From: Beggs, Tauren R - DNR
Sent: Tuesday, October 31, 2023 1:58 PM
To: Matt Dahlem
Subject: RE: BRRTS Activity 02-36-589295

Hi Matt,

This is to acknowledge that I received the documentation for the notification of PFAS contamination.

Regards,

We are committed to service excellence.
Visit our survey at http://dnr.wi.gov/customersurvey to evaluate how I did.

Tauren R. Beggs
Phone: (920) 510-3472
Tauren.Beggs@wisconsin.gov (preferred contact method during work at home)

From: Matt Dahlem <mdahlem@fehrgraham.com>
Sent: Monday, October 30, 2023 4:25 PM
To: Beggs, Tauren R - DNR <Tauren.Beggs@wisconsin.gov>
Subject: BRRTS Activity 02-36-589295

Tauren,

Please see attached notification of PFAS groundwater contamination at the above referenced BRRTS case.

Matt

MATT DAHLEM, PG | Branch Manager
Fehr Graham | Engineering & Environmental

909 North 8th Street, Suite 101
Sheboygan, Wisconsin 53081
P: 920.453.0700
fehrgraham.com

October 30, 2023

Mr. Tauren Beggs
Hydrogeologist Program Coordinator
Division of Environmental Management
Remediation and Redevelopment - Northeast Region
GREEN BAY SERVICE CENTER
2984 Shawano Ave
Green Bay, WI 54313-6727

RE: Notification of PFAS Contamination
Former Bright Horizon Properties, LLC
1709 13th Street
Two Rivers, Wisconsin 54241
BRRTS #: 02-36-589295

Dear Mr. Beggs,

Per Wisconsin Department of Natural Resources (WDNR) Approval of Remedial Action Plan and On-Site Management of Contaminated Soil under Wis. Admin. Code (WAC) § NR 718.12 dated June 29, 2023 at the above-referenced property, part of the clarification stated that per- and poly-fluoroalkyl substances (PFAS) sampling was required based on the historic use of the property as former Mirro Plant No. 4.

On behalf of West River Lofts, LLC, Fehr Graham Engineering & Environmental (Fehr Graham) installed and tested a temporary groundwater monitoring well (TW-82). This location was selected based on historical groundwater results related to observed historical discharges of Volatile Organic Compounds (VOCs) and as having the most potential for PFAS contamination as it's within the area of five historical Underground Storage Tanks (USTs), including three 10,000-gallon fuel oil tanks, one 8,000-gallon fuel oil tank, and one 65-gallon gasoline tank, an oil house, an oil room, and a degreaser (Figure 1). The groundwater was sampled for the analytes contained in the WDNR PFAS list and the results are as follows:

- Perfluorooctanesulfonic acid, which is part of the Perfluorooctane sulfonic acid (PFOS) group and part of the related chemicals of PFAS, was reported at 269 nanograms per liter (ng/L), where the Wisconsin Department of Health Services (DHS) recommends an Enforcement Standard (ES) of 20 ng/L.

All other analytes tested from the WDNR PFAS list were below the DHS recommended ES, as reflected in Table A.1.V. The laboratory analytical report is also attached.

This letter serves as good faith reporting of the discovery of PFAS groundwater contamination to WDNR as part of the ongoing site investigation and remediation efforts and should satisfy WDNR requirements for PFAS sampling.

Additional PFAS evaluation activities will be conducted at the site, as appropriate. Fehr Graham is evaluating how to most efficiently incorporate PFAS evaluation activities in the actions defined in the Remedial Action Plan with Materials Management Plan dated June 5, 2023, approved by WDNR on June 29, 2023. After redevelopment activities are complete, a Wis. Admin Code ch. NR 724 Post-Construction Documentation Report will be completed that documents soil/ groundwater management and construction activities associated with this redevelopment, along with cover system construction activities, vapor sampling results, and a cap maintenance plan. Future proposed environmental work onsite and offsite, if applicable, will also be outlined in this document.

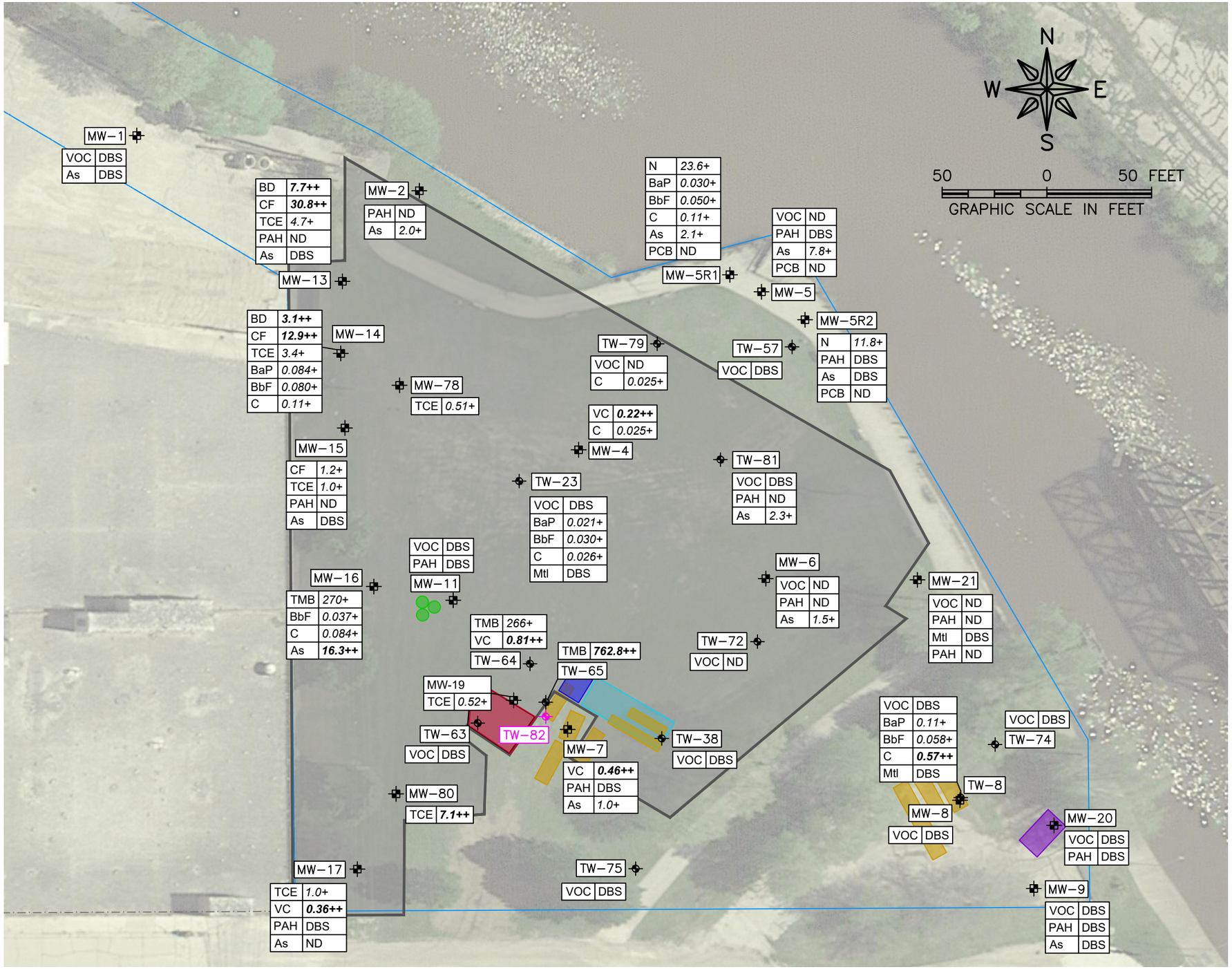
Please reach out to me directly to discuss these sampling results at (920) 453-0700. We look forward to implementing the project.

