Generated on 09/03/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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

Addtional Contacts: Kevin Schneider

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): S27511.01
Project: RACER Coldwater Road
Collected Date(s): 08/25/2021
Submitted Date/Time: 08/25/2021 16:00
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 1)

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
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
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
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

Analytical Laboratory Report

Sample Summary (1 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S27511.01	03-PRCC-21	Wastewater	08/25/21 10:40

Analytical Laboratory Report

Lab Sample ID: S27511.01
Sample Tag: 03-PRCC-21
Collected Date/Time: 08/25/2021 10:40
Matrix: Wastewater
COC Reference: 139337

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	32oz Glass	HCL	Yes	4.0	IR
1	1L Plastic	None	Yes	4.0	IR
1	500ml Plastic	None	Yes	4.0	IR
1	125ml Plastic	HNO3	Yes	4.0	IR
1	250ml Plastic	H2SO4	Yes	4.0	IR
1	125ml Amber	NaOH	Yes	4.0	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Mercury Digestion	Completed	E245.1	08/26/21 09:30	JRH	
TBOD5 - Set*	Completed	HACH 10360	08/26/21 16:30	PJH	
Metal Digestion	Completed	SW3015A	08/26/21 10:40	CCM	

Inorganics

Method: E1664A, Run Date: 09/01/21 17:00, Analyst: JWR

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

Method: HACH 10360, Run Date: 08/31/21 17:12, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
TBOD5*	5.8	3		mg/L	1.5		

Method: SM2540D, Run Date: 08/26/21 19:10, Analyst: ASB

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Suspended Solids	38	3		mg/L	4.00		

Method: SM4500-NH3 D, Run Date: 09/01/21 13:32, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Ammonia-N (Undistilled)	5.1	0.2	0.03	mg/L	10	7664-41-7	

Method: SM4500-PE, Run Date: 08/27/21 18:37, Analyst: MJC

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Total Phosphorus	0.04	0.01	0.009	mg/L	1	7723-14-0	

Metals

Method: E200.8, Run Date: 08/26/21 13:08, Analyst: CCM

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
Arsenic	0.008	0.002		mg/L	5	7440-38-2	
Chromium	0.042	0.005		mg/L	5	7440-47-3	
Copper	0.461	0.005		mg/L	5	7440-50-8	
Nickel	0.140	0.005		mg/L	5	7440-02-0	
Zinc	0.017	0.005		mg/L	5	7440-66-6	

Lab Sample ID: S27511.01 (continued)

Sample Tag: 03-PRCC-21

Method: E245.1, Run Date: 08/26/21 13:53, 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: 08/27/21 11:27, 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: S27511.01(01)+QC01
Generated on 09/03/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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): S27511.01
Project: RACER Coldwater Road
Submitted Date/Time: 08/25/2021 16:00
Sampled by: Kevin Schneider
P.O. #: 1940002628 (TASK 1)

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: S27511.01
Sample Tag: 03-PRCC-21
Collected Date/Time: 08/25/2021 10:40
Matrix: Wastewater
COC Reference: 139337

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Inorganics						
Ammonia-N (Undistilled)	SM4500-NH3 D	09/01/21 13:32	AMN210901QC	AMN210901QC	No	BLK/LCS/MS/DUP
Oil & Grease n-Hexane Extract.	E1664A	09/01/21 17:00	OGHEX210901W1	OGHEX210901W1	No	BLK/LCS
TBOD5	HACH 10360	08/31/21 17:12	BOD210826	BOD210826	No	BLK/LCS/DUP
Total Phosphorus	SM4500-PE	08/27/21 18:37	PHS210827QC	PHS210827QC	No	BLK/LCS/MS/DUP
Total Suspended Solids	SM2540D	08/26/21 19:10	TSS210826	TSS210826	No	BLK/LCS/DUP
Metals						
Arsenic	E200.8	08/26/21 13:08	MT4-21-0826A	MTD-082621-2	No	BLK/LCS/MS/MSD
Chromium	E200.8	08/26/21 13:08	MT4-21-0826A	MTD-082621-2	No	BLK/LCS/MS/MSD
Copper	E200.8	08/26/21 13:08	MT4-21-0826A	MTD-082621-2	No	BLK/LCS/MS/MSD
Mercury	E245.1	08/26/21 13:53	HG2-HG3-21-0826A	HGD-082621-1	No	BLK/LCS/MS/MSD
Nickel	E200.8	08/26/21 13:08	MT4-21-0826A	MTD-082621-2	No	BLK/LCS/MS/MSD
Zinc	E200.8	08/26/21 13:08	MT4-21-0826A	MTD-082621-2	No	BLK/LCS/MS/MSD
Other / Misc.						
Available Cyanide	OIA-1677	08/27/21 11:27	ACN210827-W1	ACN210827-W1	No	BLK/LCS/MS/MSD/DU

QC Report - Prep Batch Summary

Inorganics, Prep Batch ID: AMN210901QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Ammonia-N (Undistilled)	SM4500-NH3 D	09/01/21 13:32	AMN210901QC

Inorganics, Prep Batch ID: BOD210826

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	TBOD5	HACH 10360	08/31/21 17:12	BOD210826

Inorganics, Prep Batch ID: OGHEX210901W1

Surrogates: No, QC Types: BLK/LCS

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Oil & Grease n-Hexane Extract.	E1664A	09/01/21 17:00	OGHEX210901W1

Inorganics, Prep Batch ID: PHS210827QC

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Total Phosphorus	SM4500-PE	08/27/21 18:37	PHS210827QC

Inorganics, Prep Batch ID: TSS210826

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Total Suspended Solids	SM2540D	08/26/21 19:10	TSS210826

Metals, Prep Batch ID: HGD-082621-1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Mercury	E245.1	08/26/21 13:53	HG2-HG3-21-0826A

Metals, Prep Batch ID: MTD-082621-2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Arsenic	E200.8	08/26/21 13:08	MT4-21-0826A
S27511.01	Chromium	E200.8	08/26/21 13:08	MT4-21-0826A
S27511.01	Copper	E200.8	08/26/21 13:08	MT4-21-0826A
S27511.01	Nickel	E200.8	08/26/21 13:08	MT4-21-0826A
S27511.01	Zinc	E200.8	08/26/21 13:08	MT4-21-0826A

Other / Misc., Prep Batch ID: ACN210827-W1

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S27511.01	Available Cyanide	OIA-1677	08/27/21 11:27	ACN210827-W1

Inorganics, Prep Batch ID: AMN210901QC

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

Blank (BLK)

Lab Sample ID: AMN210901QC.LRB1

Run in Batch: AMN210901QC, Run Date: 09/01/2021 10:30, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: AMN210901QC.LCS1

Run in Batch: AMN210901QC, Run Date: 09/01/2021 11:38, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		99	90	110

Matrix Spike (MS)

Lab Sample ID: AMN210901QC.MS1, Parent Sample ID: S27582.02

Run in Batch: AMN210901QC, Run Date: 09/01/2021 12:44, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		108	80	120

Matrix Spike (MS)

Lab Sample ID: AMN210901QC.MS2, Parent Sample ID: S27640.02

Run in Batch: AMN210901QC, Run Date: 09/01/2021 17:43, Prep Date: 09/01/2021, Matrix: Solid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Ammonia-N (Undistilled)		99	80	120

Duplicate (DUP)

Lab Sample ID: AMN210901QC.DP1, Parent Sample ID: S27582.01

Run in Batch: AMN210901QC, Run Date: 09/01/2021 12:10, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		0.8	20

Duplicate (DUP)

Lab Sample ID: AMN210901QC.DP2, Parent Sample ID: S27640.02

Run in Batch: AMN210901QC, Run Date: 09/01/2021 17:35, Prep Date: 09/01/2021, Matrix: Solid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Ammonia-N (Undistilled)		0.0	20

