

April 15, 2020

Mr. Riley Neumann
Wisconsin Department of Natural Resources
2300 North Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128

Re: *Emerging Contaminant Evaluation Report*
BRRTS #: 02-41-576336 & 02-41-579429
FID #: 241828620
Sunrise Shopping Center
2410-2424 10th Avenue & 1009 Marquette Avenue
South Milwaukee, Wisconsin 53172

Mr. Neumann:

A *Remedial Construction Report* (RCR) dated September 8, 2020, was submitted to the Wisconsin Department of Natural Resources (WDNR) for the Sunrise Shopping Center facility located at the above-referenced address in South Milwaukee, Wisconsin (Site). In a review letter dated November 23, 2020, WDNR provided three (3) comments to be addressed prior to providing approval of the RCR and proceeding with the pursuit of a Case Closeout Letter for the Site. A *Remedial Construction Report Addendum* dated April 1, 2021, provided the supplemental information requested in the first two (2) comments.

The third comment indicated that an evaluation of potential subsurface impact resulting from emerging contaminants must be completed prior to proceeding with Case Close Out. In response to the third comment, DAI completed an *Emerging Contaminant Evaluation Work Plan* (Work Plan) dated January 25, 2021. The Work Plan included a Phase I Environmental Site Assessment (ESA) analysis that reviewed the historical uses of the Subject Property and probable chemical uses, and then proposed groundwater sampling for emerging contaminants at two (2) of the existing monitoring wells (MW-3 and MW-5). In an email response of January 29, 2021, WDNR approved the Work Plan with the note that sampling should follow Wisconsin perfluoroalkyl and polyfluoroalkyl substances (PFAS) expectations guidance document. The emerging contaminants sampling was performed in March 2021. Details of the sampling methodology and analytical results are provided below.

1.0 Sampling Methodology

As proposed in the January 2021 Work Plan, groundwater sampling for emerging contaminants was performed at the two (2) existing groundwater monitoring wells that have historically shown the highest levels of contamination (i.e., MW-3 and MW-5). The sampling of MW-3 (installed in the southern portion of the property) was intended to evaluate potential emerging contamination from historical petroleum and/or coal storage. The sampling of MW-5 (installed to the rear of the 2410 tenant space) was intended to evaluate potential emerging contamination from historical dry cleaner operations. The groundwater sampling was conducted on March 11, 2021.

Following the protocol outlined in the Work Plan, the monitoring wells were purged to the extent practicable to remove turbidity from the groundwater and allow the collection of a sediment-free sample that was representative of the surrounding groundwater conditions. In order to complete the purging (and subsequent sampling), a peristaltic pump with dedicated HDPE tubing was used for both monitoring wells. The use of a stainless steel bailer to purge MW-5 was originally planned, but the use of the peristaltic pump provided less turbidity and was substituted for the bailer. As required for PFAS sampling, an equipment blank sample was collected prior to purging and sample collection.

Following well development, the groundwater samples were collected, first from MW-3 and then from MW-5. The collected groundwater was dispensed into the appropriate sampling jars which were obtained directly from the laboratory. The groundwater samples were then analyzed for:

- 1,4-Dioxane via USEPA SW8270D by SIM;
- N-nonane via USEPA SW8260C; and
- PFAS (Wisconsin 33 list per March 1, 2021) via PFAS by Isotope Dilution (ID) Standard Operating Procedures (SOP).

The samples submitted for analysis of 1,4-Dioxane were dispensed into four (4) unpreserved 100-mL amber glass containers. Samples for n-nonane were dispensed into six (6) 40-mL vials preserved with hydrochloric acid. PFAS samples were dispensed into one (1) 250-mL unpreserved plastic container. New disposable nitrile gloves were used to collect each sample to limit cross contamination. The samples were stored on ice immediately after collection and were maintained at a temperature of 4°C or lower via a cooler with ice before being transferred to a refrigerator. The samples were then stored in the refrigerator until picked up by the laboratory courier. The courier transported the samples to Pace Analytical Services, LLC (Pace Analytical) of Green Bay, Wisconsin, an independent commercial Wisconsin certified analytical laboratory following standard chain-of-custody procedures. Pace Analytical subsequently transferred the samples to affiliate laboratories for specific analyses. The 1,4-Dioxane analyses were performed by Pace Analytical National of Mt. Juliet, Tennessee, the n-nonane analyses were performed by Pace Analytical Long Island of Melville, New York, and the PFAS analyses were performed by Pace Analytical of West Columbia, South Carolina.

For PFAs samples, one (1) equipment blank, one (1) field blank, and one (1) duplicate sample were collected for quality assurance/quality control purposes per the requirements of the Wisconsin PFAS expectations guidance document.

2.0 Groundwater Analytical Results

The emerging contaminants groundwater sampling was completed on March 11, 2021. Samples from MW-3 and MW-5 were analyzed for 1,4-Dioxane, n-nonane, and PFAS. Summaries of the analytical results are provided Tables A.1.C-A.1.D (see Appendix A). The results are compared to the Preventative Action Limits (PALs) and Enforcement Standards (ESs) listed in Table 1 of NR 140. For PFAS the PAL and Enforcement Standards listed in Table A.1.D are the recommended groundwater standards, not approved regulatory standards. Copies of the laboratory analytical reports for the emerging contaminants sampling are provided in this report as Appendix C.1.E.

As observed in Table A.1.C, neither 1,4-Dioxane nor n-nonane were reported above the laboratory Limit of Detection (LOD). Although the “non-detect” concentrations of 1,4-Dioxane are above the PAL and the Enforcement Standard, the concentrations are reported to the lowest possible level (i.e., below the LOD in undiluted samples). Therefore, the reported concentrations are not evaluated as exceedances per NR 140.14(3)(a). Neither 4-Dioxane nor n-nonane are contaminants of concern (COCs) at the Site.

Table A.1.D summarizes the results of the analyses for PFAS. As observed in the summary table, most PFAS constituents are reported by the laboratory at concentrations below the Limit of Quantification. However, eight (8) PFAS constituents were reported at a concentration above the LOD in MW-3, and nine (9) PFAS constituents were reported at a concentration above the LOD in MW-5, with six (6) PFAS constituents reported at a concentration above the LOD in both samples. The MW-5 duplicate sample results are generally consistent with the MW-5 results. The 12 PFAS constituents reported at a concentration above the LOD are:

PFAS with Detectable Concentrations

- Perfluorobutanoic acid (PFBA) – MW-3 and MW-5
- Perfluoropentanoic acid (PFPeA) – MW-5
- Perfluorohexanoic acid (PFHxA) – MW-5
- Perfluoroheptanoic acid (PFHpA) – MW-3 and MW-5
- Perfluorooctanoic acid (PFOA) – MW-3 and MW-5
- Perfluorononanoic acid (PFNA) – MW-3
- Perfluorodecanoic acid (PFDA) – MW-3
- Perfluorobutanesulfonic acid (PFBS) – MW-3 and MW-5
- Perfluoropentanesulfonic acid (PFPeS) – MW-5
- Perfluorohexanesulfonic acid (PFHxS) – MW-3 and MW-5
- 6:2 Fluorotelomersulfonic acid (6:2 FTS) – MW-3
- Perfluorooctane sulfonamide (PFOSA) – MW-3 and MW-5

Four (4) of the PFAS constituents were observed in the equipment blank sample, including PFBA, PFPeA, PFHxA, and PFHpA. PFBA was also observed in the laboratory Method Blank. The PFAS constituent 6:2 FTS was observed in the field blank at a concentration nearly identical to the concentration observed in MW-3.

Comparison of the sample results with the listed PALs and ESs identified three (3) PFAS constituents reported at concentrations above the PAL (PFOA, PFNA, and PFOSA), with one (1) of those constituents at a concentration above the ES. Three (3) PFAS constituents are reported below the recommended PAL (PFDA, PFBS, PFHxS), and one (1) constituent (6:2 FTS) has no recommended PAL. PFOA was reported at a concentration of 1.2×10^{-8} mg/L in both MW-3 and MW-5, which is above the PAL. PFNA was reported at a concentration of 4.3×10^{-9} mg/L in MW-3, which is also above the PAL. The concentration of PFOSA in MW-3 was reported at a concentration of 4.7×10^{-8} mg/L, above both the PAL and the ES. PFOSA was reported at a concentration in MW-5 of 9.5×10^{-9} mg/L, is above the PAL. The identified exceedances are listed below. Figure B.3.b.3 provides a Site Plan with monitoring wells locations and locations of identified PFAS exceedances.

