GILES
ENGINEERING ASSOCIATES, INC.
GEOTECHNICAL, ENVIRONMENTAL & CONSTRUCTION MATERIALS CONSULTANTS

• Dallas, TX
• Los Angeles, CA
• Manassas, VA
• Milwaukee, WI

February 23, 2024

Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
1027 W. St. Paul Avenue
Milwaukee, WI 53233

Attention: Ms. Jennifer Meyer
Environmental Program Associate

Project: Status Report - Second Groundwater Monitoring Event (PFAS)
Pershing Plaza Shopping Center
Former Lakeside Cleaners Lease Space
7536 Pershing Boulevard
Kenosha, Wisconsin
WDNR BRRTS #: 02-30-582211; WDNR FID #: 230007690
Project No. 1E-1902007

Dear Ms. Meyer:

Giles has prepared the following Status Report to summarize the Second Groundwater Monitoring Event for Per- and Polyfluorinated Substances (PFAS) in accordance with the Wisconsin Department of Natural Resources (WDNRs) written request (WDNR, September 16, 2022). The property is located at 7536 Pershing Boulevard, Kenosha, Kenosha County, Wisconsin (the "Site"). Background information, scope of services, groundwater analytical results, conclusions/recommendations and closing are detailed below.

BACKGROUND INFORMATION

Jomblee, Inc. (Jomblee) operated Lakeside Cleaners, which provided dry cleaning services at the Site for at least 15 years and ceased operations in late 2011. Ener-Con Companies, Inc. (Ener-Com), the owner of Pershing Plaza, retained The Sigma Group (Sigma) to collect soil samples at the former dry-cleaning facility in March 2018. Chlorinated volatile organic compounds (VOCs) were detected at concentrations exceeding the Wisconsin Administrative Code Natural Resources Chapter (NR Ch.) 720 Residual Contaminant Levels (RCLs) for groundwater protection in the three soil samples collected within the building. On September 11, 2018, based on the soil sampling results, attorneys for the Site owner notified the WDNR of a spill or release of dry-cleaning solvent at the Pershing Plaza Shopping Center (former Lakeside Cleaners).

The former Lakeside lease space is currently occupied by FASTSIGNS sign shop (Unit 7536). Paladin Protection Academy (Unit 7532), a concealed carry training, firearms and ammunition facility is in the lease space to the north. Julie Nails and Spa is in the lease space (Unit 7540) to the south, with a Piggly Wiggly grocery store beyond (Unit 7600).

Based on the findings of the site assessment, Sigma reported a release to the WDNR, who issued a "Responsible Party" (RP) letter to Jomblee dated September 13, 2018. The RP letter stated that a Site Investigation would need to be conducted to define the degree and extent of impacted soil and groundwater at the Site, and a vapor intrusion assessment would also need to be conducted. A letter

dated September 16, 2022, from the WDNR stated that additional groundwater samples must be collected from all wells (MW-1 through MW-5) for PFAS analysis to confirm the presence of these contaminants of concern at the Site and to assess plume stability. The first groundwater monitoring event (PFAS) took place on September 19-20, 2023, and was reported in a letter report dated October 31, 2023.

Groundwater flow direction has a concentric low centered around MW-1 as indicated on Figure 1. A groundwater elevation table is presented as Table 1.

SCOPE OF SERVICES

The following scope of services for the Second Groundwater Monitoring Event (PFAS) was completed for the Site. Field activities were conducted on December 21, 2023.

- Coordinated the field activities performed on the Site, client/owner communications, and scheduling.
- Collected five groundwater grab samples from monitoring wells MW-1 through MW-5 and submitted them to a State-certified analytical laboratory for analysis of PFAS by ID standard operating procedure (SOP) method.
- Completed data verification and data reduction.
- Evaluated the information collected and prepared this Status Report.
- Project management and peer review.

GROUNDWATER SAMPLING & RESULTS

Giles collected 5 groundwater grab samples on December 21, 2023, from MW-1 through MW-5. The well locations are shown on Figure 2. Groundwater was encountered between 2.91 and 8.76 feet below ground surface (bgs). A peristaltic pump and disposable polyethylene tubing were used to purge groundwater and to fill the groundwater sample containers. The groundwater samples were then submitted to Pace Analytical Laboratory, LLC for PFAS analysis located in West Columbia, South Carolina. The groundwater analytical results are summarized in Table 2. The laboratory report and chain-of-custody documentation are included in Attachment A.

Groundwater Analytical Results

Multiple PFAS compounds were detected in the groundwater samples.

- MW-1: Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanioc acid (PFOA) were detected above the Proposed NR 140 Preventative Action Limit (PAL). Perfluorobutanoic acid (PFBA) was detected above the Proposed NR 140 Enforcement Standard (ES).
- MW-2: PFBA was detected above the Proposed NR 140 ES.
- MW-3: PFBA was detected above the Proposed NR 140 PAL.
- MW-4: Perfluorohexanesulfonic acid (PFHxS) was detected above the Proposed NR 140 PAL. PFBA and PFOA were detected above the Proposed NR 140 ES. The monitoring well is located at the former dry cleaner machine.
- MW-5: PFBA and PFOA were detected above the Proposed NR 140 PAL.

CONCLUSIONS AND RECOMMENDATIONS

Multiple PFAS compounds were detected in MW-1 through MW-5 above the Proposed NR 140 PAL and/or ES. Based on these results additional monitoring wells may need to be installed on Site to delineate the extent of the PFAS plume. The first and second PFAS groundwater monitoring events will be presented within the Supplemental Site Investigation Report. Currently, no further groundwater sampling for VOCs nor PFAS is planned.

CLOSING

We appreciate the opportunity to be of service on this project. If there are any questions regarding the information contained herein, or if we can be of any additional service, please contact the undersigned at your convenience.

Respectfully submitted,

GILES ENGINEERING ASSOCIATES, INC.

Cody L. Reich
Staff Environmental Professional

Daniel K. Pelczar, C.P.G., P.G.
Senior Project Manager

FIGURES

Figure 1 Groundwater Flow Direction (December 21, 2023)
Figure 2 Groundwater Isoconcentration Map (PFAS)

TABLES

Table 1 Groundwater Elevations
Table 2 Groundwater Analytical Results (PFAS)

ATTACHMENTS

Attachment A Groundwater Analytical Laboratory Report & Chain of Custody Form

Distribution: Wisconsin Department of Natural Resources
Attn: Mr. Paul Grittner (1 via email: paul.grittner@wisconsin.gov)
Attn.: Ms. Jennifer Meyer (email: jennifer.meyer1@wisconsin.gov)

Jomblee, Inc.
Attn: Mr. Robert Reuschlein (1 via email: bobreuschlein@gmail.com)

KRT, LLC
Attn: Ms. Carlee Beier (1 via email: cbeier@ener-con.com)
Attn: Ms. Alicia Hurst Alexander (1 via email: ahurst@ener-con.com)

Figures

LEGEND:

- 91 — GROUNDWATER CONTOUR INTERVAL = 1.0'
- GROUNDWATER FLOW DIRECTION
- 94.19 — GROUNDWATER ELEVATION (IN FEET REFERENCED TO ARBITRARY BENCHMARK)
- MW-1 — GROUNDWATER MONITORING WELL
- FIRE HYDRANT
- CATCH BASIN
- MANHOLE
- BM — BENCHMARK: TOP OF FIRE HYDRANT. ASSUMED ELEVATION = 100.0'

VACANT

BATHROOM

VACANT (7532)

SIDEWALK / CANOPY

ASPHALT

PERSHING BLVD.