Inorganics, Prep Batch ID: BOD210826

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

Blank (BLK)

Lab Sample ID: BOD210826.LRB1

Run in Batch: BOD210826, Run Date: 08/31/2021 17:12, Prep Date: 08/31/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
TBOD5		ND	3	mg/L

Laboratory Control Sample (LCS)

Lab Sample ID: BOD210826.LCS1

Run in Batch: BOD210826, Run Date: 08/31/2021 17:12, Prep Date: 08/31/2021, Matrix: Liquid, Dilution: 20

Analyte	Flags	% Rec	LCL	UCL
TBOD5		105.2	50.8	166

Duplicate (DUP)

Lab Sample ID: BOD210826.DP1, Parent Sample ID: S27498.01

Run in Batch: BOD210826, Run Date: 08/31/2021 17:12, Prep Date: 08/31/2021, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		1.0	20

Duplicate (DUP)

Lab Sample ID: BOD210826.DP2, Parent Sample ID: S27498.02

Run in Batch: BOD210826, Run Date: 08/31/2021 17:12, Prep Date: 08/31/2021, Matrix: Liquid, Dilution: 60

Analyte	Flags	RPD	RPD CL
TBOD5		1.2	20

Duplicate (DUP)

Lab Sample ID: BOD210826.DP3, Parent Sample ID: S27541.02

Run in Batch: BOD210826, Run Date: 08/31/2021 17:12, Prep Date: 08/31/2021, Matrix: Liquid, Dilution: 300

Analyte	Flags	RPD	RPD CL
TBOD5		0.7	20

Inorganics, Prep Batch ID: OGHEX210901W1

Surrogates: No, QC Types: BLK/LCS

Blank (BLK)

Lab Sample ID: OGHEX210901W1.LRB3

Run in Batch: OGHEX210901W1, Run Date: 09/01/2021 17:00, Prep Date: 09/01/2021, 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: OGHEX210901W1.LCS1

Run in Batch: OGHEX210901W1, Run Date: 09/01/2021 17:00, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		105	78	114

Laboratory Control Sample (LCS)

Lab Sample ID: OGHEX210901W1.LCS2

Run in Batch: OGHEX210901W1, Run Date: 09/01/2021 17:00, Prep Date: 09/01/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Oil & Grease n-Hexane Extract.		105	78	114

Inorganics, Prep Batch ID: PHS210827QC

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

Blank (BLK)

Lab Sample ID: PHS210827QC.LRB1

Run in Batch: PHS210827QC, Run Date: 08/27/2021 12:29, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: PHS210827QC.LRB2

Run in Batch: PHS210827QC, Run Date: 08/27/2021 12:36, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: PHS210827QC.LCS1

Run in Batch: PHS210827QC, Run Date: 08/27/2021 12:39, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		97	90	110

Matrix Spike (MS)

Lab Sample ID: PHS210827QC.MS1, Parent Sample ID: S27547.01

Run in Batch: PHS210827QC, Run Date: 08/27/2021 13:24, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Total Phosphorus		96	80	120

Duplicate (DUP)

Lab Sample ID: PHS210827QC.DP1, Parent Sample ID: S27513.02

Run in Batch: PHS210827QC, Run Date: 08/27/2021 13:21, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Total Phosphorus		3.0	20

Inorganics, Prep Batch ID: TSS210826

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

Blank (BLK)

Lab Sample ID: TSS210826.LRB1

Run in Batch: TSS210826, Run Date: 08/26/2021 19:10, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1.00

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

Laboratory Control Sample (LCS)

Lab Sample ID: TSS210826.LCS1

Run in Batch: TSS210826, Run Date: 08/26/2021 19:10, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 10.0

Analyte	Flags	% Rec	LCL	UCL
Total Suspended Solids		105.0	80.9	112

Duplicate (DUP)

Lab Sample ID: TSS210826.DP1, Parent Sample ID: S27541.02

Run in Batch: TSS210826, Run Date: 08/26/2021 19:10, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 40.0

Analyte	Flags	RPD	RPD CL
Total Suspended Solids		0.6	5

QC Report - Batch QC Results

Metals, Prep Batch ID: HGD-082621-1

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

Blank (BLK)

Lab Sample ID: HG2-HG3-21-0826A.015

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:13, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	Conc	RDL	Units
Mercury		ND	0.05	ug/L

Laboratory Control Sample (LCS)

Lab Sample ID: HG2-HG3-21-0826A.014

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:11, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		88	85	115

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-21-0826A.021, Parent Sample ID: S27370.01

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:24, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL
Mercury		98	80	120

Matrix Spike (MS)

Lab Sample ID: HG2-HG3-21-0826A.031, Parent Sample ID: S27510.01

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:50, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Mercury		94	80	120

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-21-0826A.022, Parent Sample ID: HG2-HG3-21-0826A.021

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:26, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 2

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		101	80	120	3	20

Matrix Spike Duplicate (MSD)

Lab Sample ID: HG2-HG3-21-0826A.032, Parent Sample ID: HG2-HG3-21-0826A.031

Run in Batch: HG2-HG3-21-0826A, Run Date: 08/26/2021 13:52, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Mercury		94	80	120	1	20

Metals, Prep Batch ID: MTD-082621-2

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

Blank (BLK)

Lab Sample ID: MT4-21-0826A.020.LRB

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 11:44, Prep Date: 08/26/2021, 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: MT4-21-0826A.019.LCS

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 11:42, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Arsenic		100	85	115
Chromium		102	85	115
Copper		100	85	115
Nickel		101	85	115
Zinc		102	85	115

Matrix Spike (MS)

Lab Sample ID: MT4-21-0826A.041.MS, Parent Sample ID: S27335.02

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 12:25, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 25

Analyte	Flags	% Rec	LCL	UCL
Arsenic		116	75	125
Chromium		111	75	125
Copper		103	75	125
Nickel		104	75	125
Zinc		110	75	125

Matrix Spike (MS)

Lab Sample ID: MT4-21-0826A.064.MS, Parent Sample ID: S27501.02

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 13:18, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL
Arsenic		110	75	125
Chromium		110	75	125
Copper		105	75	125
Nickel		101	75	125
Zinc		111	75	125

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-21-0826A.042.MSD, Parent Sample ID: MT4-21-0826A.041.MS

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 12:27, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 25

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		113	75	125	3	20
Chromium		112	75	125	1	20
Copper		102	75	125	1	20
Nickel		106	75	125	2	20
Zinc		109	75	125	1	20

Metals, Prep Batch ID: MTD-082621-2 (continued)

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

Matrix Spike Duplicate (MSD)

Lab Sample ID: MT4-21-0826A.065.MSD, Parent Sample ID: MT4-21-0826A.064.MS

Run in Batch: MT4-21-0826A, Run Date: 08/26/2021 13:19, Prep Date: 08/26/2021, Matrix: Liquid, Dilution: 5

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Arsenic		108	75	125	3	20
Chromium		108	75	125	2	20
Copper		104	75	125	0	20
Nickel		102	75	125	0	20
Zinc		112	75	125	0	20

Other / Misc., Prep Batch ID: ACN210827-W1

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

Blank (BLK)

Lab Sample ID: ACN210827-W1.LRB1

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 10:59, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

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

Blank (BLK)

Lab Sample ID: ACN210827-W1.LRB2

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 11:47, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

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

Laboratory Control Sample (LCS)

Lab Sample ID: ACN210827-W1.LCS1

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 11:03, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		97	88	109

Matrix Spike (MS)

Lab Sample ID: ACN210827-W1.MS1, Parent Sample ID: S27552.01

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 11:17, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
Available Cyanide		86	82	130

Matrix Spike Duplicate (MSD)