PFAS with Exceedances of the PAL

- PFOA – MW-3 and MW-5
- PFNA – MW-3
- PFOSA – MW-3 and MW-5

PFAS with Exceedances of the ES

- PFOSA – MW-3

3.0 Summary of Emerging Contaminant Evaluation

As requested by the WDNR, an evaluation of potential emerging contaminants of concern has been completed for the Sunrise Shopping Center Site. Based upon the past uses of the property, the following emerging contaminants were assessed: 1,4-Dioxane, n-nonane, and PFAS. The results of groundwater sampling indicated that 1,4-Dioxane, and n-nonane were reported at concentrations below the laboratory level of detection.

Of the 24 PFAS constituents analyzed, twelve (12) PFAS constituents were detected in the groundwater samples. Of the twelve (12) PFAS constituents detected only three (3) PFAS constituents (PFOA, PFNA, and PFOSA) were observed at concentrations exceeding the recommended Preventative Action Limit, and only one (1) constituent (PFOSA) in one (1) monitoring well (MW-5) exceeded the Enforcement Standard.

Sincerely,
DAI Environmental, Inc.



Christopher Cailles, P.E.
Project Engineer

Attachments

cc: Steven Dukatt – Carol Investment Corporation (w/attachments)

**APPENDIX A
TABLES**

**Table A.1.C. Groundwater Analytical Table for Emerging Contaminants (mg/L)
(1,4-Dioxane and n-nonane)**

Emerging Contaminants	Sample Location (Sample Date)		PAL ¹	ES ²
	MW-3 (03/11/21)	MW-5 (03/11/21)		
1,4-Dioxane	<0.0447*	<0.0447*	0.0003	0.003
n-nonane	<0.52	<0.52	NL	NL

¹ – Preventive Action Limits (PALs) taken from Wisconsin Administrative Code, Chapter NR 140, Table 1

² – Enforcement Standards (ES) taken from Wisconsin Administrative Code, Chapter NR 140, Table 1

* – Limit of detection reported greater than most stringent applicable standard; “non-detect” concentration not taken as exceedance per NR140.14(3)(a)

NL – Not Listed in NR 140

1,4-Dioxane via USEPA Method SW8260C

n-nonane via USEPA Method SW8270D by SIM

**Table A.1.D. Groundwater Analytical Table for Emerging Contaminants (mg/L)
(Perfluoroalkyl and Polyfluoroalkyl Substances)**

Emerging Contaminants	Sample Location (Sample Date)					PAL ¹	ES ²
	MW-3 (03/11/21)	MW-5 (03/11/21)	MW-5 Dup (03/11/21)	Equipment Blank (03/11/21)	Field Blank (03/11/21)		
Perfluorobutanoic acid (PFBA)	3.1e ⁻⁸ (EB)	1.1e ⁻⁸ (EB)	1.1e ⁻⁸ (EB)	9.8e ⁻⁹ (B)	<3.4e ⁻⁹	(0.000002)	(0.00001)
Perfluoropentanoic acid (PFPeA)	<3.5e ⁻⁹	1.2e ⁻⁸ (EB)	1.2e ⁻⁸ (EB)	6.8e ⁻⁸	<3.4e ⁻⁹	NL	NL
Perfluorohexanoic acid (PFHxA)	<3.5e ⁻⁹	8.6e ⁻⁹ (EB)	9.1e ⁻⁹ (EB)	2.6e ⁻⁹ (J)	<3.4e ⁻⁹	(0.00003)	(0.00015)
Perfluoroheptanoic acid (PFHpA)	4.5e ⁻⁹ (EB)	5.9e ⁻⁹ (EB)	6.4e ⁻⁹ (EB)	8.1e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorooctanoic acid (PFOA)	1.2e⁻⁸	1.2e⁻⁸	1.2e⁻⁸	<3.4e ⁻⁹	<3.4e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)
Perfluorononanoic acid (PFNA)	4.3e⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(3e ⁻⁹)	(3e ⁻⁸)
Perfluorodecanoic acid (PFDA)	1.8e ⁻⁹ (J)	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(6e ⁻⁸)	(3e ⁻⁷)
Perfluoroundecanoic acid (PFUnA)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(6e ⁻⁷)	(0.000003)
Perfluorododecanoic acid (PFDoA)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(1e ⁻⁷)	(5e ⁻⁷)
Perfluorotridecanoic acid (PFTriA)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorotetradecanoic acid (PFTeA)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(0.000002)	(0.00001)
Perfluorobutanesulfonic acid (PFBS)	1.9e ⁻⁸	2.1e ⁻⁸	2e ⁻⁸	<3.4e ⁻⁹	<3.4e ⁻⁹	(0.00009)	(0.00045)
Perfluoropentanesulfonic acid (PFPeS)	<3.5e ⁻⁹	1.4e ⁻⁹ (J)	1.3e ⁻⁹ (J)	<3.4e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorohexanesulfonic acid (PFHxS)	<3.5e ⁻⁹	5.2e ⁻⁹	5.9e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(4e ⁻⁹)	(4e ⁻⁸)
Perfluoroheptanesulfonic acid (PFHpS)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorooctanesulfonic acid (PFOS)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)
Perfluorononanesulfonic acid (PFNs)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorodecanesulfonic acid (PFDs)	<3.5e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	NL	NL
Perfluorododecanesulfonic acid (PFDoS)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	2.7e ⁻⁹ (J, FB)	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	2.2e ⁻⁹ (J)	NL	NL
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
Perfluorooctane sulfonamide (PFOSA)	4.7e⁻⁸	9.5e⁻⁹	9.4e⁻⁹	<3.4e ⁻⁹	<3.4e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<1.4e ⁻⁸	<1.3e ⁻⁸	<1.3e ⁻⁸	<1.3e ⁻⁸	<1.4e ⁻⁸	NL	NL
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)

**Table A.1.D (Continued). Groundwater Analytical Table for Emerging Contaminants (mg/L)
(Perfluoroalkyl and Polyfluoroalkyl Substances)**

Emerging Contaminants	Sample Location (Sample Date)					PAL ¹	ES ²
	MW-3 (03/11/21)	MW-5 (03/11/21)	MW-5 Dup (03/11/21)	Equipment Blank (03/11/21)	Field Blank (03/11/21)		
N-Methyl perfluorooctane sulfonamide (NMeFOSAA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSE)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
N-Methyl perfluorooctane sulfonamidethanol (NEtFOSE)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	(2e ⁻⁹)	(2e ⁻⁸)
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	(3e ⁻⁹)	(3e ⁻⁸)
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	(6e ⁻⁷)	(0.000003)
9-chlorohexadecafluoro-3-oxanone-1- sulfonic acid (9Cl-PF3ONS)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL
11-chloroicosafuoro-3-oxaundecane-1- sulfonic acid (11Cl-PF3OUdS)	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.9e ⁻⁹	<6.7e ⁻⁹	<6.8e ⁻⁹	NL	NL

¹ – Preventive Action Limits (PALs) taken from Wisconsin Administrative Code, Chapter NR 140, Table 1

² – Enforcement Standards (ES) taken from Wisconsin Administrative Code, Chapter NR 140, Table 1

NOTE: PAL and ES values in parentheses has been recommended to WDNR for inclusion in NR140 but is not yet a regulated value

NL – Not Listed in NR 140 or recommended for inclusion in NR 140

Bold – Concentration exceeds the PAL

Underlined – Concentration exceeds the PAL and the ES

(J) – Concentration reported by the laboratory above the Limit of Detection, but below the Limit of Quantification

(B) – Concentration of contaminant observed in the laboratory method blank sample

(EB) – Concentration of contaminant observed in the equipment blank sample

(FB) – Concentration of contaminant observed in the field blank sample

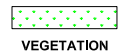
PFAS via PFAS by ID SOP

APPENDIX B
FIGURE



LEGEND

APPROXIMATE PROPERTY BOUNDARY



VEGETATION
(2410)
UNIT ADDRESS

FIBER OPTICS UTILITY LINE

GAS UTILITY LINE

SANITARY UTILITY LINE

WATER UTILITY LINE (12")

WATER UTILITY LINE (4")