Respectfully submitted,

Matt Dahlem, PG
Branch Manager

Attachments

O:\Scott Crawford, Inc\22-221 Thru Closure\Reports\PFAS\Notification of PFAS Contamination\Notification of PFAS Contamination - West River Lofts LLC - Two Rivers WI.docx



LEGEND

- MONITORING WELL (ABANDONED)
- SMALL DIAMETER MONITORING WELL (ABANDONED)
- PFAS MONITORING WELL (ABANDONED)

As	ARSENIC
BD	BROMODICHLOROMETHANE
CF	CHLOROFORM
N	NAPHTHALENE
TCE	TRICHLOROETHENE
TMB	TRIMETHYLBENZENES, TOTAL
BaP	BENZO(a)PYRENE
BbF	BENZO(b)FLUORANTHENE
C	CHRYSENE
Mtl	RCRA METALS
VOC	VOLATILE ORGANIC COMPOUNDS
PCB	POLYCHLORINATED BIPHENYLS
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS
DBS	DETECTIONS BELOW STANDARDS
ND	NO DETECTIONS
ITALICS+	EXCEED PREVENTIVE ACTION LIMIT (PAL)
ITALICS/ BOLD++	EXCEED BOTH PAL & ENFORCEMENT STANDARD (ES)

NOTE: RESULTS REPORTED IN ug/L

- FUEL OIL UST (1922)
- NAPTHA UST (1922)
- OIL HOUSE (1922)
- OIL HOUSE (1934)
- OIL ROOM (1934, 1967)
- DEGREASER (1967)
- FORMER MIRRO PLANT

FIGURE 1

GROUNDWATER CHEMISTRY
MAY 31 & JUNE 1, 2023
1702 13th ST.
TWO RIVERS, WI 54241

10/27/23

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL
ILLINOIS DESIGN FIRM NO. 194–003525
ILLINOIS
IOWA
WISCONSIN

G:\C3D\22\22–221+22–1486\22–221_Design.dwg, (5) GW Chem–5.31.23
PLOT DATE: 10/27/23

Table A.1.V
Groundwater Analytical Table - PFAS
Bright Horizon Properties, LLC (Former)
1702 13th St., Two Rivers, WI 54241
BRRTS# 02-36-589295

Sample ID		Preventive Action Limit	Enforcement Standard	TW-82	EQUIPMENT BLANK	FIELD BLANK
Date				10/6/23	10/6/23	10/6/23
Groundwater Elevation					--	--
Perfluorobutanoic Acid (PFBA)^	(ng/L)	*2,000*	***10,000***	<1.1	3.5	<0.49
Perfluoropentanoic acid (PFPeA)	(ng/L)	NS	NS	6.2	2.6	<0.82
Perfluorohexanoic acid (PFHxA)^	(ng/L)	*30,000*	***150,000***	<2.0	<0.95	<0.90
Perfluoroheptanoic acid (PFHpA)	(ng/L)	NS	NS	<1.5	<0.72	<0.68
Perfluorooctanoic acid (PFOA)*	(ng/L)	*2*	***20***	*3.7 J*	<0.90	<0.85
Perfluorononanoic acid (PFNA)^	(ng/L)	*3*	***30***	<1.8	<0.83	<0.79
Perfluorodecanoic acid (PFDA)^	(ng/L)	*60*	***300***	<1.4	<0.63	<0.60
Perfluoroundecanoic acid (PFUnA)^	(ng/L)	*600*	***3,000***	<1.1	<0.51	<0.48
Perfluorododecanoic acid (PFDoA)^	(ng/L)	*100*	***500***	<1.1	<0.50	<0.48
Perfluorotridecanoic acid (PFTrDA)	(ng/L)	NS	NS	<1.4	<0.65	<0.62
Perfluorotetradecanoic acid (PFTA)^	(ng/L)	*2,000*	***10,000***	<1.3	<0.63	<0.60
Perfluorobutanesulfonic acid (PFBS)^	(ng/L)	*90,000*	***450,000***	3.3 J	1.3 J	<0.48
Perfluoropentanesulfonic acid (PFPeS)	(ng/L)	NS	NS	<1.3	<0.63	<0.60
Perfluorohexanesulfonic acid (PFHxS)^	(ng/L)	*4*	***40***	<1.2	<0.55	<0.53
Perfluoroheptanesulfonic acid (PFHpS)	(ng/L)	NS	NS	<1.5	<0.70	<0.66
Perfluorooctanesulfonic acid (PFOS)*	(ng/L)	*2*	***20***	***269***	<0.70	<0.66
Perfluorononanesulfonic acid (PFNS)	(ng/L)	NS	NS	<1.3	<0.61	<0.58
Perfluorodecanesulfonic acid (PFDS)	(ng/L)	NS	NS	<1.4	1.0 J	<0.64
Perfluorododecanesulfonic acid (PFDoS)	(ng/L)	NS	NS	<1.3	<0.62	<0.59
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	(ng/L)	NS	NS	<1.0	<0.49	<0.46
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	(ng/L)	NS	NS	<1.5	<0.70	<0.67
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	(ng/L)	NS	NS	<1.1	<0.53	<0.50
Perfluorooctane sulfonamide (PFOSA)*	(ng/L)	*2*	***20***	<1.6	<0.75	<0.71
N-Methyl perfluorooctane sulfonamide (MeFOSA)	(ng/L)	NS	NS	<1.2	<0.58	<0.55
N-Ethyl perfluorooctane sulfonamide (EtFOSA)*	(ng/L)	*2*	***20***	<1.3	<0.60	<0.57
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	(ng/L)	NS	NS	<1.6	<0.72	<0.69
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)*	(ng/L)	*2*	***20***	<1.8	<0.85	<0.81
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	(ng/L)	NS	NS	<1.2	1.6 J	<0.52
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)*	(ng/L)	*2*	***20***	<2.0	<0.93	<0.88
Hexafluoropropylene oxide dimer acid 1 (GenX)^	(ng/L)	*30*	***300***	<1.1	<0.51	<0.49
4,8-Dioxa-3H-perfluorononanoic acid 2 (ADONA)^	(ng/L)	*600*	***3,000***	<2.1	<0.96	<0.91
9-chlorohexadecafluoro-3-oxanonane-1-sulfonic acid 3 (9Cl-PF3ONS)	(ng/L)	NS	NS	<1.1	<0.49	<0.47
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid 4 (11Cl-PF3OUdS)	(ng/L)	NS	NS	<1.2	<0.58	<0.55