Lab Sample ID: ACN210827-W1.MSD1, Parent Sample ID: ACN210827-W1.MS1

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 11:19, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
Available Cyanide		86	82	130	0	15

Duplicate (DUP)

Lab Sample ID: ACN210827-W1.DP1, Parent Sample ID: S27552.01

Run in Batch: ACN210827-W1, Run Date: 08/27/2021 11:13, Prep Date: 08/27/2021, Matrix: Liquid, Dilution: 1

Analyte	Flags	RPD	RPD CL
Available Cyanide		<1	15

Merit Laboratories Login Checklist

Lab Set ID: S27511
Client: OBG02 (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 08/25/2021 16:00 Login User: PFD

Attention: Clifford Yantz
Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 4.0
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.	[ ] 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 Bottle Preservation Check

Lab Set ID: S27511 Submitted: 08/25/2021 16:00

Client: OBG02 (Ramboll Americas)

Project: RACER Coldwater Road

Initial Preservation Check: 08/25/2021 16:35 PFD

Preservation Recheck (E200.8): N/A

Attention: Clifford Yantz
Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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

Sample ID	Bottle / Preservation	pH (Orig)	Add ml	pH (New)	Notes
S27511.01	125ml Amber NaOH	>12			
S27511.01	125ml Plastic HNO3	<2			
S27511.01	250ml Plastic H2SO4	<2			
S27511.01	32oz Glass HCL	4	2.0	<2	Lot# 2020080697

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

139337

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford Yantz / Kevin Schneider
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: 313-333-0211 FAX NO.:
P.O. NO.: 1940002628 (task1)
E-MAIL ADDRESS: clifford.Yantz@Ramboll.com / Kevin.Schneider@Ramboll.com
QUOTE NO.:

INVOICE TO

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

PROJECT NO./NAME: RALER Coldwater Road
SAMPLER(S) - PLEASE PRINT/SIGN NAME: Kevin Schneider

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	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)	Special Instructions
27511.01	8/25/21	1040	03-PRCC-21	ww	6	2	1	1	1			1	X	X	X	X	X	X	Metals Are: As, Cu, Cr, Hg, Ni, Zn
																			Analysis Per City of Flint Including QC Report
																			Field Temp 74.5 °F
																			Field pH 7.50

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
☒ Sampler	8/25/21	1505
RECEIVED BY: SIGNATURE/ORGANIZATION	8/25/21	1510
RELINQUISHED BY: SIGNATURE/ORGANIZATION	8/25/21	1610
RECEIVED BY: SIGNATURE/ORGANIZATION	8/25/21	1600

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 4.0

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

Rev. 5.18.12

Analytical Laboratory Report

Report ID: S28222.01(01)
Generated on 10/07/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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

Addtional Contacts: Kevin Schneider

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): S28222.01-S28222.06
Project: RACER Coldwater Road
Collected Date(s): 09/14/2021 - 09/16/2021
Submitted Date/Time: 09/16/2021 14:25
Sampled by: Clifford Yantz
P.O. #: 1940002628 (TASK 37)

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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.
Wisconsin PFAs analysis: MDL = LOD; RL = LOQ. LOD and LOQ are adjusted for dilution.

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
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

Analytical Laboratory Report

Sample Summary (6 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S28222.01	03-PRCC-21-INF	Liquid	09/14/21 00:01
S28222.02	03-PRCC-21-PRIM	Liquid	09/14/21 00:01
S28222.03	03-PRCC-21-EFF-155	Liquid	09/16/21 00:01
S28222.04	03-PRCC-21-MID-2-155	Liquid	09/16/21 00:01
S28222.05	03-PRCC-21-MID-1-155	Liquid	09/16/21 00:01
S28222.06	03-PRCC-21-PRIM-155	Liquid	09/16/21 00:01

Analytical Laboratory Report

Lab Sample ID: S28222.01
Sample Tag: 03-PRCC-21-INF
Collected Date/Time: 09/14/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.15/7.04/10	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 21:33, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.96	375-22-4	I
PFPeA*	Not detected	69	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*	Not detected	88	1.4	ng/L	1.96	307-24-4	X
PFBS*	88	2.0	1.4	ng/L	1.96	375-73-5	
PFHpA*	24	2.0	1.4	ng/L	1.96	375-85-9	
PFPeS*	160	2.0	1.8	ng/L	1.96	2706-91-4	
6:2 FTSA*	Not detected	3.9	2.0	ng/L	1.96	27619-97-2	
PFOA*	70	2.0	1.6	ng/L	1.96	335-67-1	
PFHxS*	440	2.0	1.6	ng/L	1.96	355-46-4	
PFHxS-LN*	360	2.0	1.6	ng/L	1.96	355-46-4-LN	
PFHxS-BR*	79	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	3.9	0.98	ng/L	1.96	39108-34-4	
PFHpS*	98	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*	6,000	2.0	1.9	ng/L	1.96	1763-23-1	
PFOS-LN*	3,600	2.0	1.9	ng/L	1.96	1763-23-1-LN	
PFOS-BR*	2,200	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	9.8	2.0	ng/L	1.96	13252-13-6	

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

Analytical Laboratory Report

Lab Sample ID: S28222.02
Sample Tag: 03-PRCC-21-PRIM
Collected Date/Time: 09/14/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.25/7.07/10	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 10:26, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	15	9.7	9.7	ng/L	1.93	375-22-4	
PFPeA*	2.4	3.9	0.97	ng/L	1.93	2706-90-3	J
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.93	757124-72-4	
PFHxA*	Not detected	1.9	1.4	ng/L	1.93	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.93	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.93	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.93	2706-91-4	
6:2 FTSA*	Not detected	3.9	1.9	ng/L	1.93	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.93	335-67-1	
PFHxS*	1.6	1.9	1.5	ng/L	1.93	355-46-4	J
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.93	375-95-1	
8:2 FTSA*	Not detected	3.9	0.97	ng/L	1.93	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.93	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.93	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.93	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.93	2991-50-6	
PFOS*	12	1.9	1.9	ng/L	1.93	1763-23-1	
PFOS-LN*	5.7	1.9	1.9	ng/L	1.93	1763-23-1-LN	
PFOS-BR*	6.4	1.9	1.9	ng/L	1.93	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.93	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.93	68259-12-1	
PFDoDA*	Not detected	1.9	1.5	ng/L	1.93	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.93	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.93	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.93	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.93	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.93	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.93	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.93	919005-14-4	
HFPO-DA*	Not detected	9.7	1.9	ng/L	1.93	13252-13-6	