91.23
MW-2

91

90

MW-1
88.46

FORMER DRY CLEANING MACHINE

MW-4
89.34

89

FORMER LAKESIDE CLEANERS (7536 PERSHING BLVD.)

MW-5
91.39

91

ASPHALT

GAS METER

BM

DOCK DOOR

91

GARAGE / STORAGE

JULIE NAILS & SPA (7540)

SIDEWALK / CANOPY

92

DOOR

HALLWAY

93

94

MW-3
94.19

GAS METER

TRANSFORMER

PIGGLY WIGGLY (7600)

0 10' 20'

APPROXIMATE SCALE

N W E S

NOTES:

1.) EXISTING FEATURES ARE APPROXIMATE BASED ON AERIAL PHOTOGRAPHY AND FIELD OBSERVATIONS.

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FIGURE 1
GROUNDWATER FLOW DIRECTION (12-21-2023)
PERSHING PLAZA SHOPPING CENTER
(FORMER LAKESIDE CLEANERS)
7536 PERSHING BOULEVARD
KENOSHA, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
KMH	JMH	approx. 1'=20'	02-12-24	--
PROJECT NO.: 1E-1902007			CAD No. 1E1902007Q	

LEGEND:

- ESTIMATED EXTENT OF IMPACTED GROUNDWATER EXCEEDING NR 140 ENFORCEMENT STANDARDS
- ESTIMATED EXTENT OF IMPACTED GROUNDWATER EXCEEDING NR 140 PREVENTIVE ACTION LIMITS
- MW-1 — GROUNDWATER MONITORING WELL
- VP-1 — SUB-SLAB VAPOR POINT
- IA-1 — INDOOR AIR SAMPLE
- B-4 — SOIL BORING
- B-1 — PREVIOUS HAND AUGER (BY SIGMA GROUP)
- GP-1 — PREVIOUS GEOPROBE SOIL BORING (BY SIGMA GROUP)
- FIRE HYDRANT
- CATCH BASIN
- MANHOLE
- ELECTRIC POLE
- OE — OVERHEAD ELECTRIC LINE
- G — GAS LINE
- W — WATER LINE
- SN — SANITARY SEWER LINE
- ST — STORM SEWER LINE
- FLOOR DRAIN
- BM — BENCHMARK: TOP OF FIRE HYDRANT. ASSUMED ELEVATION = 100.0'

MW-1

Date	9/19/23	12/21/23
DTW	7.80	8.76
PFAS		
6:2 FTS	<1.8	<1.7
PFBS	3.8	<0.36
PFBA	(6.5)	(12)
PFHpA	1.4 J	2.0 J
PFHxS	<0.49	1.7 B J
PFHxA	1.9 J	<0.60
PFNA	0.99 J	0.66 J
PFOS**	(6.5)	(3.3 J)
PFOA**	(3.4 J)	(5.4)
PFPeS	<0.53	<0.52
PFPeA	2.5 J	4.8
**PFAS (6)	(9.9)	(8.7)

MW-2

Date	9/19/23	12/21/23
DTW	6.05	6.02
PFAS		
6:2 FTS	<1.8	1.8 B J
PFBS	<0.37	<0.36
PFBA	(15)	(11)
PFHpA	1.3 J	1.1 J
PFHxS	<0.50	1.1 B J
PFHxA	3.4 J	1.9 J
PFNA	<0.42	<0.40
PFOS**	<1.8	<1.7
PFOA**	<0.75	1.4 J
PFPeS	<0.54	<0.52
PFPeA	5.9	3.2 J
**PFAS (6)	0	1.4

MW-4

Date	4/13/21	9/20/23	12/21/23
DTW	4.16	6.97	8.17
PFAS			
6:2 FTS	6.3 J	<1.9	2.2 B J
PFBS	3.9 J	3.7	5.3
PFBA	(8.0)	(10)	(10)
PFHpA	4.0 J	4.0	5.2
PFHxS	(5.8)	(7.9)	(12 B)
PFHxA	2.8 J	2.4 J	<0.60
PFNA	<1.1	<0.43	<0.40
PFOS**	<2.2	<1.9	<1.7
PFOA**	(14)	(18)	(25)
PFPeS	4.3	4.3	5.8
PFPeA	2.2 J	2.6 J	3.0 J
**PFAS (6)	(14)	(18)	(25)

MW-5

Date	9/19/23	12/21/23
DTW	5.02	5.31
PFAS		
6:2 FTS	<1.8	<1.7
PFBS	2.8 J	2.2 J
PFBA	(9.5)	(7.9)
PFHpA	2.8 J	2.0 J
PFHxS	1.6 J	1.5 B J
PFHxA	5.3	3.5
PFNA	0.56 J	<0.40
PFOS**	<1.8	<1.7
PFOA**	(2.8 J)	(2.0 J)
PFPeS	<0.53	0.65 J
PFPeA	14	9.7
**PFAS (6)	(2.8)	(2.0)

MW-3

Date	9/20/23	12/21/23
DTW	3.71	2.91
PFAS		
6:2 FTS	<1.7	<1.7
PFBS	1.2 J	<0.36
PFBA	(9.5)	(8.7)
PFHpA	<0.38	<0.39
PFHxS	<0.47	2.6 B J
PFHxA	<0.59	<0.59
PFNA	<0.40	<0.40
PFOS**	<1.7	<1.7
PFOA**	<0.71	<0.72
PFPeS	<0.51	<0.51
PFPeA	1.5 J	0.92 J
**PFAS (6)	0	0

Chemical key:

6:2 FTS: 1H, 1H, 2H, 2H-perfluorooctane sulfonic acid
PFBS: Perfluorobutanesulfonic acid
PFBA: Perfluorobutanoic acid
PFHpA: Perfluoroheptanoic acid
PFHxS: Perfluorohexanesulfonic acid
PFHxA: Perfluorohexanoic acid
PFNA: Perfluorononanoic acid
PFOS: Perfluorooctanesulfonic acid
PFOA: Perfluorooctanoic acid
PFPeS: Perfluoropentanesulfonic acid
PFPeA: Perfluoropentanoic acid
**PFAS (6): PFAS concentrations combined per Wisconsin Department of Health Services

Abbreviations:

PFAS: Per- and Poly-Fluoroalkyl Substances

DTW: Depth to Water, expressed in feet below top of casing
PAL: Preventative Action Limit
ES: Enforcement Standard

Notes:

PFAS results expressed in nanograms per liter (ng/L), equivalent to parts per trillion (ppt)
Only compounds with detected concentrations above the Proposed NR 140 PAL or ES in at least one sample are shown
Results indicated in blue and/or (parenthesized) exceed the Proposed NR 140 PAL for PFAS results
Results indicated in red and/or underlined exceed the Proposed NR 140 ES for PFAS results

0 10' 20'
APPROXIMATE SCALE

N W E S

PERSHING BLVD.