Notes:
NS = No standard established

***** = DHS recommends a combined ES of 20 ng/L and a combined PAL of 2 ng/L for PFOS, PFOA, PFOSA, NEtFOSA, NEtFOSAA, and NEtFOSE.

^ = The Enforcement Standard (ES) and Preventive Action Limit (PAL) listed in this table have been recommended by the Department of Health Services to the Department of Natural Resources. The Department of Natural Resources is in the rule making process to include these values into ch. NR 140. The standards presented in this table are not required on January 1, 2021 as the rule making process has not been completed yet.

ng/L (nanograms per liter) = PPT (parts per trillion)
J = Between limit of detection & limit of quantification
ITALICS indicates exceedance of the Wisconsin Department of Health Services recommended NR 140.10 Preventive Action Limit
BOLD indicates exceedance of the Wisconsin Department of Health Services recommended NR 140.10 Enforcement Standard

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

October 13, 2023

Dillon Plamann
Fehr Graham Engineering & Environmental
909 N. 8th Street
Suite 101
Sheboygan, WI 53081

RE: Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Dear Dillon Plamann:

Enclosed are the analytical results for sample(s) received by the laboratory on October 06, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Minneapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Christopher Hyska

Christopher Hyska
christopher.hyska@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification #: via A2LA 2926.01
USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40269154001	**TW-82**	Water	10/06/23 11:20	10/06/23 12:30
40269154002	**EQUIPMENT BLANK**	Water	10/06/23 11:10	10/06/23 12:30
40269154003	**FIELD BLANK**	Water	10/06/23 11:15	10/06/23 12:30