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

Analytical Laboratory Report

Lab Sample ID: S28222.03
Sample Tag: 03-PRCC-21-EFF-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.68/7.03/11	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 10:45, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.8	9.8	ng/L	1.95	375-22-4	
PFPeA*	Not detected	3.9	0.98	ng/L	1.95	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	1.95	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	1.95	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	1.95	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	1.95	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	1.95	2706-91-4	
6:2 FTSA*	Not detected	3.9	2.0	ng/L	1.95	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	1.95	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	1.95	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	1.95	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	1.95	375-95-1	
8:2 FTSA*	Not detected	3.9	0.98	ng/L	1.95	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	1.95	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	1.95	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	1.95	2355-31-9	
EtFOSAA*	Not detected	3.9	2.0	ng/L	1.95	2991-50-6	
PFOS*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1	
PFOS-LN*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-LN	
PFOS-BR*	Not detected	2.0	1.9	ng/L	1.95	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	1.95	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	1.95	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	1.95	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	1.95	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	1.95	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	1.95	754-91-6	
PFTeDA*	Not detected	3.9	1.8	ng/L	1.95	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	1.95	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	1.95	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	1.95	919005-14-4	
HFPO-DA*	Not detected	9.8	2.0	ng/L	1.95	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S28222.04
Sample Tag: 03-PRCC-21-MID-2-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.15/6.99/11	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 21:52, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	11	11	ng/L	2.13	375-22-4	
PFPeA*	Not detected	4.3	1.1	ng/L	2.13	2706-90-3	
4:2 FTSA*	Not detected	2.1	1.7	ng/L	2.13	757124-72-4	
PFHxA*	Not detected	2.1	1.5	ng/L	2.13	307-24-4	
PFBS*	Not detected	2.1	1.5	ng/L	2.13	375-73-5	
PFHpA*	Not detected	2.1	1.5	ng/L	2.13	375-85-9	
PFPeS*	Not detected	2.1	1.9	ng/L	2.13	2706-91-4	
6:2 FTSA*	Not detected	4.3	2.1	ng/L	2.13	27619-97-2	
PFOA*	Not detected	2.1	1.7	ng/L	2.13	335-67-1	
PFHxS*	Not detected	2.1	1.7	ng/L	2.13	355-46-4	
PFHxS-LN*	Not detected	2.1	1.7	ng/L	2.13	355-46-4-LN	
PFHxS-BR*	Not detected	2.1	1.7	ng/L	2.13	355-46-4-BR	
PFNA*	Not detected	2.1	1.9	ng/L	2.13	375-95-1	
8:2 FTSA*	Not detected	4.3	1.1	ng/L	2.13	39108-34-4	
PFHpS*	Not detected	2.1	2.1	ng/L	2.13	375-92-8	
PFDA*	Not detected	2.1	2.1	ng/L	2.13	335-76-2	
N-MeFOSAA*	Not detected	2.1	2.1	ng/L	2.13	2355-31-9	
EtFOSAA*	Not detected	4.3	2.1	ng/L	2.13	2991-50-6	
PFOS*	Not detected	2.1	2.1	ng/L	2.13	1763-23-1	
PFOS-LN*	Not detected	2.1	2.1	ng/L	2.13	1763-23-1-LN	
PFOS-BR*	Not detected	2.1	2.1	ng/L	2.13	1763-23-1-BR	
PFUnDA*	Not detected	2.1	1.5	ng/L	2.13	2058-94-8	
PFNS*	Not detected	2.1	1.5	ng/L	2.13	68259-12-1	
PFDoDA*	Not detected	2.1	1.7	ng/L	2.13	307-55-1	
PFDS*	Not detected	2.1	1.5	ng/L	2.13	335-77-3	
PFTrDA*	Not detected	2.1	1.3	ng/L	2.13	72629-94-8	
FOSA*	Not detected	2.1	1.9	ng/L	2.13	754-91-6	
PFTeDA*	Not detected	4.3	1.9	ng/L	2.13	376-06-7	
11Cl-PF3OUdS*	Not detected	2.1	1.9	ng/L	2.13	763051-92-9	
9Cl-PF3ONS*	Not detected	2.1	1.5	ng/L	2.13	756426-58-1	
ADONA*	Not detected	2.1	2.1	ng/L	2.13	919005-14-4	
HFPO-DA*	Not detected	11	2.1	ng/L	2.13	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S28222.05
Sample Tag: 03-PRCC-21-MID-1-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.68/6.99/11	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 22:12, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	9.7	9.7	ng/L	1.93	375-22-4	
PFPeA*	Not detected	3.9	0.97	ng/L	1.93	2706-90-3	
4:2 FTSA*	Not detected	1.9	1.5	ng/L	1.93	757124-72-4	
PFHxA*	Not detected	1.9	1.4	ng/L	1.93	307-24-4	
PFBS*	Not detected	1.9	1.4	ng/L	1.93	375-73-5	
PFHpA*	Not detected	1.9	1.4	ng/L	1.93	375-85-9	
PFPeS*	Not detected	1.9	1.7	ng/L	1.93	2706-91-4	
6:2 FTSA*	Not detected	3.9	1.9	ng/L	1.93	27619-97-2	
PFOA*	Not detected	1.9	1.5	ng/L	1.93	335-67-1	
PFHxS*	Not detected	1.9	1.5	ng/L	1.93	355-46-4	
PFHxS-LN*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-LN	
PFHxS-BR*	Not detected	1.9	1.5	ng/L	1.93	355-46-4-BR	
PFNA*	Not detected	1.9	1.7	ng/L	1.93	375-95-1	
8:2 FTSA*	Not detected	3.9	0.97	ng/L	1.93	39108-34-4	
PFHpS*	Not detected	1.9	1.9	ng/L	1.93	375-92-8	
PFDA*	Not detected	1.9	1.9	ng/L	1.93	335-76-2	
N-MeFOSAA*	Not detected	1.9	1.9	ng/L	1.93	2355-31-9	
EtFOSAA*	Not detected	3.9	1.9	ng/L	1.93	2991-50-6	
PFOS*	Not detected	1.9	1.9	ng/L	1.93	1763-23-1	
PFOS-LN*	Not detected	1.9	1.9	ng/L	1.93	1763-23-1-LN	
PFOS-BR*	Not detected	1.9	1.9	ng/L	1.93	1763-23-1-BR	
PFUnDA*	Not detected	1.9	1.4	ng/L	1.93	2058-94-8	
PFNS*	Not detected	1.9	1.4	ng/L	1.93	68259-12-1	
PFDoDA*	Not detected	1.9	1.5	ng/L	1.93	307-55-1	
PFDS*	Not detected	1.9	1.4	ng/L	1.93	335-77-3	
PFTrDA*	Not detected	1.9	1.2	ng/L	1.93	72629-94-8	
FOSA*	Not detected	1.9	1.7	ng/L	1.93	754-91-6	
PFTeDA*	Not detected	3.9	1.7	ng/L	1.93	376-06-7	
11Cl-PF3OUdS*	Not detected	1.9	1.7	ng/L	1.93	763051-92-9	
9Cl-PF3ONS*	Not detected	1.9	1.4	ng/L	1.93	756426-58-1	
ADONA*	Not detected	1.9	1.9	ng/L	1.93	919005-14-4	
HFPO-DA*	Not detected	9.7	1.9	ng/L	1.93	13252-13-6	

Analytical Laboratory Report

Lab Sample ID: S28222.06
Sample Tag: 03-PRCC-21-PRIM-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	15ml Centrifuge Tube	None	Yes	4.8	IR

Extraction / Prep.

Parameter	Result	Method	Run Date	Analyst	Flags
Initial wt. (g) / Final wt. (g) / Volume (ml)*	12.53/7.03/11	ASTMD7979-19M	09/30/21 15:15	KCV	

