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October 18, 2021

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 Amendment***
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:

As directed by the Wisconsin Department of Natural Resources (WDNR) in a letter dated November 23, 2020, an evaluation of potential subsurface impact of the Sunrise Shopping Center facility (Site) resulting from emerging contaminants was performed in March 2021. The results of the sampling were submitted to WDNR in the *Emerging Contaminant Evaluation Report* dated April 15, 2021. In a response letter dated May 19, 2021, the WDNR requested additional investigation of per- and polyfluoroalkyl substances (PFAS). A *PFAS Additional Evaluation Work Plan* (Work plan) dated July 21, 2021, was submitted to WDNR with the proposed additional investigations. That Work plan was approved in an email dated July 26, 2021. The only modification was that WDNR required the full list of PFAS constituent required by Wisconsin, instead of the reduced list proposed in the Work plan.

The additional emerging contaminants sampling was performed in August 2021 (though results took over a month to receive from the laboratory). This *Emerging Contaminant Evaluation Report Amendment* provides details of the sampling methodology and analytical results for the initial (March 2021) sampling event and the additional August 2021 sampling activities. Requested revisions listed in the May 2021 response letter from WDNR have been completed as part of this amended report.

1.0 Emerging Contaminant Assessment

To appropriately complete the required evaluation of emerging contaminants, DAI Environmental, Inc. (DAI) performed a re-evaluation of the October 2014 dated Phase I Environmental Site Assessment (Phase I ESA) and a review of the WDNR guidance document RR-101E.

A review of the Phase I indicates that the property was originally developed prior to 1910 and has a long history of commercial/industrial uses. Information obtained from the Phase I ESA, including review of Sanborn® fire insurance maps, historical aerials, and historical city directories, indicated that the Site was originally utilized as the Caveney & Co. Coal & Wood Yard and was used as such until at least 1950. At some point between 1955 and 1958, the Site transitioned from industrial to commercial use with the construction of the northern-most building, the building addressed as 1009 Marquette Avenue. By 1963, a second commercial building had been constructed on the Site to the adjacent southeast of the 1009 Marquette Avenue building. The second building included what are now tenant spaces addressed as 2410 to 2414B 10th Avenue (previously 2410-2416). Between 1969 and 1971, the second building was extended to the southeast, adding the tenant spaces currently addressed as 2418-2422 10th Avenue. Various tenants have occupied the multi-tenant space since construction, including Sunbrite Cleaners (2410), Wolf's Dry Cleaners & Launderers (2416), and Caveney Heating Oil/Caveney & Co. (2416). The Site is presently used as a strip shopping mall, with three (3) tenants: Ace Hardware (1009 Marquette Avenue), a clothing retail shop (2412 10th Avenue), and Aurora Pharmacy (2414 10th Avenue). All other tenant spaces are presently vacant.

The historical uses of the property that are potential sources of contamination include dry cleaning and petroleum storage. Comparison of these sources with Table 1 of the WDNR guidance document indicate the following potential contaminants of concern (COCs):

- Volatile Organic Compounds (VOCs)
- VOC (n-nonane)
- VOC (1,4-Dioxane)
- Chlorinated VOCs (CVOCs)
- Petroleum VOCs (PVOCs)
- Polynuclear Aromatic Hydocarbons (PAHs)
- Polyfluoroalkyl substances (PFAS)

Extensive soil and groundwater sampling have been completed for VOCs and PAHs, leaving n-nonane, 1,4-Dioxane, and PFAS as the COCs to evaluate as part of the emerging contaminant evaluation. Based upon the information currently available, there are no known specific uses, storage, handling, etc., of the three (3) potential COCs. To further evaluate potential sources that may have contributed to PFAS concentrations in groundwater, additional historical research was conducted to identify any potential occupants of the Site that were not previously identified and that may be associated with PFAS usage. The historical research included a review of any known or recorded fires at the Site that may have used PFAS containing flame retardants to put out the fire. Freedom of Information Act (FOIA) requests were submitted to the City of South Milwaukee and the South Milwaukee Fire Department. Neither FOIA request revealed any

information that indicated a previously unknown source that may have contributed to the observed PFAS concentrations, nor any recording of an extinguished fire at the Site. Documentation obtained as part of this research is provided in Appendix C.1.F.

2.0 Sampling Methodology

2.1 Sampling Network

As proposed in the January 25, 2021, *Emerging Contaminant Evaluation Work Plan*, groundwater sampling for emerging contaminants was performed on March 11, 2021, at two (2) existing groundwater monitoring wells that have historically shown the highest levels of contamination (MW-3 and MW-5). These monitoring wells were chosen to be representative of a larger area because a specific location of any potential release of emerging contaminants was not known. The March 2021 sampling included analysis of n-nonane, 1,4-Dioxane, and PFAS.

Based upon the observation of various PFAS constituents in the groundwater sampling, WDNR requested that all available monitoring wells on-site be sampled. Therefore, additional sampling for PFAS was performed on August 4-5, 2021, at the six (6) existing monitoring wells: MW-1 to MW-5 and MW-201. Figure B.3.d in Appendix B shows the locations of the six (6) monitoring wells. This additional sampling included the resampling of MW-3 and MW-5 for comparison to previous sampling results. No sampling for 1,4-Dioxane or n-Nonane were performed based upon the lack of any detections of these compounds during the March 2021 sampling event.

In addition to sampling groundwater from the six (6) monitoring wells, the water in the Ace Hardware sump pit and the discharge from the water treatment system was for PFAS. The location of the Ace Hardware sump is also depicted in Figure B.3.d. Samples of the sump and system discharge were collected on August 5, 2021.

2.2 Monitoring Well Development

Consistent with the protocol followed during quarterly sampling, the monitoring wells sampled for emerging contaminants in March 2021 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. The monitoring wells were purged using a peristaltic pump and dedicated HDPE tubing, consistent with published recommendations for PFAS sampling.

During the August 2021 additional sampling, the development and sampling of the monitoring wells was conducted in accordance with the United States Environmental Protection Agency (USEPA) *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells* (Sampling Procedure) dated January 19, 2010. Low-flow is an enhanced development and sampling protocol similar to sampling with a peristaltic pump that has been recommended as an improved sampling method providing higher quality and more consistent data. Unfortunately monitoring well MW-3 could not be sampled via low-flow protocol due to the damage to the well casing that apparently incurred during snow removal operations. In lieu of the low-flow pump unit, a peristaltic pump was substituted and all other protocol were followed as closely as possible.

Briefly the sampling protocol calls for a submersible pump, constructed of stainless steel, to be used for the extraction of groundwater at a relatively low rate which is manually controlled to minimize drawdown in the monitoring well (approximately 100 to 500-mL/min). HDPE tubing was used to minimize potential PFAS contamination from the sampling equipment. Dedicated tubing was utilized for each well, and the submersible pump was be decontaminated with a non-phosphate detergent (e.g., Alconox®) between monitoring wells, minimizing the potential for cross-contamination.

To monitor the purging progress and determine when stable conditions have been achieved and a representative groundwater sample could be collected, the water recovered by the low-flow pump unit passed through a small volume flow-through cell (e.g., 250-mL or less) coupled with a multi-parameter instrument (e.g., YSI Professional Plus or similar) for measuring field indicator parameters. The multi-parameter instrument measures pH, Oxidation-Reduction Potential (ORP), Dissolved Oxygen (DO), Specific Conductance, and Temperature. The indicator field parameters are measured at a regular interval, approximately equivalent to at least the turn-over rate of the flow-through cell (e.g., 250-mL flow-through cell with a flow rate of 100-mL/min would have a maximum monitoring frequency of every 2.5-min). The purging is considered complete and sampling begins when the field indicator parameters have stabilized in three (3) consecutive readings as follows:

- DO: 10% variance for values greater than 0.5-mg/L, or three (3) consecutive DO values less than 0.5-mg/L;
- Specific Conductance: 3%
- Temperature: ± 1 degree Celsius
- pH: ± 0.1 unit
- ORP: ± 10-mV

A copy of the field sheets completed during the low-flow sampling are included Appendix C.1.G.

2.3 Groundwater Sampling Procedures

The groundwater samples from MW-3 and MW-5 during the March 2021 sampling event and the groundwater sample from MW-3 in August 2021 were collected using a peristaltic pump with dedicated tubing. Otherwise the groundwater samples were collected using the low-flow sampler. For wells developed following low-flow sampling protocol, the tubing was disconnected from the flow-through cell once purging was complete. Groundwater was then dispensed directly from either the peristaltic pump tubing or low-flow pump tubing into the appropriate sample jars, which were obtained from the laboratory. The groundwater samples were then analyzed for:

- 1,4-Dioxane via USEPA SW8270D by SIM (March 2021 only);
- N-nonane via USEPA SW8260C (March 2021 only); 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, and the 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^{o}C or lower via a cooler with ice before being transferred to a refrigerator. Ice packs were not used per the published recommendations indicating a potential for PFAS contamination from the ice packs. 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-Dixone 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.

Per the requirements of the Wisconsin PFAS expectations guidance document, one (1) equipment blank (e.g., pump distilled water through pump into sample containers), one (1) field blank, and one (1) duplicate sample were collected for quality assurance/quality control purposes during the March 2021 PFAS sampling. With the resampling of MW-3 and MW-5 in August serving as "duplicate" samples to the March 2021 sampling, only an equipment blank and a field blank were collected during August 2021 PFAs sampling event.

3.0 Water Analytical Results

3.1 Groundwater

The emerging contaminants groundwater sampling was completed on March 11, 2021, and August 4, 2021. The March 2021 groundwater samples from MW-3 and MW-5 were analyzed for 1,4-Dioxane, n-nonane, and PFAS, and all monitoring wells were sampled for PFAS in August 2021. 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 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, bur are 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 at concentrations above the laboratory Limit of Detection (LOD). Although the "non-detect" concentration limits reported for 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 1,4-Dioxane nor n-nonane are COCs at the Site.

Table A.1.D summarizes the results of the analyses for PFAS. As observed in the summary table, 18 of 33 constituents on the WDNR PFAS List were reported by the laboratory at concentrations

below the Limit of Quantification (LOQ). The 15 PFAS constituents reported at a concentration above the LOD are:

PFAS with Detectable Concentrations

- Perfluorobutanoic acid (PFBA)
- Perfluoropentanoic acid (PFPeA)
- Perfluorohexanoic acid (PFHxA)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorodecanoic acid (PFDA)
- Perfluorobutanesulfonic acid (PFBS)
- Perfluoropentanesulfonic acid (PFPeS)
- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanesulfonic acid (PFHpS)
- 6:2 Fluorotelomersulfonic acid (6:2 FTS)
- Perfluorooctanoic acid (PFOA)*
- Perfluorooctanesulfonic acid (PFOS)*
- Perfluorooctane sulfonamide (PFOSA)*
- N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)*

* – One (1) of six (6) PFAS constituents included in cumulative concentration evaluated against applicable objectives.

Either eleven (11) or twelve (12) PFAS constituents were observed in each of the monitoring wells, with the exception of MW-201, where only seven (7) PFAS constituents were reported above the LOQ. Certain of constituents were observed in the equipment blank and/or laboratory Method Blank during the May 2021 sampling, but only the PFAS constituent 6:2 FTS was observed in the equipment blank sample in the August 2021 sampling event. Therefore, all PFAS reported at concentrations above the LOQ in the August 2021 sample results are evaluated as actual detections of that PFAS constituent.

Many of the PFAS constituents observed were reported at concentrations below the recommended PALs, or are listed constituents with no recommended PAL. The August 2021 sampling identified two (2) individual PFAS constituents reported at concentrations above the PAL: PFNA in MW-4 and PFHxS in all monitoring wells except MW-201. (PFNA was observed in MW-3 at a concentration above the PAL in May 2021, but the August 2021 results were below the PAL.) In addition to the individual PFAS constituents, the cumulative PFAS concentration of the PFOA, PFOS, PFOSA, and NEtFOSAA were observed at a total concentration above the recommended ES in MW-1 through MW-5, and also above the recommended PAL in MW-201. The identified exceedances are summarized below by well location. Figure B.3.b.3a provides a Site Plan showing the monitoring well locations and the locations of all identified PFAS exceedances in May 2021. Figure B.3.b.3b provides the August 2021 PFAS exceedances.

PFAS with Exceedances of the PALs

- PFNA – MW-4
- PFHxS – MW-1 to MW-5
- Combined PFAS (PFOA only) – MW-201

PFAS with Exceedances of the Enforcement Standards

- Combined PFAS (PFOA and PFOS) – MW-1
- Combined PFAS (PFOA, PFOS, PFOSA, and NEtFOSAA) – MW-2
- Combined PFAS (PFOA, PFOS, and PFOSA) – MW-3
- Combined PFAS (PFOA and PFOS) – MW-4
- Combined PFAS (PFOA, PFOS, and PFOSA) – MW-5

3.2 Ace Hardware Sump/Effluent

In addition to completing groundwater sampling, PFAS analysis was performed on the sump water from the basement of the Ace Hardware building. Samples from the sump influent as well as the effluent from the activated carbon treatment system were collected and analyzed. The results of the sampling are summarized in Table A.1.D. The results of these PFAS analyses are compared to the recommended PALs and Enforcement Standards for groundwater samples.

The results of the laboratory analyses of the Ace Hardware sump water indicate comparable, but slightly lower PFAS concentrations as compared to the groundwater concentrations observed in MW-5 (consistent with Tetrachloroethene results commonly observed between MW-5 and the sump). All individual PFAS constituents in the sump sample were reported at concentrations below the recommended PALs, or are constituents for which no PALs have been recommended. However, the combined concentrations of PFOA and PFOS in the sump influent exceed the recommended PAL, although effluent concentrations after treatment are below the Limit of Detection (LOQ). Therefore, results of the effluent sample indicate that the treatment system is effective in preventing any PFAS concentrations from discharging into the City of South Milwaukee stormwater sewer system and ultimately Lake Michigan.

4.0 Summary of Emerging Contaminant Evaluation

As requested by the WDNR, an evaluation of potential emerging COCs has been completed for the Sunrise Shopping Center Site. The previous uses of the property as a petroleum distribution facility and by two (2) historical dry cleaning operations were identified in the January 25, 2021, *Emerging Contaminant Evaluation Work Plan* as potential sources of n-nonane, 1,4-Dioxane, and PFAS. Two (2) on-site monitoring wells were sampled and analyzed for n-nonane, 1,4-Dioxane, and PFAS in March 2021 as proposed in the January 2021. The results of groundwater analyses reported 1,4-Dioxane and n-nonane at concentrations below the laboratory LOQ, and therefore are not considered COCs. The results of PFAS analysis identified 12 PFAS constituents in the groundwater samples.

Therefore, six (6) on-site monitoring wells were subsequently sampled and analyzed for PFAS in August 2021 as proposed in the July 2021 dated *PFAS Additional Evaluation Work Plan*. The results of August sampling identified 15 PFAS constituents in the groundwater samples. PFAS concentrations were observed in all monitoring wells, with the highest contaminant concentrations observed in monitoring well MW-4 and the least impacted groundwater monitoring well was MW-201. The concentrations of PFNA and/or PFHxS are above the recommended PALs in five (5) of the six (6) monitoring wells sampled. The combined concentrations of two (2) or more PFAS constituents (PFOA, PFOS, PFOSA, and NEtFOSAA) were observed at levels above the Enforcement Standards in the five (5) monitoring wells MW-1 to MW-5.

The influent sample to the sump indicated a combined concentration from two (2) PFAS constituents (PFOA and PFOS) at a level exceeding the PAL. However, the effluent sample results all show contaminant constituents at concentrations below the laboratory LOQs. Therefore, there is no discharge of any emerging contaminant into the City of South Milwaukee's stormwater sewer system.

The highest concentration of PFAS was observed at MW-4, which is located behind the former Wolf's Dry Cleaners tenant space. An attempt was also made to compare the locations and concentrations of PFAS with the known Tetrachlroroethene (Perc) contaminant plume. However, the spatial distribution of PFAS concentrations are not well correlated with the spatial distribution of Perc, implying that the source area of these two (2) contaminants are not the same.

A further review of potential sources of PFAS was also conducted, including prior building tenants that may have used PFAS, as well as a historical review of any recorded fires at the Site where PFAS containing firefighting foams may have been used. Unfortunately the review did not identify any additional potential sources. Finally, a review of the BRRTS database was undertaken to see if there are any known off-site sources of PFAS that may account for the concentrations observed on-site. However, the BRRRTS database did not reveal any other PFAS contaminated sites in the vicinity.

The observed groundwater contamination will be addressed as part of the Case Close Out, consistent with Perc and PAH contamination. If you have any questions or require any further information in association with this Emerging Contaminant Evaluation Report Amendment, please contact me at (847) 996-3580.