OVERHEAD ELECTRIC UTILITY LINE

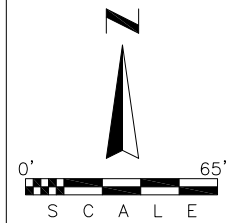
MONITORING WELL LOCATION

OBSERVED EXCEEDANCE OF THE RECOMMENDED PAL ES FOR PFAS CONSTITUENT

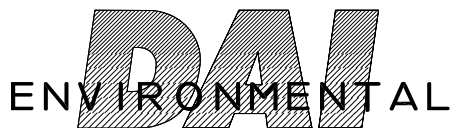
OBSERVED EXCEEDANCE OF THE RECOMMENDED PAL ES FOR PFAS CONSTITUENT

PFAS CONSTITUENT	PFAS CONC. (ng/L)
PFDA	12
PFNA	4.3
PFOSA	4.7

NOTE: DUPLICATE SAMPLE RESULTS DISPLAYED AS # / #



CAD FILE: 6255-210
REVISED: 04/15/21



SUNRISE SHOPPING CENTER
2410-2424 10TH AVENUE
1009 MARQUETTE AVENUE
SOUTH MILWAUKEE, WISCONSIN

FIGURE B.3.b.3
GROUNDWATER
ISOCONCENTRATION
(PFAS)

APPENDIX C.1.E
LABORATORY ANALYTICAL REPORTS
(EMERGING CONTAMIANANTS ANALYSIS)

March 30, 2021

Chris Cailles
DAI Environmental
Polo Park Business Center
27834 Irma Lee Circle
Lake Forest, IL 60045

RE: Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223357

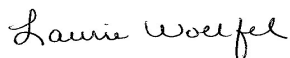
Dear Chris Cailles:

Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 2021. 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,



Laurie Woelfel
laurie.woelfel@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jenny Rovzar, DAI



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

SAMPLE SUMMARY

Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223357

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40223357001	EQUIPMENT BLANK	Water	03/11/21 09:45	03/13/21 08:35
40223357002	MW-3	Water	03/11/21 10:00	03/13/21 08:35
40223357003	MW-5	Water	03/11/21 11:00	03/13/21 08:35
40223357004	FIELD BLANK	Water	03/11/21 09:45	03/13/21 08:35
40223357005	MW-5 (DUP)	Water	03/11/21 11:00	03/13/21 08:35

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Sample Preservation Receipt Form

Client Name: DAB ENV.

Project # 40223357

All containers needing preservation have been checked and noted below: Yes No N/A

Initial when completed:

Date/Time:

Lab Lot# of pH paper:

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

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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	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T								ZPLC	GN		
001																																			2.5 / 5 / 10
002																																			2.5 / 5 / 10
003																																			2.5 / 5 / 10
004																																			2.5 / 5 / 10
005																																			2.5 / 5 / 10
006																																			2.5 / 5 / 10
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018																																			2.5 / 5 / 10
019																																			2.5 / 5 / 10
020																																			2.5 / 5 / 10

MLK
3-13-21

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	VG9A	40 mL clear ascorbic	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
AG4U	120 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG5U	100 mL amber glass unpres			VG9D	40 mL clear vial DI	ZPLC	ziploc bag
AG2S	500 mL amber glass H2SO4					GN	
BG3U	250 mL clear glass unpres						



1241 Bellevue Street, Green Bay, WI 54302

Document Name:
Sample Condition Upon Receipt (SCUR)

Document No.:
ENV-FRM-GBAY-0014-Rev.00

Document Revised: 26Mar2020

Author:
Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: DAE Env.

Project #: _____

Courier: CS Logistics Fed Ex Speedee UPS Walco
 Client Pace Other: _____

WO# : 40223357

40223357

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 - N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 40F / Corr: _____

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: 3-13-21 / Initials: ML
Labeled By Initials: ML

Chain of Custody Present: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pa #, mail/invoice, pres. del analysis, acy matrix</u>
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>no date/time</u> <u>ML 3-13-21</u> <u>ML 3-13-21</u>
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No - VOA Samples frozen upon receipt <input type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time: _____
Short Hold Time Analysis (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8. <u>Lab received in BPA per sample point</u> <u>ML 3-13-21</u>
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No - Pace Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A - Pace IR Containers Used: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	9.
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A - Includes date/time/ID/Analysis Matrix: <u>W</u>	12. <u>ool time "1000"</u> <u>ML 3-13-21</u>
Trip Blank Present: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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 logir



Report of Analysis

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

Project Name: 6255 SOUTH MILWAUKEE AVE

Project Number: 40223357

Lot Number: **WC16034**

Date Completed: 03/26/2021

Karen Coonan

03/28/2021 3:49 PM

Approved and released by:
Project Manager II: **Karen L. Coonan**



The electronic signature above is the equivalent of a handwritten signature.
This report shall not be reproduced, except in its entirety, without the written approval of Pace Analytical Services, LLC.

PACE ANALYTICAL SERVICES, LLC

SC DHEC No: 32010001

NELAC No: E87653

NC DENR No: 329

NC Field Parameters No: 5639

Case Narrative Pace Analytical Services, LLC Lot Number: WC16034

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.

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.

If you have any questions regarding this report please contact the Pace Project Manager listed on the cover page.

Sample WC16034-002 required centrifugation prior to extraction, due to excessive solids present in the samples. Centrifugation was performed following the PFAS Aqueous Centrifuge Protocol; samples were spiked with Surrogate (SUR; Extracted Internal Standard/EIS) and shaken vigorously before being poured into a conical bottle and centrifuged. The centrifuged aqueous sample was decanted back into the original sample bottle, off of the condensed solids remaining in the centrifuge bottle. Original sample bottle was rinsed as normal and centrifuge bottle was rinsed with 4mL of MeOH. Centrifuge bottle rinsate was added to the elution. Samples concentrated to <10mL and reconstituted to 10mL using MeOH by transfer pipet.

Surrogate (4:2-FTS, 6:2-FTS and 8:2-FTS) recovery for the following sample was outside the upper control limit: WC16034-002. The sample was re-extracted. Surrogate recovery was outside the upper control limit in the Run 2. This sample did not contain any target analytes; results were reported.

The method blank associated with batch 86218 had PFBA detected at a concentration that was above the MDL but below ½ the PQL. All samples associated with this method blank that have detections for PFBA have been flagged with a "B".

PACE ANALYTICAL SERVICES, LLC

Sample Summary
Pace Analytical Services, LLC
Lot Number: WC16034
Project Name: 6255 SOUTH MILWAUKEE AVE
Project Number: 40223357

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	EQUIPMENT BLANK	Aqueous	03/11/2021 0945	03/16/2021
002	MW-3	Aqueous	03/11/2021 1000	03/16/2021
003	MW-5	Aqueous	03/11/2021 1100	03/16/2021
004	FIELD BLANK	Aqueous	03/11/2021 0945	03/16/2021
005	MW-5 (DUP)	Aqueous	03/11/2021 1100	03/16/2021

(5 samples)

PACE ANALYTICAL SERVICES, LLC

Detection Summary
Pace Analytical Services, LLC
Lot Number: WC16034
Project Name: 6255 SOUTH MILWAUKEE AVE
Project Number: 40223357