ASPHALT
VACANT (7532)
SIDEWALK / CANOPY
FORMER LAKESIDE CLEANERS (7536 PERSHING BLVD.)
FORMER DRY CLEANING MACHINE
ASPHALT
BM
GAS METER
DOCK DOOR
GARAGE / STORAGE
HALLWAY
DOOR
JULIE NAILS & SPA (7540)
PVC DRAIN PIPES
HALLWAY
GAS METER
BAKERY AREA
DISPLAY COUNTER
SIDEWALK / CANOPY
HALLWAY
STORAGE ROOM
TRANSFORMER
PIGGLY WIGGLY (7600)

MW-1 MW-2 MW-3 MW-4 MW-5
VP-1 VP-2 VP-3 VP-4 VP-5
IA-1
B-1 B-2 B-3 B-4 B-5 B-6
GP-1 GP-2 GP-3 GP-4

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FIGURE 2
GROUNDWATER ISOCONCENTRATION MAP (PFAS)
PERSHING PLAZA SHOPPING CENTER
(FORMER LAKESIDE CLEANERS)
7536 PERSHING BOULEVARD
KENOSHA, WISCONSIN

DESIGNED	DRAWN	SCALE	DATE	REVISED
CLR/DKP	JGH	approx. 1'=20'	10-25-23	02-12-24
PROJECT NO.: 1E-1902007			CAD No. 1E1902007L4	

Tables

TABLE 1
GROUNDWATER ELEVATION DATA

Pershing Plaza Shopping Center
(Former Lakeside Cleaners Lease Space)
7536 Pershing Boulevard
Kenosha, Wisconsin
Project Number 1E-1902007

Well Location (Feet/Direction to Former DCM)		Well Elevation		Well Construction		Date Groundwater Measured	Groundwater	
		TOC	Ground Surface	Depth to Bottom	Screen Length		Depth (TOC)	Calculated Elevation
Exterior West	**MW-1** (15' W)	97.22	97.43	13.00	10	7/26/19	6.58	90.64
						7/30/19	5.44	91.78
						8/2/19	6.78	90.44
						9/26/19	6.57	90.65
						5/7/20	6.91	90.31
						10/13/20	7.38	89.84
						12/3/20	7.65	89.57
						1/11/21	7.24	89.98
						4/13/21	7.12	90.10
						7/15/21	7.77	89.45
						10/19/21	--	--
						4/14/22	7.75	89.47
						9/19/23	7.80	89.42
						12/21/23	8.76	88.46
	MW-2 (37' NW)	97.25	97.46	14.00	10	7/26/19	4.27	92.98
						7/30/19	4.25	93.00
						8/2/19	4.45	92.80
						9/26/19	4.79	92.46
						5/7/20	4.63	92.62
						10/13/20	4.50	92.75
						12/3/20	5.11	92.14
						1/11/21	5.16	92.09
						4/13/21	4.85	92.40
						7/15/21	4.66	92.59
						10/19/21	--	--
						4/14/22	5.01	92.24
						9/19/23	6.05	91.20
						12/21/23	6.02	91.23
	MW-3 (85' SW)	97.10	97.28	13.00	10	7/26/19	12.08	85.02
						7/30/19	8.27	88.83
						8/2/19	10.11	86.99
						9/26/19	3.77	93.33
						5/7/20	3.91	93.19
						10/13/20	8.87	88.23
						12/3/20	6.19	90.91
						1/11/21	4.05	93.05
						4/13/21	3.75	93.35
						7/15/21	3.58	93.52
						10/19/21	--	--
						4/14/22	3.73	93.37
						9/19/23	3.71	93.39
						12/21/23	2.91	94.19
Interior	**MW-4** (At Former DCM)	97.51	97.61	12.65	10	4/28/20	4.74	92.77
						5/7/20	6.60	90.91
						10/13/20	6.63	90.88
						12/3/20	7.21	90.30
						1/11/21	6.47	91.04
						4/13/21	4.16	93.35
						7/15/21	6.94	90.57
						10/19/21	--	--
						4/14/22	6.45	91.06
						9/19/23	6.97	90.54
						12/21/23	8.17	89.34
Exterior East	**MW-5** (90' E)	96.70	97.13	11.97	10	4/28/20	10.04	86.66
						5/7/20	10.23	86.47
						10/13/20	4.78	91.92
						12/3/20	5.78	90.92
						1/11/21	4.80	91.90
						4/13/21	4.13	92.57
						7/15/21	4.55	92.15
						10/19/21	--	--
						4/14/22	4.23	92.47
						9/19/23	5.02	91.68
						12/21/23	5.31	91.39

Notes:
TOC: Top of casing
All measurements are recorded in feet.
DCM: Dry Cleaning Machine (Distance to Former DCM is approximate)
Elevations of the wells MW-1 through MW-3 were surveyed on 8/2/19. Elevations of the wells MW-4 and MW-5 were surveyed on 4/28/2020. Survey measurements were tied to a local benchmark, the top of the fire hydrant located west of MW-1, which was assigned an elevation of 100 feet.
-- : not measured

TABLE 2
PFAS Groundwater Analytical Results

Pershing Plaza Shopping Center
(Former Lakeside Cleaners Lease Space)
7536 Pershing Boulevard
Kenosha, Wisconsin
Project Number 1E-1902007