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 (ng/L) (Perfluoroalkyl and Polyfluoroalkyl Substances)

Emerging Contaminants	Sample Location (Sample Date)					PAL[1]	ES[2]
	MW-1 (08/04/21)	MW-2 (08/04/21)	MW-3 (03/11/21)	MW-3 (08/05/21)	MW-4 (08/05/21)		
Perfluorobutanoic acid (PFBA)	11	13	31 (EB)	17	71	(2,000)	(10,000)
Perfluoropentanoic acid (PFPeA)	8.3	17	<3.5	20	33	NL	NL
Perfluorohexanoic acid (PFHxA)	7.6	9.4	<3.5	15	20	(30,000)	(150,000)
Perfluoroheptanoic acid (PFHpA)	5.9	4.1	4.5 (EB)	25	13	NL	NL
Perfluorononanoic acid (PFNA)	0.82 (J)	<0.39	**4.3**	2.2 (J)	**4.4**	(3)	(30)
Perfluorodecanoic acid (PFDA)	<0.44	<0.44	1.8 (J)	1 (J)	3.5	(60)	(300)
Perfluoroundecanoic acid (PFUnA)	<0.52	<0.53	<3.5	<0.54	<0.52	(600)	(3,000)
Perfluorododecanoic acid (PFDoA)	<0.39	<0.4	<3.5	<0.41	<0.39	(100)	(500)
Perfluorotridecanoic acid (PFTriA)	<0.44	<0.45	<3.5	<0.46	<0.44	NL	NL
Perfluorotetradecanoic acid (PFTeA)	<0.5	<0.5	<3.5	<0.55	<0.53	(2,000)	(10,000)
Perfluorobutanesulfonic acid (PFBS)	9	16	19	34	7	(90,000)	(450,000)
Perfluoropentanesulfonic acid (PFPeS)	2.8 (J)	6.7	<3.5	<0.51	1.8 (J)	NL	NL
Perfluorohexanesulfonic acid (PFHxS)	**11**	**14**	<3.5	**7.1**	**13**	(4)	(40)
Perfluoroheptanesulfonic acid (PFHpS)	<0.42	<0.42	<3.5	<0.43	0.9 (J)	NL	NL
Perfluorononanesulfonic acid (PFNs)	<0.6	<0.6	<3.5	<0.61	<0.59	NL	NL
Perfluorodecanesulfonic acid (PFDs)	<0.65	<0.65	<3.5	<0.67	<0.65	NL	NL
Perfluorododecanesulfonic acid (PFDoS)	<0.87	<0.88	<6.9	<0.9	<0.87	NL	NL
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<0.73	<0.74	<6.9	<0.75	<0.73	NL	NL
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	1.7 (J)	3.6 (J)	2.7 (J, FB)	<1.8	<1.3	NL	NL
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<1.3	<1.3	<6.9	<1.4	<1.3	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<1.1	<1.1	<14	<1.1	<1	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSAA)	<0.78	<0.78	<6.9	<0.8	<0.77	NL	NL
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSE)	<1.1	<1.1	<6.9	<1.1	<1.1	NL	NL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.7	<1.7	<6.9	<1.8	<1.7	(30)	(300)

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

Emerging Contaminants	Sample Location (Sample Date)					PAL[1]	ES[2]
	MW-1 (08/04/21)	MW-2 (08/04/21)	MW-3 (03/11/21)	MW-3 (08/05/21)	MW-4 (08/05/21)		
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.4	<0.41	<6.9	<0.42	<0.4	(600)	(3,000)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	<0.4	<0.41	<6.9	<0.42	<0.4	NL	NL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.55	<0.56	<6.9	<0.57	<0.55	NL	NL
Perfluorooctanoic acid (PFOA)**	11	22	12	9.6	29	**PAL[1]**	**ES[2]**
Perfluorooctanesulfonic acid (PFOS)**	9.6	14	<3.5	29	69		
Perfluorooctane sulfonamide (PFOSA)**	<0.51	0.84 (J)	47	4.2	<0.51		
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)**	<1.1	<1.1	<6.9	<1.2	<1.1		
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)**	<0.63	2.5 (J)	<6.9	<0.65	<0.62		
N-Methyl perfluorooctane sulfonamidethanol (NEtFOSE)**	<0.8	<0.8	<6.9	<0.82	<0.79		
TOTAL[3]	**<u>20.6</u>**	**<u>39.34</u>**	**<u>59</u>**	**<u>42.8</u>**	**<u>98</u>**	(2)	(20)

[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
[3] – Total combined concentration of six (6) PFAS compared to the PAL and the ES
** – PFAS constituent included in the combined total compared to the PAL and the ES
-- – All PFAS constituents reported below limit of quantification; total concentration taken as highest "non-detect concentration and listed in parentheses
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
<u>Underlined</u> – 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

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

Emerging Contaminants	Sample Location (Sample Date)				PAL[1]	ES[2]
	MW-5 (03/11/21)	MW-5 Dup (03/11/21)	MW-5 (08/05/21)	MW-201 (08/04/21)		
Perfluorobutanoic acid (PFBA)	11 (EB)	11 (EB)	26	1.6 (J)	(2,000)	(10,000)
Perfluoropentanoic acid (PFPeA)	12 (EB)	12 (EB)	18	6.1	NL	NL
Perfluorohexanoic acid (PFHxA)	8.6 (EB)	9.1 (EB)	13	7.2	(30,000)	(150,000)
Perfluoroheptanoic acid (PFHpA)	5.9 (EB)	6.4 (EB)	8	5.3	NL	NL
Perfluorononanoic acid (PFNA)	<3.4	<3.4	0.97 (J)	<0.38	(3)	(30)
Perfluorodecanoic acid (PFDA)	<3.4	<3.4	<0.44	<0.44	(60)	(300)
Perfluoroundecanoic acid (PFUnA)	<3.4	<3.4	<0.52	<0.52	(600)	(3,000)
Perfluorododecanoic acid (PFDoA)	<3.4	<3.4	<0.39	<0.39	(100)	(500)
Perfluorotridecanoic acid (PFTriA)	<3.4	<3.4	<0.44	<0.44	NL	NL
Perfluorotetradecanoic acid (PFTeA)	<3.4	<3.4	<0.5	<0.5	(2,000)	(10,000)
Perfluorobutanesulfonic acid (PFBS)	21	20	17	3.2 (J)	(90,000)	(450,000)
Perfluoropentanesulfonic acid (PFPeS)	1.4 (J)	1.3 (J)	1.3 (J)	<0.49	NL	NL
Perfluorohexanesulfonic acid (PFHxS)	**5.2**	**5.9**	**6.1**	0.95 (J)	(4)	(40)
Perfluoroheptanesulfonic acid (PFHpS)	<3.4	<3.4	<0.42	<0.41	NL	NL
Perfluorononanesulfonic acid (PFNs)	<3.4	<3.4	<0.6	<0.59	NL	NL
Perfluorodecanesulfonic acid (PFDs)	<3.4	<3.4	<0.65	<0.65	NL	NL
Perfluorododecanesulfonic acid (PFDoS)	<6.7	<6.9	<0.87	<0.87	NL	NL
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<6.7	<6.9	<0.73	<0.73	NL	NL
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	<6.7	<6.9	<1.7	29	NL	NL
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<6.7	<6.9	<1.3	<1.3	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<13	<13	<1.1	<1	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSAA)	<6.7	<6.9	<0.78	<0.77	NL	NL
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSE)	<6.7	<6.9	<1.1	<1.1	NL	NL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<6.7	<6.9	<1.7	<1.7	(30)	(300)
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<6.7	<6.9	<0.4	<0.4	(600)	(3,000)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	<6.7	<6.9	<0.4	<0.4	NL	NL
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<6.7	<6.9	<0.55	<0.55	NL	NL

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

Emerging Contaminants	Sample Location (Sample Date)				PAL[1]	ES[2]
	MW-5 (03/11/21)	MW-5 Dup (03/11/21)	MW-5 (08/05/21)	MW-201 (08/04/21)		
Perfluorooctanoic acid (PFOA)**	12	12	15	6.7		
Perfluorooctanesulfonic acid (PFOS)**	<3.4	<3.4	13	<1.7		
Perfluorooctane sulfonamide (PFOSA)**	9.5	9.4	1.8J	<0.51		
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)**	<6.7	<6.9	<1.1	<1.1	PAL[1]	ES[2]
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)**	<6.7	<6.9	<0.63	<0.62		
N-Methyl perfluorooctane sulfonamidethanol (NEtFOSE)**	<6.7	<6.9	<0.8	<0.79		
TOTAL[3]	**21.5**	**21.4**	**29.8**	**6.7**	(2)	(20)

[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
[3] – Total combined concentration of six (6) PFAS compared to the PAL and the ES
** – PFAS constituent included in the combined total compared to the PAL and the ES
-- – All PFAS constituents reported below limit of quantification; total concentration taken as highest "non-detect concentration and listed in parentheses
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

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

Emerging Contaminants	Sample Location (Sample Date)				PAL[1]	ES[2]
	Equipment Blank (03/11/21)	Equipment Blank (08/04/21)	Field Blank (03/11/21)	Field Blank (08/04/21)		
Perfluorobutanoic acid (PFBA)	9.8 (B)	<0.42	<3.4	<0.45	(2,000)	(10,000)
Perfluoropentanoic acid (PFPeA)	68	<0.56	<3.4	<0.59	NL	NL
Perfluorohexanoic acid (PFHxA)	2.6 (J)	<0.7	<3.4	<0.74	(30,000)	(150,000)
Perfluoroheptanoic acid (PFHpA)	8.1	<0.46	<3.4	<0.48	NL	NL
Perfluorononanoic acid (PFNA)	<3.4	<0.47	<3.4	<0.5	(3)	(30)
Perfluorodecanoic acid (PFDA)	<3.4	<0.54	<3.4	<0.57	(60)	(300)
Perfluoroundecanoic acid (PFUnA)	<3.4	<0.64	<3.4	<0.67	(600)	(3,000)
Perfluorododecanoic acid (PFDoA)	<3.4	<0.48	<3.4	<0.51	(100)	(500)
Perfluorotridecanoic acid (PFTriA)	<3.4	<0.54	<3.4	<0.57	NL	NL
Perfluorotetradecanoic acid (PFTeA)	<3.4	<0.61	<3.4	<0.65	(2,000)	(10,000)
Perfluorobutanesulfonic acid (PFBS)	<3.4	<0.61	<3.4	<0.65	(90,000)	(450,000)
Perfluoropentanesulfonic acid (PFPeS)	<3.4	<0.61	<3.4	<0.64	NL	NL
Perfluorohexanesulfonic acid (PFHxS)	<3.4	<0.57	<3.4	<0.59	(4)	(40)
Perfluoroheptanesulfonic acid (PFHpS)	<3.4	<0.51	<3.4	<0.54	NL	NL
Perfluorononanesulfonic acid (PFNs)	<3.4	<0.73	<3.4	<0.77	NL	NL
Perfluorodecanesulfonic acid (PFDs)	<3.4	<0.8	<3.4	<0.84	NL	NL
Perfluorododecanesulfonic acid (PFDoS)	<6.7	<1.1	<6.8	<1.1	NL	NL
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<6.7	<0.9	<6.8	<0.94	NL	NL
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	<6.7	2.2 (J)	2.2 (J)	<2.2	NL	NL
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<6.7	<1.6	<6.8	<1.7	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<13	<1.3	<14	<1.4	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSAA)	<6.7	<0.96	<6.8	<1.0	NL	NL
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSE)	<6.7	<1.3	<6.8	<1.4	NL	NL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<6.7	<2.1	<6.8	<2.2	(30)	(300)
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<6.7	<0.50	<6.8	<0.52	(600)	(3,000)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	<6.7	<0.49	<6.8	<0.52	NL	NL

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

Emerging Contaminants	Sample Location (Sample Date)				PAL[1]	ES[2]
	Equipment Blank (03/11/21)	Equipment Blank (08/04/21)	Field Blank (03/11/21)	Field Blank (08/04/21)		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<6.7	<0.68	<6.8	<0.71	NL	NL
Perfluorooctanoic acid (PFOA)**	<3.4	<0.85	<3.4	<0.89	**PAL[1]**	**ES[2]**
Perfluorooctanesulfonic acid (PFOS)**	<3.4	<2.1	<3.4	<2.2		
Perfluorooctane sulfonamide (PFOSA)**	<3.4	<0.63	<3.4	<0.66		
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)**	<6.7	<1.4	<6.8	<1.5		
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)**	<6.7	<0.77	<6.8	<0.81		
N-Methyl perfluorooctane sulfonamidethanol (NEtFOSE)**	<6.7	<0.98	<6.8	<1		
TOTAL	-- (<6.7)	-- (<2.1)	-- (<6.8)	-- (<2.2)	(2)	(20)

[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
[3] – Total combined concentration of six (6) PFAS compared to the PAL and the ES
** – PFAS constituent included in the combined total compared to the PAL and the ES
-- – All PFAS constituents reported below limit of quantification; total concentration taken as highest "non-detect concentration and listed in parentheses
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

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

Emerging Contaminants	Sample Location (Sample Date)		PAL[1]	ES[2]
	Sump (08/04/21)	Effluent (08/05/21)		
Perfluorobutanoic acid (PFBA)	6.5	<0.35	(2,000)	(10,000)
Perfluoropentanoic acid (PFPeA)	8.2	<0.46	NL	NL
Perfluorohexanoic acid (PFHxA)	5.4	<0.58	(30,000)	(150,000)
Perfluoroheptanoic acid (PFHpA)	2.1 (J)	<0.38	NL	NL
Perfluorononanoic acid (PFNA)	0.45 (J)	<0.39	(3)	(30)
Perfluorodecanoic acid (PFDA)	<0.46	<0.44	(60)	(300)
Perfluoroundecanoic acid (PFUnA)	<0.55	<0.53	(600)	(3,000)
Perfluorododecanoic acid (PFDoA)	<0.41	<0.4	(100)	(500)
Perfluorotridecanoic acid (PFTriA)	<0.46	<0.44	NL	NL
Perfluorotetradecanoic acid (PFTeA)	<0.52	<0.5	(2,000)	(10,000)
Perfluorobutanesulfonic acid (PFBS)	13	<0.5	(90,000)	(450,000)
Perfluoropentanesulfonic acid (PFPeS)	1.1 (J)	<0.5	NL	NL
Perfluorohexanesulfonic acid (PFHxS)	3 (J)	<0.46	(4)	(40)
Perfluoroheptanesulfonic acid (PFHpS)	<0.44	<0.42	NL	NL
Perfluorononanesulfonic acid (PFNs)	<0.62	<0.6	NL	NL
Perfluorodecanesulfonic acid (PFDs)	<0.68	<0.65	NL	NL
Perfluorododecanesulfonic acid (PFDoS)	<0.91	<0.88	NL	NL
4:2 Fluorotelomer sulfonic acid (4:2 FTSA)	<0.76	<0.73	NL	NL
6:2 Fluorotelomer sulfonic acid (6:2 FTSA)	<1.7	<1.7	NL	NL
8:2 Fluorotelomer sulfonic acid (8:2 FTSA)	<1.4	<1.3	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSA)	<1.1	<1.1	NL	NL
N-Methyl perfluorooctane sulfonamide (NMeFOSAA)	<0.81	<0.78	NL	NL
N-Methyl perfluorooctane sulfonamidoacetic acid (NMeFOSE)	<1.1	<1.1	NL	NL
Hexafluoropropylene oxide dimer acid (HFPO-DA)	<1.8	<1.7	(30)	(300)
4,8-Dioxa-3H-perfluorononanoic acid (DONA)	<0.42	<0.41	(600)	(3,000)
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	<0.42	<0.4	NL	NL

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

Emerging Contaminants	Sample Location (Sample Date)		PAL[1]	ES[2]
	Sump (08/04/21)	Effluent (08/05/21)		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	<0.58	<0.56	NL	NL
Perfluorooctanoic acid (PFOA)**	4.8	<0.7	PAL[1]	ES[2]
Perfluorooctanesulfonic acid (PFOS)**	5.9	<1.7		
Perfluorooctane sulfonamide (PFOSA)**	<0.54	<0.51		
N-Ethyl perfluorooctane sulfonamide (NEtFOSA)**	<1.2	<1.1		
N-Ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)**	<0.66	<0.63		
N-Methyl perfluorooctane sulfonamidethanol (NEtFOSE)**	<0.83	<0.8		
TOTAL[3]	**10.7**	-- (<1.7)	(2)	(20)