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	EQUIPMENT BLANK	Aqueous	PFBA	PFAS by ID	9.8	B	ng/L	5
001	EQUIPMENT BLANK	Aqueous	PFHpA	PFAS by ID	8.1		ng/L	5
001	EQUIPMENT BLANK	Aqueous	PFHxA	PFAS by ID	2.6	J	ng/L	5
001	EQUIPMENT BLANK	Aqueous	PFPeA	PFAS by ID	68		ng/L	5
002	MW-3	Aqueous	6:2 FTS	PFAS by ID	2.7	JQ	ng/L	7
002	MW-3	Aqueous	PFBS	PFAS by ID	19		ng/L	7
002	MW-3	Aqueous	PFHxS	PFAS by ID	6.9		ng/L	7
002	MW-3	Aqueous	PFBA	PFAS by ID	31		ng/L	7
002	MW-3	Aqueous	PFDA	PFAS by ID	1.8	J	ng/L	7
002	MW-3	Aqueous	PFHpA	PFAS by ID	4.5		ng/L	7
002	MW-3	Aqueous	PFNA	PFAS by ID	4.3		ng/L	7
002	MW-3	Aqueous	PFOA	PFAS by ID	12		ng/L	7
002	MW-3	Aqueous	PFOS	PFAS by ID	47		ng/L	7
003	MW-5	Aqueous	PFBS	PFAS by ID	21		ng/L	9
003	MW-5	Aqueous	PFPeS	PFAS by ID	1.4	J	ng/L	9
003	MW-5	Aqueous	PFHxS	PFAS by ID	5.2		ng/L	9
003	MW-5	Aqueous	PFBA	PFAS by ID	11		ng/L	9
003	MW-5	Aqueous	PFHpA	PFAS by ID	5.9		ng/L	9
003	MW-5	Aqueous	PFHxA	PFAS by ID	8.6		ng/L	9
003	MW-5	Aqueous	PFOA	PFAS by ID	12		ng/L	9
003	MW-5	Aqueous	PFPeA	PFAS by ID	12		ng/L	9
003	MW-5	Aqueous	PFOS	PFAS by ID	9.5		ng/L	9
004	FIELD BLANK	Aqueous	6:2 FTS	PFAS by ID	2.2	J	ng/L	11
005	MW-5 (DUP)	Aqueous	PFBS	PFAS by ID	20		ng/L	13
005	MW-5 (DUP)	Aqueous	PFPeS	PFAS by ID	1.3	J	ng/L	13
005	MW-5 (DUP)	Aqueous	PFHxS	PFAS by ID	5.9		ng/L	13
005	MW-5 (DUP)	Aqueous	PFBA	PFAS by ID	11		ng/L	13
005	MW-5 (DUP)	Aqueous	PFHpA	PFAS by ID	6.4		ng/L	13
005	MW-5 (DUP)	Aqueous	PFHxA	PFAS by ID	9.1		ng/L	13
005	MW-5 (DUP)	Aqueous	PFOA	PFAS by ID	12		ng/L	13
005	MW-5 (DUP)	Aqueous	PFPeA	PFAS by ID	12		ng/L	13
005	MW-5 (DUP)	Aqueous	PFOS	PFAS by ID	9.4		ng/L	13

(32 detections)

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC	Laboratory ID: WC16034-001
Description: EQUIPMENT BLANK	Matrix: Aqueous
Date Sampled: 03/11/2021 0945	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	03/21/2021 1551	MMM	03/19/2021 1109	86218

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	3.4	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	9.8	B	3.4	0.84	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	8.1		3.4	0.84	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	2.6	J	3.4	0.84	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	68		3.4	0.84	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		100	25-150
13C2_6:2FTS		96	25-150
13C2_8:2FTS		94	25-150
13C2_PFDa		93	25-150
13C2_PFHxDA		96	25-150
13C2_PFTeDA		96	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: WC16034-001
Description: EQUIPMENT BLANK	Matrix: Aqueous
Date Sampled: 03/11/2021 0945	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		86	25-150
13C3_PFHxS		100	25-150
13C3-HFPO-DA		101	25-150
13C4_PFBa		109	25-150
13C4_PFHpA		103	25-150
13C5_PFHxA		108	25-150
13C5_PFPeA		108	25-150
13C6_PFDa		100	25-150
13C7_PFUdA		100	25-150
13C8_PFOA		101	25-150
13C8_PFOS		89	25-150
13C8_PFOsA		98	10-150
13C9_PFNA		102	25-150
d-EtFOsA		96	10-150
d5-EtFOsAA		97	25-150
d9-EtFOsE		102	10-150
d-MeFOsA		85	10-150
d3-MeFOsAA		95	25-150
d7-MeFOsE		93	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: WC16034-002
Description: MW-3	Matrix: Aqueous
Date Sampled: 03/11/2021 1000	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	03/23/2021 1924	SES	03/22/2021 1146	86408
2	SOP SPE	PFAS by ID SOP	1	03/24/2021 2033	JJG	03/22/2021 1146	86408

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND	Q	6.9	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	2.7	JQ	6.9	1.7	ng/L	2
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		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	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	3.5	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	19		3.5	0.87	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	6.9		3.5	0.87	ng/L	1
Perfluoro-n-butanefluoronic acid (PFBA)	375-22-4	PFAS by ID SOP	31		3.5	0.87	ng/L	1
Perfluoro-n-decanefluoronic acid (PFDA)	335-76-2	PFAS by ID SOP	1.8	J	3.5	0.87	ng/L	1
Perfluoro-n-dodecanefluoronic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-heptanefluoronic acid (PFHpA)	375-85-9	PFAS by ID SOP	4.5		3.5	0.87	ng/L	1
Perfluoro-n-hexadecanefluoronic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-n-hexanefluoronic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-nonanefluoronic acid (PFNA)	375-95-1	PFAS by ID SOP	4.3		3.5	0.87	ng/L	1
Perfluoro-n-octadecanefluoronic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-n-octanefluoronic acid (PFOA)	335-67-1	PFAS by ID SOP	12		3.5	0.87	ng/L	1
Perfluoro-n-pentanefluoronic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-tetradecanefluoronic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-tridecanefluoronic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-undecanefluoronic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	47		3.5	0.87	ng/L	1

Surrogate	Q	Run 1		Q	Run 2	
		% Recovery	Acceptance Limits		% Recovery	Acceptance Limits
13C2_4:2FTS	N	211	25-150	N	255	25-150
13C2_6:2FTS	N	263	25-150	N	286	25-150
13C2_8:2FTS	N	304	25-150	N	301	25-150
13C2_PFDa		88	25-150		86	25-150
13C2_PFHxDA		34	25-150		30	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: WC16034-002
Description: MW-3	Matrix: Aqueous
Date Sampled: 03/11/2021 1000	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C2_PFTeDA		55	25-150		50	25-150
13C3_PFBS		65	25-150		68	25-150
13C3_PFHxS		76	25-150		80	25-150
13C3-HFPO-DA		58	25-150		60	25-150
13C4_PFBA		34	25-150		36	25-150
13C4_PFHpA		77	25-150		81	25-150
13C5_PFHxA		64	25-150		68	25-150
13C5_PFPeA		49	25-150		52	25-150
13C6_PFDA		94	25-150		103	25-150
13C7_PFUdA		109	25-150		107	25-150
13C8_PFOA		83	25-150		90	25-150
13C8_PFOS		93	25-150		86	25-150
13C8_PFOSA		78	10-150		81	10-150
13C9_PFNA		94	25-150		99	25-150
d-EtFOSA		62	10-150		61	10-150
d5-EtFOSAA		98	25-150		104	25-150
d9-EtFOSE		51	10-150		54	10-150
d-MeFOSA		55	10-150		61	10-150
d3-MeFOSAA		98	25-150		100	25-150
d7-MeFOSE		49	10-150		53	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: WC16034-003
Description: MW-5	Matrix: Aqueous
Date Sampled: 03/11/2021 1100	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	03/23/2021 1935	SES	03/22/2021 1146	86408

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	3.4	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	21		3.4	0.84	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.4	J	3.4	0.84	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	5.2		3.4	0.84	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11		3.4	0.84	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.9		3.4	0.84	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	8.6		3.4	0.84	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		6.7	1.7	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	12		3.4	0.84	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	12		3.4	0.84	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.84	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.5		3.4	0.84	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		136	25-150
13C2_6:2FTS		103	25-150
13C2_8:2FTS		83	25-150
13C2_PFDaA		66	25-150
13C2_PFHxDA		61	25-150
13C2_PFTeDA		57	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: WC16034-003
Description: MW-5	Matrix: Aqueous
Date Sampled: 03/11/2021 1100	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		81	25-150
13C3_PFHxS		89	25-150
13C3-HFPO-DA		91	25-150
13C4_PFBa		90	25-150
13C4_PFHpA		96	25-150
13C5_PFHxA		94	25-150
13C5_PFPeA		95	25-150
13C6_PFDa		83	25-150
13C7_PFUdA		79	25-150
13C8_PFOA		93	25-150
13C8_PFOS		89	25-150
13C8_PFOsA		87	10-150
13C9_PFNA		93	25-150
d-EtFOsA		62	10-150
d5-EtFOsAA		72	25-150
d9-EtFOSE		59	10-150
d-MeFOsA		68	10-150
d3-MeFOsAA		79	25-150
d7-MeFOSE		54	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: WC16034-004
Description: FIELD BLANK	Matrix: Aqueous
Date Sampled: 03/11/2021 0945	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	03/23/2021 1852	SES	03/22/2021 1146	86408