Sample Location	**MW-1**		**MW-2**		**MW-3**		**MW-4** (At Former DCM)			**MW-5**		**Proposed NR 140 Standards* (ng/L)**	
Sample Date	9/19/23	12/21/23	9/19/23	12/21/23	9/20/23	12/21/23	4/13/21	9/20/23	12/21/23	9/19/23	12/21/23	**PAL**	**ES**
Depth to Water (Ft below TOC)	7.80	8.76	6.05	6.02	3.71	2.91	4.16	6.97	8.17	5.02	5.31		
6:2 FTS	<1.8	<1.7	<1.8	1.8 B J	<1.7	<1.7	6.3 J	<1.9	2.2 B J	<1.8	<1.7	**NS**	**NS**
Perfluorobutanesulfonic acid (PFBS)	3.8	<0.36	<0.37	<0.36	1.2 J	<0.36	3.9 J	3.7	5.3	2.8 J	2.2 J	**90**	**450**
Perfluorobutanoic acid (PFBA)	(6.5)	**(12)**	**(15)**	**(11)**	(9.5)	(8.7)	(8.0)	**(10)**	**(10)**	(9.5)	(7.9)	**2**	**10**
Perfluoroheptanoic acid (PFHpA)	1.4 J	2.0 J	1.3 J	1.1 J	<0.38	<0.39	4.0 J	4.0	5.2	2.8 J	2.0 J	**NS**	**NS**
Perfluorohexanesulfonic acid (PFHxS)	<0.49	1.7 B J	<0.50	1.1 B J	<0.47	2.6 B J	(5.8)	(7.9)	(12 B)	1.6 J	1.5 B J	**4**	**40**
Perfluorohexanoic acid (PFHxA)	1.9 J	<0.60	3.4 J	1.9 J	<0.59	<0.59	2.8 J	2.4 J	<0.60	5.3	3.5	**30**	**150**
Perfluorononanoic acid (PFNA)	0.99 J	0.66 J	<0.42	<0.40	<0.40	<0.40	<1.1	<0.43	<0.40	0.56 J	<0.40	**3**	**30**
Perfluorooctanesulfonic acid (PFOS)**	(6.5)	(3.3 J)	<1.8	<1.7	<1.7	<1.7	<2.2	<1.9	<1.7	<1.8	<1.7	**2**	**20**
Perfluorooctanoic acid (PFOA)**	(3.4 J)	(5.4)	<0.75	1.4 J	<0.71	<0.72	(14)	(18)	**(25)**	(2.8 J)	(2.0 J)	**2**	**20**
Perfluoropentanesulfonic acid (PFPeS)	<0.53	<0.52	<0.54	<0.52	<0.51	<0.51	4.3	4.3	5.8	<0.53	0.65 J	**NS**	**NS**
Perfluoropentanoic acid (PFPeA)	2.5 J	4.8	5.9	3.2 J	1.5 J	0.92 J	2.2 J	2.6 J	3.0 J	14	9.7	**NS**	**NS**
PFAS (6)**	(9.9)	(8.7)	0	1.4	0	0	(14)	(18)	**(25)**	(2.8)	(2.0)	**2****	**20****

Notes:
PFAS: Per- and Poly-fluoroalkyl Substances
ng/L: nanograms per Liter; equivalent to parts per trillion (ppt)

*Wisconsin Department of Health Services (DHS) recommended Groundwater Standards (Cycle 11) dated November 6, 2020

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

DCM: Former Dry Cleaning Machine
TOC: Top of casing
PAL: Preventive Action Limit
ES: Enforcement Standard
J: Result is an estimate value (detected between the laboratory method detection limit and reporting limit)
B: Compound detected in the sample and the laboratory method blank
NS: No Standard Established
<xx.x: Result concentration was detected below the method detection limit of x
(xx.x): Parenthesized results exceed the proposed NR 140 Preventive Action Limit
xx.x: Bold/underlined results exceed the proposed NR 140 Enforcement Standard

Attachment A

Groundwater Analytical Laboratory Report & Chain of Custody Form

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

January 24, 2024

Dan Pelczar
Giles Engineering Associates, Inc.
N8 W22350 Johnson Road
Suite A1
Waukesha, WI 53186

RE: Project: IE-1902007 PERSHING PLAZA
Pace Project No.: 40272500

Dear Dan Pelczar:

Enclosed are the analytical results for sample(s) received by the laboratory on December 22, 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:

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

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Michelle Peed, Giles Engineering Associates, Inc.
Cody Reich, Giles Engineering Associates, Inc.

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

SAMPLE SUMMARY

Project: IE-1902007 PERSHING PLAZA
Pace Project No.: 40272500

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40272500001	**MW-1**	Water	12/21/23 12:20	12/22/23 09:00
40272500002	**MW-2**	Water	12/21/23 11:45	12/22/23 09:00
40272500003	**MW-3**	Water	12/21/23 12:45	12/22/23 09:00
40272500004	**MW-4**	Water	12/21/23 10:20	12/22/23 09:00
40272500005	**MW-5**	Water	12/21/23 11:00	12/22/23 09:00

Pace® Location Requested (City/State).
Pace Analytical Green Bay
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

402724500

Acct 12/22/23

Scan QR Code for instructions

Company Name:	Giles Engineering Associates, Inc.	Contact/Report To:	Dan Pelczar
Street Address:	N8 W22350 Johnson Road, Suite A1 Waukesha, WI 53186	Phone #.	262-544-0118
		E-Mail:	dpelczar@gilesengr.com; creich@gilesengr.com
		Cc E-Mail:	
Customer Project #.		Invoice To:	Dan Pelczar
Project Name.	IE-1902007 PERSHING PLAZA	Invoice E-Mail.	dpelczar@gilesengr.com
Site Collection Info/Facility ID (as applicable)		Purchase Order # (if applicable).	
		Quote #:	
Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET		County / State origin of sample(s):	Wisconsin
Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other_____		Regulatory Program (DW, RCRA, etc) as applicable:	
		Rush (Pre-approval required): [ ] 2 Day [ ] 3 day [ ] 5 day [ ] Other_____	DW PWSID # or WW Permit # as applicable:
		Date Results Requested: Standard TAT	Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

* Matrix Codes (Insert in Matrix box below). Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Other (OT), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk

**Container Size. (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) Other

*** Preservative Types. (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj Mgr: Dan Milewsky; AcctNum / Client ID:; Table #:; Profile / Template: 2160; Prelog / Bottle Ord. ID: EZ 3034650

Preservation non-conformance Identified for sample

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res. Cl2	Number & Type of Containers Plastic	Number & Type of Containers Glass	Specify Container Size ** 3	Identify Container Preservative Type*** 1	Analysis Requested PFAS	Sample Comment
MW-1	GW	G	12-21-23	1220				2		X			001
MW-2				1145									002
MW-3				1245									003
MW-4				1020									004
MW-5				1100									005

Customer Remarks / Special Conditions / Possible Hazards:

Collected By: Cody Reich
Printed Name.
Signature Cody L Reich

Additional Instructions from Pace®:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp (°C)	Corrected Temp. (°C)

Relinquished by/Company. (Signature) Cody L Reich Giles	Date/Time 12-21-23 1425	Received by/Company. (Signature)	Date/Time	Tracking Number.
Relinquished by/Company. (Signature) CS Logistics	Date/Time 12/22/23 0900	Received by/Company. (Signature)	Date/Time 12/22/23 0900	Delivered by. [ ] In- Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company (Signature)	Date/Time	Received by/Company (Signature)	Date/Time.	
Relinquished by/Company (Signature)	Date/Time	Received by/Company. (Signature)	Date/Time	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Sample Preservation Receipt Form