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40269154001	**TW-82**	ENV-SOP-MIN4-0178	NBH	57	PASI-M
40269154002	**EQUIPMENT BLANK**	ENV-SOP-MIN4-0178	NBH	57	PASI-M
40269154003	**FIELD BLANK**	ENV-SOP-MIN4-0178	NBH	57	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40269154001	**TW-82**					
ENV-SOP-MIN4-0178	Perfluorobutanesulfonic acid	3.3J	ng/L	4.0	10/12/23 17:57	
ENV-SOP-MIN4-0178	PFPeA	6.2	ng/L	4.5	10/12/23 17:57	
ENV-SOP-MIN4-0178	Perfluorooctanesulfonic acid	269	ng/L	4.1	10/12/23 17:57	
ENV-SOP-MIN4-0178	Perfluorooctanoic acid	3.7J	ng/L	4.5	10/12/23 17:57	
40269154002	**EQUIPMENT BLANK**					
ENV-SOP-MIN4-0178	NMeFOSE	1.6J	ng/L	2.1	10/12/23 18:05	
ENV-SOP-MIN4-0178	Perfluorobutanesulfonic acid	1.3J	ng/L	1.8	10/12/23 18:05	
ENV-SOP-MIN4-0178	PFBA	3.5	ng/L	2.1	10/12/23 18:05	
ENV-SOP-MIN4-0178	PFDS	1.0J	ng/L	2.0	10/12/23 18:05	
ENV-SOP-MIN4-0178	PFPeA	2.6	ng/L	2.1	10/12/23 18:05	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: TW-82 **Lab ID: 40269154001** Collected: 10/06/23 11:20 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
11Cl-PF3OUdS	**<1.2**	ng/L	4.2	1.2	1	10/10/23 12:30	10/12/23 17:57	763051-92-9	
4:2 FTS	**<1.0**	ng/L	4.2	1.0	1	10/10/23 12:30	10/12/23 17:57	757124-72-4	
6:2 FTS	**<1.5**	ng/L	4.3	1.5	1	10/10/23 12:30	10/12/23 17:57	27619-97-2	
8:2 FTS	**<1.1**	ng/L	4.3	1.1	1	10/10/23 12:30	10/12/23 17:57	39108-34-4	
9Cl-PF3ONS	**<1.1**	ng/L	4.2	1.1	1	10/10/23 12:30	10/12/23 17:57	756426-58-1	
ADONA	**<2.1**	ng/L	4.2	2.1	1	10/10/23 12:30	10/12/23 17:57	919005-14-4	
HFPO-DA	**<1.1**	ng/L	4.5	1.1	1	10/10/23 12:30	10/12/23 17:57	13252-13-6	
NEtFOSAA	**<1.8**	ng/L	4.5	1.8	1	10/10/23 12:30	10/12/23 17:57	2991-50-6	
NEtFOSA	**<1.3**	ng/L	4.5	1.3	1	10/10/23 12:30	10/12/23 17:57	4151-50-2	
NEtFOSE	**<2.0**	ng/L	4.5	2.0	1	10/10/23 12:30	10/12/23 17:57	1691-99-2	
NMeFOSAA	**<1.6**	ng/L	4.5	1.6	1	10/10/23 12:30	10/12/23 17:57	2355-31-9	
NMeFOSA	**<1.2**	ng/L	4.5	1.2	1	10/10/23 12:30	10/12/23 17:57	31506-32-8	
NMeFOSE	**<1.2**	ng/L	4.5	1.2	1	10/10/23 12:30	10/12/23 17:57	24448-09-7	
Perfluorobutanesulfonic acid	**3.3J**	ng/L	4.0	1.1	1	10/10/23 12:30	10/12/23 17:57	375-73-5	
Perfluorodecanoic acid	**<1.4**	ng/L	4.5	1.4	1	10/10/23 12:30	10/12/23 17:57	335-76-2	
Perfluorohexanoic acid	**<2.0**	ng/L	4.5	2.0	1	10/10/23 12:30	10/12/23 17:57	307-24-4	
PFBA	**<1.1**	ng/L	4.5	1.1	1	10/10/23 12:30	10/12/23 17:57	375-22-4	
PFDS	**<1.4**	ng/L	4.3	1.4	1	10/10/23 12:30	10/12/23 17:57	335-77-3	
PFDoS	**<1.3**	ng/L	4.4	1.3	1	10/10/23 12:30	10/12/23 17:57	79780-39-5	
PFHpS	**<1.5**	ng/L	4.3	1.5	1	10/10/23 12:30	10/12/23 17:57	375-92-8	
PFNS	**<1.3**	ng/L	4.3	1.3	1	10/10/23 12:30	10/12/23 17:57	68259-12-1	
PFOSA	**<1.6**	ng/L	4.5	1.6	1	10/10/23 12:30	10/12/23 17:57	754-91-6	
PFPeA	**6.2**	ng/L	4.5	1.8	1	10/10/23 12:30	10/12/23 17:57	2706-90-3	
PFPeS	**<1.3**	ng/L	4.2	1.3	1	10/10/23 12:30	10/12/23 17:57	2706-91-4	
Perfluorododecanoic acid	**<1.1**	ng/L	4.5	1.1	1	10/10/23 12:30	10/12/23 17:57	307-55-1	
Perfluoroheptanoic acid	**<1.5**	ng/L	4.5	1.5	1	10/10/23 12:30	10/12/23 17:57	375-85-9	
Perfluorohexanesulfonic acid	**<1.2**	ng/L	4.1	1.2	1	10/10/23 12:30	10/12/23 17:57	355-46-4	
Perfluorononanoic acid	**<1.8**	ng/L	4.5	1.8	1	10/10/23 12:30	10/12/23 17:57	375-95-1	
Perfluorooctanesulfonic acid	**269**	ng/L	4.1	1.5	1	10/10/23 12:30	10/12/23 17:57	1763-23-1	
Perfluorooctanoic acid	**3.7J**	ng/L	4.5	1.9	1	10/10/23 12:30	10/12/23 17:57	335-67-1	
Perfluorotetradecanoic acid	**<1.3**	ng/L	4.5	1.3	1	10/10/23 12:30	10/12/23 17:57	376-06-7	
Perfluorotridecanoic acid	**<1.4**	ng/L	4.5	1.4	1	10/10/23 12:30	10/12/23 17:57	72629-94-8	
Perfluoroundecanoic acid	**<1.1**	ng/L	4.5	1.1	1	10/10/23 12:30	10/12/23 17:57	2058-94-8	
Surrogates									
13C4-PFBA (S)	83	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	375-22-4	
13C5-PFPeA (S)	100	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	2706-90-3	
13C3-PFBS (S)	96	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	375-73-5	
13C24:2FTS (S)	180	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		S0
13C3HFPO-DA (S)	60	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		
13C4-PFHpA (S)	107	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	375-85-9	
13C3-PFHxS (S)	104	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	355-46-4	
13C26:2FTS (S)	427	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		S0
13C8-PFOA (S)	111	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	335-67-1	
13C8-PFOS (S)	100	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	1763-23-1	
13C9-PFNA (S)	116	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	375-95-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: TW-82 **Lab ID: 40269154001** Collected: 10/06/23 11:20 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C6-PFDA (S)	118	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	335-76-2	
13C28:2FTS (S)	479	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		S0
d3-MeFOSAA (S)	138	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	2355-31-9	
13C7-PFUdA (S)	120	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	2058-94-8	
13C8-PFOSA (S)	76	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	754-91-6	
d5-EtFOSAA (S)	147	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	2991-50-6	
13C2-PFDoA (S)	120	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		