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	2.2	J	6.8	1.7	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	3.4	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
Perfluoro-1-butanefluoronic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-butanefluoronic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.85	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.4	0.85	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		87	25-150
13C2_6:2FTS		89	25-150
13C2_8:2FTS		84	25-150
13C2_PFDaA		79	25-150
13C2_PFHxDA		84	25-150
13C2_PFTeDA		79	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: WC16034-004
Description: FIELD BLANK	Matrix: Aqueous
Date Sampled: 03/11/2021 0945	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		75	25-150
13C3_PFHxS		81	25-150
13C3-HFPO-DA		91	25-150
13C4_PFBa		91	25-150
13C4_PFHpA		89	25-150
13C5_PFHxA		86	25-150
13C5_PFPeA		89	25-150
13C6_PFDa		82	25-150
13C7_PFUdA		84	25-150
13C8_PFOA		92	25-150
13C8_PFOS		91	25-150
13C8_PFOsA		83	10-150
13C9_PFNa		89	25-150
d-EtFOsA		78	10-150
d5-EtFOsAA		78	25-150
d9-EtFOsE		85	10-150
d-MeFOsA		74	10-150
d3-MeFOsAA		78	25-150
d7-MeFOsE		73	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: WC16034-005
Description: MW-5 (DUP)	Matrix: Aqueous
Date Sampled: 03/11/2021 1100	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	03/23/2021 1946	SES	03/22/2021 1146	86408

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	DL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11CI-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
1H,1H,2H,2H-perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0	PFAS by ID SOP	ND		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		6.9	1.7	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	3.4	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	20		3.4	0.86	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.3	J	3.4	0.86	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	5.9		3.4	0.86	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	11		3.4	0.86	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-n-heptanoic acid (PFHpa)	375-85-9	PFAS by ID SOP	6.4		3.4	0.86	ng/L	1
Perfluoro-n-hexadecanoic acid (PFHxDA)	67905-19-5	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	9.1		3.4	0.86	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-n-octadecanoic acid (PFODA)	16517-11-6	PFAS by ID SOP	ND		6.9	1.7	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	12		3.4	0.86	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	12		3.4	0.86	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.86	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.4		3.4	0.86	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		138	25-150
13C2_6:2FTS		105	25-150
13C2_8:2FTS		88	25-150
13C2_PFDaA		72	25-150
13C2_PFHxDA		68	25-150
13C2_PFTeDA		58	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: WC16034-005
Description: MW-5 (DUP)	Matrix: Aqueous
Date Sampled: 03/11/2021 1100	Project Name: 6255 SOUTH MILWAUKEE AVE
Date Received: 03/16/2021	Project Number: 40223357

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C3_PFBs		84	25-150
13C3_PFHxS		91	25-150
13C3-HFPO-DA		93	25-150
13C4_PFBa		95	25-150
13C4_PFHpA		99	25-150
13C5_PFHxA		98	25-150
13C5_PFPeA		98	25-150
13C6_PFDa		91	25-150
13C7_PFUdA		83	25-150
13C8_PFOA		100	25-150
13C8_PFOS		101	25-150
13C8_PFOSA		97	10-150
13C9_PFNA		96	25-150
d-EtFOSA		59	10-150
d5-EtFOSAA		76	25-150
d9-EtFOSE		55	10-150
d-MeFOSA		70	10-150
d3-MeFOSAA		80	25-150
d7-MeFOSE		66	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

QC Summary

PFAS by LC/MS/MS - MB

Sample ID: WQ86218-001

Matrix: Aqueous

Batch: 86218

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/19/2021 1109

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
9CI-PF3ONS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
11CI-PF3OUdS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
8:2 FTS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
6:2 FTS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
10:2 FTS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
4:2 FTS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
GenX	ND		1	8.0	2.0	ng/L	03/21/2021 1426
ADONA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
EtFOSA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
EtFOSAA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
EtFOSE	ND		1	8.0	2.0	ng/L	03/21/2021 1426
MeFOSA	ND		1	16	4.0	ng/L	03/21/2021 1426
MeFOSAA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
MeFOSE	ND		1	8.0	2.0	ng/L	03/21/2021 1426
PFBS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFDS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFHpS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFNS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFOSA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFPeS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFDOS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
PFHxS	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFBA	1.5	J	1	4.0	1.0	ng/L	03/21/2021 1426
PFDA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFDoA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFHpA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFHxDA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
PFHxA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFNA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFODA	ND		1	8.0	2.0	ng/L	03/21/2021 1426
PFOA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFPeA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFTeDA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFTTrDA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFUdA	ND		1	4.0	1.0	ng/L	03/21/2021 1426
PFOS	ND		1	4.0	1.0	ng/L	03/21/2021 1426

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		95	25-150
13C2_6:2FTS		103	25-150
13C2_8:2FTS		99	25-150
13C2_PFDoA		93	25-150
13C2_PFHxDA		104	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86218-001

Matrix: Aqueous

Batch: 86218

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/19/2021 1109

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		100	25-150
13C3_PFBs		90	25-150
13C3_PFHxS		104	25-150
13C3-HFPO-DA		107	25-150
13C4_PFBa		109	25-150
13C4_PFHpA		109	25-150
13C5_PFHxA		110	25-150
13C5_PFPeA		109	25-150
13C6_PFDa		103	25-150
13C7_PFUdA		97	25-150
13C8_PFOA		106	25-150
13C8_PFOs		96	25-150
13C8_PFOsA		102	10-150
13C9_PFNa		102	25-150
d-EtFOsA		86	10-150
d5-EtFOsAA		97	25-150
d9-EtFOsE		107	10-150
d-MeFOsA		90	10-150
d3-MeFOsAA		98	25-150
d7-MeFOsE		104	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86218-002

Matrix: Aqueous

Batch: 86218

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/19/2021 1109

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	14		1	97	50-150	03/21/2021 1436
11CI-PF3OUdS	15	14		1	95	50-150	03/21/2021 1436
8:2 FTS	15	12		1	76	50-150	03/21/2021 1436
6:2 FTS	15	16		1	108	50-150	03/21/2021 1436
10:2 FTS	15	16		1	102	50-150	03/21/2021 1436
4:2 FTS	15	15		1	100	50-150	03/21/2021 1436
GenX	32	32		1	100	50-150	03/21/2021 1436
ADONA	15	15		1	97	50-150	03/21/2021 1436
EtFOSA	16	20		1	124	50-150	03/21/2021 1436
EtFOSAA	16	15		1	91	50-150	03/21/2021 1436
EtFOSE	16	17		1	105	50-150	03/21/2021 1436
MeFOSA	16	19		1	119	50-150	03/21/2021 1436
MeFOSAA	16	16		1	97	50-150	03/21/2021 1436
MeFOSE	16	17		1	104	50-150	03/21/2021 1436
PFBS	14	16		1	114	50-150	03/21/2021 1436
PFDS	15	18		1	114	50-150	03/21/2021 1436
PFHpS	15	13		1	86	50-150	03/21/2021 1436
PFNS	15	15		1	94	50-150	03/21/2021 1436
PFOSA	16	14		1	90	50-150	03/21/2021 1436
PFPeS	15	17		1	110	50-150	03/21/2021 1436
PFDOS	15	16		1	100	50-150	03/21/2021 1436
PFHxS	15	14		1	95	50-150	03/21/2021 1436
PFBA	16	16		1	99	50-150	03/21/2021 1436
PFDA	16	16		1	98	50-150	03/21/2021 1436
PFDoA	16	16		1	100	50-150	03/21/2021 1436
PFHpA	16	15		1	95	50-150	03/21/2021 1436
PFHxDA	16	17		1	109	50-150	03/21/2021 1436
PFHxA	16	15		1	94	50-150	03/21/2021 1436
PFNA	16	14		1	85	50-150	03/21/2021 1436
PFODA	16	17		1	107	50-150	03/21/2021 1436
PFOA	16	15		1	94	50-150	03/21/2021 1436
PFPeA	16	15		1	95	50-150	03/21/2021 1436
PFTeDA	16	16		1	101	50-150	03/21/2021 1436
PFTrDA	16	16		1	100	50-150	03/21/2021 1436
PFUdA	16	15		1	92	50-150	03/21/2021 1436
PFOS	15	15		1	104	50-150	03/21/2021 1436

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		109	25-150
13C2_6:2FTS		100	25-150
13C2_8:2FTS		105	25-150
13C2_PFDaA		93	25-150
13C2_PFHxDA		100	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86218-002