Client Name: Giles

Project # 40272500

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							Plastic						Vials						Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN 1	GN 2							
001									2																								2.5 / 5
002									2																								2.5 / 5
003									2																								2.5 / 5
004									2																								2.5 / 5
005									2																								2.5 / 5
006																																	2.5 / 5
007																																	2.5 / 5
008																																	2.5 / 5
009																																	2.5 / 5
010																																	2.5 / 5
011																																	2.5 / 5
012																																	2.5 / 5
013																																	2.5 / 5
014		MH	12/22/23																														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# : 40272500

40272500

Client Name: Giles

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 - 120 **Type of Ice:** (Wet) Blue Dry None ☐ Meltwater Only

Cooler Temperature Uncorr: 1.0 /Corr: 1.0

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

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

Person examining contents:
Date: 12/22/25 /Initials: mh

Labeled By Initials: yn

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:		8.
For Analysis: ☒Yes ☐No MS/MSD.	☐Yes ☒No ☐N/A	
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: W		
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

Report of Analysis

Pace Analytical Services, LLC
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
Attention: Brian Basten

Project Name: IE-1902007 Pershing Plaza

Project Number: 40272500

Lot Number:**YL27017**

Date Completed:01/24/2024

01/24/2024 4:23 PM
Approved and released by:
Project Coordinator 1: **Jenna S. Holliday**

Case Narrative
Pace Analytical Services, LLC
Lot Number: YL27017

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report. Where sampling is conducted by the client, results relate to the accuracy of the information provided, and as the samples are received.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved The NELAC Institute (TNI) standards, the Pace Analytical Services, LLC ("Pace") Laboratory Quality Manual, standard operating procedures (SOPs), and Pace policies. Any exceptions to the TNI standards, the Laboratory Quality Manual, SOPs or policies are qualified on the results page or discussed below.

Pace is a TNI accredited laboratory; however, the following analyses are currently not listed on our TNI scope of accreditation: E. coli and Total coliforms SM 9223 B-2004, Solid Chemical Material: TOC Walkley-Black, Biological Tissue: All, Non-Potable Water: SGT-HEM EPA 1664B, Silica EPA 200.7, Boron, Calcium, Silicon, Strontium EPA 200.8, Bicarbonate, Carbonate, and Hydroxide Alkalinity SM 2320 B-2011, SM 9221 C E-2006 & SM 9222D-2006, Strontium SW-846 6010D, VOC SM 6200 B-2011, Fecal Coliform Colilert-18. If you have any questions regarding this report, please contact the Pace Project Manager listed on the cover page.

PFAS Analysis
Surrogate recovery for samples YL27017-001, -002, -003, and -005 was outside the acceptance limits. These samples did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

The method blank (MB) associated with batch 93366 had 6:2FTS and PFHxS detected at a concentration that was above the DL but below ½ the LOQ. All samples associated with this method blank that have detections for 6:2FTS and PFHxS have been flagged with a "B".

Sample Summary
Pace Analytical Services, LLC
Lot Number: YL27017
Project Name: IE-1902007 Pershing Plaza
Project Number: 40272500

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-1	Aqueous	12/21/2023 1220	12/27/2023
002	MW-2	Aqueous	12/21/2023 1145	12/27/2023
003	MW-3	Aqueous	12/21/2023 1245	12/27/2023
004	MW-4	Aqueous	12/21/2023 1020	12/27/2023
005	MW-5	Aqueous	12/21/2023 1100	12/27/2023

(5 samples)

Detection Summary

Pace Analytical Services, LLC

Lot Number: YL27017

Project Name: IE-1902007 Pershing Plaza

Project Number: 40272500

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-1	Aqueous	PFHxS	PFAS by ID	1.7	BJ	ng/L	5
001	MW-1	Aqueous	PFBA	PFAS by ID	12		ng/L	5
001	MW-1	Aqueous	PFHpA	PFAS by ID	2.0	J	ng/L	5
001	MW-1	Aqueous	PFNA	PFAS by ID	0.66	J	ng/L	5
001	MW-1	Aqueous	PFOA	PFAS by ID	5.4		ng/L	5
001	MW-1	Aqueous	PFPeA	PFAS by ID	4.8		ng/L	5
001	MW-1	Aqueous	PFOS	PFAS by ID	3.3	J	ng/L	5
002	MW-2	Aqueous	6:2 FTS	PFAS by ID	1.8	BJ	ng/L	7
002	MW-2	Aqueous	PFHxS	PFAS by ID	1.1	BJ	ng/L	7
002	MW-2	Aqueous	PFBA	PFAS by ID	11		ng/L	7
002	MW-2	Aqueous	PFHpA	PFAS by ID	1.1	J	ng/L	7
002	MW-2	Aqueous	PFHxA	PFAS by ID	1.9	J	ng/L	7
002	MW-2	Aqueous	PFOA	PFAS by ID	1.4	J	ng/L	7
002	MW-2	Aqueous	PFPeA	PFAS by ID	3.2	J	ng/L	7
003	MW-3	Aqueous	PFHxS	PFAS by ID	2.6	BJ	ng/L	9
003	MW-3	Aqueous	PFBA	PFAS by ID	8.7		ng/L	9
003	MW-3	Aqueous	PFPeA	PFAS by ID	0.92	J	ng/L	9
004	MW-4	Aqueous	6:2 FTS	PFAS by ID	2.2	BJ	ng/L	11
004	MW-4	Aqueous	PFBS	PFAS by ID	5.3		ng/L	11
004	MW-4	Aqueous	PFPeS	PFAS by ID	5.8		ng/L	11
004	MW-4	Aqueous	PFHxS	PFAS by ID	12	B	ng/L	11
004	MW-4	Aqueous	PFBA	PFAS by ID	10		ng/L	11
004	MW-4	Aqueous	PFHpA	PFAS by ID	5.2		ng/L	11
004	MW-4	Aqueous	PFOA	PFAS by ID	25		ng/L	11
004	MW-4	Aqueous	PFPeA	PFAS by ID	3.0	J	ng/L	11
005	MW-5	Aqueous	PFBS	PFAS by ID	2.2	J	ng/L	13
005	MW-5	Aqueous	PFPeS	PFAS by ID	0.65	J	ng/L	13
005	MW-5	Aqueous	PFHxS	PFAS by ID	1.5	BJ	ng/L	13
005	MW-5	Aqueous	PFBA	PFAS by ID	7.9		ng/L	13
005	MW-5	Aqueous	PFHpA	PFAS by ID	2.0	J	ng/L	13
005	MW-5	Aqueous	PFHxA	PFAS by ID	3.5		ng/L	13
005	MW-5	Aqueous	PFOA	PFAS by ID	2.0	J	ng/L	13
005	MW-5	Aqueous	PFPeA	PFAS by ID	9.7		ng/L	13

(33 detections)

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-001**

Description: **MW-1** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1220** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/18/2024 0016	ELC2	12/31/2023 0723	93366