Organics

28 PFAs, Method: ASTMD7979-19M, Run Date: 10/01/21 22:31, Analyst: KCV

Parameter	Result	RL	MDL	Units	Dilution	CAS#	Flags
PFBA*	Not detected	10	10	ng/L	2	375-22-4	
PFPeA*	Not detected	4.0	1.0	ng/L	2	2706-90-3	
4:2 FTSA*	Not detected	2.0	1.6	ng/L	2	757124-72-4	
PFHxA*	Not detected	2.0	1.4	ng/L	2	307-24-4	
PFBS*	Not detected	2.0	1.4	ng/L	2	375-73-5	
PFHpA*	Not detected	2.0	1.4	ng/L	2	375-85-9	
PFPeS*	Not detected	2.0	1.8	ng/L	2	2706-91-4	
6:2 FTSA*	Not detected	4.0	2.0	ng/L	2	27619-97-2	
PFOA*	Not detected	2.0	1.6	ng/L	2	335-67-1	
PFHxS*	Not detected	2.0	1.6	ng/L	2	355-46-4	
PFHxS-LN*	Not detected	2.0	1.6	ng/L	2	355-46-4-LN	
PFHxS-BR*	Not detected	2.0	1.6	ng/L	2	355-46-4-BR	
PFNA*	Not detected	2.0	1.8	ng/L	2	375-95-1	
8:2 FTSA*	Not detected	4.0	1.0	ng/L	2	39108-34-4	
PFHpS*	Not detected	2.0	2.0	ng/L	2	375-92-8	
PFDA*	Not detected	2.0	2.0	ng/L	2	335-76-2	
N-MeFOSAA*	Not detected	2.0	2.0	ng/L	2	2355-31-9	
EtFOSAA*	Not detected	4.0	2.0	ng/L	2	2991-50-6	
PFOS*	11	2.0	2.0	ng/L	2	1763-23-1	
PFOS-LN*	8.8	2.0	2.0	ng/L	2	1763-23-1-LN	
PFOS-BR*	2.5	2.0	2.0	ng/L	2	1763-23-1-BR	
PFUnDA*	Not detected	2.0	1.4	ng/L	2	2058-94-8	
PFNS*	Not detected	2.0	1.4	ng/L	2	68259-12-1	
PFDoDA*	Not detected	2.0	1.6	ng/L	2	307-55-1	
PFDS*	Not detected	2.0	1.4	ng/L	2	335-77-3	
PFTrDA*	Not detected	2.0	1.2	ng/L	2	72629-94-8	
FOSA*	Not detected	2.0	1.8	ng/L	2	754-91-6	
PFTeDA*	Not detected	4.0	1.8	ng/L	2	376-06-7	
11Cl-PF3OUdS*	Not detected	2.0	1.8	ng/L	2	763051-92-9	
9Cl-PF3ONS*	Not detected	2.0	1.4	ng/L	2	756426-58-1	
ADONA*	Not detected	2.0	2.0	ng/L	2	919005-14-4	
HFPO-DA*	Not detected	10	2.0	ng/L	2	13252-13-6	

Merit Laboratories Login Checklist

Lab Set ID: S28222
Client: OBG02 (Ramboll Americas)
Project: RACER Coldwater Road
Submitted: 09/16/2021 14:25 Login User: JRM

Attention: Clifford Yantz
Address: Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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

Selection				Description	Note
Sample Receiving					
01.	[X] Yes	[ ] No	[ ] N/A	Samples are received at 4C +/- 2C Thermometer #	IR 4.8
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.	[ ] 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

138946

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford S. Yantz
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd.
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: 3133330211 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 - Colderwater Rd. SAMPLER(S) - PLEASE PRINT/SIGN NAME: Clifford Scott Yantz / Clifford Scott 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	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1937)
28222.01	9/14/21		03-PRCC-21-INF	L	3	3							X
.02	9/14/21		03-PRCC-21-PRIM	L	3	3							X
.03	9/16/21		03-PRCC-21-EFF-155	L	3	3							X
.04	↓		03-PRCC-21-MID-2-155	L	3	3							X
.05			03-PRCC-21-MID-1-155	L	3	3							X
.06	↓		03-PRCC-21-PRIM-155	L	3	3							X

		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	Sampler Clifford Scott Yantz / Ramboll	9/16/21	11:37
RECEIVED BY: SIGNATURE/ORGANIZATION		9/16/21	11:37
RELINQUISHED BY: SIGNATURE/ORGANIZATION		9/16/21	14:25
RECEIVED BY: SIGNATURE/ORGANIZATION		9/16/21	1425

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

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 4.8

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

Rev. 5.18.12

Quality Control Report

Report ID: QC-S28222-01
Generated on 10/07/2021

Report to

Attention: Clifford Yantz
Ramboll Americas
2090 Commonwealth Blvd
Ann Arbor, MI 48105

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): S28222.01-S28222.06
Project: RACER Coldwater Road
Submitted Date/Time: 09/16/2021 14:25
Sampled by: Clifford Yantz
P.O. #: 1940002628 (TASK 37)

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

QC Report - Analysis Summary

Lab Sample ID: S28222.01
Sample Tag: 03-PRCC-21-INF
Collected Date/Time: 09/14/2021 00:01
Matrix: Liquid
COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 21:33	AK211001R	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S28222.02
Sample Tag: 03-PRCC-21-PRIM
Collected Date/Time: 09/14/2021 00:01
Matrix: Liquid
COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 10:26	AK210930B	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S28222.03
Sample Tag: 03-PRCC-21-EFF-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 10:45	AK210930B	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S28222.04
Sample Tag: 03-PRCC-21-MID-2-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 21:52	AK211001R	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

Lab Sample ID: S28222.05

Sample Tag: 03-PRCC-21-MID-1-155

Collected Date/Time: 09/16/2021 00:01

Matrix: Liquid

COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 22:12	AK211001R	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Analysis Summary

Lab Sample ID: S28222.06
Sample Tag: 03-PRCC-21-PRIM-155
Collected Date/Time: 09/16/2021 00:01
Matrix: Liquid
COC Reference: 138946

Analysis	Method	Run Date/Time	Batch ID	Prep ID	Surr	QC Types
Organics - Volatiles						
28 PFAs	ASTMD7979-19M	10/01/21 22:31	AK211001R	PF210930W2	Yes	BLK/LCS/LCSD/MS/MS

QC Report - Prep Batch Summary

Organics - Volatiles, Prep Batch ID: PF210930W2

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

Sample ID	Analysis	Method	Run Date/Time	Batch ID
S28222.01	28 PFAs	ASTMD7979-19M	10/01/21 21:33	AK211001R
S28222.02	28 PFAs	ASTMD7979-19M	10/01/21 10:26	AK210930B
S28222.03	28 PFAs	ASTMD7979-19M	10/01/21 10:45	AK210930B
S28222.04	28 PFAs	ASTMD7979-19M	10/01/21 21:52	AK211001R
S28222.05	28 PFAs	ASTMD7979-19M	10/01/21 22:12	AK211001R
S28222.06	28 PFAs	ASTMD7979-19M	10/01/21 22:31	AK211001R

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.01

Sample Tag: 03-PRCC-21-INF

Collected Date/Time: 09/14/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK211001R, Run Date: 10/01/2021 21:33, Matrix: WW, Dilution: 1.96

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA	*	**249.0**	50.0	150.0
M2-6:2FTSA		**143.7**	50.0	150.0
M2-8:2FTSA		**121.6**	50.0	150.0
M2PFTeDA		**133.5**	12.0	218.0
M3PFBS		**82.2**	50.0	150.0
M3PFHxS		**86.9**	50.0	150.0
M4PFHpA		**89.7**	50.0	150.0
M5PFHxA		**73.2**	50.0	150.0
M5PFPeA		**55.6**	50.0	150.0
M6PFDA		**78.6**	50.0	150.0
M7PFUnDA		**93.2**	50.0	150.0
M8FOSA		**89.3**	50.0	150.0
M8PFOA		**86.5**	50.0	150.0
M8PFOS		**96.4**	50.0	150.0
M9-PFNA		**88.1**	50.0	150.0
MPFBA	*	**34.2**	50.0	150.0
MPFDoDA		**103.1**	50.0	150.0
d3N-MeFOSAA		**89.2**	50.0	150.0
d5EtFOSAA		**118.3**	50.0	150.0
MHFPO-DA		**64.2**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.02