Matrix: Aqueous

Batch: 86218

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/19/2021 1109

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		101	25-150
13C3_PFBs		86	25-150
13C3_PFHxS		103	25-150
13C3-HFPO-DA		106	25-150
13C4_PFBa		111	25-150
13C4_PFHpA		107	25-150
13C5_PFHxA		108	25-150
13C5_PFPeA		110	25-150
13C6_PFDa		104	25-150
13C7_PFUdA		99	25-150
13C8_PFOA		104	25-150
13C8_PFOs		92	25-150
13C8_PFOsA		109	10-150
13C9_PFNa		111	25-150
d-EtFOsA		89	10-150
d5-EtFOsAA		96	25-150
d9-EtFOsE		109	10-150
d-MeFOsA		91	10-150
d3-MeFOsAA		96	25-150
d7-MeFOsE		101	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86408-001

Matrix: Aqueous

Batch: 86408

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/22/2021 1146

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
9CI-PF3ONS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
11CI-PF3OUdS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
8:2 FTS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
6:2 FTS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
10:2 FTS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
4:2 FTS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
GenX	ND		1	8.0	2.0	ng/L	03/23/2021 1810
ADONA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
EtFOSA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
EtFOSAA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
EtFOSE	ND		1	8.0	2.0	ng/L	03/23/2021 1810
MeFOSA	ND		1	16	4.0	ng/L	03/23/2021 1810
MeFOSAA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
MeFOSE	ND		1	8.0	2.0	ng/L	03/23/2021 1810
PFBS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFDS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFHpS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFNS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFOSA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFPeS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFDOS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
PFHxS	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFBA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFDA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFDoA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFHpA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFHxDA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
PFHxA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFNA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFODA	ND		1	8.0	2.0	ng/L	03/23/2021 1810
PFOA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFPeA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFTeDA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFTTrDA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFUdA	ND		1	4.0	1.0	ng/L	03/23/2021 1810
PFOS	ND		1	4.0	1.0	ng/L	03/23/2021 1810

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		89	25-150
13C2_6:2FTS		88	25-150
13C2_8:2FTS		88	25-150
13C2_PFDoA		97	25-150
13C2_PFHxDA		100	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86408-001

Matrix: Aqueous

Batch: 86408

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/22/2021 1146

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		97	25-150
13C3_PFBs		82	25-150
13C3_PFHxS		87	25-150
13C3-HFPO-DA		94	25-150
13C4_PFBa		96	25-150
13C4_PFHpA		101	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		91	25-150
13C6_PFDa		99	25-150
13C7_PFUdA		97	25-150
13C8_PFOA		97	25-150
13C8_PFOs		97	25-150
13C8_PFOsA		94	10-150
13C9_PFNa		98	25-150
d-EtFOsA		81	10-150
d5-EtFOsAA		87	25-150
d9-EtFOsE		98	10-150
d-MeFOsA		79	10-150
d3-MeFOsAA		90	25-150
d7-MeFOsE		88	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86408-002

Matrix: Aqueous

Batch: 86408

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/22/2021 1146

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9CI-PF3ONS	15	15		1	102	50-150	03/23/2021 1821
11CI-PF3OUdS	15	15		1	98	50-150	03/23/2021 1821
8:2 FTS	15	12		1	78	50-150	03/23/2021 1821
6:2 FTS	15	17		1	115	50-150	03/23/2021 1821
10:2 FTS	15	18		1	116	50-150	03/23/2021 1821
4:2 FTS	15	17		1	117	50-150	03/23/2021 1821
GenX	32	33		1	105	50-150	03/23/2021 1821
ADONA	15	16		1	106	50-150	03/23/2021 1821
EtFOSA	16	24		1	148	50-150	03/23/2021 1821
EtFOSAA	16	17		1	109	50-150	03/23/2021 1821
EtFOSE	16	18		1	112	50-150	03/23/2021 1821
MeFOSA	16	17		1	109	50-150	03/23/2021 1821
MeFOSAA	16	16		1	100	50-150	03/23/2021 1821
MeFOSE	16	20		1	124	50-150	03/23/2021 1821
PFBS	14	17		1	121	50-150	03/23/2021 1821
PFDS	15	14		1	90	50-150	03/23/2021 1821
PFHpS	15	16		1	105	50-150	03/23/2021 1821
PFNS	15	14		1	90	50-150	03/23/2021 1821
PFOSA	16	17		1	106	50-150	03/23/2021 1821
PFPeS	15	18		1	122	50-150	03/23/2021 1821
PFDOS	15	14		1	92	50-150	03/23/2021 1821
PFHxS	15	16		1	107	50-150	03/23/2021 1821
PFBA	16	17		1	109	50-150	03/23/2021 1821
PFDA	16	17		1	107	50-150	03/23/2021 1821
PFDoA	16	19		1	117	50-150	03/23/2021 1821
PFHpA	16	17		1	106	50-150	03/23/2021 1821
PFHxDA	16	19		1	120	50-150	03/23/2021 1821
PFHxA	16	17		1	104	50-150	03/23/2021 1821
PFNA	16	18		1	110	50-150	03/23/2021 1821
PFODA	16	19		1	121	50-150	03/23/2021 1821
PFOA	16	16		1	101	50-150	03/23/2021 1821
PFPeA	16	16		1	100	50-150	03/23/2021 1821
PFTeDA	16	17		1	107	50-150	03/23/2021 1821
PFTrDA	16	17		1	107	50-150	03/23/2021 1821
PFUdA	16	17		1	105	50-150	03/23/2021 1821
PFOS	15	15		1	100	50-150	03/23/2021 1821

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		87	25-150
13C2_6:2FTS		86	25-150
13C2_8:2FTS		86	25-150
13C2_PFDoA		85	25-150
13C2_PFHxDA		98	25-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = 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: WQ86408-002

Matrix: Aqueous

Batch: 86408

Prep Method: SOP SPE

Analytical Method: PFAS by ID SOP

Prep Date: 03/22/2021 1146

Surrogate	Q	% Rec	Acceptance Limit
13C2_PFTeDA		91	25-150
13C3_PFBs		79	25-150
13C3_PFHxS		86	25-150
13C3-HFPO-DA		90	25-150
13C4_PFBa		92	25-150
13C4_PFHpA		94	25-150
13C5_PFHxA		91	25-150
13C5_PFPeA		92	25-150
13C6_PFDa		90	25-150
13C7_PFUdA		93	25-150
13C8_PFOA		92	25-150
13C8_PFOs		99	25-150
13C8_PFOsA		94	10-150
13C9_PFNa		90	25-150
d-EtFOsA		75	10-150
d5-EtFOsAA		90	25-150
d9-EtFOsE		96	10-150
d-MeFOsA		75	10-150
d3-MeFOsAA		85	25-150
d7-MeFOsE		82	10-150

LOQ = Limit of Quantitation

ND = Not detected at or above the DL

N = Recovery is out of criteria

DL = Detection Limit

J = Estimated result < LOQ and ≥ DL

P = The RPD between two GC columns exceeds 40%

* = RSD is out of criteria

+ = RPD is out of criteria

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



Samples Pre-Logged into eCOC.