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.0	0.58	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.0	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	Q	7.0	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.0	0.76	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.0	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.0	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.0	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.0	0.83	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.0	0.81	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.0	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.5	0.36	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.68	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.62	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.0	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**1.7**	**BJ**	**3.5**	**0.48**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**12**		**3.5**	**0.52**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**2.0**	**J**	**3.5**	**0.39**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.5	0.60	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**0.66**	**J**	**3.5**	**0.40**	**ng/L**	**1**
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**5.4**		**3.5**	**0.72**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**4.8**		**3.5**	**0.47**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.55	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	**1763-23-1**	**PFAS by ID SOP**	**3.3**	**J**	**3.5**	**1.7**	**ng/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	191	25-150
13C2_6:2FTS	N	151	25-150
13C2_8:2FTS		89	25-150
13C2_PFDoA		68	25-150
13C2_PFTeDA		57	25-150
13C3_PFBS		65	25-150
13C3_PFHxS		75	25-150
13C3-HFPO-DA		65	25-150
13C4_PFBA		42	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-001**

Description: **MW-1** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1220** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		68	25-150
13C5_PFHxA		72	25-150
13C5_PFPeA		65	25-150
13C6_PFDA		70	25-150
13C7_PFUdA		73	25-150
13C8_PFOA		75	25-150
13C8_PFOS		74	25-150
13C8_PFOSA		66	10-150
13C9_PFNA		72	25-150
d-EtFOSA		56	10-150
d5-EtFOSAA		69	25-150
d9-EtFOSE		58	10-150
d-MeFOSA		54	10-150
d3-MeFOSAA		76	25-150
d7-MeFOSE		64	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-002**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1145** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/18/2024 0027	ELC2	12/31/2023 0723	93366

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.0	0.58	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.0	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**1.8**	**BJ**	**7.0**	**1.7**	**ng/L**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.0	0.76	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.0	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.0	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.0	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.0	0.83	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.0	0.81	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.0	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.5	0.36	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.68	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.62	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.0	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**1.1**	**BJ**	**3.5**	**0.48**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**11**		**3.5**	**0.52**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**1.1**	**J**	**3.5**	**0.39**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**1.9**	**J**	**3.5**	**0.60**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.5	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**1.4**	**J**	**3.5**	**0.72**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**3.2**	**J**	**3.5**	**0.47**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.54	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.5	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	156	25-150
13C2_6:2FTS		90	25-150
13C2_8:2FTS		69	25-150
13C2_PFDoA		66	25-150
13C2_PFTeDA		63	25-150
13C3_PFBS		69	25-150
13C3_PFHxS		75	25-150
13C3-HFPO-DA		72	25-150
13C4_PFBA		48	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-002**

Description: **MW-2** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1145** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		73	25-150
13C5_PFHxA		75	25-150
13C5_PFPeA		72	25-150
13C6_PFDA		63	25-150
13C7_PFUdA		71	25-150
13C8_PFOA		74	25-150
13C8_PFOS		72	25-150
13C8_PFOSA		69	10-150
13C9_PFNA		71	25-150
d-EtFOSA		56	10-150
d5-EtFOSAA		69	25-150
d9-EtFOSE		65	10-150
d-MeFOSA		56	10-150
d3-MeFOSAA		67	25-150
d7-MeFOSE		60	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-003**

Description: **MW-3** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1245** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/18/2024 0038	ELC2	12/31/2023 0723	93366

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.9	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.9	0.57	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.9	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	Q	6.9	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	6.9	0.75	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.9	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.9	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.9	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.9	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.9	0.82	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.9	0.80	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.9	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.5	0.36	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.67	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.61	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.5	0.51	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.9	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**2.6**	**BJ**	**3.5**	**0.48**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**8.7**		**3.5**	**0.52**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.45	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.5	0.39	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.5	0.59	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.5	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.5	0.72	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**0.92**	**J**	**3.5**	**0.47**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.54	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.5	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	214	25-150
13C2_6:2FTS	N	156	25-150
13C2_8:2FTS		78	25-150
13C2_PFDoA		73	25-150
13C2_PFTeDA		61	25-150
13C3_PFBS		69	25-150
13C3_PFHxS		79	25-150
13C3-HFPO-DA		68	25-150
13C4_PFBA		41	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-003**

Description: **MW-3** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1245** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		74	25-150
13C5_PFHxA		77	25-150
13C5_PFPeA		65	25-150
13C6_PFDA		72	25-150
13C7_PFUdA		74	25-150
13C8_PFOA		85	25-150
13C8_PFOS		74	25-150
13C8_PFOSA		71	10-150
13C9_PFNA		78	25-150
d-EtFOSA		60	10-150
d5-EtFOSAA		70	25-150
d9-EtFOSE		66	10-150
d-MeFOSA		54	10-150
d3-MeFOSAA		73	25-150
d7-MeFOSE		69	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-004**

Description: **MW-4** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1020** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/18/2024 0048	ELC2	12/31/2023 0723	93366

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.0	0.58	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.0	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	**27619-97-2**	**PFAS by ID SOP**	**2.2**	**BJ**	**7.0**	**1.7**	**ng/L**	**1**
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.0	0.76	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.0	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.0	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.0	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.0	0.83	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.0	0.81	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.0	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**5.3**		**3.5**	**0.36**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.68	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.62	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**5.8**		**3.5**	**0.52**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.0	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**12**	**B**	**3.5**	**0.48**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**10**		**3.5**	**0.52**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**5.2**		**3.5**	**0.39**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.5	0.60	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.5	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**25**		**3.5**	**0.72**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**3.0**	**J**	**3.5**	**0.47**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.55	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.5	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		148	25-150
13C2_6:2FTS		94	25-150
13C2_8:2FTS		62	25-150
13C2_PFDoA		61	25-150
13C2_PFTeDA		53	25-150
13C3_PFBS		64	25-150
13C3_PFHxS		68	25-150
13C3-HFPO-DA		62	25-150
13C4_PFBA		49	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-004**

Description: **MW-4** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1020** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		63	25-150
13C5_PFHxA		67	25-150
13C5_PFPeA		67	25-150
13C6_PFDA		63	25-150
13C7_PFUdA		64	25-150
13C8_PFOA		65	25-150
13C8_PFOS		67	25-150
13C8_PFOSA		65	10-150
13C9_PFNA		62	25-150
d-EtFOSA		49	10-150
d5-EtFOSAA		63	25-150
d9-EtFOSE		53	10-150
d-MeFOSA		46	10-150
d3-MeFOSAA		65	25-150
d7-MeFOSE		58	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-005**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1100** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	01/18/2024 1635	ELC2	12/31/2023 0723	93366