[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
[3] – Total combined concentration of six (6) PFAS compared to the PAL and the ES
** – PFAS constituent included in the combined total compared to the PAL and the ES
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<u>Underlined</u> – Concentration exceeds the PAL and the ES
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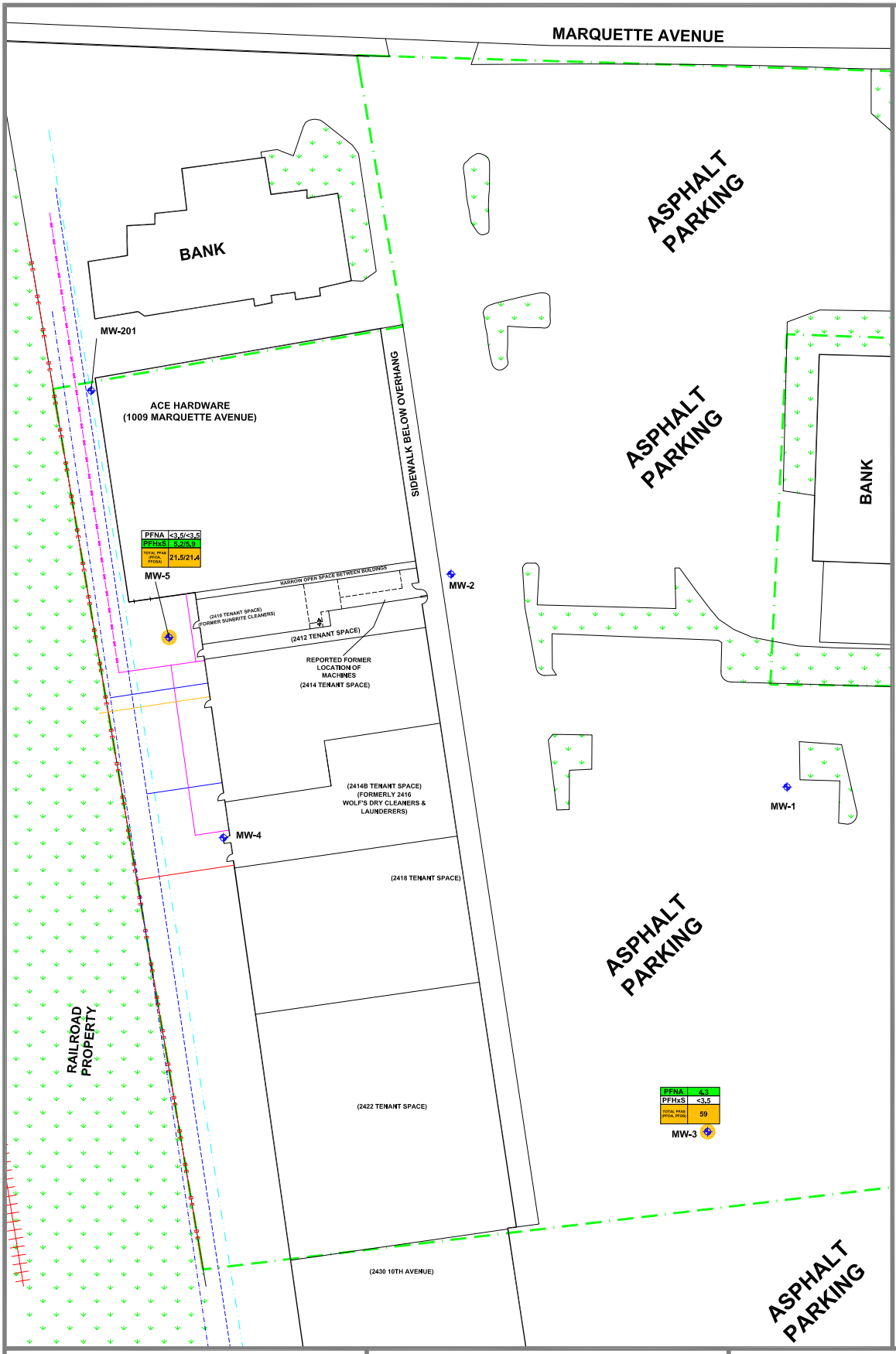
(B) – Concentration of contaminant observed in the laboratory method blank sample
(EB) – Concentration of contaminant observed in the equipment blank sample
(FB) – Concentration of contaminant observed in the field blank sample
PFAS via PFAS by ID SOP

APPENDIX B
FIGURES



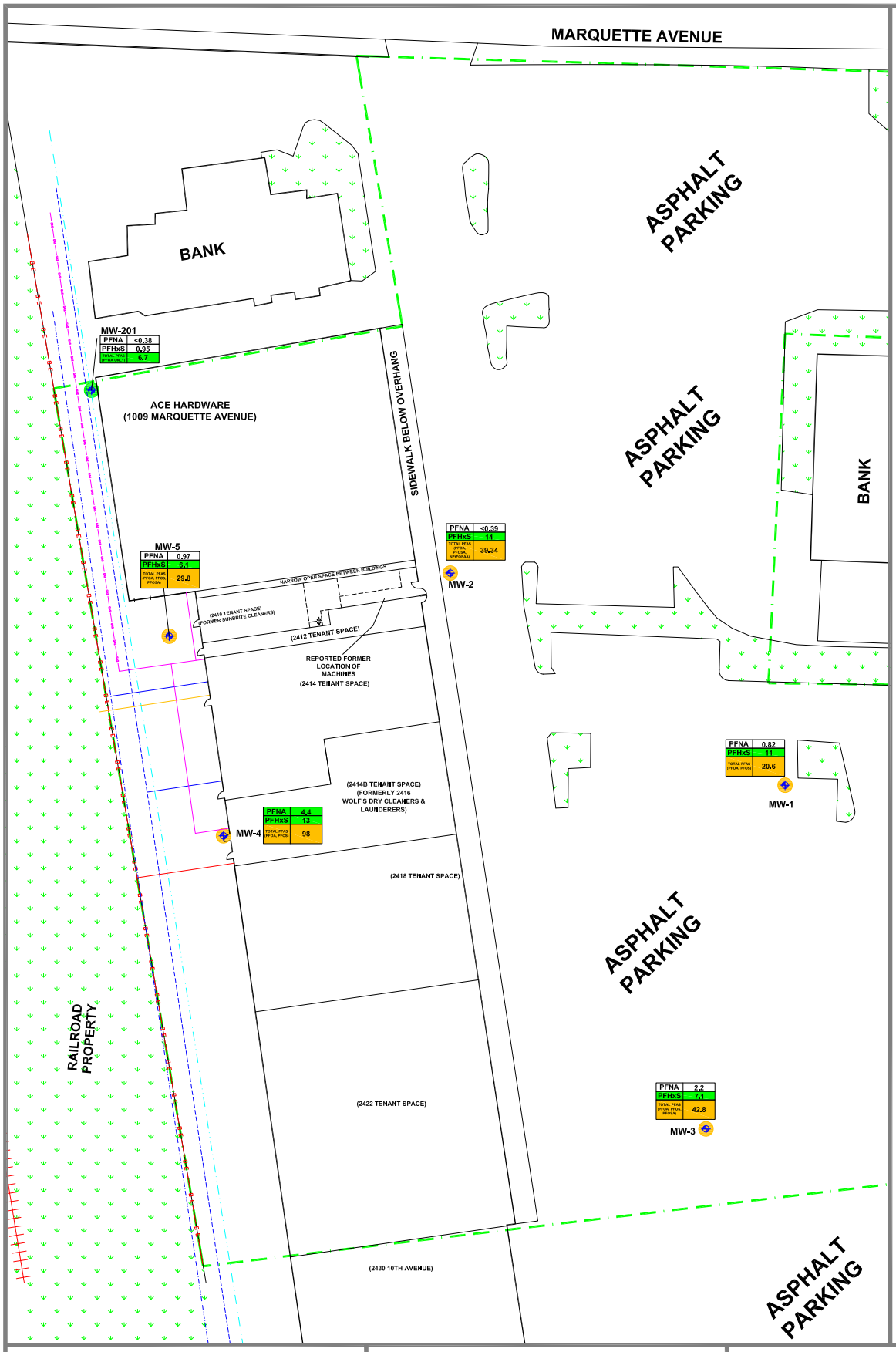
CAD FILE: 6255-210C

REVISED: 09/30/21

DAI ENVIRONMENTAL

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

FIGURE B.3.b.3a
GROUNDWATER ISOCONCENTRATION (PFAS - MAY 2021)



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 FOR PFAS CONSTITUENT

OBSERVED EXCEEDANCE OF THE RECOMMENDED PAL AND ES FOR PFAS CONSTITUENT

PFAS CONSTITUENT	PFAS CONC. (ng/L)

NOTE: AUGUST 2021 SAMPLES AT MW-3 AND MW-5 ARE DUPLICATE SAMPLES TO MAY 2021 SAMPLES

TOTAL PFAS = CUMULATIVE CONCENTRATIONS OF PFOA, PFOS, PFOSA AND NEtFOSAA

N

0' 65'

S C A L E

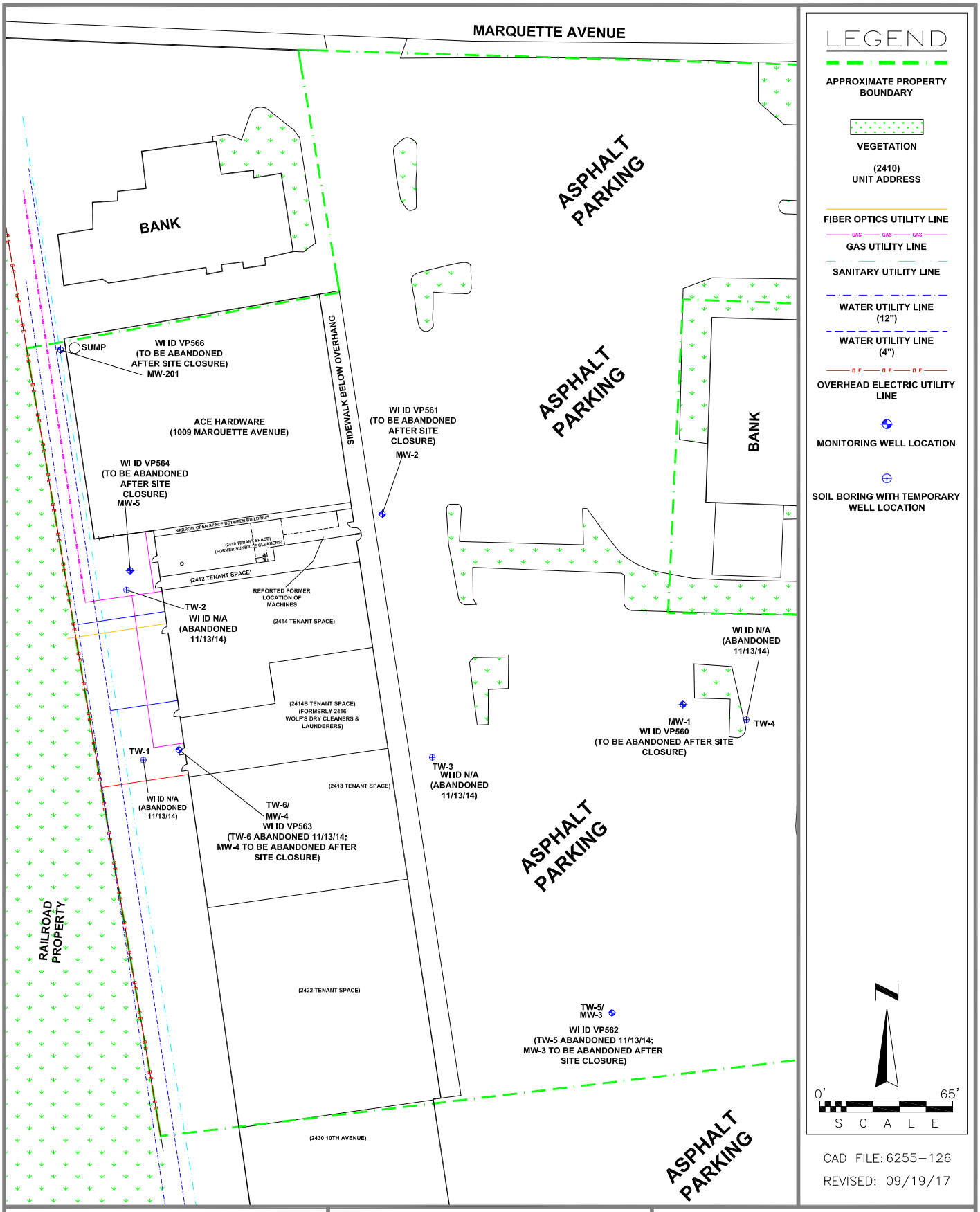
CAD FILE: 6255-210B

REVISED: 09/30/21

ENVIRONMENTAL DAI

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

FIGURE B.3.b.3b
GROUNDWATER ISOCONCENTRATION
(PFAS - AUGUST 2021)



CAD FILE: 6255-126

REVISED: 09/19/17

DAI ENVIRONMENTAL

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

FIGURE B.3.d
MONITORING WELLS

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

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

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

Enclosures

cc: Jenny Rovzar, DAI

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

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

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

4022357

Pace Analytical®
www.pacelabs.com

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

(Please Print Clearly)	
Company Name:	DAI Environmental
Branch/Location:	Lake Forest, IL
Project Contact:	Chris Chilles
Phone:	847-573-8900
Project Number:	6255
Project Name:	South Milwaukee Hot
Project State:	Wisconsin
Sampled By (Print):	Marcus Gyaschyn
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: PFAS	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	Equipment Blank	3/11/21	9:45	W						
002	MW-3	3/11/21	10:00	GW			X			
003	MW-5	3/11/21	11:00	GW			X			
004	Field Blank	3/11/21	9:45							
005	MW-5 (Dup)	3/11/21	11:00	GW			X			

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:	Date/Time:	Received By:	Date/Time:
			3/12/21 0900
	3/12/21 1700	CS Logistics	3/12/21
CS Logistics	3-13-21 0835		3-13-21 0835

PACE Project No. 4022357

Receipt Temp = 4.0 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

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

Sample Preservation Receipt Form

Client Name: DAI 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):

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
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
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010																																	2.5 / 5 / 10
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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

MK 3/3/21

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	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	

Pace Analytical® 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)

Project #:

WO# : 40223357

40223357

Client Name: DAT Env.

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

Tracking #: _____

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

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

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

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT /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: MLR

Labeled By Initials: CMO

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. PO#, mail/invoice, pres., COC analysis, COC matrix
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3. No date/time MLR 3-13-21 MLR 3-13-21
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume:		8. Lab received (1) BP3U per sample point MLR 3-13-21
For Analysis: ☐Yes ☒No MS/MSD:	☐Yes ☒No ☐N/A	
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☐Yes ☒No ☐N/A	12. COC time "1000" MLR 3-13-21
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased): _____		

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

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

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

03/28/2021 3:49 PM
Approved and released by:
Project Manager II: **Karen L. Coonan**

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".

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)

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-butanesulfonic 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_PFDoA		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
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S = MS/MSD failure

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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**

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-butanesulfonic 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-butanoic acid (PFBA)	**375-22-4**	**PFAS by ID SOP**	**31**		**3.5**	**0.87**	**ng/L**	**1**
Perfluoro-n-decanoic acid (PFDA)	**335-76-2**	**PFAS by ID SOP**	**1.8**	**J**	**3.5**	**0.87**	**ng/L**	**1**
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	**375-85-9**	**PFAS by ID SOP**	**4.5**		**3.5**	**0.87**	**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	ND		3.5	0.87	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	**375-95-1**	**PFAS by ID SOP**	**4.3**		**3.5**	**0.87**	**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**		**3.5**	**0.87**	**ng/L**	**1**
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.87	ng/L	1
Perfluoro-n-undecanoic 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	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 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_PFDoA		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

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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_PFDoA		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%
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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 (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.8	1.7	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-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-butanesulfonic 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-butanoic 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_PFDoA		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 (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		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_PFDoA		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

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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: WQ86218-001
Batch: 86218
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/19/2021 1109

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	2.0	ng/L	03/21/2021 1426
11Cl-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
PFTrDA	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
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - MB

Sample ID: WQ86218-001
Batch: 86218
Analytical Method: PFAS by ID SOP

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ86218-002
Batch: 86218
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/19/2021 1109

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	14		1	97	50-150	03/21/2021 1436
11Cl-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_PFDoA		93	25-150
13C2_PFHxDA		100	25-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ86218-002
Batch: 86218
Analytical Method: PFAS by ID SOP

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

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

PFAS by LC/MS/MS - MB

Sample ID: WQ86408-001
Batch: 86408
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/22/2021 1146

Parameter	Result	Q	Dil	LOQ	DL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	2.0	ng/L	03/23/2021 1810
11Cl-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
PFTrDA	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
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - MB

Sample ID: WQ86408-001
Batch: 86408
Analytical Method: PFAS by ID SOP

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ86408-002
Batch: 86408
Analytical Method: PFAS by ID SOP
Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 03/22/2021 1146

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	15		1	102	50-150	03/23/2021 1821
11Cl-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
DL = Detection Limit
ND = Not detected at or above the DL
J = Estimated result < LOQ and ≥ DL
* = RSD is out of criteria
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
+ = RPD is out of criteria

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ86408-002
Batch: 86408
Analytical Method: PFAS by ID SOP

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

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

Chain of Custody
and
Miscellaneous Documents

Internal Transfer Chain of Custody

Samples Pre-Logged into eCOC

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

Pace Analytical
www.pacelabs.com

Workorder: 40223357 Workorder Name: 6255 SOUTH MILWAUKEE AVE

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

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Containers	WI DFTS Use	Requested Analysis	LAB USE ONLY
1	EQUIPMENT BLANK	PS	3/11/2021 09:45	40223357001	Water	1	X		
2	MW-3	PS	3/11/2021 10:00	40223357002	Water	1	X		
3	MW-6	PS	3/11/2021 11:00	40223357003	Water	1	X		
4	FIELD BLANK	PS	3/11/2021 09:45	40223357004	Water	1	X		
5	MW-5 (DUP)	PS	3/11/2021 11:00	40223357005	Water	1	X		

WC16034
KLC2

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	3/15/21 1600		
2	[illegible] 3/16/21	1222		1222
3	LPS FedEx	3/16/21 0900	[illegible]	3/16/21 0945

Comments:

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

PACE ANALYTICAL SERVICES, LLC

Pace Analytical

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: ☐ Pace ☐ Client ☑ UPS ☐ FedEx ☐ Other:

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

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

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

1.1 / 1.1 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

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

☐ Yes	☐ No	☑ 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).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH_3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ 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?
☐ Yes	☑ 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 ($Na_2S_2O_3$) with Shealy ID: NA.