Sample Tag: 03-PRCC-21-PRIM

Collected Date/Time: 09/14/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210930B, Run Date: 10/01/2021 10:26, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**79.3**	50.0	150.0
M2-6:2FTSA		**88.4**	50.0	150.0
M2-8:2FTSA		**91.8**	50.0	150.0
M2PFTeDA		**195.3**	12.0	218.0
M3PFBS		**101.1**	50.0	150.0
M3PFHxS		**102.9**	50.0	150.0
M4PFHpA		**104.2**	50.0	150.0
M5PFHxA		**107.3**	50.0	150.0
M5PFPeA		**104.5**	50.0	150.0
M6PFDA		**125.1**	50.0	150.0
M7PFUnDA		**102.9**	50.0	150.0
M8FOSA		**97.9**	50.0	150.0
M8PFOA		**100.3**	50.0	150.0
M8PFOS		**104.0**	50.0	150.0
M9-PFNA		**92.8**	50.0	150.0
MPFBA		**107.7**	50.0	150.0
MPFDoDA		**118.0**	50.0	150.0
d3N-MeFOSAA		**104.0**	50.0	150.0
d5EtFOSAA		**116.1**	50.0	150.0
MHFPO-DA		**109.2**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.03

Sample Tag: 03-PRCC-21-EFF-155

Collected Date/Time: 09/16/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK210930B, Run Date: 10/01/2021 10:45, Matrix: WW, Dilution: 1.95

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**87.4**	50.0	150.0
M2-6:2FTSA		**86.3**	50.0	150.0
M2-8:2FTSA		**88.7**	50.0	150.0
M2PFTeDA		**211.5**	12.0	218.0
M3PFBS		**99.8**	50.0	150.0
M3PFHxS		**106.0**	50.0	150.0
M4PFHpA		**115.2**	50.0	150.0
M5PFHxA		**104.4**	50.0	150.0
M5PFPeA		**99.1**	50.0	150.0
M6PFDA		**126.5**	50.0	150.0
M7PFUnDA		**97.0**	50.0	150.0
M8FOSA		**104.3**	50.0	150.0
M8PFOA		**114.7**	50.0	150.0
M8PFOS		**106.6**	50.0	150.0
M9-PFNA		**97.8**	50.0	150.0
MPFBA		**103.5**	50.0	150.0
MPFDoDA		**130.6**	50.0	150.0
d3N-MeFOSAA		**104.5**	50.0	150.0
d5EtFOSAA		**118.9**	50.0	150.0
MHFPO-DA		**116.7**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.04

Sample Tag: 03-PRCC-21-MID-2-155

Collected Date/Time: 09/16/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK211001R, Run Date: 10/01/2021 21:52, Matrix: WW, Dilution: 2.13

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**85.3**	50.0	150.0
M2-6:2FTSA		**83.7**	50.0	150.0
M2-8:2FTSA		**96.0**	50.0	150.0
M2PFTeDA		**151.7**	12.0	218.0
M3PFBS		**84.5**	50.0	150.0
M3PFHxS		**82.2**	50.0	150.0
M4PFHpA		**88.7**	50.0	150.0
M5PFHxA		**86.0**	50.0	150.0
M5PFPeA		**89.5**	50.0	150.0
M6PFDA		**82.8**	50.0	150.0
M7PFUnDA		**89.1**	50.0	150.0
M8FOSA		**92.5**	50.0	150.0
M8PFOA		**98.2**	50.0	150.0
M8PFOS		**94.7**	50.0	150.0
M9-PFNA		**91.6**	50.0	150.0
MPFBA		**90.3**	50.0	150.0
MPFDoDA		**107.9**	50.0	150.0
d3N-MeFOSAA		**87.8**	50.0	150.0
d5EtFOSAA		**107.2**	50.0	150.0
MHFPO-DA		**71.8**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.05

Sample Tag: 03-PRCC-21-MID-1-155

Collected Date/Time: 09/16/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK211001R, Run Date: 10/01/2021 22:12, Matrix: WW, Dilution: 1.93

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**72.2**	50.0	150.0
M2-6:2FTSA		**73.5**	50.0	150.0
M2-8:2FTSA		**102.7**	50.0	150.0
M2PFTeDA		**93.4**	12.0	218.0
M3PFBS		**82.1**	50.0	150.0
M3PFHxS		**81.0**	50.0	150.0
M4PFHpA		**81.8**	50.0	150.0
M5PFHxA		**78.7**	50.0	150.0
M5PFPeA		**89.3**	50.0	150.0
M6PFDA		**89.4**	50.0	150.0
M7PFUnDA		**84.0**	50.0	150.0
M8FOSA		**89.9**	50.0	150.0
M8PFOA		**87.5**	50.0	150.0
M8PFOS		**85.8**	50.0	150.0
M9-PFNA		**88.5**	50.0	150.0
MPFBA		**86.6**	50.0	150.0
MPFDoDA		**82.3**	50.0	150.0
d3N-MeFOSAA		**83.0**	50.0	150.0
d5EtFOSAA		**94.4**	50.0	150.0
MHFPO-DA		**83.0**	50.0	150.0

QC Report - Internal Standards per Lab Sample

Lab Sample ID: S28222.06

Sample Tag: 03-PRCC-21-PRIM-155

Collected Date/Time: 09/16/2021 00:01

Matrix: Liquid

COC Reference: 138946

Organics - Volatiles, Analysis: 28 PFAs

Run in Batch: AK211001R, Run Date: 10/01/2021 22:31, Matrix: WW, Dilution: 2

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**75.5**	50.0	150.0
M2-6:2FTSA		**76.8**	50.0	150.0
M2-8:2FTSA		**95.2**	50.0	150.0
M2PFTeDA		**136.4**	12.0	218.0
M3PFBS		**85.3**	50.0	150.0
M3PFHxS		**81.4**	50.0	150.0
M4PFHpA		**90.3**	50.0	150.0
M5PFHxA		**80.5**	50.0	150.0
M5PFPeA		**87.3**	50.0	150.0
M6PFDA		**77.9**	50.0	150.0
M7PFUnDA		**77.6**	50.0	150.0
M8FOSA		**89.5**	50.0	150.0
M8PFOA		**82.5**	50.0	150.0
M8PFOS		**87.4**	50.0	150.0
M9-PFNA		**89.7**	50.0	150.0
MPFBA		**84.4**	50.0	150.0
MPFDoDA		**95.4**	50.0	150.0
d3N-MeFOSAA		**84.1**	50.0	150.0
d5EtFOSAA		**99.6**	50.0	150.0
MHFPO-DA		**77.0**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF210930W2

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

Blank (BLK)

Lab Sample ID: AK211001R.BLK210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 20:15, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**93.0**	50.0	150.0
M2-6:2FTSA		**91.7**	50.0	150.0
M2-8:2FTSA		**99.1**	50.0	150.0
M2PFTeDA		**119.2**	12.0	218.0
M3PFBS		**79.3**	50.0	150.0
M3PFHxS		**79.1**	50.0	150.0
M4PFHpA		**83.3**	50.0	150.0
M5PFHxA		**85.6**	50.0	150.0
M5PFPeA		**82.9**	50.0	150.0
M6PFDA		**79.2**	50.0	150.0
M7PFUnDA		**82.4**	50.0	150.0
M8FOSA		**86.9**	50.0	150.0
M8PFOA		**76.2**	50.0	150.0
M8PFOS		**87.7**	50.0	150.0
M9-PFNA		**77.2**	50.0	150.0
MPFBA		**81.8**	50.0	150.0
MPFDoDA		**88.8**	50.0	150.0
d3N-MeFOSAA		**80.4**	50.0	150.0
d5EtFOSAA		**103.0**	50.0	150.0
MHFPO-DA		**82.9**	50.0	150.0

Laboratory Control Sample (LCS)