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.0	0.58	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.0	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		7.0	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	7.0	0.76	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.0	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.0	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.0	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.0	0.83	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.0	0.81	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.0	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	**375-73-5**	**PFAS by ID SOP**	**2.2**	**J**	**3.5**	**0.36**	**ng/L**	**1**
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.68	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.62	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	**2706-91-4**	**PFAS by ID SOP**	**0.65**	**J**	**3.5**	**0.52**	**ng/L**	**1**
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.0	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	**355-46-4**	**PFAS by ID SOP**	**1.5**	**BJ**	**3.5**	**0.48**	**ng/L**	**1**
Perfluoro-n-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**7.9**		**3.5**	**0.52**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**2.0**	**J**	**3.5**	**0.39**	**ng/L**	**1**
Perfluoro-n-hexanoic acid (PFHxA)	**307-24-4**	**PFAS by ID SOP**	**3.5**		**3.5**	**0.60**	**ng/L**	**1**
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.5	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	**335-67-1**	**PFAS by ID SOP**	**2.0**	**J**	**3.5**	**0.72**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	**2706-90-3**	**PFAS by ID SOP**	**9.7**		**3.5**	**0.47**	**ng/L**	**1**
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.52	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.54	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.5	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	196	25-150
13C2_6:2FTS		111	25-150
13C2_8:2FTS		87	25-150
13C2_PFDoA		71	25-150
13C2_PFTeDA		69	25-150
13C3_PFBS		75	25-150
13C3_PFHxS		78	25-150
13C3-HFPO-DA		78	25-150
13C4_PFBA		62	25-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
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PFAS by LC/MS/MS

Client: **Pace Analytical Services, LLC** Laboratory ID: **YL27017-005**

Description: **MW-5** Matrix: **Aqueous**

Date Sampled: **12/21/2023 1100** Project Name: **IE-1902007 Pershing Plaza**

Date Received: **12/27/2023** Project Number: **40272500**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		71	25-150
13C5_PFHxA		79	25-150
13C5_PFPeA		74	25-150
13C6_PFDA		74	25-150
13C7_PFUdA		70	25-150
13C8_PFOA		81	25-150
13C8_PFOS		76	25-150
13C8_PFOSA		80	10-150
13C9_PFNA		79	25-150
d-EtFOSA		63	10-150
d5-EtFOSAA		82	25-150
d9-EtFOSE		64	10-150
d-MeFOSA		50	10-150
d3-MeFOSAA		75	25-150
d7-MeFOSE		72	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
W = Reported on wet weight basis
S = MS/MSD failure

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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: YQ93366-001
Batch: 93366
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/31/2023 0723

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	01/17/2024 2116
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	01/17/2024 2116
8:2 FTS	ND		1	8.0	1.6	ng/L	01/17/2024 2116
6:2 FTS	**3.9**	**J**	**1**	**8.0**	**2.0**	**ng/L**	**01/17/2024 2116**
4:2 FTS	ND		1	8.0	0.87	ng/L	01/17/2024 2116
GenX	ND		1	8.0	2.1	ng/L	01/17/2024 2116
ADONA	ND		1	8.0	0.48	ng/L	01/17/2024 2116
EtFOSA	ND		1	8.0	1.4	ng/L	01/17/2024 2116
EtFOSAA	ND		1	8.0	0.75	ng/L	01/17/2024 2116
EtFOSE	ND		1	8.0	0.95	ng/L	01/17/2024 2116
MeFOSA	ND		1	16	1.3	ng/L	01/17/2024 2116
MeFOSAA	ND		1	8.0	0.93	ng/L	01/17/2024 2116
MeFOSE	ND		1	8.0	1.3	ng/L	01/17/2024 2116
PFBS	ND		1	4.0	0.41	ng/L	01/17/2024 2116
PFDS	ND		1	4.0	0.78	ng/L	01/17/2024 2116
PFHpS	ND		1	4.0	0.50	ng/L	01/17/2024 2116
PFNS	ND		1	4.0	0.71	ng/L	01/17/2024 2116
PFOSA	ND		1	4.0	0.61	ng/L	01/17/2024 2116
PFPeS	ND		1	4.0	0.59	ng/L	01/17/2024 2116
PFDOS	ND		1	8.0	1.0	ng/L	01/17/2024 2116
PFHxS	**0.69**	**J**	**1**	**4.0**	**0.55**	**ng/L**	**01/17/2024 2116**
PFBA	ND		1	4.0	0.60	ng/L	01/17/2024 2116
PFDA	ND		1	4.0	0.52	ng/L	01/17/2024 2116
PFDoA	ND		1	4.0	0.47	ng/L	01/17/2024 2116
PFHpA	ND		1	4.0	0.45	ng/L	01/17/2024 2116
PFHxA	ND		1	4.0	0.69	ng/L	01/17/2024 2116
PFNA	ND		1	4.0	0.46	ng/L	01/17/2024 2116
PFOA	ND		1	4.0	0.83	ng/L	01/17/2024 2116
PFPeA	ND		1	4.0	0.54	ng/L	01/17/2024 2116
PFTeDA	ND		1	4.0	0.60	ng/L	01/17/2024 2116
PFTrDA	ND		1	4.0	0.53	ng/L	01/17/2024 2116
PFUdA	ND		1	4.0	0.63	ng/L	01/17/2024 2116
PFOS	ND		1	4.0	2.0	ng/L	01/17/2024 2116

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		72	25-150
13C2_6:2FTS		67	25-150
13C2_8:2FTS		68	25-150
13C2_PFDoA		62	25-150
13C2_PFTeDA		56	25-150
13C3_PFBS		64	25-150
13C3_PFHxS		67	25-150
13C3-HFPO-DA		70	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - MB

Sample ID: YQ93366-001
Batch: 93366
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/31/2023 0723

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		64	25-150
13C4_PFHpA		65	25-150
13C5_PFHxA		66	25-150
13C5_PFPeA		67	25-150
13C6_PFDA		60	25-150
13C7_PFUdA		63	25-150
13C8_PFOA		66	25-150
13C8_PFOS		65	25-150
13C8_PFOSA		63	10-150
13C9_PFNA		60	25-150
d-EtFOSA		56	10-150
d5-EtFOSAA		66	25-150
d9-EtFOSE		63	10-150
d-MeFOSA		53	10-150
d3-MeFOSAA		68	25-150
d7-MeFOSE		69	10-150

LOQ = Limit of Quantitation
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ93366-002
Batch: 93366
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/31/2023 0723