d3-NMeFOSA (S)	37	%.	10-150		1	10/10/23 12:30	10/12/23 17:57	31506-32-8	
d7-NMeFOSE (S)	49	%.	10-150		1	10/10/23 12:30	10/12/23 17:57	24448-09-7	
13C2-PFTA (S)	124	%.	25-150		1	10/10/23 12:30	10/12/23 17:57		
d9-NEtFOSE (S)	60	%.	10-150		1	10/10/23 12:30	10/12/23 17:57	1691-99-2	
d5-NEtFOSA (S)	39	%.	10-150		1	10/10/23 12:30	10/12/23 17:57	4151-50-2	
13C5-PFHxA (S)	105	%.	25-150		1	10/10/23 12:30	10/12/23 17:57	307-24-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: EQUIPMENT BLANK **Lab ID: 40269154002** Collected: 10/06/23 11:10 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
11Cl-PF3OUdS	**<0.58**	ng/L	2.0	0.58	1	10/10/23 12:30	10/12/23 18:05	763051-92-9	
4:2 FTS	**<0.49**	ng/L	2.0	0.49	1	10/10/23 12:30	10/12/23 18:05	757124-72-4	
6:2 FTS	**<0.70**	ng/L	2.0	0.70	1	10/10/23 12:30	10/12/23 18:05	27619-97-2	
8:2 FTS	**<0.53**	ng/L	2.0	0.53	1	10/10/23 12:30	10/12/23 18:05	39108-34-4	
9Cl-PF3ONS	**<0.49**	ng/L	1.9	0.49	1	10/10/23 12:30	10/12/23 18:05	756426-58-1	
ADONA	**<0.96**	ng/L	2.0	0.96	1	10/10/23 12:30	10/12/23 18:05	919005-14-4	
HFPO-DA	**<0.51**	ng/L	2.1	0.51	1	10/10/23 12:30	10/12/23 18:05	13252-13-6	
NEtFOSAA	**<0.85**	ng/L	2.1	0.85	1	10/10/23 12:30	10/12/23 18:05	2991-50-6	
NEtFOSA	**<0.60**	ng/L	2.1	0.60	1	10/10/23 12:30	10/12/23 18:05	4151-50-2	
NEtFOSE	**<0.93**	ng/L	2.1	0.93	1	10/10/23 12:30	10/12/23 18:05	1691-99-2	
NMeFOSAA	**<0.72**	ng/L	2.1	0.72	1	10/10/23 12:30	10/12/23 18:05	2355-31-9	
NMeFOSA	**<0.58**	ng/L	2.1	0.58	1	10/10/23 12:30	10/12/23 18:05	31506-32-8	
NMeFOSE	**1.6J**	ng/L	2.1	0.54	1	10/10/23 12:30	10/12/23 18:05	24448-09-7	
Perfluorobutanesulfonic acid	**1.3J**	ng/L	1.8	0.51	1	10/10/23 12:30	10/12/23 18:05	375-73-5	
Perfluorodecanoic acid	**<0.63**	ng/L	2.1	0.63	1	10/10/23 12:30	10/12/23 18:05	335-76-2	
Perfluorohexanoic acid	**<0.95**	ng/L	2.1	0.95	1	10/10/23 12:30	10/12/23 18:05	307-24-4	
PFBA	**3.5**	ng/L	2.1	0.52	1	10/10/23 12:30	10/12/23 18:05	375-22-4	
PFDS	**1.0J**	ng/L	2.0	0.67	1	10/10/23 12:30	10/12/23 18:05	335-77-3	
PFDoS	**<0.62**	ng/L	2.0	0.62	1	10/10/23 12:30	10/12/23 18:05	79780-39-5	
PFHpS	**<0.70**	ng/L	2.0	0.70	1	10/10/23 12:30	10/12/23 18:05	375-92-8	
PFNS	**<0.61**	ng/L	2.0	0.61	1	10/10/23 12:30	10/12/23 18:05	68259-12-1	
PFOSA	**<0.75**	ng/L	2.1	0.75	1	10/10/23 12:30	10/12/23 18:05	754-91-6	
PFPeA	**2.6**	ng/L	2.1	0.86	1	10/10/23 12:30	10/12/23 18:05	2706-90-3	
PFPeS	**<0.63**	ng/L	2.0	0.63	1	10/10/23 12:30	10/12/23 18:05	2706-91-4	
Perfluorododecanoic acid	**<0.50**	ng/L	2.1	0.50	1	10/10/23 12:30	10/12/23 18:05	307-55-1	
Perfluoroheptanoic acid	**<0.72**	ng/L	2.1	0.72	1	10/10/23 12:30	10/12/23 18:05	375-85-9	
Perfluorohexanesulfonic acid	**<0.55**	ng/L	1.9	0.55	1	10/10/23 12:30	10/12/23 18:05	355-46-4	
Perfluorononanoic acid	**<0.83**	ng/L	2.1	0.83	1	10/10/23 12:30	10/12/23 18:05	375-95-1	
Perfluorooctanesulfonic acid	**<0.70**	ng/L	1.9	0.70	1	10/10/23 12:30	10/12/23 18:05	1763-23-1	
Perfluorooctanoic acid	**<0.90**	ng/L	2.1	0.90	1	10/10/23 12:30	10/12/23 18:05	335-67-1	
Perfluorotetradecanoic acid	**<0.63**	ng/L	2.1	0.63	1	10/10/23 12:30	10/12/23 18:05	376-06-7	
Perfluorotridecanoic acid	**<0.65**	ng/L	2.1	0.65	1	10/10/23 12:30	10/12/23 18:05	72629-94-8	
Perfluoroundecanoic acid	**<0.51**	ng/L	2.1	0.51	1	10/10/23 12:30	10/12/23 18:05	2058-94-8	
Surrogates									
13C4-PFBA (S)	43	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	375-22-4	
13C5-PFPeA (S)	88	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	2706-90-3	
13C3-PFBS (S)	95	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	375-73-5	
13C24:2FTS (S)	83	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		
13C3HFPO-DA (S)	68	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		
13C4-PFHpA (S)	93	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	375-85-9	
13C3-PFHxS (S)	102	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	355-46-4	
13C26:2FTS (S)	268	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		S0
13C8-PFOA (S)	95	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	335-67-1	
13C8-PFOS (S)	101	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	1763-23-1	
13C9-PFNA (S)	96	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	375-95-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: EQUIPMENT BLANK **Lab ID: 40269154002** Collected: 10/06/23 11:10 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C6-PFDA (S)	109	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	335-76-2	
13C28:2FTS (S)	272	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		S0
d3-MeFOSAA (S)	35	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	2355-31-9	
13C7-PFUdA (S)	100	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	2058-94-8	
13C8-PFOSA (S)	58	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	754-91-6	
d5-EtFOSAA (S)	68	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	2991-50-6	
13C2-PFDoA (S)	79	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		
d3-NMeFOSA (S)	37	%.	10-150		1	10/10/23 12:30	10/12/23 18:05	31506-32-8	
d7-NMeFOSE (S)	54	%.	10-150		1	10/10/23 12:30	10/12/23 18:05	24448-09-7	
13C2-PFTA (S)	114	%.	25-150		1	10/10/23 12:30	10/12/23 18:05		
d9-NEtFOSE (S)	67	%.	10-150		1	10/10/23 12:30	10/12/23 18:05	1691-99-2	
d5-NEtFOSA (S)	36	%.	10-150		1	10/10/23 12:30	10/12/23 18:05	4151-50-2	
13C5-PFHxA (S)	89	%.	25-150		1	10/10/23 12:30	10/12/23 18:05	307-24-4	