SR barcode labels applied by: JRG2 Date: 03/16/2021

Comments:

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

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

Enclosures

cc: Jenny Rovzar, DAI

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

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

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Green Bay, WI 54302
(920)469-2436

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

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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

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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	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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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

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

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

QC Batch: 1636158
QC Batch Method: 3510C
Analysis Method: EPA 8270D by SIM
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

Pace Analytical Services, LLC
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Green Bay, WI 54302
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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.

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

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

4022336~~6~~ ~~40223363~~ 3/13/21 AL

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF COUSTODY

(Please Print Clearly)

Company Name:	DAI Environmental
Branch/Location:	Lake Forest, IL
Project Contact:	Chris Carlles
Phone:	847-573-8900
Project Number:	6255
Project Name:	South Milwaukee Ave
Project State:	Wisconsin
Sampled By (Print):	Marcus Gieschner
Sampled By (Sign):	[signature]
PO #:	
Regulatory Program:	

*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

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge
W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

FILTERED? (YES/NO): Y/N
PRESERVATION (CODE)*: Pick Letter
Analyses Requested: 1,4-Dioxane

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	1,4-Dioxane	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-3	3/11/21	10:00	GW	X			
002	MW-5	3/11/21	11:00	GW	X			

3/13/21 AL
40223366

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:	Date/Time:	Received By:	Date/Time:
[signature]		[signature]	3/12/21 1200
[signature]	3/12/21 1700	CS Logistics	3/12/21
CS Logistics	3/13/21 0835	[signature]	3-13-21 0835

PACE Project No. ~~40223363~~
Receipt Temp = ROI °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Preservation Receipt Form

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

Client Name: DAT ENV. Project # ~~40223363~~ 40223366

3/3/21

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

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

Initial when completed: Date/ Time:

Pace Lab #	Glass								Plastic					Vials						Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN						
001						4																										2.5 / 5 / 10
002						4																										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
010																																2.5 / 5 / 10
011																																2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
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

MLK 3-3-21

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

G1U	1 liter amber glass
G1U	1 liter clear glass
G1H	1 liter amber glass HCL
G4S	125 mL amber glass H2SO4
G4U	120 mL amber glass unpres
G5U	100 mL amber glass unpres
G2S	500 mL amber glass H2SO4
G3U	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	

Pace Analytical® 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: DAT Env.

Project #:

WO#: 40223366

40223366

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

Tracking #:

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

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

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - NA Type of Ice: (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: R.T /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:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. PO#, Mail/invoice, pres. MLR 3-13-21
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3. No date/time MLR 3-13-21
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☒Yes ☐No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☒Yes ☐No ☐N/A	12.
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

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

Person Contacted: Date/Time:

Comments/ Resolution:

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

MLR 31321 Page 2 of 2

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

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

Enclosures

cc: Jenny Rovzar, DAI

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

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

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

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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(920)469-2436

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

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

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	

REPORT OF LABORATORY ANALYSIS

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

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

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

QUALITY CONTROL DATA

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

QC Batch: 201046
QC Batch Method: EPA 8260C/5030C
Analysis 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

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

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.

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

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		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

4022336?

(Please Print Clearly)	
Company Name:	DAI Environmental
Branch/Location:	Lake Forest, IL
Project Contact:	Chris Cailles
Phone:	847-573 8900
Project Number:	6255
Project Name:	South Milwaukee Ave
Project State:	Wisconsin
Sampled By (Print):	Marcus Gyrechyer
Sampled By (Sign):	
PO #:	Regulatory Program:

*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

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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, B = Biota, C = Charcoal, O = Oil, S = Soil, SL = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: n-hexane	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
01	MW-3	3/11/21	10:00	GW			X			
02	MW-5	3/11/21	11:00	GW			X			

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:	Date/Time:	Received By:	Date/Time:
			3/12/21 1200
	3/12/21 1700	CS Logistics	3/12/21
CS Logistics	3-13-21 0835		3/13/21 0835

PACE Project No. 4022336?

Receipt Temp = 2.0 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Preservation Receipt Form

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

Client Name: DAT ENV. Project # 40223367

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

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

Initial when completed: Date/ Time:

Pace Lab #	Glass								Plastic					Vials						Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN						
001																	6															2.5 / 5 / 10
002																	6															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
010																																2.5 / 5 / 10
011																																2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
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

MK 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**

G1U	1 liter amber glass
G1U	1 liter clear glass
G1H	1 liter amber glass HCL
G4S	125 mL amber glass H2SO4
G4U	120 mL amber glass unpres
G5U	100 mL amber glass unpres
G2S	500 mL amber glass H2SO4
G3U	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	

Pace Analytical® 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: DAT ENV. Project #:

WO# : 40223367

40223367

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

Tracking #:

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

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

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - N/A Type of Ice: (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

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

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

Person Contacted: Date/Time:

Comments/ Resolution:

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

MLR 3/13/21

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

September 13, 2021

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

RE: Project: 6255 SOUTH MILWAUKEE
Pace Project No.: 40231335

Dear Chris Cailles:

Enclosed are the analytical results for sample(s) received by the laboratory on August 10, 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,

Steven Mleczko
steve.mleczko@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jenny Rovzar, DAI

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

SAMPLE SUMMARY

Project: 6255 SOUTH MILWAUKEE
Pace Project No.: 40231335

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40231335001	**MW-1**	Water	08/04/21 12:15	08/10/21 09:00
40231335002	**MW-2**	Water	08/04/21 13:05	08/10/21 09:00
40231335003	**MW-201**	Water	08/04/21 13:50	08/10/21 09:00
40231335004	**MW-5**	Water	08/05/21 10:55	08/10/21 09:00
40231335005	**MW-4**	Water	08/05/21 11:45	08/10/21 09:00
40231335006	**MW-3**	Water	08/05/21 09:15	08/10/21 09:00
40231335007	**SUMP**	Water	08/05/21 12:45	08/10/21 09:00
40231335008	**EFFLUENT**	Water	08/05/21 13:30	08/10/21 09:00
40231335009	**EQUIP BLANK**	Water	08/04/21 11:45	08/10/21 09:00
40231335010	**FIELD BLANK**	Water	08/04/21 11:45	08/10/21 09:00

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

40231335

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

(Please Print Clearly)	
Company Name:	DAI Environmental
Branch/Location:	Lake Forest
Project Contact:	Chris Cailles
Phone:	847-573-8900
Project Number:	6255
Project Name:	South Milwaukee
Project State:	Wisconsin
Sampled By (Print):	Marcus Greschner
Sampled By (Sign):	Marcus Greschner
PO #:	Regulatory Program:

Quote #:	00097183
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: PFAS (WI 33)
001	MW-1	8-4-21	12:15	GW			X
002	MW-2	8-4-21	1:05	GW			X
003	MW-207	8-4-21	1:50	GW			X
004	MW-5	8-5-21	10:55	GW			X
005	MW-4	8-5-21	11:45	GW			X
006	MW-3	8-5-21	9:15	GW			X
007	SUMP	8-5-21	12:45	GW			X
008	Effluent	8-5-21	1:30	GW			X
009	Equip Blank①	8-4-21	—				
010	Field Blank①	8-4-21	—				

CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	①received in shipment, lab added to CoC per PM 8/10/21 dlw	

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:	Date/Time:	Received By:	Date/Time:
[signature]	8/9/21 11:29	[signature]	8/9/21 1130
[signature]	8/9/21 1346	CS Logistics	8/9/21
CS Logistics	8/10/21 0900	[signature]	8/10/21 0900

PACE Project No.
40231335

Receipt Temp = \ °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

40231335

Steve Mleczko

From: Chris Cailles <cailles@daienv.com>
Sent: Tuesday, August 10, 2021 8:17 AM
To: Steve Mleczko
Subject: PFAS samples, S. Milwaukee
Attachments: 1669_001.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Steve,

For the PFAS water samples that you should be receiving today, the chain did not specifically note that the field blank and equipment blank are to be analyzed for PFAS (see attached). Those samples are to be analyzed as well. Please note the correction upon your forwarding to the sister laboratory.

Thanks,

Chris

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

Sample Preservation Receipt Form

Client Name: DAI Env. Project # 40231335

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):

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																						2.5 / 5 / 10
002										2																						2.5 / 5 / 10
003										2																						2.5 / 5 / 10
004										2																						2.5 / 5 / 10
005										2																						2.5 / 5 / 10
006										2																						2.5 / 5 / 10
007										2																						2.5 / 5 / 10
008										2																						2.5 / 5 / 10
009										2																						2.5 / 5 / 10
010										2																						2.5 / 5 / 10
011																																2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
014																																2.5 / 5 / 10
015																					8/10/21											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 ☒N/A ***If yes look in headspace column**

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	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	

Pace Analytical® 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)

Project #:

WO# : 40231335

40231335

Client Name: DAI Env.

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

Tracking #: —

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

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

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 107 **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: \ /Corr: \

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

Person examining contents:
Date: 8/10/21 Initials: AZ

Labeled By Initials: AZ

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

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. no pg#, mail/inv. info, filt, pres 8/10/21 AZ
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD: ☐Yes ☒No ☐N/A		8.
Correct Containers Used:	☒Yes ☐No	9. 004+010 added to CoC per PM, received in shipment 8/10/21 AZ
-Pace Containers Used:	☐Yes ☒No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☐Yes ☒No ☐N/A	12. 004: no times 8/10/21 AZ
-Includes date/time/ID/Analysis Matrix: WJ		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

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

Person Contacted: Date/Time:

Comments/ Resolution:

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

Report of Analysis

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

Project Name: 6255 South Milwaukee

Project Number: 40231335

Lot Number:**WH11069**

Date Completed:09/12/2021

09/13/2021 5:09 PM
Approved and released by:
Project Manager II: **Karen L. Coonan**

Case Narrative
Pace Analytical Services, LLC
Lot Number: WH11069

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.

Samples WH11069-001, WH11069-002, WH11069-005, and WH11069-006 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 recoveries for the following samples were outside the upper control limit: WH11069-001, WH11069-002, WH11069-004. This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Surrogate recoveries for the following samples were outside control limits: WH11069-005, WH11069-006. Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The method blank (MB) and the laboratory control sample (LCS) for prep batch 14070 recovered outside acceptance criteria. For the following samples there was an insufficient amount to perform a re-extraction or re-analysis: WH11069-008. The data has been reported.

Re-extraction and re-analysis (Run 2) for the following samples were performed outside of the analytical holding time for the analytes 6:2FTS and PFTeDA: WH11069-004, -005, -006 and -007. Samples were re-extracted and re-analyzed due to the QC failures (MB, LCS and internal standards) in batch 14070.

Sample Summary

Pace Analytical Services, LLC

Lot Number: WH11069

Project Name: 6255 South Milwaukee

Project Number: 40231335

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW-1	Aqueous	08/04/2021 1215	08/11/2021
002	MW-2	Aqueous	08/04/2021 1305	08/11/2021
003	MW-201	Aqueous	08/04/2021 1350	08/11/2021
004	MW-5	Aqueous	08/05/2021 1055	08/11/2021
005	MW-4	Aqueous	08/05/2021 1145	08/11/2021
006	MW-3	Aqueous	08/05/2021 0915	08/11/2021
007	SUMP	Aqueous	08/05/2021 1245	08/11/2021
008	EFFLUENT	Aqueous	08/05/2021 1330	08/11/2021
009	EQUIP BLANK	Aqueous	08/04/2021 1145	08/11/2021
010	FIELD BLANK	Aqueous	08/04/2021 1145	08/11/2021

(10 samples)

Detection Summary

Pace Analytical Services, LLC

Lot Number: WH11069

Project Name: 6255 South Milwaukee

Project Number: 40231335

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW-1	Aqueous	6:2 FTS	PFAS by ID	1.7	J	ng/L	7
001	MW-1	Aqueous	PFBS	PFAS by ID	11		ng/L	7
001	MW-1	Aqueous	PFPeS	PFAS by ID	2.8	J	ng/L	7
001	MW-1	Aqueous	PFHxS	PFAS by ID	11		ng/L	7
001	MW-1	Aqueous	PFBA	PFAS by ID	9.0		ng/L	7
001	MW-1	Aqueous	PFHpA	PFAS by ID	5.9		ng/L	7
001	MW-1	Aqueous	PFHxA	PFAS by ID	7.6		ng/L	7
001	MW-1	Aqueous	PFNA	PFAS by ID	0.82	J	ng/L	7
001	MW-1	Aqueous	PFOA	PFAS by ID	11		ng/L	7
001	MW-1	Aqueous	PFPeA	PFAS by ID	8.3		ng/L	7
001	MW-1	Aqueous	PFOS	PFAS by ID	9.6		ng/L	7
002	MW-2	Aqueous	6:2 FTS	PFAS by ID	3.6	J	ng/L	9
002	MW-2	Aqueous	EtFOSAA	PFAS by ID	2.5	J	ng/L	9
002	MW-2	Aqueous	PFBS	PFAS by ID	13		ng/L	9
002	MW-2	Aqueous	PFOSA	PFAS by ID	0.84	J	ng/L	9
002	MW-2	Aqueous	PFPeS	PFAS by ID	6.7		ng/L	9
002	MW-2	Aqueous	PFHxS	PFAS by ID	14		ng/L	9
002	MW-2	Aqueous	PFBA	PFAS by ID	16		ng/L	9
002	MW-2	Aqueous	PFHpA	PFAS by ID	4.1		ng/L	9
002	MW-2	Aqueous	PFHxA	PFAS by ID	9.4		ng/L	9
002	MW-2	Aqueous	PFOA	PFAS by ID	22		ng/L	9
002	MW-2	Aqueous	PFPeA	PFAS by ID	17		ng/L	9
002	MW-2	Aqueous	PFOS	PFAS by ID	14		ng/L	9
003	MW-201	Aqueous	6:2 FTS	PFAS by ID	29		ng/L	11
003	MW-201	Aqueous	PFBS	PFAS by ID	1.6	J	ng/L	11
003	MW-201	Aqueous	PFHxS	PFAS by ID	0.95	J	ng/L	11
003	MW-201	Aqueous	PFBA	PFAS by ID	3.2	J	ng/L	11
003	MW-201	Aqueous	PFHpA	PFAS by ID	5.3		ng/L	11
003	MW-201	Aqueous	PFHxA	PFAS by ID	7.2		ng/L	11
003	MW-201	Aqueous	PFOA	PFAS by ID	6.7		ng/L	11
003	MW-201	Aqueous	PFPeA	PFAS by ID	6.1		ng/L	11
004	MW-5	Aqueous	PFBS	PFAS by ID	26		ng/L	13
004	MW-5	Aqueous	PFOSA	PFAS by ID	1.8	J	ng/L	13
004	MW-5	Aqueous	PFPeS	PFAS by ID	1.3	J	ng/L	13
004	MW-5	Aqueous	PFHxS	PFAS by ID	6.1		ng/L	13
004	MW-5	Aqueous	PFBA	PFAS by ID	17		ng/L	13
004	MW-5	Aqueous	PFHpA	PFAS by ID	8.0		ng/L	13
004	MW-5	Aqueous	PFHxA	PFAS by ID	13		ng/L	13
004	MW-5	Aqueous	PFNA	PFAS by ID	0.97	J	ng/L	13
004	MW-5	Aqueous	PFOA	PFAS by ID	15		ng/L	13
004	MW-5	Aqueous	PFPeA	PFAS by ID	18		ng/L	13
004	MW-5	Aqueous	PFOS	PFAS by ID	13		ng/L	13
005	MW-4	Aqueous	PFBS	PFAS by ID	71		ng/L	15