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	16		1	105	50-150	01/17/2024 2126
11Cl-PF3OUdS	15	14		1	96	50-150	01/17/2024 2126
8:2 FTS	15	13		1	87	50-150	01/17/2024 2126
6:2 FTS	15	15		1	98	50-150	01/17/2024 2126
4:2 FTS	15	16		1	108	50-150	01/17/2024 2126
GenX	32	34		1	107	50-150	01/17/2024 2126
ADONA	15	15		1	101	50-150	01/17/2024 2126
EtFOSA	16	15		1	95	50-150	01/17/2024 2126
EtFOSAA	16	16		1	101	50-150	01/17/2024 2126
EtFOSE	16	15		1	95	50-150	01/17/2024 2126
MeFOSA	16	17		1	108	50-150	01/17/2024 2126
MeFOSAA	16	17		1	107	50-150	01/17/2024 2126
MeFOSE	16	16		1	99	50-150	01/17/2024 2126
PFBS	14	17		1	117	50-150	01/17/2024 2126
PFDS	15	18		1	116	50-150	01/17/2024 2126
PFHpS	15	15		1	98	50-150	01/17/2024 2126
PFNS	15	16		1	105	50-150	01/17/2024 2126
PFOSA	16	18		1	112	50-150	01/17/2024 2126
PFPeS	15	17		1	116	50-150	01/17/2024 2126
PFDOS	15	15		1	100	50-150	01/17/2024 2126
PFHxS	15	15		1	100	50-150	01/17/2024 2126
PFBA	16	17		1	109	50-150	01/17/2024 2126
PFDA	16	17		1	105	50-150	01/17/2024 2126
PFDoA	16	16		1	99	50-150	01/17/2024 2126
PFHpA	16	17		1	107	50-150	01/17/2024 2126
PFHxA	16	16		1	101	50-150	01/17/2024 2126
PFNA	16	15		1	94	50-150	01/17/2024 2126
PFOA	16	16		1	101	50-150	01/17/2024 2126
PFPeA	16	17		1	108	50-150	01/17/2024 2126
PFTeDA	16	17		1	104	50-150	01/17/2024 2126
PFTrDA	16	16		1	99	50-150	01/17/2024 2126
PFUdA	16	17		1	106	50-150	01/17/2024 2126
PFOS	15	16		1	108	50-150	01/17/2024 2126

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		85	25-150
13C2_6:2FTS		89	25-150
13C2_8:2FTS		79	25-150
13C2_PFDoA		81	25-150
13C2_PFTeDA		67	25-150
13C3_PFBS		75	25-150
13C3_PFHxS		82	25-150
13C3-HFPO-DA		86	25-150

LOQ = Limit of Quantitation
DL = Detection Limit
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J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

PFAS by LC/MS/MS - LCS

Sample ID: YQ93366-002
Batch: 93366
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 12/31/2023 0723

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		79	25-150
13C4_PFHpA		77	25-150
13C5_PFHxA		82	25-150
13C5_PFPeA		82	25-150
13C6_PFDA		73	25-150
13C7_PFUdA		83	25-150
13C8_PFOA		82	25-150
13C8_PFOS		77	25-150
13C8_PFOSA		74	10-150
13C9_PFNA		79	25-150
d-EtFOSA		70	10-150
d5-EtFOSAA		79	25-150
d9-EtFOSE		73	10-150
d-MeFOSA		61	10-150
d3-MeFOSAA		78	25-150
d7-MeFOSE		78	10-150

LOQ = Limit of Quantitation
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Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Chain of Custody
and
Miscellaneous Documents

Internal Transfer Chain of Custody

Rush Multiplier____X
Samples Pre-Logged into eCOC

State Of Origin: WI
Cert. Needed: [x] Yes [ ] No
Owner Received Date: 12/22/2023 **Results Requested By:** 1/23/2024

Workorder: 40272500 **Workorder Name:** IE-1902007 PERSHING PLAZA

Report To	Subcontract To
Dan Milewsky Pace Analytical Green Bay 1241 Bellevue Street Suite 9 Green Bay, WI 54302 Phone (920)469-2436	Pace Analytical West Columbia 106 Vantage Point Drive West Columbia, SC 29172 Phone (803)791-9700

YL27017
JSH

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Requested Analysis: PFAS WIDNR 33 Cmpd List											LAB USE ONLY
1	MW-1	PS	12/21/2023 12:20	40272500001	Water	2						X											
2	MW-2	PS	12/21/2023 11:45	40272500002	Water	2						X											
3	MW-3	PS	12/21/2023 12:45	40272500003	Water	2						X											
4	MW-4	PS	12/21/2023 10:20	40272500004	Water	2						X											
5	MW-5	PS	12/21/2023 11:00	40272500005	Water	2						X											

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	12/26/23 [illegible]		
2				
3	FEDEX	12/27/23 1000	[signature]	12/27/23 1000

Comments: For historic data refer to WD15036-001

Cooler Temperature on Receipt 4.3 °C | **Custody Seal** Y or N | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical Services, LLC *(formerly Shealy Environmental Services, Inc.)*
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DC#_Title: ENV-FRM-WCOL-0286 v02_Samples Receipt Checklist (SRC)
Effective Date: 8/2/2022

YL27017

Sample Receipt Checklist (SRC)

Client: DAL-E Cooler Inspected by/date: SGS 12/7/23 Lot #: JSH

Means of receipt: ☐ Pace ☐ Client ☐ UPS ☒ FedEx ☐ Other: ____

☒ Yes	☐ No		1. Were custody seals present on the cooler?
☒ Yes	☐ No	☐ NA	2. If custody seals were present, were they intact and unbroken?

pH Strip ID: NA Chlorine Strip ID: NA Tested by: NA

Original temperature upon receipt / Derived (Corrected) temperature upon receipt %Solid Snap-Cup ID: NA

4.3/4.3 °C NA/NA °C NA/NA °C NA/NA °C

Method: ☒ Temperature Blank ☐ Against Bottles IR Gun ID: 8 IR Gun Correction Factor: 0 °C

Method of coolant: ☒ Wet Ice ☐ Ice Packs ☐ Dry Ice ☐ None

☒ Yes	☐ No	☐ NA	3. Were all coolers received at or below 6.0°C? If no, was Project Manager notified? PM was Notified by: phone / email / face-to-face (circle one).
☒ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☒ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☒ Yes	☐ No		6. Were sample IDs listed on the COC and all sample containers?
☒ Yes	☐ No		7. Was collection date & time listed on the COC and all sample containers?
☒ Yes	☐ No		8. Did all container label information (ID, date, time) agree with the COC?
☒ Yes	☐ No		9. Were tests to be performed listed on the COC?
☒ Yes	☐ No		10. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? ____
☒ Yes	☐ No		11. Was adequate sample volume available?
☒ Yes	☐ No		12. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☒ Yes	☐ No		13. Were all samples containers accounted for? (No missing/excess)
☐ Yes	☐ No	☒ NA	14. Were VOA, 8015C and RSK-175 samples free of bubbles >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☒ NA	15. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☒ NA	16. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☒ NA	17. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☒ NA	18. Was the quote number listed on the container label? If yes, Quote # ____

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) NA were received incorrectly preserved and were adjusted accordingly in sample receiving with NA mL of circle one: H2SO4, HNO3, HCl, NaOH using SR # NA. Time of preservation NA. If more than one preservative is needed, please note in the comments below.

Sample(s) NA were received with bubbles >6 mm in diameter.

Samples(s) NA were received with TRC > 0.5 mg/L (If #19 is *no*) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Unique ID: NA.

Comments:

Qualtrax ID: 56360 Pace® Analytical Services, LLC Page 1 of 1