REPORT OF LABORATORY ANALYSIS

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(920)469-2436

ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: FIELD BLANK **Lab ID: 40269154003** Collected: 10/06/23 11:15 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
11Cl-PF3OUdS	**<0.55**	ng/L	1.9	0.55	1	10/10/23 12:30	10/12/23 18:12	763051-92-9	
4:2 FTS	**<0.46**	ng/L	1.9	0.46	1	10/10/23 12:30	10/12/23 18:12	757124-72-4	
6:2 FTS	**<0.67**	ng/L	1.9	0.67	1	10/10/23 12:30	10/12/23 18:12	27619-97-2	
8:2 FTS	**<0.50**	ng/L	1.9	0.50	1	10/10/23 12:30	10/12/23 18:12	39108-34-4	
9Cl-PF3ONS	**<0.47**	ng/L	1.8	0.47	1	10/10/23 12:30	10/12/23 18:12	756426-58-1	
ADONA	**<0.91**	ng/L	1.9	0.91	1	10/10/23 12:30	10/12/23 18:12	919005-14-4	
HFPO-DA	**<0.49**	ng/L	2.0	0.49	1	10/10/23 12:30	10/12/23 18:12	13252-13-6	
NEtFOSAA	**<0.81**	ng/L	2.0	0.81	1	10/10/23 12:30	10/12/23 18:12	2991-50-6	
NEtFOSA	**<0.57**	ng/L	2.0	0.57	1	10/10/23 12:30	10/12/23 18:12	4151-50-2	
NEtFOSE	**<0.88**	ng/L	2.0	0.88	1	10/10/23 12:30	10/12/23 18:12	1691-99-2	
NMeFOSAA	**<0.69**	ng/L	2.0	0.69	1	10/10/23 12:30	10/12/23 18:12	2355-31-9	
NMeFOSA	**<0.55**	ng/L	2.0	0.55	1	10/10/23 12:30	10/12/23 18:12	31506-32-8	
NMeFOSE	**<0.52**	ng/L	2.0	0.52	1	10/10/23 12:30	10/12/23 18:12	24448-09-7	
Perfluorobutanesulfonic acid	**<0.48**	ng/L	1.8	0.48	1	10/10/23 12:30	10/12/23 18:12	375-73-5	
Perfluorodecanoic acid	**<0.60**	ng/L	2.0	0.60	1	10/10/23 12:30	10/12/23 18:12	335-76-2	
Perfluorohexanoic acid	**<0.90**	ng/L	2.0	0.90	1	10/10/23 12:30	10/12/23 18:12	307-24-4	
PFBA	**<0.49**	ng/L	2.0	0.49	1	10/10/23 12:30	10/12/23 18:12	375-22-4	
PFDS	**<0.64**	ng/L	1.9	0.64	1	10/10/23 12:30	10/12/23 18:12	335-77-3	
PFDoS	**<0.59**	ng/L	1.9	0.59	1	10/10/23 12:30	10/12/23 18:12	79780-39-5	
PFHpS	**<0.66**	ng/L	1.9	0.66	1	10/10/23 12:30	10/12/23 18:12	375-92-8	
PFNS	**<0.58**	ng/L	1.9	0.58	1	10/10/23 12:30	10/12/23 18:12	68259-12-1	
PFOSA	**<0.71**	ng/L	2.0	0.71	1	10/10/23 12:30	10/12/23 18:12	754-91-6	
PFPeA	**<0.82**	ng/L	2.0	0.82	1	10/10/23 12:30	10/12/23 18:12	2706-90-3	
PFPeS	**<0.60**	ng/L	1.9	0.60	1	10/10/23 12:30	10/12/23 18:12	2706-91-4	
Perfluorododecanoic acid	**<0.48**	ng/L	2.0	0.48	1	10/10/23 12:30	10/12/23 18:12	307-55-1	
Perfluoroheptanoic acid	**<0.68**	ng/L	2.0	0.68	1	10/10/23 12:30	10/12/23 18:12	375-85-9	
Perfluorohexanesulfonic acid	**<0.53**	ng/L	1.8	0.53	1	10/10/23 12:30	10/12/23 18:12	355-46-4	
Perfluorononanoic acid	**<0.79**	ng/L	2.0	0.79	1	10/10/23 12:30	10/12/23 18:12	375-95-1	
Perfluorooctanesulfonic acid	**<0.66**	ng/L	1.8	0.66	1	10/10/23 12:30	10/12/23 18:12	1763-23-1	
Perfluorooctanoic acid	**<0.85**	ng/L	2.0	0.85	1	10/10/23 12:30	10/12/23 18:12	335-67-1	
Perfluorotetradecanoic acid	**<0.60**	ng/L	2.0	0.60	1	10/10/23 12:30	10/12/23 18:12	376-06-7	
Perfluorotridecanoic acid	**<0.62**	ng/L	2.0	0.62	1	10/10/23 12:30	10/12/23 18:12	72629-94-8	
Perfluoroundecanoic acid	**<0.48**	ng/L	2.0	0.48	1	10/10/23 12:30	10/12/23 18:12	2058-94-8	
Surrogates									
13C4-PFBA (S)	94	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	375-22-4	
13C5-PFPeA (S)	92	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	2706-90-3	
13C3-PFBS (S)	97	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	375-73-5	
13C24:2FTS (S)	84	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
13C3HFPO-DA (S)	94	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
13C4-PFHpA (S)	97	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	375-85-9	
13C3-PFHxS (S)	96	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	355-46-4	
13C26:2FTS (S)	108	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
13C8-PFOA (S)	103	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	335-67-1	
13C8-PFOS (S)	95	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	1763-23-1	
13C9-PFNA (S)	102	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	375-95-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Sample: FIELD BLANK **Lab ID: 40269154003** Collected: 10/06/23 11:15 Received: 10/06/23 12:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C6-PFDA (S)	103	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	335-76-2	
13C28:2FTS (S)	110	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
d3-MeFOSAA (S)	84	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	2355-31-9	
13C7-PFUdA (S)	97	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	2058-94-8	
13C8-PFOSA (S)	72	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	754-91-6	
d5-EtFOSAA (S)	86	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	2991-50-6	
13C2-PFDoA (S)	96	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
d3-NMeFOSA (S)	49	%.	10-150		1	10/10/23 12:30	10/12/23 18:12	31506-32-8	
d7-NMeFOSE (S)	69	%.	10-150		1	10/10/23 12:30	10/12/23 18:12	24448-09-7	
13C2-PFTA (S)	99	%.	25-150		1	10/10/23 12:30	10/12/23 18:12		
d9-NEtFOSE (S)	72	%.	10-150		1	10/10/23 12:30	10/12/23 18:12	1691-99-2	
d5-NEtFOSA (S)	47	%.	10-150		1	10/10/23 12:30	10/12/23 18:12	4151-50-2	
13C5-PFHxA (S)	93	%.	25-150		1	10/10/23 12:30	10/12/23 18:12	307-24-4	

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

QC Batch: 910719
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID NPW
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 40269154001, 40269154002, 40269154003