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
005	MW-4	Aqueous	PFHpS	PFAS by ID	0.90	J	ng/L	15
005	MW-4	Aqueous	PFPeS	PFAS by ID	1.8	J	ng/L	15
005	MW-4	Aqueous	PFHxS	PFAS by ID	13		ng/L	15
005	MW-4	Aqueous	PFBA	PFAS by ID	7.0		ng/L	15
005	MW-4	Aqueous	PFDA	PFAS by ID	3.5		ng/L	15
005	MW-4	Aqueous	PFHpA	PFAS by ID	13		ng/L	15
005	MW-4	Aqueous	PFHxA	PFAS by ID	20		ng/L	15
005	MW-4	Aqueous	PFNA	PFAS by ID	4.4		ng/L	15
005	MW-4	Aqueous	PFOA	PFAS by ID	29		ng/L	15
005	MW-4	Aqueous	PFPeA	PFAS by ID	33		ng/L	15
005	MW-4	Aqueous	PFOS	PFAS by ID	69		ng/L	15
006	MW-3	Aqueous	PFBS	PFAS by ID	17		ng/L	17
006	MW-3	Aqueous	PFOSA	PFAS by ID	4.2		ng/L	17
006	MW-3	Aqueous	PFHxS	PFAS by ID	7.1		ng/L	17
006	MW-3	Aqueous	PFBA	PFAS by ID	34	Q	ng/L	17
006	MW-3	Aqueous	PFDA	PFAS by ID	1.0	J	ng/L	17
006	MW-3	Aqueous	PFHpA	PFAS by ID	25		ng/L	17
006	MW-3	Aqueous	PFHxA	PFAS by ID	15		ng/L	17
006	MW-3	Aqueous	PFNA	PFAS by ID	2.2	J	ng/L	17
006	MW-3	Aqueous	PFOA	PFAS by ID	9.6		ng/L	17
006	MW-3	Aqueous	PFPeA	PFAS by ID	20		ng/L	17
006	MW-3	Aqueous	PFOS	PFAS by ID	29		ng/L	17
007	SUMP	Aqueous	PFBS	PFAS by ID	6.5		ng/L	19
007	SUMP	Aqueous	PFPeS	PFAS by ID	1.1	J	ng/L	19
007	SUMP	Aqueous	PFHxS	PFAS by ID	3.0	J	ng/L	19
007	SUMP	Aqueous	PFBA	PFAS by ID	13		ng/L	19
007	SUMP	Aqueous	PFHpA	PFAS by ID	2.1	J	ng/L	19
007	SUMP	Aqueous	PFHxA	PFAS by ID	5.4		ng/L	19
007	SUMP	Aqueous	PFNA	PFAS by ID	0.45	J	ng/L	19
007	SUMP	Aqueous	PFOA	PFAS by ID	4.8		ng/L	19
007	SUMP	Aqueous	PFPeA	PFAS by ID	8.2		ng/L	19
007	SUMP	Aqueous	PFOS	PFAS by ID	5.9		ng/L	19
009	EQUIP BLANK	Aqueous	6:2 FTS	PFAS by ID	2.2	J	ng/L	23

(76 detections)

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC | Laboratory ID: WH11069-001
Description: MW-1 | Matrix: Aqueous
Date Sampled: 08/04/2021 1215 | Project Name: 6255 South Milwaukee
Date Received: 08/11/2021 | Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/01/2021 1846	JJG	08/31/2021 1810	14001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	0.40	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	0.55	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	1.7	J	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	Q	6.7	0.73	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	0.40	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.7	0.63	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	0.80	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	0.78	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	11		3.3	0.35	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.3	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.3	0.42	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.3	0.60	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.3	0.51	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	2.8	J	3.3	0.50	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	11		3.3	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	9.0		3.3	0.50	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.3	0.39	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.9		3.3	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	7.6		3.3	0.58	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.82	J	3.3	0.39	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	11		3.3	0.69	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	8.3		3.3	0.45	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.3	0.50	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.3	0.52	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	9.6		3.3	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	189	25-150
13C2_6:2FTS		112	25-150
13C2_8:2FTS		77	25-150
13C2_PFDoA		70	25-150
13C2_PFTeDA		64	25-150
13C3_PFBS		75	25-150
13C3_PFHxS		78	25-150
13C3-HFPO-DA		73	25-150
13C4_PFBA		58	25-150

LOQ = Limit of Quantitation
ND = Not detected at or above the DL
H = Out of holding time
B = Detected in the method blank
N = Recovery is out of criteria
W = Reported on wet weight basis
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
DL = Detection Limit
J = Estimated result < LOQ and ≥ DL
Q = Surrogate failure
L = LCS/LCSD failure
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: WH11069-001	
Description: MW-1		Matrix: Aqueous	
Date Sampled: 08/04/2021 1215	Project Name: 6255 South Milwaukee		
Date Received: 08/11/2021	Project Number: 40231335		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		81	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		72	25-150
13C6_PFDA		78	25-150
13C7_PFUdA		74	25-150
13C8_PFOA		80	25-150
13C8_PFOS		74	25-150
13C8_PFOSA		75	10-150
13C9_PFNA		81	25-150
d-EtFOSA		62	10-150
d5-EtFOSAA		71	25-150
d9-EtFOSE		65	10-150
d-MeFOSA		65	10-150
d3-MeFOSAA		69	25-150
d7-MeFOSE		69	10-150

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

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: WH11069-002
Description: MW-2
Matrix: Aqueous
Date Sampled: 08/04/2021 1305
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/01/2021 1857	JJG	08/31/2021 1810	14001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	0.41	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	0.56	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	3.6	J	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	Q	6.7	0.74	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	0.41	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	2.5	J	6.7	0.63	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	0.80	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	0.78	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	13		3.4	0.35	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.42	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.60	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	0.84	J	3.4	0.52	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	6.7		3.4	0.50	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	0.88	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	14		3.4	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	16		3.4	0.51	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.40	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	4.1		3.4	0.38	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	9.4		3.4	0.58	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.39	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	22		3.4	0.70	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	17		3.4	0.46	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.50	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.45	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.53	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	14		3.4	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS	N	175	25-150
13C2_6:2FTS		99	25-150
13C2_8:2FTS		80	25-150
13C2_PFDoA		70	25-150
13C2_PFTeDA		53	25-150
13C3_PFBS		88	25-150
13C3_PFHxS		84	25-150
13C3-HFPO-DA		82	25-150
13C4_PFBA		69	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: WH11069-002
Description: MW-2
Matrix: Aqueous
Date Sampled: 08/04/2021 1305
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		92	25-150
13C5_PFHxA		92	25-150
13C5_PFPeA		83	25-150
13C6_PFDA		87	25-150
13C7_PFUdA		69	25-150
13C8_PFOA		83	25-150
13C8_PFOS		74	25-150
13C8_PFOSA		88	10-150
13C9_PFNA		83	25-150
d-EtFOSA		73	10-150
d5-EtFOSAA		69	25-150
d9-EtFOSE		71	10-150
d-MeFOSA		85	10-150
d3-MeFOSAA		77	25-150
d7-MeFOSE		70	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

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-003
Description: MW-201
Matrix: Aqueous
Date Sampled: 08/04/2021 1350
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/01/2021 1908	JJG	08/31/2021 1810	14001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.6	0.40	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.6	0.55	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.6	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	29		6.6	1.7	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		6.6	0.73	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.6	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.6	0.40	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.6	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.6	0.62	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.6	0.79	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.6	0.77	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.6	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	1.6	J	3.3	0.34	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.3	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.3	0.41	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.3	0.59	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.3	0.51	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.3	0.49	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.6	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	0.95	J	3.3	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	3.2	J	3.3	0.50	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.3	0.39	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	5.3		3.3	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	7.2		3.3	0.57	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.3	0.38	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	6.7		3.3	0.69	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	6.1		3.3	0.45	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.3	0.50	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.3	0.52	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.3	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		86	25-150
13C2_6:2FTS		127	25-150
13C2_8:2FTS		85	25-150
13C2_PFDoA		83	25-150
13C2_PFTeDA		76	25-150
13C3_PFBS		83	25-150
13C3_PFHxS		77	25-150
13C3-HFPO-DA		77	25-150
13C4_PFBA		86	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: WH11069-003
Description: MW-201
Matrix: Aqueous
Date Sampled: 08/04/2021 1350
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		81	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		82	25-150
13C6_PFDA		84	25-150
13C7_PFUdA		85	25-150
13C8_PFOA		83	25-150
13C8_PFOS		85	25-150
13C8_PFOSA		83	10-150
13C9_PFNA		83	25-150
d-EtFOSA		72	10-150
d5-EtFOSAA		85	25-150
d9-EtFOSE		77	10-150
d-MeFOSA		75	10-150
d3-MeFOSAA		83	25-150
d7-MeFOSE		81	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

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-004
Description: MW-5
Matrix: Aqueous
Date Sampled: 08/05/2021 1055
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/02/2021 1610	JJG	09/01/2021 1309	14070
2	SOP SPE	PFAS by ID SOP	1	09/09/2021 2210	JJG	09/08/2021 1229	14719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	0.40	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	0.55	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	H	6.7	1.7	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	6.7	0.73	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	0.40	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.7	0.63	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	0.80	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	0.78	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	26		3.3	0.35	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.3	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.3	0.42	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.3	0.60	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	1.8	J	3.3	0.51	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.3	J	3.3	0.50	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	6.1		3.3	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	17		3.3	0.50	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.3	0.39	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	8.0		3.3	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	13		3.3	0.58	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.97	J	3.3	0.39	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	15		3.3	0.69	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	18		3.3	0.45	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	H	3.3	0.50	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.3	0.52	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	13		3.3	1.7	ng/L	1

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS	N	168	25-150	HN	177	25-150
13C2_6:2FTS		100	25-150	H	142	25-150
13C2_8:2FTS		76	25-150	H	108	25-150
13C2_PFDoA		53	25-150	H	64	25-150
13C2_PFTeDA		48	25-150	H	57	25-150
13C3_PFBS		86	25-150	H	102	25-150
13C3_PFHxS		101	25-150	H	93	25-150
13C3-HFPO-DA		91	25-150	H	102	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

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-004
Description: MW-5
Matrix: Aqueous
Date Sampled: 08/05/2021 1055
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		82	25-150	H	92	25-150
13C4_PFHpA		91	25-150	H	99	25-150
13C5_PFHxA		92	25-150	H	110	25-150
13C5_PFPeA		86	25-150	H	98	25-150
13C6_PFDA		77	25-150	H	94	25-150
13C7_PFUdA		61	25-150	H	88	25-150
13C8_PFOA		95	25-150	H	101	25-150
13C8_PFOS		85	25-150	H	74	25-150
13C8_PFOSA		89	10-150	H	102	10-150
13C9_PFNA		87	25-150	H	99	25-150
d-EtFOSA		45	10-150	H	66	10-150
d5-EtFOSAA		70	25-150	H	89	25-150
d9-EtFOSE		52	10-150	H	59	10-150
d-MeFOSA		51	10-150	H	66	10-150
d3-MeFOSAA		74	25-150	H	103	25-150
d7-MeFOSE		56	10-150	H	60	10-150

LOQ = Limit of Quantitation
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
DL = Detection Limit
Q = Surrogate failure
ND = Not detected at or above the DL
N = Recovery is out of criteria
P = The RPD between two GC columns exceeds 40%
J = Estimated result < LOQ and ≥ DL
L = LCS/LCSD failure
H = Out of holding time
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: WH11069-005
Description: MW-4
Matrix: Aqueous
Date Sampled: 08/05/2021 1145
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/02/2021 1621	JJG	09/01/2021 1309	14070
2	SOP SPE	PFAS by ID SOP	1	09/09/2021 2221	JJG	09/08/2021 1229	14719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.6	0.40	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.6	0.55	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.6	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	HQ	7.1	1.8	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	6.6	0.73	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.6	1.7	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.6	0.40	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.6	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.6	0.62	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.6	0.79	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.0	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.6	0.77	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.6	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	71		3.3	0.34	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.3	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	0.90	J	3.3	0.41	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.3	0.59	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.3	0.51	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.8	J	3.3	0.49	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.6	0.87	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	13		3.3	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	7.0		3.3	0.50	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	3.5		3.3	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.3	0.39	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	13		3.3	0.37	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	20		3.3	0.57	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	4.4		3.3	0.38	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	29		3.3	0.69	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	33		3.3	0.45	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	H	3.6	0.53	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.3	0.44	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.3	0.52	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	69		3.3	1.7	ng/L	1

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS	N	224	25-150	HN	306	25-150
13C2_6:2FTS	N	257	25-150	HN	242	25-150
13C2_8:2FTS		139	25-150	HN	154	25-150
13C2_PFDoA		56	25-150	H	64	25-150
13C2_PFTeDA		53	25-150	H	59	25-150
13C3_PFBS		68	25-150	H	82	25-150
13C3_PFHxS		79	25-150	H	85	25-150
13C3-HFPO-DA		63	25-150	H	75	25-150

LOQ = Limit of Quantitation
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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: WH11069-005
Description: MW-4
Matrix: Aqueous
Date Sampled: 08/05/2021 1145
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		46	25-150	H	51	25-150
13C4_PFHpA		82	25-150	H	90	25-150
13C5_PFHxA		65	25-150	H	81	25-150
13C5_PFPeA		55	25-150	H	62	25-150
13C6_PFDA		78	25-150	H	97	25-150
13C7_PFUdA		66	25-150	H	85	25-150
13C8_PFOA		79	25-150	H	91	25-150
13C8_PFOS		70	25-150	H	74	25-150
13C8_PFOSA		86	10-150	H	96	10-150
13C9_PFNA		83	25-150	H	99	25-150
d-EtFOSA		48	10-150	H	60	10-150
d5-EtFOSAA		72	25-150	H	80	25-150
d9-EtFOSE		57	10-150	H	54	10-150
d-MeFOSA		49	10-150	H	66	10-150
d3-MeFOSAA		82	25-150	H	100	25-150
d7-MeFOSE		60	10-150	H	61	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
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PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-006
Description: MW-3
Matrix: Aqueous
Date Sampled: 08/05/2021 0915
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/02/2021 1631	JJG	09/01/2021 1309	14070
2	SOP SPE	PFAS by ID SOP	1	09/09/2021 2231	JJG	09/08/2021 1229	14719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.9	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.9	0.57	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND	Q	6.9	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	HQ	7.3	1.8	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND	Q	6.9	0.75	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		6.9	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		6.9	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.9	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.9	0.65	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.9	0.82	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.9	0.80	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.9	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	17		3.4	0.36	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.67	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.43	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.61	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	4.2		3.4	0.53	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.4	0.51	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.9	0.90	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	7.1		3.4	0.48	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	34	Q	3.4	0.52	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	1.0	J	3.4	0.45	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	25		3.4	0.39	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	15		3.4	0.59	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	2.2	J	3.4	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	9.6		3.4	0.71	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	20		3.4	0.47	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	HQ	3.6	0.55	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.54	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	29		3.4	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS	N	199	25-150	HN	219	25-150
13C2_6:2FTS	N	244	25-150	HN	235	25-150
13C2_8:2FTS	N	182	25-150	HN	201	25-150
13C2_PFDoA		50	25-150	H	51	25-150
13C2_PFTeDA	N	22	25-150	HN	23	25-150
13C3_PFBS		59	25-150	H	61	25-150
13C3_PFHxS		80	25-150	H	70	25-150
13C3-HFPO-DA		55	25-150	H	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

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PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-006
Description: MW-3
Matrix: Aqueous
Date Sampled: 08/05/2021 0915
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA	N	24	25-150	H	27	25-150
13C4_PFHpA		72	25-150	H	67	25-150
13C5_PFHxA		58	25-150	H	60	25-150
13C5_PFPeA		40	25-150	H	44	25-150
13C6_PFDA		83	25-150	H	84	25-150
13C7_PFUdA		76	25-150	H	84	25-150
13C8_PFOA		76	25-150	H	74	25-150
13C8_PFOS		81	25-150	H	75	25-150
13C8_PFOSA		86	10-150	H	83	10-150
13C9_PFNA		85	25-150	H	87	25-150
d-EtFOSA		28	10-150	H	33	10-150
d5-EtFOSAA		90	25-150	H	89	25-150
d9-EtFOSE		23	10-150	H	28	10-150
d-MeFOSA		38	10-150	H	43	10-150
d3-MeFOSAA		95	25-150	H	100	25-150
d7-MeFOSE		30	10-150	H	34	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

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-007
Description: SUMP
Matrix: Aqueous
Date Sampled: 08/05/2021 1245
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/02/2021 1642	JJG	09/01/2021 1309	14070
2	SOP SPE	PFAS by ID SOP	1	09/09/2021 2242	JJG	09/08/2021 1229	14719

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		7.0	0.58	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		7.0	1.4	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	H	6.9	1.7	ng/L	2
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		7.0	0.76	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		7.0	1.8	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		7.0	0.42	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		7.0	1.2	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		7.0	0.66	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		7.0	0.83	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		14	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		7.0	0.81	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		7.0	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	6.5		3.5	0.36	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.5	0.68	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.5	0.44	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.5	0.62	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.5	0.54	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	1.1	J	3.5	0.52	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		7.0	0.91	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	3.0	J	3.5	0.48	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	13		3.5	0.52	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.5	0.41	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	2.1	J	3.5	0.39	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	5.4		3.5	0.60	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	0.45	J	3.5	0.40	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	4.8		3.5	0.72	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	8.2		3.5	0.48	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND	H	3.5	0.52	ng/L	2
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.5	0.46	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.5	0.55	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	5.9		3.5	1.7	ng/L	1