Lab Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:36, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**94.1**	50.0	150.0
M2-6:2FTSA		**102.7**	50.0	150.0
M2-8:2FTSA		**112.2**	50.0	150.0
M2PFTeDA		**125.0**	12.0	218.0
M3PFBS		**77.0**	50.0	150.0
M3PFHxS		**75.2**	50.0	150.0
M4PFHpA		**84.5**	50.0	150.0
M5PFHxA		**76.2**	50.0	150.0
M5PFPeA		**86.0**	50.0	150.0
M6PFDA		**80.3**	50.0	150.0
M7PFUnDA		**80.1**	50.0	150.0
M8FOSA		**88.4**	50.0	150.0
M8PFOA		**83.8**	50.0	150.0
M8PFOS		**76.5**	50.0	150.0
M9-PFNA		**83.2**	50.0	150.0
MPFBA		**80.4**	50.0	150.0
MPFDoDA		**93.3**	50.0	150.0
d3N-MeFOSAA		**72.8**	50.0	150.0
d5EtFOSAA		**98.8**	50.0	150.0
MHFPO-DA		**85.7**	50.0	150.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK211001R.LCSD210930B, Parent Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:55, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**94.8**	50.0	150.0
M2-6:2FTSA		**92.8**	50.0	150.0
M2-8:2FTSA		**115.4**	50.0	150.0
M2PFTeDA		**110.1**	12.0	218.0
M3PFBS		**85.0**	50.0	150.0
M3PFHxS		**82.7**	50.0	150.0
M4PFHpA		**83.0**	50.0	150.0
M5PFHxA		**81.5**	50.0	150.0
M5PFPeA		**83.1**	50.0	150.0
M6PFDA		**83.7**	50.0	150.0
M7PFUnDA		**78.7**	50.0	150.0
M8FOSA		**84.1**	50.0	150.0
M8PFOA		**79.5**	50.0	150.0
M8PFOS		**89.0**	50.0	150.0
M9-PFNA		**77.4**	50.0	150.0
MPFBA		**80.3**	50.0	150.0
MPFDoDA		**88.1**	50.0	150.0
d3N-MeFOSAA		**75.2**	50.0	150.0
d5EtFOSAA		**100.9**	50.0	150.0
MHFPO-DA		**85.8**	50.0	150.0

Matrix Spike (MS)

Lab Sample ID: AK211001R.2822303M, Parent Sample ID: S28223.02

Run in Batch: AK211001R, Run Date: 10/01/2021 23:10, Prep Date: 09/30/2021, Matrix: WW, Dilution: 2.05

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**105.5**	50.0	150.0
M2-6:2FTSA		**98.2**	50.0	150.0
M2-8:2FTSA		**111.4**	50.0	150.0
M2PFTeDA		**128.4**	12.0	218.0
M3PFBS		**94.0**	50.0	150.0
M3PFHxS		**81.9**	50.0	150.0
M4PFHpA		**84.5**	50.0	150.0
M5PFHxA		**85.7**	50.0	150.0
M5PFPeA		**89.3**	50.0	150.0
M6PFDA		**78.0**	50.0	150.0
M7PFUnDA		**82.4**	50.0	150.0
M8FOSA		**89.8**	50.0	150.0
M8PFOA		**84.1**	50.0	150.0
M8PFOS		**83.8**	50.0	150.0
M9-PFNA		**83.4**	50.0	150.0
MPFBA		**89.4**	50.0	150.0
MPFDoDA		**89.5**	50.0	150.0
d3N-MeFOSAA		**81.2**	50.0	150.0
d5EtFOSAA		**102.9**	50.0	150.0
MHFPO-DA		**78.9**	50.0	150.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK211001R.2822304N, Parent Sample ID: AK211001R.2822303M

Run in Batch: AK211001R, Run Date: 10/01/2021 23:30, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1.94

Internal Standard	Flags	%Rec	LCL	UCL
M2-4:2FTSA		**104.3**	50.0	150.0
M2-6:2FTSA		**88.5**	50.0	150.0
M2-8:2FTSA		**118.8**	50.0	150.0
M2PFTeDA		**119.0**	12.0	218.0
M3PFBS		**85.0**	50.0	150.0
M3PFHxS		**79.2**	50.0	150.0
M4PFHpA		**85.9**	50.0	150.0
M5PFHxA		**80.5**	50.0	150.0
M5PFPeA		**89.3**	50.0	150.0
M6PFDA		**76.8**	50.0	150.0
M7PFUnDA		**75.8**	50.0	150.0
M8FOSA		**91.5**	50.0	150.0
M8PFOA		**80.8**	50.0	150.0
M8PFOS		**89.6**	50.0	150.0
M9-PFNA		**86.4**	50.0	150.0
MPFBA		**91.3**	50.0	150.0
MPFDoDA		**87.5**	50.0	150.0
d3N-MeFOSAA		**78.4**	50.0	150.0
d5EtFOSAA		**104.8**	50.0	150.0
MHFPO-DA		**72.9**	50.0	150.0

Organics - Volatiles, Prep Batch ID: PF210930W2

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

Blank (BLK)

Lab Sample ID: AK211001R.BLK210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 20:15, Prep Date: 09/30/2021, 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
PFHpA		ND	2	ng/l
PFPeS		ND	2	ng/l
6:2 FTSA		ND	2	ng/l
PFOA		ND	2	ng/l
PFHxS		ND	2	ng/l
PFHxS-LN		ND	2	ng/l
PFHxS-BR		ND	2	ng/l
PFNA		ND	2	ng/l
8:2 FTSA		ND	2	ng/l
PFHpS		ND	2	ng/l
PFDA		ND	2	ng/l
N-MeFOSAA		ND	2	ng/l
EtFOSAA		ND	4	ng/l
PFOS		ND	2	ng/l
PFOS-LN		ND	2	ng/l
PFOS-BR		ND	2	ng/l
PFUnDA		ND	2	ng/l
PFNS		ND	2	ng/l
PFDoDA		ND	2	ng/l
PFDS		ND	2	ng/l
PFTrDA		ND	2	ng/l
FOSA		ND	2	ng/l
PFTeDA		ND	4	ng/l
11CL-PF3OUdS		ND	2	ng/l
9CL-PF3ONS		ND	2	ng/l
ADONA		ND	2	ng/l
HFPO-DA		ND	2	ng/l

Laboratory Control Sample (LCS)

Lab Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:36, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
PFBA		99.5	70.0	130.0
PFPeA		87.2	70.0	130.0
4:2 FTSA		100.0	70.0	130.0
PFHxA		95.8	70.0	130.0
PFBS		107.0	70.0	130.0
HFPO-DA		107.0	70.0	130.0
PFHpA		99.2	70.0	130.0
PFPeS		98.0	70.0	130.0
ADONA		97.5	70.0	130.0

Organics - Volatiles, Prep Batch ID: PF210930W2 (continued)

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

Laboratory Control Sample (LCS) (continued)

Lab Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:36, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL
6:2 FTSA		87.4	70.0	130.0
PFOA		81.0	70.0	130.0
PFHxS		107.0	70.0	130.0
PFNA		95.3	70.0	130.0
PFHpS		92.0	70.0	130.0
8:2 FTSA		106.0	70.0	130.0
PFDA		110.0	70.0	130.0
N-MeFOSAA		121.0	70.0	130.0
PFOS		85.3	70.0	130.0
EtFOSAA		107.0	70.0	130.0
PFUnDA		95.3	70.0	130.0
9CL-PF3ONS		93.0	70.0	130.0
PFNS		97.0	70.0	130.0
PFDoDA		92.2	70.0	130.0
PFDS		99.8	70.0	130.0
PFTrDA		110.0	70.0	130.0
11CL-PF3OUdS		117.0	70.0	130.0
PFTeDA		97.8	70.0	130.0
FOSA		90.0	70.0	130.0

Laboratory Control Sample Duplicate (LCSD)