METHOD BLANK: 4793845 Matrix: Water
Associated Lab Samples: 40269154001, 40269154002, 40269154003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
11Cl-PF3OUdS	ng/L	<0.54	1.8	10/12/23 17:36	
4:2 FTS	ng/L	<0.45	1.8	10/12/23 17:36	
6:2 FTS	ng/L	<0.65	1.8	10/12/23 17:36	
8:2 FTS	ng/L	<0.49	1.9	10/12/23 17:36	
9Cl-PF3ONS	ng/L	<0.45	1.8	10/12/23 17:36	
ADONA	ng/L	<0.89	1.8	10/12/23 17:36	
HFPO-DA	ng/L	<0.48	1.9	10/12/23 17:36	
NEtFOSA	ng/L	<0.56	1.9	10/12/23 17:36	
NEtFOSAA	ng/L	<0.79	1.9	10/12/23 17:36	
NEtFOSE	ng/L	<0.86	1.9	10/12/23 17:36	
NMeFOSA	ng/L	<0.53	1.9	10/12/23 17:36	
NMeFOSAA	ng/L	<0.67	1.9	10/12/23 17:36	
NMeFOSE	ng/L	<0.50	1.9	10/12/23 17:36	
Perfluorobutanesulfonic acid	ng/L	<0.47	1.7	10/12/23 17:36	
Perfluorodecanoic acid	ng/L	<0.59	1.9	10/12/23 17:36	
Perfluorododecanoic acid	ng/L	<0.46	1.9	10/12/23 17:36	
Perfluoroheptanoic acid	ng/L	<0.67	1.9	10/12/23 17:36	
Perfluorohexanesulfonic acid	ng/L	<0.51	1.8	10/12/23 17:36	
Perfluorohexanoic acid	ng/L	<0.88	1.9	10/12/23 17:36	
Perfluorononanoic acid	ng/L	<0.77	1.9	10/12/23 17:36	
Perfluorooctanesulfonic acid	ng/L	<0.64	1.8	10/12/23 17:36	
Perfluorooctanoic acid	ng/L	<0.83	1.9	10/12/23 17:36	
Perfluorotetradecanoic acid	ng/L	<0.58	1.9	10/12/23 17:36	
Perfluorotridecanoic acid	ng/L	<0.60	1.9	10/12/23 17:36	
Perfluoroundecanoic acid	ng/L	<0.47	1.9	10/12/23 17:36	
PFBA	ng/L	<0.48	1.9	10/12/23 17:36	
PFDoS	ng/L	<0.57	1.9	10/12/23 17:36	
PFDS	ng/L	<0.62	1.9	10/12/23 17:36	
PFHpS	ng/L	<0.65	1.8	10/12/23 17:36	
PFNS	ng/L	<0.57	1.9	10/12/23 17:36	
PFOSA	ng/L	<0.69	1.9	10/12/23 17:36	
PFPeA	ng/L	<0.79	1.9	10/12/23 17:36	
PFPeS	ng/L	<0.58	1.8	10/12/23 17:36	
13C2-PFDoA (S)	%.	91	25-150	10/12/23 17:36	
13C2-PFTA (S)	%.	97	25-150	10/12/23 17:36	
13C24:2FTS (S)	%.	84	25-150	10/12/23 17:36	
13C26:2FTS (S)	%.	107	25-150	10/12/23 17:36	
13C28:2FTS (S)	%.	102	25-150	10/12/23 17:36	
13C3-PFBS (S)	%.	91	25-150	10/12/23 17:36	
13C3-PFHxS (S)	%.	91	25-150	10/12/23 17:36	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

METHOD BLANK: 4793845 Matrix: Water
Associated Lab Samples: 40269154001, 40269154002, 40269154003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C3HFPO-DA (S)	%.	93	25-150	10/12/23 17:36	
13C4-PFBA (S)	%.	91	25-150	10/12/23 17:36	
13C4-PFHpA (S)	%.	94	25-150	10/12/23 17:36	
13C5-PFHxA (S)	%.	90	25-150	10/12/23 17:36	
13C5-PFPeA (S)	%.	90	25-150	10/12/23 17:36	
13C6-PFDA (S)	%.	98	25-150	10/12/23 17:36	
13C7-PFUdA (S)	%.	93	25-150	10/12/23 17:36	
13C8-PFOA (S)	%.	100	25-150	10/12/23 17:36	
13C8-PFOS (S)	%.	93	25-150	10/12/23 17:36	
13C8-PFOSA (S)	%.	72	25-150	10/12/23 17:36	
13C9-PFNA (S)	%.	97	25-150	10/12/23 17:36	
d3-MeFOSAA (S)	%.	80	25-150	10/12/23 17:36	
d3-NMeFOSA (S)	%.	40	20-150	10/12/23 17:36	
d5-EtFOSAA (S)	%.	76	25-150	10/12/23 17:36	
d5-NEtFOSA (S)	%.	37	20-150	10/12/23 17:36	
d7-NMeFOSE (S)	%.	56	20-150	10/12/23 17:36	
d9-NEtFOSE (S)	%.	60	20-150	10/12/23 17:36	

LABORATORY CONTROL SAMPLE & LCSD: 4793846 4793847

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
11Cl-PF3OUdS	ng/L	3.7	3.6	3.4	99	92	50-150	8	30	
4:2 FTS	ng/L	3.6	3.4	3.1	93	85	50-150	10	30	
6:2 FTS	ng/L	3.7	3.9	3.3	105	89	50-150	16	30	
8:2 FTS	ng/L	3.7	3.6	3.1	97	85	50-150	14	30	
9Cl-PF3ONS	ng/L	3.6	3.2	3.0	89	84	50-150	6	30	
ADONA	ng/L	3.7	3.0	2.8	81	77	50-150	6	30	
HFPO-DA	ng/L	3.9	3.8	3.4	99	87	50-150	13	30	
NEtFOSA	ng/L	3.9	3.4	2.8	87	73	50-150	18	30	
NEtFOSAA	ng/L	3.9	3.9	3.6	100	92	50-150	8	30	
NEtFOSE	ng/L	3.9	3.7	3.4	96	87	50-150	10	30	
NMeFOSA	ng/L	3.9	4.6	3.3	120	85	50-150	35	30	R1
NMeFOSAA	ng/L	3.9	3.8	3.4	98	87	50-150	12	30	
NMeFOSE	ng/L	3.9	3.4	3.8	87	99	50-150	13	30	
Perfluorobutanesulfonic acid	ng/L	3.4	3.7	3.4	107	100	50-150	7	30	
Perfluorodecanoic acid	ng/L	3.9	3.3	3.1	86	81	50-150	7	30	
Perfluorododecanoic acid	ng/L	3.9	3.4	3.4	87	87	50-150	1	30	
Perfluoroheptanoic acid	ng/L	3.9	3.6	3.4	92	87	50-150	6	30	
Perfluorohexanesulfonic acid	ng/L	3.6	3.2	3.1	90	88	50-150	3	30	
Perfluorohexanoic acid	ng/L	3.9	4.0	3.7	104	95	50-150	10	30	
Perfluorononanoic acid	ng/L	3.9	3.5	3.2	90	83	50-150	9	30	
Perfluorooctanesulfonic acid	ng/L	3.6	3.4	2.8	94	79	50-150	18	30	
Perfluorooctanoic acid	ng/L	3.9	3.6	3.3	92	85	50-150	8	30	
Perfluorotetradecanoic acid	ng/L	3.9	3.5	3.4	90	87	50-150	3	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