Surrogate	Run 1 Q	Run 1 % Recovery	Run 1 Acceptance Limits	Run 2 Q	Run 2 % Recovery	Run 2 Acceptance Limits
13C2_4:2FTS		101	25-150	H	128	25-150
13C2_6:2FTS		103	25-150	H	118	25-150
13C2_8:2FTS		77	25-150	H	96	25-150
13C2_PFDoA		63	25-150	H	70	25-150
13C2_PFTeDA		68	25-150	H	87	25-150
13C3_PFBS		87	25-150	H	107	25-150
13C3_PFHxS		98	25-150	H	106	25-150
13C3-HFPO-DA		92	25-150	H	101	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: WH11069-007
Description: SUMP
Matrix: Aqueous
Date Sampled: 08/05/2021 1245
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
13C4_PFBA		94	25-150	H	106	25-150
13C4_PFHpA		93	25-150	H	101	25-150
13C5_PFHxA		89	25-150	H	110	25-150
13C5_PFPeA		90	25-150	H	106	25-150
13C6_PFDA		77	25-150	H	102	25-150
13C7_PFUdA		65	25-150	H	91	25-150
13C8_PFOA		89	25-150	H	106	25-150
13C8_PFOS		84	25-150	H	88	25-150
13C8_PFOSA		96	10-150	H	104	10-150
13C9_PFNA		84	25-150	H	97	25-150
d-EtFOSA		68	10-150	H	74	10-150
d5-EtFOSAA		75	25-150	H	93	25-150
d9-EtFOSE		62	10-150	H	79	10-150
d-MeFOSA		65	10-150	H	74	10-150
d3-MeFOSAA		88	25-150	H	106	25-150
d7-MeFOSE		67	10-150	H	80	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

PFAS by LC/MS/MS

Client: Pace Analytical Services, LLC
Laboratory ID: WH11069-008
Description: EFFLUENT
Matrix: Aqueous
Date Sampled: 08/05/2021 1330
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/02/2021 1653	JJG	09/01/2021 1309	14070

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		6.7	0.40	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		6.7	0.56	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		6.7	1.3	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND	L	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	0.73	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	0.41	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		6.7	0.63	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		6.7	0.80	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		13	1.1	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		6.7	0.78	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		6.7	1.1	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		3.4	0.35	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		3.4	0.65	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		3.4	0.42	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		3.4	0.60	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		3.4	0.51	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		3.4	0.50	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		6.7	0.88	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		3.4	0.46	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		3.4	0.50	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		3.4	0.44	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		3.4	0.40	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		3.4	0.38	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		3.4	0.58	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		3.4	0.39	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		3.4	0.70	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		3.4	0.46	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		3.4	0.50	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		3.4	0.44	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		3.4	0.53	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		3.4	1.7	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		95	25-150
13C2_6:2FTS		125	25-150
13C2_8:2FTS		78	25-150
13C2_PFDoA		74	25-150
13C2_PFTeDA		78	25-150
13C3_PFBS		90	25-150
13C3_PFHxS		90	25-150
13C3-HFPO-DA		93	25-150
13C4_PFBA		92	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: WH11069-008	
Description: EFFLUENT		Matrix: Aqueous	
Date Sampled: 08/05/2021 1330	Project Name: 6255 South Milwaukee		
Date Received: 08/11/2021	Project Number: 40231335		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		91	25-150
13C5_PFHxA		87	25-150
13C5_PFPeA		93	25-150
13C6_PFDA		77	25-150
13C7_PFUdA		69	25-150
13C8_PFOA		94	25-150
13C8_PFOS		89	25-150
13C8_PFOSA		99	10-150
13C9_PFNA		86	25-150
d-EtFOSA		65	10-150
d5-EtFOSAA		85	25-150
d9-EtFOSE		76	10-150
d-MeFOSA		63	10-150
d3-MeFOSAA		86	25-150
d7-MeFOSE		74	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: WH11069-009
Description: EQUIP BLANK
Matrix: Aqueous
Date Sampled: 08/04/2021 1145
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/01/2021 1918	JJG	08/31/2021 1810	14001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.2	0.49	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.2	0.68	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.2	1.6	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	2.2	J	8.2	2.0	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.2	0.90	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.2	2.1	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.2	0.50	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		8.2	1.4	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.2	0.77	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		8.2	0.98	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		16	1.3	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.2	0.96	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		8.2	1.3	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.1	0.42	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.1	0.80	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.1	0.51	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.1	0.73	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.1	0.63	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		8.2	1.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.1	0.57	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.1	0.54	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.1	0.48	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.1	0.46	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.1	0.70	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.1	0.47	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.1	0.85	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.1	0.56	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.1	0.61	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.1	0.54	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.1	0.64	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.1	2.1	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		92	25-150
13C2_6:2FTS		101	25-150
13C2_8:2FTS		89	25-150
13C2_PFDoA		106	25-150
13C2_PFTeDA		95	25-150
13C3_PFBS		92	25-150
13C3_PFHxS		87	25-150
13C3-HFPO-DA		88	25-150
13C4_PFBA		94	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: WH11069-009	
Description: EQUIP BLANK		Matrix: Aqueous	
Date Sampled: 08/04/2021 1145	Project Name: 6255 South Milwaukee		
Date Received: 08/11/2021	Project Number: 40231335		

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		87	25-150
13C5_PFHxA		97	25-150
13C5_PFPeA		90	25-150
13C6_PFDA		96	25-150
13C7_PFUdA		103	25-150
13C8_PFOA		91	25-150
13C8_PFOS		91	25-150
13C8_PFOSA		96	10-150
13C9_PFNA		91	25-150
d-EtFOSA		82	10-150
d5-EtFOSAA		108	25-150
d9-EtFOSE		102	10-150
d-MeFOSA		95	10-150
d3-MeFOSAA		106	25-150
d7-MeFOSE		96	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: WH11069-010
Description: FIELD BLANK
Matrix: Aqueous
Date Sampled: 08/04/2021 1145
Project Name: 6255 South Milwaukee
Date Received: 08/11/2021
Project Number: 40231335

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	SOP SPE	PFAS by ID SOP	1	09/01/2021 1929	JJG	08/31/2021 1810	14001

Parameter	CAS Number	Analytical Method	Result	Q	LOQ	MDL	Units	Run
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9Cl-PF3ONS)	756426-58-1	PFAS by ID SOP	ND		8.6	0.52	ng/L	1
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3...)	763051-92-9	PFAS by ID SOP	ND		8.6	0.71	ng/L	1
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	PFAS by ID SOP	ND		8.6	1.7	ng/L	1
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2	PFAS by ID SOP	ND		8.6	2.2	ng/L	1
1H,1H,2H,2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4	PFAS by ID SOP	ND		8.6	0.94	ng/L	1
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	PFAS by ID SOP	ND		8.6	2.2	ng/L	1
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	PFAS by ID SOP	ND		8.6	0.52	ng/L	1
N-ethylperfluoro-1-octanesulfonamide (EtFOSA)	4151-50-2	PFAS by ID SOP	ND		8.6	1.5	ng/L	1
N-ethylperfluoro-1-octanesulfonamidoacetic acid (EtFOSAA)	2991-50-6	PFAS by ID SOP	ND		8.6	0.81	ng/L	1
2-N-ethylperfluoro-1-octanesulfonamido-ethanol (EtFOSE)	1691-99-2	PFAS by ID SOP	ND		8.6	1.0	ng/L	1
N-methylperfluoro-1-octanesulfonamide (MeFOSA)	31506-32-8	PFAS by ID SOP	ND		17	1.4	ng/L	1
N-methylperfluoro-1-octanesulfonamidoacetic acid (MeFOSAA)	2355-31-9	PFAS by ID SOP	ND		8.6	1.0	ng/L	1
2-N-methylperfluoro-1-octanesulfonamido-ethanol (MeFOSE)	24448-09-7	PFAS by ID SOP	ND		8.6	1.4	ng/L	1
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5	PFAS by ID SOP	ND		4.3	0.45	ng/L	1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3	PFAS by ID SOP	ND		4.3	0.84	ng/L	1
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8	PFAS by ID SOP	ND		4.3	0.54	ng/L	1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1	PFAS by ID SOP	ND		4.3	0.77	ng/L	1
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6	PFAS by ID SOP	ND		4.3	0.66	ng/L	1
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4	PFAS by ID SOP	ND		4.3	0.64	ng/L	1
Perfluorododecanesulfonic acid (PFDOS)	79780-39-5	PFAS by ID SOP	ND		8.6	1.1	ng/L	1
Perfluorohexanesulfonic acid (PFHxS)	355-46-4	PFAS by ID SOP	ND		4.3	0.59	ng/L	1
Perfluoro-n-butanoic acid (PFBA)	375-22-4	PFAS by ID SOP	ND		4.3	0.65	ng/L	1
Perfluoro-n-decanoic acid (PFDA)	335-76-2	PFAS by ID SOP	ND		4.3	0.57	ng/L	1
Perfluoro-n-dodecanoic acid (PFDoA)	307-55-1	PFAS by ID SOP	ND		4.3	0.51	ng/L	1
Perfluoro-n-heptanoic acid (PFHpA)	375-85-9	PFAS by ID SOP	ND		4.3	0.48	ng/L	1
Perfluoro-n-hexanoic acid (PFHxA)	307-24-4	PFAS by ID SOP	ND		4.3	0.74	ng/L	1
Perfluoro-n-nonanoic acid (PFNA)	375-95-1	PFAS by ID SOP	ND		4.3	0.50	ng/L	1
Perfluoro-n-octanoic acid (PFOA)	335-67-1	PFAS by ID SOP	ND		4.3	0.89	ng/L	1
Perfluoro-n-pentanoic acid (PFPeA)	2706-90-3	PFAS by ID SOP	ND		4.3	0.59	ng/L	1
Perfluoro-n-tetradecanoic acid (PFTeDA)	376-06-7	PFAS by ID SOP	ND		4.3	0.65	ng/L	1
Perfluoro-n-tridecanoic acid (PFTrDA)	72629-94-8	PFAS by ID SOP	ND		4.3	0.57	ng/L	1
Perfluoro-n-undecanoic acid (PFUdA)	2058-94-8	PFAS by ID SOP	ND		4.3	0.67	ng/L	1
Perfluorooctanesulfonic acid (PFOS)	1763-23-1	PFAS by ID SOP	ND		4.3	2.2	ng/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C2_4:2FTS		104	25-150
13C2_6:2FTS		113	25-150
13C2_8:2FTS		84	25-150
13C2_PFDoA		103	25-150
13C2_PFTeDA		96	25-150
13C3_PFBS		97	25-150
13C3_PFHxS		93	25-150
13C3-HFPO-DA		92	25-150
13C4_PFBA		98	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: WH11069-010
Description: FIELD BLANK		Matrix: Aqueous
Date Sampled: 08/04/2021 1145	Project Name: 6255 South Milwaukee	
Date Received: 08/11/2021	Project Number: 40231335	

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
13C4_PFHpA		92	25-150
13C5_PFHxA		99	25-150
13C5_PFPeA		97	25-150
13C6_PFDA		99	25-150
13C7_PFUdA		91	25-150
13C8_PFOA		97	25-150
13C8_PFOS		89	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		94	25-150
d-EtFOSA		87	10-150
d5-EtFOSAA		98	25-150
d9-EtFOSE		104	10-150
d-MeFOSA		75	10-150
d3-MeFOSAA		94	25-150
d7-MeFOSE		100	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.)*
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QC Summary

PFAS by LC/MS/MS - MB

Sample ID: WQ14001-001
Batch: 14001
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 08/31/2021 1810

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	09/01/2021 1814
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	09/01/2021 1814
8:2 FTS	ND		1	8.0	1.6	ng/L	09/01/2021 1814
6:2 FTS	ND		1	8.0	2.0	ng/L	09/01/2021 1814
4:2 FTS	ND		1	8.0	0.87	ng/L	09/01/2021 1814
GenX	ND		1	8.0	2.1	ng/L	09/01/2021 1814
ADONA	ND		1	8.0	0.48	ng/L	09/01/2021 1814
EtFOSA	ND		1	8.0	1.4	ng/L	09/01/2021 1814
EtFOSAA	ND		1	8.0	0.75	ng/L	09/01/2021 1814
EtFOSE	ND		1	8.0	0.95	ng/L	09/01/2021 1814
MeFOSA	ND		1	16	1.3	ng/L	09/01/2021 1814
MeFOSAA	ND		1	8.0	0.93	ng/L	09/01/2021 1814
MeFOSE	ND		1	8.0	1.3	ng/L	09/01/2021 1814
PFBS	ND		1	4.0	0.41	ng/L	09/01/2021 1814
PFDS	ND		1	4.0	0.78	ng/L	09/01/2021 1814
PFHpS	ND		1	4.0	0.50	ng/L	09/01/2021 1814
PFNS	ND		1	4.0	0.71	ng/L	09/01/2021 1814
PFOSA	ND		1	4.0	0.61	ng/L	09/01/2021 1814
PFPeS	ND		1	4.0	0.59	ng/L	09/01/2021 1814
PFDOS	ND		1	8.0	1.0	ng/L	09/01/2021 1814
PFHxS	ND		1	4.0	0.55	ng/L	09/01/2021 1814
PFBA	ND		1	4.0	0.60	ng/L	09/01/2021 1814
PFDA	ND		1	4.0	0.52	ng/L	09/01/2021 1814
PFDoA	ND		1	4.0	0.47	ng/L	09/01/2021 1814
PFHpA	ND		1	4.0	0.45	ng/L	09/01/2021 1814
PFHxA	ND		1	4.0	0.69	ng/L	09/01/2021 1814
PFNA	ND		1	4.0	0.46	ng/L	09/01/2021 1814
PFOA	ND		1	4.0	0.83	ng/L	09/01/2021 1814
PFPeA	ND		1	4.0	0.54	ng/L	09/01/2021 1814
PFTeDA	ND		1	4.0	0.60	ng/L	09/01/2021 1814
PFTrDA	ND		1	4.0	0.53	ng/L	09/01/2021 1814
PFUdA	ND		1	4.0	0.63	ng/L	09/01/2021 1814
PFOS	ND		1	4.0	2.0	ng/L	09/01/2021 1814

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		102	25-150
13C2_6:2FTS		96	25-150
13C2_8:2FTS		94	25-150
13C2_PFDoA		95	25-150
13C2_PFTeDA		90	25-150
13C3_PFBS		90	25-150
13C3_PFHxS		81	25-150
13C3-HFPO-DA		88	25-150

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

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

PFAS by LC/MS/MS - MB

Sample ID: WQ14001-001
Batch: 14001
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 08/31/2021 1810

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		90	25-150
13C4_PFHpA		87	25-150
13C5_PFHxA		95	25-150
13C5_PFPeA		90	25-150
13C6_PFDA		92	25-150
13C7_PFUdA		93	25-150
13C8_PFOA		89	25-150
13C8_PFOS		90	25-150
13C8_PFOSA		92	10-150
13C9_PFNA		89	25-150
d-EtFOSA		78	10-150
d5-EtFOSAA		94	25-150
d9-EtFOSE		99	10-150
d-MeFOSA		91	10-150
d3-MeFOSAA		87	25-150
d7-MeFOSE		93	10-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ14001-002
Batch: 14001
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 08/31/2021 1810

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	15		1	100	50-150	09/01/2021 1825
11Cl-PF3OUdS	15	14		1	95	50-150	09/01/2021 1825
8:2 FTS	15	12		1	76	50-150	09/01/2021 1825
6:2 FTS	15	16		1	108	50-150	09/01/2021 1825
4:2 FTS	15	12		1	83	50-150	09/01/2021 1825
GenX	32	25		1	79	50-150	09/01/2021 1825
ADONA	15	14		1	93	50-150	09/01/2021 1825
EtFOSA	16	15		1	91	50-150	09/01/2021 1825
EtFOSAA	16	15		1	93	50-150	09/01/2021 1825
EtFOSE	16	14		1	88	50-150	09/01/2021 1825
MeFOSA	16	19		1	122	50-150	09/01/2021 1825
MeFOSAA	16	15		1	96	50-150	09/01/2021 1825
MeFOSE	16	14		1	86	50-150	09/01/2021 1825
PFBS	14	11		1	81	50-150	09/01/2021 1825
PFDS	15	17		1	112	50-150	09/01/2021 1825
PFHpS	15	11		1	75	50-150	09/01/2021 1825
PFNS	15	15		1	100	50-150	09/01/2021 1825
PFOSA	16	14		1	85	50-150	09/01/2021 1825
PFPeS	15	15		1	98	50-150	09/01/2021 1825
PFDOS	15	13		1	86	50-150	09/01/2021 1825
PFHxS	15	14		1	96	50-150	09/01/2021 1825
PFBA	16	15		1	94	50-150	09/01/2021 1825
PFDA	16	16		1	97	50-150	09/01/2021 1825
PFDoA	16	16		1	103	50-150	09/01/2021 1825
PFHpA	16	14		1	90	50-150	09/01/2021 1825
PFHxA	16	14		1	87	50-150	09/01/2021 1825
PFNA	16	15		1	96	50-150	09/01/2021 1825
PFOA	16	15		1	94	50-150	09/01/2021 1825
PFPeA	16	15		1	94	50-150	09/01/2021 1825
PFTeDA	16	15		1	91	50-150	09/01/2021 1825
PFTrDA	16	13		1	81	50-150	09/01/2021 1825
PFUdA	16	14		1	85	50-150	09/01/2021 1825
PFOS	15	13		1	89	50-150	09/01/2021 1825