State Of Origin: WI
 Cert. Needed: Yes No
 Owner Received Date: 3/13/2021 Results Requested By: 3/22/2021



Workorder: 40223357 Workorder Name: 6255 SOUTH MILWAUKEE AVE

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Leakage	Preserved Containers	Requested Analysis
1	EQUIPMENT BLANK	PS	3/11/2021 09:45	40223357001	Water	1		
2	MW-3	PS	3/11/2021 10:00	40223357002	Water	1		
3	MW-5	PS	3/11/2021 11:00	40223357003	Water	1		
4	FIELD BLANK	PS	3/11/2021 09:45	40223357004	Water	1		
5	MW-5 (DUP)	PS	3/11/2021 11:00	40223357005	Water	1		



WC16034

KLC2

LAB USE ONLY

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	<i>[Signature]</i>	3/15/21 10:00			
2	MEH 3/16/21	12:22		12:22	
3	LPS Fedex	3/16/21 09:52	<i>[Signature]</i>	3/16/21 09:52	

Cooler Temperature on Receipt 1.1 °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



Samples Receipt Checklist (SRC) (ME0018C-15)
Issuing Authority: Pace ENV - WCOL

Revised: 9/29/2020
Page 1 of 1

Sample Receipt Checklist (SRC)

Client: PACE

Cooler Inspected by/date: MEH / 03/16/2021

Lot #: WC16034

Means of receipt: <input type="checkbox"/> Pace <input type="checkbox"/> Client <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other:	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Were custody seals present on the cooler?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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	
1.1 / 1.1 °C NA / NA °C NA / NA °C NA / NA °C	
Method: <input checked="" type="checkbox"/> Temperature Blank <input type="checkbox"/> Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C	
Method of coolant: <input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Ice Packs <input type="checkbox"/> Dry Ice <input type="checkbox"/> None	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA	4. Is the commercial courier's packing slip attached to this form?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Were proper custody procedures (relinquished/received) followed?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	6. Were sample IDs listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	7. Were sample IDs listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	8. Was collection date & time listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9. Was collection date & time listed on all sample containers?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10. Did all container label information (ID, date, time) agree with the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	11. Were tests to be performed listed on the COC?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	13. Was adequate sample volume available?
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼" or 6mm in diameter) in any of the VOA vials?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	19. Were all applicable NH ₃ /TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	20. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc...) correctly transcribed from the COC into the comment section in LIMS?
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	21. Was the quote number listed on the container label? If yes. Quote # NA
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 ₂ S ₂ O ₃) with Shealy ID: NA	
SR barcode labels applied by: IRG2 Date: 03/16/2021	
Comments:	

March 22, 2021

Chris Cailles
DAI Environmental
Polo Park Business Center
27834 Irma Lee Circle
Lake Forest, IL 60045

RE: Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223366

Dear Chris Cailles:

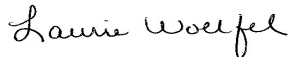
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise 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 National - Mt. Juliet

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

Sincerely,



Laurie Woelfel
laurie.woelfel@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jenny Rovzar, DAI



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

CERTIFICATIONS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

Pace Analytical Services National

12065 Lebanon Road, Mt. Juliet, TN 37122

Alabama Certification #: 40660

Alaska Certification 17-026

Arizona Certification #: AZ0612

Arkansas Certification #: 88-0469

California Certification #: 2932

Canada Certification #: 1461.01

Colorado Certification #: TN00003

Connecticut Certification #: PH-0197

DOD Certification: #1461.01

EPA# TN00003

Florida Certification #: E87487

Georgia DW Certification #: 923

Georgia Certification: NELAP

Idaho Certification #: TN00003

Illinois Certification #: 200008

Indiana Certification #: C-TN-01

Iowa Certification #: 364

Kansas Certification #: E-10277

Kentucky UST Certification #: 16

Kentucky Certification #: 90010

Louisiana Certification #: AI30792

Louisiana DW Certification #: LA180010

Maine Certification #: TN0002

Maryland Certification #: 324

Massachusetts Certification #: M-TN003

Michigan Certification #: 9958

Minnesota Certification #: 047-999-395

Mississippi Certification #: TN00003

Missouri Certification #: 340

Montana Certification #: CERT0086

Nebraska Certification #: NE-OS-15-05

Nevada Certification #: TN-03-2002-34

New Hampshire Certification #: 2975

New Jersey Certification #: TN002

New Mexico DW Certification

New York Certification #: 11742

North Carolina Aquatic Toxicity Certification #: 41

North Carolina Drinking Water Certification #: 21704

North Carolina Environmental Certificate #: 375

North Dakota Certification #: R-140

Ohio VAP Certification #: CL0069

Oklahoma Certification #: 9915

Oregon Certification #: TN200002

Pennsylvania Certification #: 68-02979

Rhode Island Certification #: LAO00356

South Carolina Certification #: 84004

South Dakota Certification

Tennessee DW/Chem/Micro Certification #: 2006

Texas Mold Certification #: LAB0152

Texas Certification #: T 104704245-17-14

USDA Soil Permit #: P330-15-00234

Utah Certification #: TN00003

Virginia Certification #: VT2006

Vermont Dept. of Health: ID# VT-2006

Virginia Certification #: 460132

Washington Certification #: C847

West Virginia Certification #: 233

Wisconsin Certification #: 998093910

Wyoming UST Certification #: via A2LA 2926.01

A2LA-ISO 17025 Certification #: 1461.01

A2LA-ISO 17025 Certification #: 1461.02

AIHA-LAP/LLC EMLAP Certification #:100789

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40223366001	MW-3	Water	03/11/21 10:00	03/13/21 08:35
40223366002	MW-5	Water	03/11/21 11:00	03/13/21 08:35

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40223366001	MW-3	EPA 8270D by SIM	AO	2	PAN
40223366002	MW-5	EPA 8270D by SIM	AO	2	PAN

PAN = Pace National - Mt. Juliet

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

Sample: MW-3 **Lab ID: 40223366001** Collected: 03/11/21 10:00 Received: 03/13/21 08:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270 D-SIM									
Analytical Method: EPA 8270D by SIM Preparation Method: 3510C Pace National - Mt. Juliet									
1,4-Dioxane (p-Dioxane)	<0.0447	ug/L	0.149	0.0447	1	03/18/21 11:24	03/18/21 20:50	123-91-1	
Surrogates									
Nitrobenzene-d5 (S)	58.8	%	10.0-120		1	03/18/21 11:24	03/18/21 20:50	4165-60-0	

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ANALYTICAL RESULTS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

Sample: MW-5 **Lab ID: 40223366002** Collected: 03/11/21 11:00 Received: 03/13/21 08:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
SVOA (GC/MS) 8270 D-SIM									
Analytical Method: EPA 8270D by SIM Preparation Method: 3510C Pace National - Mt. Juliet									
1,4-Dioxane (p-Dioxane)	<0.0447	ug/L	0.149	0.0447	1	03/18/21 11:24	03/18/21 20:10	123-91-1	
Surrogates									
Nitrobenzene-d5 (S)	57.4	%	10.0-120		1	03/18/21 11:24	03/18/21 20:10	4165-60-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223366

QC Batch: 1636158	Analysis Method: EPA 8270D by SIM
QC Batch Method: 3510C	Analysis Description: SVOA (GC/MS) 8270 D-SIM
	Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 40223366001, 40223366002

METHOD BLANK: R3632677-3 Matrix: Water

Associated Lab Samples: 40223366001, 40223366002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.0447	0.149	03/18/21 19:49	
Nitrobenzene-d5 (S)	%	60.2	10.0-120	03/18/21 19:49	

LABORATORY CONTROL SAMPLE & LCSD: R3632677-1 R3632677-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	50.0	66.0	66.0	132	132	73.0-146	0.00	20	
Nitrobenzene-d5 (S)	%				60.0	65.2	10.0-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223366

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.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223366

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40223366001	MW-3	3510C	1636158	EPA 8270D by SIM	1636158
40223366002	MW-5	3510C	1636158	EPA 8270D by SIM	1636158

REPORT OF LABORATORY ANALYSIS

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Sample Preservation Receipt Form

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Client Name: DAD ENV.

Project # 40223363-40223366
3/3/20

All containers needing preservation have been checked and noted below: Yes No NA

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	AG4U	AG5U	AG2S	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T								ZPLC	GN				
001																																				2.5 / 5 / 10
002																																				2.5 / 5 / 10
003																																				2.5 / 5 / 10
004																																				2.5 / 5 / 10
005																																				2.5 / 5 / 10
006																																				2.5 / 5 / 10
007																																				2.5 / 5 / 10
008																																				2.5 / 5 / 10
009																																				2.5 / 5 / 10
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014																																				2.5 / 5 / 10
015																																				2.5 / 5 / 10
016																																				2.5 / 5 / 10
017																																				2.5 / 5 / 10
018																																				2.5 / 5 / 10
019																																				2.5 / 5 / 10
020																																				2.5 / 5 / 10


Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): Yes No NA *If yes look in headspace column

G1U	1 liter amber glass
G1U	1 liter clear glass
31H	1 liter amber glass HCL
34S	125 mL amber glass H2SO4
34U	120 mL amber glass unpres
35U	100 mL amber glass unpres
32S	500 mL amber glass H2SO4
33U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: DAI ENV. Project #: _____

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

WO# : 40223366



40223366

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 - N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun
 Cooler Temperature Uncorr: RAT /Corr: _____