Lab Sample ID: AK211001R.LCSD210930B, Parent Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:55, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		98.1	70.0	130.0	1.4	30.0
PFPeA		91.8	70.0	130.0	5.1	30.0
4:2 FTSA		93.4	70.0	130.0	6.8	30.0
PFHxA		91.3	70.0	130.0	4.8	30.0
PFBS		95.2	70.0	130.0	11.7	30.0
HFPO-DA		89.0	70.0	130.0	18.4	30.0
PFHpA		95.2	70.0	130.0	4.1	30.0
PFPeS		86.8	70.0	130.0	12.1	30.0
ADONA		98.2	70.0	130.0	0.7	30.0
6:2 FTSA		100.0	70.0	130.0	13.4	30.0
PFOA		87.2	70.0	130.0	7.4	30.0
PFHxS		101.0	70.0	130.0	5.8	30.0
PFNA		96.2	70.0	130.0	0.9	30.0
PFHpS		77.1	70.0	130.0	17.6	30.0
8:2 FTSA		92.9	70.0	130.0	13.2	30.0
PFDA		93.0	70.0	130.0	16.7	30.0
N-MeFOSAA		101.0	70.0	130.0	18.0	30.0
PFOS	*	67.8	70.0	130.0	22.9	30.0
EtFOSAA		103.0	70.0	130.0	3.8	30.0
PFUnDA		94.3	70.0	130.0	1.1	30.0
9CL-PF3ONS		86.9	70.0	130.0	6.8	30.0
PFNS		82.7	70.0	130.0	15.9	30.0

Organics - Volatiles, Prep Batch ID: PF210930W2 (continued)

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

Laboratory Control Sample Duplicate (LCSD) (continued)

Lab Sample ID: AK211001R.LCSD210930B, Parent Sample ID: AK211001R.LCS210930B

Run in Batch: AK211001R, Run Date: 10/01/2021 19:55, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFDoDA		97.3	70.0	130.0	5.4	30.0
PFDS		79.5	70.0	130.0	22.6	30.0
PFTrDA		107.0	70.0	130.0	2.8	30.0
11CL-PF3OUdS		93.5	70.0	130.0	22.3	30.0
PFTeDA		93.2	70.0	130.0	4.8	30.0
FOSA		98.5	70.0	130.0	9.0	30.0

Matrix Spike (MS)

Lab Sample ID: AK211001R.2822303M, Parent Sample ID: S28223.02

Run in Batch: AK211001R, Run Date: 10/01/2021 23:10, Prep Date: 09/30/2021, Matrix: WW, Dilution: 2.05

Analyte	Flags	% Rec	LCL	UCL
PFBA		116.5	70.0	130.0
PFPeA		89.3	70.0	130.0
4:2 FTSA		97.1	70.0	130.0
PFHxA		94.2	70.0	130.0
PFBS		91.3	70.0	130.0
PFHpA		97.1	70.0	130.0
PFPeS		83.5	70.0	130.0
6:2 FTSA		81.6	70.0	130.0
PFOA		93.5	70.0	130.0
PFHxS		111.7	70.0	130.0
PFNA		92.2	70.0	130.0
8:2 FTSA		92.2	70.0	130.0
PFHpS		83.5	70.0	130.0
PFDA		93.2	70.0	130.0
N-MeFOSAA		95.1	70.0	130.0
EtFOSAA		93.2	70.0	130.0
PFOS		91.3	70.0	130.0
PFUnDA		97.1	70.0	130.0
PFNS		89.3	70.0	130.0
PFDoDA		94.2	70.0	130.0
PFDS		97.1	70.0	130.0
PFTrDA		106.8	70.0	130.0
FOSA		94.2	70.0	130.0
PFTeDA		81.6	70.0	130.0
11CL-PF3OUdS		106.8	70.0	130.0
9CL-PF3ONS		97.1	70.0	130.0
ADONA		97.1	70.0	130.0
HFPO-DA		106.8	70.0	130.0

Matrix Spike Duplicate (MSD)

Lab Sample ID: AK211001R.2822304N, Parent Sample ID: AK211001R.2822303M

Run in Batch: AK211001R, Run Date: 10/01/2021 23:30, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1.94

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
PFBA		113.4	70.0	130.0	8.7	30.0
PFPeA		90.7	70.0	130.0	4.4	30.0

Organics - Volatiles, Prep Batch ID: PF210930W2 (continued)

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

Matrix Spike Duplicate (MSD) (continued)

Lab Sample ID: AK211001R.2822304N, Parent Sample ID: AK211001R.2822303M

Run in Batch: AK211001R, Run Date: 10/01/2021 23:30, Prep Date: 09/30/2021, Matrix: WW, Dilution: 1.94

Analyte	Flags	% Rec	LCL	UCL	RPD	RPD CL
4:2 FTSA		95.9	70.0	130.0	7.3	30.0
PFHxA		101.0	70.0	130.0	1.0	30.0
PFBS		103.1	70.0	130.0	6.2	30.0
PFHpA		95.9	70.0	130.0	7.3	30.0
PFPeS		90.7	70.0	130.0	2.3	30.0
6:2 FTSA		100.0	70.0	130.0	14.4	30.0
PFOA		92.1	70.0	130.0	7.3	30.0
PFHxS		97.9	70.0	130.0	18.2	30.0
PFNA		86.6	70.0	130.0	12.3	30.0
8:2 FTSA		85.6	70.0	130.0	13.5	30.0
PFHpS		85.6	70.0	130.0	3.6	30.0
PFDA		95.9	70.0	130.0	3.2	30.0
N-MeFOSAA		103.1	70.0	130.0	2.0	30.0
EtFOSAA		90.7	70.0	130.0	8.7	30.0
PFOS		86.6	70.0	130.0	7.4	30.0
PFUnDA		95.9	70.0	130.0	7.3	30.0
PFNS		82.5	70.0	130.0	14.0	30.0
PFDoDA		94.8	70.0	130.0	5.3	30.0
PFDS		83.5	70.0	130.0	21.0	30.0
PFTrDA		103.1	70.0	130.0	9.5	30.0
FOSA		88.7	70.0	130.0	12.0	30.0
PFTeDA		83.5	70.0	130.0	3.6	30.0
11CL-PF3OUdS		97.9	70.0	130.0	14.6	30.0
9CL-PF3ONS		91.8	70.0	130.0	11.6	30.0
ADONA		101.0	70.0	130.0	2.0	30.0
HFPO-DA		103.1	70.0	130.0	9.5	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

138946

CHAIN OF CUSTODY RECORD

REPORT TO

CONTACT NAME: Clifford S. Yantz
COMPANY: Ramboll
ADDRESS: 2090 Commonwealth Blvd.
CITY: Ann Arbor STATE: MI ZIP CODE: 48105
PHONE NO.: 3133330211 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 - Colderwater Rd. SAMPLER(S) - PLEASE PRINT/SIGN NAME: Clifford Scott Yantz / Clifford Scott 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	YEAR TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives: NONE	HCl	HNO_3	H_2SO_4	NaOH	MeOH	OTHER	PFAS (1937)
28222.01	9/14/21		03-PRCC-21-INF	L	3	3							X
.02	9/14/21		03-PRCC-21-PRIM	L	3	3							X
.03	9/16/21		03-PRCC-21-EFF-155	L	3	3							X
.04	↓		03-PRCC-21-MID-2-155	L	3	3							X
.05			03-PRCC-21-MID-1-155	L	3	3							X
.06	↓		03-PRCC-21-PRIM-155	L	3	3							X

		DATE	TIME
RELINQUISHED BY: SIGNATURE/ORGANIZATION	Sampler Clifford Scott Yantz / Ramboll	9/16/21	11:37
RECEIVED BY: SIGNATURE/ORGANIZATION		9/16/21	11:37
RELINQUISHED BY: SIGNATURE/ORGANIZATION		9/16/21	14:25
RECEIVED BY: SIGNATURE/ORGANIZATION		9/16/21	1425

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

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

SEAL NO. SEAL INTACT YES ☐ NO ☐ INITIALS

NOTES: TEMP. ON ARRIVAL 4.8

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

Rev. 5.18.12