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		92	25-150
13C2_6:2FTS		90	25-150
13C2_8:2FTS		93	25-150
13C2_PFDoA		90	25-150
13C2_PFTeDA		96	25-150
13C3_PFBS		92	25-150
13C3_PFHxS		87	25-150
13C3-HFPO-DA		92	25-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ14001-002
Batch: 14001
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 08/31/2021 1810

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		92	25-150
13C4_PFHpA		91	25-150
13C5_PFHxA		97	25-150
13C5_PFPeA		91	25-150
13C6_PFDA		92	25-150
13C7_PFUdA		94	25-150
13C8_PFOA		89	25-150
13C8_PFOS		92	25-150
13C8_PFOSA		95	10-150
13C9_PFNA		91	25-150
d-EtFOSA		75	10-150
d5-EtFOSAA		91	25-150
d9-EtFOSE		104	10-150
d-MeFOSA		81	10-150
d3-MeFOSAA		90	25-150
d7-MeFOSE		91	10-150

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

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

PFAS by LC/MS/MS - MB

Sample ID: WQ14070-001
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
9Cl-PF3ONS	ND		1	8.0	0.48	ng/L	09/02/2021 1517
11Cl-PF3OUdS	ND		1	8.0	0.66	ng/L	09/02/2021 1517
8:2 FTS	ND		1	8.0	1.6	ng/L	09/02/2021 1517
6:2 FTS	4.0	J	1	8.0	2.0	ng/L	09/02/2021 1517
4:2 FTS	ND		1	8.0	0.87	ng/L	09/02/2021 1517
GenX	ND		1	8.0	2.1	ng/L	09/02/2021 1517
ADONA	ND		1	8.0	0.48	ng/L	09/02/2021 1517
EtFOSA	ND		1	8.0	1.4	ng/L	09/02/2021 1517
EtFOSAA	ND		1	8.0	0.75	ng/L	09/02/2021 1517
EtFOSE	ND		1	8.0	0.95	ng/L	09/02/2021 1517
MeFOSA	ND		1	16	1.3	ng/L	09/02/2021 1517
MeFOSAA	ND		1	8.0	0.93	ng/L	09/02/2021 1517
MeFOSE	ND		1	8.0	1.3	ng/L	09/02/2021 1517
PFBS	ND		1	4.0	0.41	ng/L	09/02/2021 1517
PFDS	ND		1	4.0	0.78	ng/L	09/02/2021 1517
PFHpS	ND		1	4.0	0.50	ng/L	09/02/2021 1517
PFNS	ND		1	4.0	0.71	ng/L	09/02/2021 1517
PFOSA	ND		1	4.0	0.61	ng/L	09/02/2021 1517
PFPeS	ND		1	4.0	0.59	ng/L	09/02/2021 1517
PFDOS	ND		1	8.0	1.0	ng/L	09/02/2021 1517
PFHxS	ND		1	4.0	0.55	ng/L	09/02/2021 1517
PFBA	ND		1	4.0	0.60	ng/L	09/02/2021 1517
PFDA	ND		1	4.0	0.52	ng/L	09/02/2021 1517
PFDoA	ND		1	4.0	0.47	ng/L	09/02/2021 1517
PFHpA	ND		1	4.0	0.45	ng/L	09/02/2021 1517
PFHxA	ND		1	4.0	0.69	ng/L	09/02/2021 1517
PFNA	ND		1	4.0	0.46	ng/L	09/02/2021 1517
PFOA	ND		1	4.0	0.83	ng/L	09/02/2021 1517
PFPeA	ND		1	4.0	0.54	ng/L	09/02/2021 1517
PFTeDA	ND		1	4.0	0.60	ng/L	09/02/2021 1517
PFTrDA	ND		1	4.0	0.53	ng/L	09/02/2021 1517
PFUdA	ND		1	4.0	0.63	ng/L	09/02/2021 1517
PFOS	ND		1	4.0	2.0	ng/L	09/02/2021 1517

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		101	25-150
13C2_6:2FTS		89	25-150
13C2_8:2FTS		77	25-150
13C2_PFDoA		83	25-150
13C2_PFTeDA		45	25-150
13C3_PFBS		80	25-150
13C3_PFHxS		92	25-150
13C3-HFPO-DA		91	25-150

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

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

PFAS by LC/MS/MS - MB

Sample ID: WQ14070-001
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		91	25-150
13C4_PFHpA		83	25-150
13C5_PFHxA		84	25-150
13C5_PFPeA		87	25-150
13C6_PFDA		81	25-150
13C7_PFUdA		79	25-150
13C8_PFOA		87	25-150
13C8_PFOS		86	25-150
13C8_PFOSA		94	10-150
13C9_PFNA		92	25-150
d-EtFOSA		80	10-150
d5-EtFOSAA		99	25-150
d9-EtFOSE		92	10-150
d-MeFOSA		79	10-150
d3-MeFOSAA		95	25-150
d7-MeFOSE		88	10-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ14070-002
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	15	16		1	108	50-150	09/02/2021 1528
11Cl-PF3OUdS	15	16		1	103	50-150	09/02/2021 1528
8:2 FTS	15	16		1	102	50-150	09/02/2021 1528
6:2 FTS	15	25	N	1	165	50-150	09/02/2021 1528
4:2 FTS	15	15		1	97	50-150	09/02/2021 1528
GenX	32	29		1	91	50-150	09/02/2021 1528
ADONA	15	17		1	116	50-150	09/02/2021 1528
EtFOSA	16	20		1	126	50-150	09/02/2021 1528
EtFOSAA	16	15		1	93	50-150	09/02/2021 1528
EtFOSE	16	16		1	102	50-150	09/02/2021 1528
MeFOSA	16	16		1	102	50-150	09/02/2021 1528
MeFOSAA	16	18		1	110	50-150	09/02/2021 1528
MeFOSE	16	15		1	92	50-150	09/02/2021 1528
PFBS	14	14		1	96	50-150	09/02/2021 1528
PFDS	15	16		1	101	50-150	09/02/2021 1528
PFHpS	15	14		1	91	50-150	09/02/2021 1528
PFNS	15	16		1	105	50-150	09/02/2021 1528
PFOSA	16	15		1	93	50-150	09/02/2021 1528
PFPeS	15	16		1	110	50-150	09/02/2021 1528
PFDOS	15	13		1	82	50-150	09/02/2021 1528
PFHxS	15	15		1	104	50-150	09/02/2021 1528
PFBA	16	17		1	105	50-150	09/02/2021 1528
PFDA	16	17		1	106	50-150	09/02/2021 1528
PFDoA	16	17		1	104	50-150	09/02/2021 1528
PFHpA	16	16		1	102	50-150	09/02/2021 1528
PFHxA	16	16		1	102	50-150	09/02/2021 1528
PFNA	16	19		1	119	50-150	09/02/2021 1528
PFOA	16	16		1	101	50-150	09/02/2021 1528
PFPeA	16	16		1	103	50-150	09/02/2021 1528
PFTeDA	16	17		1	105	50-150	09/02/2021 1528
PFTrDA	16	14		1	89	50-150	09/02/2021 1528
PFUdA	16	17		1	107	50-150	09/02/2021 1528
PFOS	15	15		1	98	50-150	09/02/2021 1528

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		96	25-150
13C2_6:2FTS		94	25-150
13C2_8:2FTS		76	25-150
13C2_PFDoA		82	25-150
13C2_PFTeDA		68	25-150
13C3_PFBS		81	25-150
13C3_PFHxS		84	25-150
13C3-HFPO-DA		91	25-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ14070-002
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		88	25-150
13C4_PFHpA		84	25-150
13C5_PFHxA		86	25-150
13C5_PFPeA		88	25-150
13C6_PFDA		81	25-150
13C7_PFUdA		76	25-150
13C8_PFOA		87	25-150
13C8_PFOS		82	25-150
13C8_PFOSA		89	10-150
13C9_PFNA		83	25-150
d-EtFOSA		69	10-150
d5-EtFOSAA		95	25-150
d9-EtFOSE		99	10-150
d-MeFOSA		80	10-150
d3-MeFOSAA		95	25-150
d7-MeFOSE		83	10-150

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

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

Sample ID: WH11069-008MS
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Parameter	Sample Amount (ng/L)	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
9Cl-PF3ONS	ND	12	12		1	97	50-150	09/02/2021 1703
11Cl-PF3OUdS	ND	13	10		1	83	50-150	09/02/2021 1703
8:2 FTS	ND	13	12		1	93	50-150	09/02/2021 1703
6:2 FTS	ND	13	13		1	102	50-150	09/02/2021 1703
4:2 FTS	ND	12	12		1	100	50-150	09/02/2021 1703
GenX	ND	27	27		1	100	50-150	09/02/2021 1703
ADONA	ND	13	13		1	105	50-150	09/02/2021 1703
EtFOSA	ND	13	16		1	123	50-150	09/02/2021 1703
EtFOSAA	ND	13	12		1	90	50-150	09/02/2021 1703
EtFOSE	ND	13	13		1	100	50-150	09/02/2021 1703
MeFOSA	ND	13	13		1	98	50-150	09/02/2021 1703
MeFOSAA	ND	13	12		1	91	50-150	09/02/2021 1703
MeFOSE	ND	13	13		1	95	50-150	09/02/2021 1703
PFBS	ND	12	11		1	97	50-150	09/02/2021 1703
PFDS	ND	13	10		1	81	50-150	09/02/2021 1703
PFHpS	ND	13	10		1	80	50-150	09/02/2021 1703
PFNS	ND	13	11		1	86	50-150	09/02/2021 1703
PFOSA	ND	13	12		1	91	50-150	09/02/2021 1703
PFPeS	ND	13	13		1	100	50-150	09/02/2021 1703
PFDOS	ND	13	11		1	88	50-150	09/02/2021 1703
PFHxS	ND	12	13		1	105	50-150	09/02/2021 1703
PFBA	ND	13	14		1	102	50-150	09/02/2021 1703
PFDA	ND	13	14		1	106	50-150	09/02/2021 1703
PFDoA	ND	13	13		1	101	50-150	09/02/2021 1703
PFHpA	ND	13	12		1	91	50-150	09/02/2021 1703
PFHxA	ND	13	13		1	96	50-150	09/02/2021 1703
PFNA	ND	13	15		1	109	50-150	09/02/2021 1703
PFOA	ND	13	13		1	100	50-150	09/02/2021 1703
PFPeA	ND	13	14		1	103	50-150	09/02/2021 1703
PFTeDA	ND	13	15		1	109	50-150	09/02/2021 1703
PFTrDA	ND	13	13		1	97	50-150	09/02/2021 1703
PFUdA	ND	13	12		1	91	50-150	09/02/2021 1703
PFOS	ND	12	12		1	95	50-150	09/02/2021 1703

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		95	25-150
13C2_6:2FTS		109	25-150
13C2_8:2FTS		77	25-150
13C2_PFDoA		76	25-150
13C2_PFTeDA		75	25-150
13C3_PFBS		86	25-150
13C3_PFHxS		92	25-150
13C3-HFPO-DA		91	25-150

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

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

Sample ID: WH11069-008MS
Batch: 14070
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/01/2021 1309

Surrogate	Q	% Rec	Acceptance Limit
13C4_PFBA		87	25-150
13C4_PFHpA		90	25-150
13C5_PFHxA		90	25-150
13C5_PFPeA		89	25-150
13C6_PFDA		76	25-150
13C7_PFUdA		71	25-150
13C8_PFOA		90	25-150
13C8_PFOS		92	25-150
13C8_PFOSA		104	10-150
13C9_PFNA		81	25-150
d-EtFOSA		45	10-150
d5-EtFOSAA		85	25-150
d9-EtFOSE		84	10-150
d-MeFOSA		71	10-150
d3-MeFOSAA		90	25-150
d7-MeFOSE		74	10-150

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

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

PFAS by LC/MS/MS - MB

Sample ID: WQ14719-001
Batch: 14719
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/08/2021 1229

Parameter	Result	Q	Dil	LOQ	MDL	Units	Analysis Date
6:2 FTS	ND		1	8.0	2.0	ng/L	09/09/2021 1816
PFTeDA	ND		1	4.0	0.60	ng/L	09/09/2021 1816

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		119	25-150
13C2_6:2FTS		109	25-150
13C2_8:2FTS		92	25-150
13C2_PFDoA		89	25-150
13C2_PFTeDA		97	25-150
13C3_PFBS		105	25-150
13C3_PFHxS		103	25-150
13C3-HFPO-DA		101	25-150
13C4_PFBA		105	25-150
13C4_PFHpA		96	25-150
13C5_PFHxA		107	25-150
13C5_PFPeA		109	25-150
13C6_PFDA		104	25-150
13C7_PFUdA		93	25-150
13C8_PFOA		103	25-150
13C8_PFOS		88	25-150
13C8_PFOSA		101	10-150
13C9_PFNA		101	25-150
d-EtFOSA		91	10-150
d5-EtFOSAA		96	25-150
d9-EtFOSE		109	10-150
d-MeFOSA		90	10-150
d3-MeFOSAA		110	25-150
d7-MeFOSE		104	10-150

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

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

PFAS by LC/MS/MS - LCS

Sample ID: WQ14719-002
Batch: 14719
Analytical Method: PFAS by ID SOP

Matrix: Aqueous
Prep Method: SOP SPE
Prep Date: 09/08/2021 1229

Parameter	Spike Amount (ng/L)	Result (ng/L)	Q	Dil	% Rec	%Rec Limit	Analysis Date
6:2 FTS	15	13		1	85	50-150	09/09/2021 1827
PFTeDA	16	15		1	92	50-150	09/09/2021 1827

Surrogate	Q	% Rec	Acceptance Limit
13C2_4:2FTS		109	25-150
13C2_6:2FTS		111	25-150
13C2_8:2FTS		105	25-150
13C2_PFDoA		88	25-150
13C2_PFTeDA		101	25-150
13C3_PFBS		95	25-150
13C3_PFHxS		97	25-150
13C3-HFPO-DA		103	25-150
13C4_PFBA		104	25-150
13C4_PFHpA		105	25-150
13C5_PFHxA		103	25-150
13C5_PFPeA		99	25-150
13C6_PFDA		99	25-150
13C7_PFUdA		91	25-150
13C8_PFOA		101	25-150
13C8_PFOS		90	25-150
13C8_PFOSA		102	10-150
13C9_PFNA		97	25-150
d-EtFOSA		88	10-150
d5-EtFOSAA		95	25-150
d9-EtFOSE		112	10-150
d-MeFOSA		95	10-150
d3-MeFOSAA		110	25-150
d7-MeFOSE		111	10-150

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

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

Chain of Custody

and

Miscellaneous Documents

Internal Transfer Chain of Custody

Pace Analytical
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/10/2021 Results Requested By: 8/31/2021

Workorder: 40231335 Workorder Name: 6255 SOUTH MILWAUKEE

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

WH11069
KLC2

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: PFAS WI 33	LAB USE ONLY
1	MW-1	PS	8/4/2021 12:15	40231335001	Water	2	X	
2	MW-2	PS	8/4/2021 13:05	40231335002	Water	2	X	
3	MW-201	PS	8/4/2021 13:50	40231335003	Water	2	X	
4	MW-5	PS	8/5/2021 10:55	40231335004	Water	2	X	
5	MW-4	PS	8/5/2021 11:45	40231335005	Water	2	X	
6	MW-3	PS	8/5/2021 09:15	40231335006	Water	2	X	
7	SUMP	PS	8/5/2021 12:45	40231335007	Water	2	X	
8	EFFLUENT	PS	8/5/2021 13:30	40231335008	Water	2	X	
9	EQUIP BLANK	PS	8/4/2021 11:45	40231335009	Water	2	X	
10	FIELD BLANK	PS	8/4/2021 11:45	40231335010	Water	2	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	8/10/21 1600		
2				
3	UPS	8/11/21 0950	Kaylan Williams	8-11-21 950

Comments
WI water samples
Need the WI 33 compound list

Cooler Temperature on Receipt 2.3 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

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

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

PACE ANALYTICAL SERVICES, LLC

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106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.pacelabs.com

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www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of

40231335

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

(Please Print Clearly)	
Company Name:	DAI Environmental
Branch/Location:	Lake Forest
Project Contact:	Chris Cailles
Phone:	847-573-8900
Project Number:	6255
Project Name:	South Milwaukee
Project State:	Wisconsin
Sampled By (Print):	Marcus Gaschner
Sampled By (Sign):	Marcus Gaschner
PO #:	Regulatory Program:

Quote #:	00097153
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

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; B = Biota; C = Charcoal; O = Oil; S = Soil; SL = Sludge; W = Water; DW = Drinking Water; GW = Ground Water; SW = Surface Water; WW = Waste Water; WP = Wipe

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

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Y/N	PRES Code	Analyses Requested: DFAS (WI 33)	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW-1	8-4-21	12:15	GW			X			
002	MW-2	8-4-21	1:05	GW			X			
003	MW-201	8-4-21	1:50	GW			X			
004	MW-5	8-5-21	10:55	GW			X			
005	MW-4	8-5-21	11:45	GW			X			
006	MW-3	8-5-21	9:15	GW			X			
007	SUMP	8-5-21	12:45	GW			X			
008	Effluent	8-5-21	1:30	GW			X			
009	Equip Blank①	8-4-21	—						①received in shipment, lab added to CoC per PM 8/10/21 MN	
010	Field Blank①	8-4-21	—							

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:	Date/Time:	Received By:	Date/Time:
	8/9/21 11:29		8/9/21 1130
	8/9/21 1800	CS Logistics	8/9/21
CS Logistics	8/10/21 0900		8/10/21 0900

PACE Project No.: 40231335
Receipt Temp = °C
Sample Receipt pH: OK / Adjusted
Cooler Custody Seal: Present / Not Present; Intact / Not Intact

Version 6.0 08/14/09

1

Steve Mleczko

From: Chris Calles <calles@dalcenv.com>
Sent: Tuesday, August 10, 2021 8:17 AM
To: Steve Mleczko
Subject: PFAS samples, S. Milwaukee
Attachments: 1669_001.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Steve,

For the PFAS water samples that you should be receiving today, the chain did not specifically note that the field blank and equipment blank are to be analyzed for PFAS (see attached). Those samples are to be analyzed as well. Please note the correction upon your forwarding to the sister laboratory.