Temp Blank Present: yes no Biological Tissue is Frozen: yes no

Person examining contents:
 Date: 3-13-21 /Initials: MLR
 Labeled By Initials: SRK

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:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pg #, mail/invoice pres. MLR 3-13-21</u>
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>no date/time MLR 3-13-21</u>
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

March 24, 2021

Chris Cailles
DAI Environmental
Polo Park Business Center
27834 Irma Lee Circle
Lake Forest, IL 60045

RE: Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223367

Dear Chris Cailles:

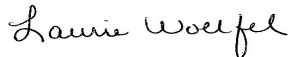
Enclosed are the analytical results for sample(s) received by the laboratory on March 13, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise 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 - Melville

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

Sincerely,



Laurie Woelfel
laurie.woelfel@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jenny Rovzar, DAI



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

Pace Analytical Services Long Island

Delaware Certification # NY10478

Virginia Certification # 460302

Delaware Certification # NY10478

575 Broad Hollow Rd, Melville, NY 11747

New York Certification #: 10478 Primary Accrediting Body

New Jersey Certification #: NY158

Pennsylvania Certification #: 68-00350

Connecticut Certification #: PH-0435

Maryland Certification #: 208

Rhode Island Certification #: LAO00340

Massachusetts Certification #: M-NY026

New Hampshire Certification #: 2987

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40223367001	MW-3	Water	03/11/21 10:00	03/13/21 08:35
40223367002	MW-5	Water	03/11/21 11:00	03/13/21 08:35

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SAMPLE ANALYTE COUNT

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40223367001	MW-3	EPA 8260C/5030C	KGG	4	PACE-MV
40223367002	MW-5	EPA 8260C/5030C	KGG	4	PACE-MV

PACE-MV = Pace Analytical Services - Melville

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

Sample: MW-3 **Lab ID: 40223367001** Collected: 03/11/21 10:00 Received: 03/13/21 08:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics		Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
n-Nonane	<0.52	ug/L	4.0	0.52	1		03/21/21 14:19	111-84-2	N3
Surrogates									
1,2-Dichloroethane-d4 (S)	89	%	70-123		1		03/21/21 14:19	17060-07-0	
4-Bromofluorobenzene (S)	95	%	66-119		1		03/21/21 14:19	460-00-4	
Toluene-d8 (S)	93	%	82-121		1		03/21/21 14:19	2037-26-5	

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ANALYTICAL RESULTS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

Sample: MW-5 **Lab ID: 40223367002** Collected: 03/11/21 11:00 Received: 03/13/21 08:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville								
n-Nonane	<0.52	ug/L	4.0	0.52	1		03/21/21 14:38	111-84-2	N3
Surrogates									
1,2-Dichloroethane-d4 (S)	90	%	70-123		1		03/21/21 14:38	17060-07-0	
4-Bromofluorobenzene (S)	95	%	66-119		1		03/21/21 14:38	460-00-4	
Toluene-d8 (S)	93	%	82-121		1		03/21/21 14:38	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223367

QC Batch: 201046	Analysis Method: EPA 8260C/5030C
QC Batch Method: EPA 8260C/5030C	Analysis Description: 8260 MSV
	Laboratory: Pace Analytical Services - Melville

Associated Lab Samples: 40223367001, 40223367002

METHOD BLANK: 989627 Matrix: Water

Associated Lab Samples: 40223367001, 40223367002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
n-Nonane	ug/L	<0.52	4.0	03/21/21 12:17	N3
1,2-Dichloroethane-d4 (S)	%	89	70-123	03/21/21 12:17	
4-Bromofluorobenzene (S)	%	96	66-119	03/21/21 12:17	
Toluene-d8 (S)	%	90	82-121	03/21/21 12:17	

LABORATORY CONTROL SAMPLE: 989628

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
n-Nonane	ug/L	50	61.7	123	54-139	N3,v1
1,2-Dichloroethane-d4 (S)	%			90	70-123	
4-Bromofluorobenzene (S)	%			96	66-119	
Toluene-d8 (S)	%			92	82-121	

MATRIX SPIKE SAMPLE: 989629

Parameter	Units	70165984001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
n-Nonane	ug/L	<4.0	50	41.8	84	60-140	N3,v1
1,2-Dichloroethane-d4 (S)	%				87	70-123	
4-Bromofluorobenzene (S)	%				92	66-119	
Toluene-d8 (S)	%				95	82-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6255 SOUTH MILWAUKEE AVE

Pace Project No.: 40223367

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.

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

N3 Accreditation is not offered by the relevant laboratory accrediting body for this parameter.

v1 The continuing calibration verification was above the method acceptance limit. Any detection for the analyte in the associated samples may have a high bias.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6255 SOUTH MILWAUKEE AVE
Pace Project No.: 40223367

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40223367001	MW-3	EPA 8260C/5030C	201046		
40223367002	MW-5	EPA 8260C/5030C	201046		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: JAI Environmental
 Branch/Location: Lake Forest, IL
 Project Contact: Chris Cailles
 Phone: 847-573 8900
 Project Number: 6255
 Project Name: South Milwaukee Area
 Project State: Wisconsin
 Sampled By (Print): Marcel Grieschner
 Sampled By (Sign): [Signature]
 PO #: _____ Regulatory Program: _____



40223367

CHAIN OF CUSTODY

***Preservation Codes**
 A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
 H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED?
(YES/NO)
 PRESERVATION
(CODE)*

Y/N	Pick Letter	Analyses Requested
		NONE

Quote #: _____
 Mail To Contact: _____
 Mail To Company: _____
 Mail To Address: _____
 Invoice To Contact: _____
 Invoice To Company: _____
 Invoice To Address: _____
 Invoice To Phone: _____
 CLIENT COMMENTS: _____
 LAB COMMENTS (Lab Use Only): _____
 Profile #: _____

Data Package Options (billable)
 EPA Level III
 EPA Level IV

MS/MSD
 On your sample (billable)
 NOT needed on your sample

Matrix Codes
 A = Air W = Water
 B = Biota DW = Drinking Water
 C = Charcoal GW = Ground Water
 O = Oil SW = Surface Water
 S = Soil WP = Waste Water
 SI = Sludge

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX
		DATE	TIME	
021	mw-3	3/11/21	10:00	GW
022	mw-5	3/11/21	11:00	GW

Rush Turnaround Time Requested - Prelims
 (Rush TAT subject to approval/surcharge)
 Date Needed: _____

Transmit Prelim Rush Results by (complete what you want): _____


Email #1: _____
 Email #2: _____
 Telephone: _____
 Fax: _____

Samples on HOLD are subject to special pricing and release of liability

Relinquished By: [Signature] Date/Time: _____
 Relinquished By: [Signature] Date/Time: 3/12/21 1700
 Relinquished By: CS Logistics Date/Time: 3-13-21 0835
 Relinquished By: _____ Date/Time: _____
 Relinquished By: _____ Date/Time: _____

Received By: [Signature] Date/Time: 3/12/21 1200
 Received By: CS Logistics Date/Time: 3/12/21
 Received By: Meghan Z. Peltier Date/Time: 3-13-21 0835
 Received By: _____ Date/Time: _____
 Received By: _____ Date/Time: _____

PACE Project No. 40223367
 Receipt Temp = 12.0 °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present / Not Present
 Intact / Not Intact

 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: DAE ENV.
Courier: CS Logistics Fed Ex Speedee UPS Walco
 Client Pace Other: _____

Project #: _____

WO#: 40223367



40223367

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 - [unclear] **Type of Ice:** Wet Blue Dry None

Samples on ice, cooling process has begun

Cooler Temperature Uncorr. 20°C / Corr: _____

Temp Blank Present: Yes No **Biological Tissue is Frozen:** Yes No

Person examining contents: Date: <u>3-13-21</u> / Initials: <u>MLR</u> Labeled By Initials: <u>SRIK</u>

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: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pa # mail/invoice pres.</u>
Chain of Custody Relinquished: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3. <u>no date/time</u>
Sampler Name & Signature on COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4. <u>MLR 3-13-21</u>
Samples Arrived within Hold Time: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt <input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time: _____
Short Hold Time Analysis (<72hr): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
- Pace Containers Used: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
- Pace IR Containers Used: <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.
Sample Labels match COC: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
- Includes date/time/ID/Analysis Matrix: <u>W</u>	
Trip Blank Present: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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 logir

MLR
3-13-21 Page 2 of 2
 Page 12 of 12