LABORATORY CONTROL SAMPLE & LCSD: 4793846 4793847

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Perfluorotridecanoic acid	ng/L	3.9	4.0	3.2	104	83	50-150	23	30	
Perfluoroundecanoic acid	ng/L	3.9	3.5	3.1	89	80	50-150	12	30	
PFBA	ng/L	3.9	3.8	3.5	98	90	50-150	9	30	
PFDoS	ng/L	3.8	3.3	3.2	88	84	50-150	5	30	
PFDS	ng/L	3.7	3.0	3.2	81	87	50-150	6	30	
PFHpS	ng/L	3.7	4.1	3.8	112	104	50-150	8	30	
PFNS	ng/L	3.7	3.1	3.4	82	92	50-150	11	30	
PFOSA	ng/L	3.9	3.6	3.2	93	84	50-150	11	30	
PFPeA	ng/L	3.9	3.8	3.7	99	96	50-150	3	30	
PFPeS	ng/L	3.6	3.2	3.1	88	86	50-150	3	30	
13C2-PFDoA (S)	%.				99	94	25-150			
13C2-PFTA (S)	%.				102	80	25-150			
13C24:2FTS (S)	%.				90	80	25-150			
13C26:2FTS (S)	%.				103	103	25-150			
13C28:2FTS (S)	%.				108	91	25-150			
13C3-PFBS (S)	%.				101	91	25-150			
13C3-PFHxS (S)	%.				104	93	25-150			
13C3HFPO-DA (S)	%.				102	92	25-150			
13C4-PFBA (S)	%.				100	89	25-150			
13C4-PFHpA (S)	%.				102	91	25-150			
13C5-PFHxA (S)	%.				100	89	25-150			
13C5-PFPeA (S)	%.				98	88	25-150			
13C6-PFDA (S)	%.				108	96	25-150			
13C7-PFUdA (S)	%.				101	93	25-150			
13C8-PFOA (S)	%.				110	99	25-150			
13C8-PFOS (S)	%.				100	89	25-150			
13C8-PFOSA (S)	%.				74	68	25-150			
13C9-PFNA (S)	%.				108	95	25-150			
d3-MeFOSAA (S)	%.				85	80	25-150			
d3-NMeFOSA (S)	%.				43	38	20-150			
d5-EtFOSAA (S)	%.				80	82	25-150			
d5-NEtFOSA (S)	%.				42	39	20-150			
d7-NMeFOSE (S)	%.				61	48	20-150			
d9-NEtFOSE (S)	%.				67	54	20-150			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

DL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.

Pace Analytical Services, LLC
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Green Bay, WI 54302
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 22-221 SCOTT CRAWFORD
Pace Project No.: 40269154

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40269154001	**TW-82**	ENV-SOP-MIN4-0178	910719	ENV-SOP-MIN4-0178	911649
40269154002	**EQUIPMENT BLANK**	ENV-SOP-MIN4-0178	910719	ENV-SOP-MIN4-0178	911649
40269154003	**FIELD BLANK**	ENV-SOP-MIN4-0178	910719	ENV-SOP-MIN4-0178	911649

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 40269154

ALL SHADED AREAS are for LAB USE ONLY

Company: Fehr Graham	Billing Information: Dillon Planann- DPlanann@fehrgraham.com
Address: 909 N 8th St. Suite 101	
Report To: Matt Dahlem	Email To:
Copy To:	Site Collection Info/Address: 1762 Bth St.
Customer Project Name/Number: 22-221 Scott Crawford	State: WI County/City: Two Rivers Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [X] No
Collected By (print): Kindyl Foss	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: Quickest TAT [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)
	Field Filtered (if applicable): [ ] Yes [X] No Analysis:

Container Preservative Type ** | Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: PFAS	Lab Profile/Line: Lab Sample # / Comments
TW-82	GW	grab	10/4	1120				2	X	001
Equipment Blank				1110				1	X	002
Field Blank				1115				1	X	003

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY: Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used: 1

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2882028

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: 118
Cooler 1 Temp Upon Receipt: 4.0 oC
Cooler 1 Therm Corr. Factor: +.5 oC
Cooler 1 Corrected Temp: 4.5 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
	10/6/23 1230	PACE	10/10/23 1230
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: 1 of: 1

Client Name: Ecr Graham

Sample Preservation Receipt Form

Project # 40269154

All containers needing preservation have been checked and noted below. ☐Yes ☐No ☑N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed.

Date/ Time:

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	Vials: VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN 1	GN 2	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001								2	2																									2.5 / 5
002									1																									2.5 / 5
003									1																									2.5 / 5
004																																		2.5 / 5
005																																		2.5 / 5
006																																		2.5 / 5
007																																		2.5 / 5
008																																		2.5 / 5
009																																		2.5 / 5
010															10/6/22																			2.5 / 5
011																																		2.5 / 5
012																																		2.5 / 5
013																																		2.5 / 5
014																																		2.5 / 5
015																																		2.5 / 5
016																																		2.5 / 5
017																																		2.5 / 5
018																																		2.5 / 5
019																																		2.5 / 5
020																																		2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm). ☐Yes ☐No ☑N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	
						GN 2	

Page 1 of 2

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40269154

40269154

Client Name: Fehr Graham

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☑ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

Thermometer Used SR - 118 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr. 4.0 /Corr 4.5

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents:
Date: 10/6/23 Initials: BC

Labeled By Initials: YM

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- DI VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☑Yes ☐No	7.
Sufficient Volume. For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
Correct Type: (Pace Green Bay), Pace IR, Non-Pace		
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: WT		
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Page 2 of 2