Thanks,
Chris

Sample Preservation Receipt Form

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

Client Name: DAI Env.

Project # 4023335

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

Lab Lot# of pH paper:

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

Initial when completed:

Date/ Time:

Pace Lab #	Glass: AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP3U	BP3B	BP3N	BP3S	Vials: VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	JG9U	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001										2																							2.5 / 5 / 10
002										2																							2.5 / 5 / 10
003										2																							2.5 / 5 / 10
004										2																							2.5 / 5 / 10
005										2																							2.5 / 5 / 10
006										2																							2.5 / 5 / 10
007										2																							2.5 / 5 / 10
008										2																							2.5 / 5 / 10
009										2																							2.5 / 5 / 10
010										2																							2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
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

8/10/22 AW

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
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	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	

Page 1 of 2

F-GB-C-046-Rev.03 (11Feb2020) Sample Preservation Receipt Form

Pace Analytical® 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)

Project #: WO#: 40231335

Client Name: DAL Env.

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

Tracking #: —

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

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

Packing Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - 107 **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: \ /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: 8/10/22 Initials: AZJ

Labeled By Initials:

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. no pgm#, mailbox info, filt types 8/10/22 AZJ
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☒Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume:		8.
For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	
Correct Containers Used:	☒Yes ☐No	9. 004+010 added to CoC per PM, received in shipment 8/10/22 AZJ
-Pace Containers Used:	☐Yes ☒No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC	☐Yes ☒No ☐N/A	12. 004: no times 8/10/22 AZJ
-Includes date/time/ID/Analysis Matrix: WJ		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

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

Person Contacted: Date/Time:

Comments/ Resolution:

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

Page 2 of 2

Pace Analytical

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: JRG2 / 08/11/2021 | Lot #: WH11069

Means of receipt: ☐ Pace ☐ Client ☑ UPS ☐ FedEx ☐ Other: _____

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

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

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

2.3 / 2.3 °C NA / NA °C NA / NA °C NA / NA °C

Method: ☐ Temperature Blank ☑ Against Bottles IR Gun ID: 5 IR Gun Correction Factor: 0 °C

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

☐ Yes	☐ No	☑ 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).
☑ Yes	☐ No	☐ NA	4. Is the commercial courier's packing slip attached to this form?
☑ Yes	☐ No		5. Were proper custody procedures (relinquished/received) followed?
☑ Yes	☐ No		6. Were sample IDs listed on the COC?
☑ Yes	☐ No		7. Were sample IDs listed on all sample containers?
☑ Yes	☐ No		8. Was collection date & time listed on the COC?
☑ Yes	☐ No		9. Was collection date & time listed on all sample containers?
☑ Yes	☐ No		10. Did all container label information (ID, date, time) agree with the COC?
☑ Yes	☐ No		11. Were tests to be performed listed on the COC?
☑ Yes	☐ No		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)? _____
☑ Yes	☐ No		13. Was adequate sample volume available?
☑ Yes	☐ No		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
☐ Yes	☑ No		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
☐ Yes	☐ No	☑ NA	16. For VOA and RSK-175 samples, were bubbles present >"pea-size" (¼"or 6mm in diameter) in any of the VOA vials?
☐ Yes	☐ No	☑ NA	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
☐ Yes	☐ No	☑ NA	18. Were all cyanide samples received at a pH > 12 and sulfide samples received at a pH > 9?
☐ Yes	☐ No	☑ NA	19. Were all applicable NH3/TKN/cyanide/phenol/625.1/608.3 (< 0.5mg/L) samples free of residual chlorine?
☐ Yes	☐ No	☑ 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?
☐ Yes	☑ No		21. Was the quote number listed on the container label? If yes, Quote # _____

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

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

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

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

SR barcode labels applied by: JSM Date: 08/11/2021

Comments:

APPENDIX C.1.F
EMERGING CONTAMINANT HISTORICAL USE RESEARCH

Chris Cailles

From: Jennifer Rovzar
Sent: Friday, September 24, 2021 3:22 PM
To: Chris Cailles
Subject: FW: [EXTERNAL] Open Records Request
Attachments: 06-009336.pdf; 03-010087.pdf; 19-023241.pdf; FD19-002113.pdf; 12-018250.pdf; 11-003804.pdf

Email chain from S. Milwaukee.

Jennifer Rovzar

DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, IL 60045
Ph: (847) 573-8900 x579
Cell: (847) 445-7461
Fax: (847) 573-8953
Email: rovzar@daienv.com

From: Dan Margetta [mailto:margettad@smwi.org]
Sent: Thursday, July 15, 2021 2:22 PM
To: Jennifer Rovzar <rovzar@daienv.com>
Subject: RE: [EXTERNAL] Open Records Request

The attached reports are what I was able to locate regarding fire calls to the property at 2410-2424 10th Avenue and 1009 Marquette Avenue. I would also suggest filing a request with the South Milwaukee Fire Department as they may have more detailed records regarding fire incidents.

Thank You,

Dan Margetta
Police IT/Records Custodian
South Milwaukee Police Department
2424 15th Avenue
South Milwaukee, WI 53172
(414) 768-8060 Ext. 172
margettad@smwi.org

From: Jennifer Rovzar <rovzar@daienv.com>
Sent: Wednesday, July 14, 2021 4:30 PM
To: Dan Margetta <margettad@smwi.org>
Subject: [EXTERNAL] Open Records Request

Mr. Margetta,

I am submitting this email to request any fire records you have pertaining to the properties located at 2410-2424 10th Avenue and 1009 Marquette Avenue (also known as Sunrise Shopping Center). I am looking for any historical as well as current records of any possible fires that may have occurred at these locations. Please feel free to contact me with any questions or if you require any further information to process my request.

Sincerely,

Jennifer Rovzar

DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, IL 60045
Ph: (847) 573-8900 x579
Cell: (847) 445-7461
Fax: (847) 573-8953
Email: rovzar@daienv.com

Chris Cailles

From: Jennifer Rovzar
Sent: Friday, September 24, 2021 3:21 PM
To: Chris Cailles
Subject: FW: [EXTERNAL] Fwd: Open Records Request

Email chain from South Milwaukee fire chief.

Jennifer Rovzar

DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, IL 60045
Ph: (847) 573-8900 x579
Cell: (847) 445-7461
Fax: (847) 573-8953
Email: rovzar@daienv.com

From: Joe Knitter [mailto:knitter@smwi.org]
Sent: Thursday, July 15, 2021 10:48 AM
To: Jennifer Rovzar <rovzar@daienv.com>
Cc: Shannon Hrdlicka <shrdlicka@smwi.org>
Subject: RE: [EXTERNAL] Fwd: Open Records Request

Our software goes back until January of 1999. By City Policy, we are only obligated to maintain this type of record for seven years. Unfortunately, we do not archive records not entered into our software.

Chief Knitter

From: Jennifer Rovzar [mailto:rovzar@daienv.com]
Sent: Thursday, July 15, 2021 10:40 AM
To: Joe Knitter
Cc: Shannon Hrdlicka
Subject: RE: [EXTERNAL] Fwd: Open Records Request

Hi Chief Knitter,

Thank you for your quick response. Do you know how far back the software keeps records from? Do you know where I could find/look for historical fire data, such as from the 1960's-80's?

Thank you, Jennifer

Jennifer Rovzar

DAI Environmental, Inc.
27834 N. Irma Lee Circle

Lake Forest, IL 60045
Ph: (847) 573-8900 x579
Cell: (847) 445-7461
Fax: (847) 573-8953
Email: rovzar@daienv.com

From: Joe Knitter [mailto:knitter@smwi.org]
Sent: Thursday, July 15, 2021 10:32 AM
To: Jennifer Rovzar <rovzar@daienv.com>
Cc: Shannon Hrdlicka <shrdlicka@smwi.org>
Subject: RE: [EXTERNAL] Fwd: Open Records Request

Ms. Rovzar:

A query of our record management software revealed the records attached to this email. Since you did not specify a timeframe, this is for all responses that were NOT medical-response related going back as far as the software would allow.

Chief Knitter

From: Joe Knitter
Sent: Thursday, July 15, 2021 9:25 AM
To: 'rovzar@daienv.com'
Subject: RE: [EXTERNAL] Fwd: Open Records Request

Ms. Rovzar:

I have forwarded your message to my department email address and will be responding from here going forward. I will query our records and get that information to you as quickly as possible.

Chief Knitter

From: SMFD Website [mailto:smfd929@gmail.com]
Sent: Wednesday, July 14, 2021 6:43 PM
To: Joe Knitter; Shannon Hrdlicka
Subject: [EXTERNAL] Fwd: Open Records Request

Joseph Knitter

Please excuse any typos, grammatical errors, or indication of brevity… This was sent from my iPhone.

Begin forwarded message:

> **From:** Jennifer Rovzar <rovzar@daienv.com>
> **Date:** July 14, 2021 at 4:36:37 PM CDT

To: smfd929@gmail.com
Subject: FW: Open Records Request

Mr. Kitter

I am submitting this email to request any fire records you have pertaining to the properties located at 2410-2424 10th Avenue and 1009 Marquette Avenue (also known as Sunrise Shopping Center). I am looking for any historical as well as current records of any possible fires that may have occurred at these locations. Please feel free to contact me with any questions or if you require any further information to process my request.

Sincerely,

Jennifer Rovzar

DAI Environmental, Inc.
27834 N. Irma Lee Circle
Lake Forest, IL 60045
Ph: (847) 573-8900 x579
Cell: (847) 445-7461
Fax: (847) 573-8953
Email: rovzar@daienv.com

NOTICE: This email is from outside the City of South Milwaukee, please use caution when reviewing its contents. Do not open any unexpected attachments or links.
If you are unsure about the email contact the sender using methods not listed in the email to verify the source.
https://www.oakcreekwi.gov/home/showdocument?id=15262&t=637568444423093058

CONFIDENTIALITY NOTICE:
This is a transmission from the City of South Milwaukee and may contain information, which is

South Milwaukee

Call Detail

03.010087 2500 10th Ave (Sunrise Village) Fire-Other (FI2)

Reported	6/20/03	20:49:48	Units - - ,
Priority	1		
Case#	03-010029		
Stacked	20:49:48		
Dispatched			
Arrived			
Finished	21:52:00		
Disposition			

Names

	Conversion	
Involved Person	Smith,Issachar BI 1050 Marion Ave, 106 South Milwaukee, WI 53172	Sex> Male Race> Black/African American DOB> 11/18/87
Involved Person	Zoric, Damir 1511 Nicholson #3 South Milwaukee, WI 53172	Sex> Male Race> White DOB> 09/04/87
Involved Person	Zoric, Damir 1511 Nicholson #3 South Milwaukee, WI 53172	Sex> Male Race> White DOB> 09/04/87
Involved Person	Zoric, Damir 1511 Nicholson #3 South Milwaukee, WI 53172	Sex> Male Race> White DOB> 09/04/87

Summary

Several Callers Report A Youth Just Set A Fire On The Tracks And Fled Nb Officer Spoke With Several Youths Who Stated They Didn't Have Anything To Do With The Fire Fire Was Put Out

South Milwaukee

Call Detail

06.009336 Ace Hardware (Ace Hardware) Fire-Other (FI2)

Reported	6/15/06	20:44:23	
Priority	1		
Stacked	20:46:55		
Dispatched	20:46:55		
Arrived	20:48:27		
Finished	21:02:35		
Disposition	Cleared/No Report		

Units
1019 - 1019 - Siefert, Nathan A
828 - 828 - Vinohradsky, Todd J
1698P - 1698 - FIRE DEPARTMENT, FD

Notes

6/15/06 20:44	FD walk in reports a group started a fire behind ace.
6/15/06 20:58	Names Added : Treacy Michael A;
6/15/06 20:58	

Names

Contact Treacy, Michael A
2309 12th Ave,LF
South Milwaukee, WI 53172
Sex> Male Race> White
DOB> 11/03/76

Unit History

CC	Date/Time	Unit	Officer	Operator	Disposition
DI	06/15/06 20:46:55	1019	1019	1001	
DI	06/15/06 20:46:55	1698P	1698	1001	
OS	06/15/06 20:48:27	1698P	1698	1001	
OS	06/15/06 20:48:48	1019	1019	1001	
DI	06/15/06 20:51:51	828	828	1001	
OS	06/15/06 20:58:00	828	828	1001	
FI	06/15/06 20:58:41	1698P	1698	1001	Cleared/No Report
FI	06/15/06 21:02:23	828	828	1001	Finish
FI	06/15/06 21:02:34	1019	1019	1001	Finish

Summary

Michael Treacy warned on fire regulations after he was observed with a campfire behind ace hardware.

South Milwaukee

Call Detail

11.003804 | **2418 10th Ave (Sunrise Restaurant)** | **Fire-Other (FI2)**

Reported	2/24/11	18:50:03	
Priority	1		
Stacked	18:50:39		
Dispatched	18:53:05		
Arrived	18:54:05		
Finished	19:08:19		
Disposition	Cleared/No Report		

Units: 1663P - 1663 - FIRE DEPARTMENT, FD

Notes

2/24/11 18:53	Update reviewed by dispatcher- Danek, Jesse J
2/24/11 18:53	Dispatched: 1663

Unit History

CC	Date/Time	Unit	Officer	Operator	Disposition
DI	02/24/11 18:53:05	1663P	1663	1001	
OS	02/24/11 18:54:05	1663P	1663	1001	
FI	02/24/11 19:08:18	1663P	1663	421	Cleared/No Report

Summary

Dumpster fire.

South Milwaukee

Call Detail

12.018250 | **2418 10th Ave (Sunrise Restaurant)** | **Fire-Other (FI2)**

Reported	8/26/12	6:30:15	
Priority	1		
Stacked	6:31:04		
Dispatched	6:31:05		
Arrived	6:33:13		
Finished	6:47:58		
Disposition	Cleared/No Report		

Units
53 - 53 - Dews, William E
373 - 373 - Fleming, Brian J
1663P - 1663 - FIRE DEPARTMENT, FD

Notes

8/26/12 6:30 Fire on the grill

Names

Caller Restaurant Sunrise

South Milwaukee, WI 53172

Unit History

CC	Date/Time	Unit	Officer	Operator	Disposition
DI	08/26/12 06:31:05	373	373	674	
DI	08/26/12 06:31:05	53	53	674	
DI	08/26/12 06:32:54	1663P	1663	674	
OS	08/26/12 06:33:13	1663P	1663	674	
OS	08/26/12 06:33:40	53	53	674	
OS	08/26/12 06:35:38	373	373	674	
FI	08/26/12 06:35:41	373	373	674	Finish
FI	08/26/12 06:47:57	1663P	1663	674	Finish
FI	08/26/12 06:47:57	53	53	674	Cleared/No Report

Summary

Fire on the grill

South Milwaukee

Call Detail

19.023241 | **2418 10th Ave (Sunrise Restaurant)** | **Fire-Other (FI2)**

Reported	8/31/19	14:12:52	
Priority	1		
Stacked	14:13:10		
Dispatched	14:13:10		
Arrived	14:18:50		
Finished	15:38:54		
Disposition	Miscellaneous Service Perf		

Units
798 - 798 - Hesse, Steven K
414 - 414 - Jaske, Peter P
828 - 828 - Vinohradsky, Todd J
833 - 833 - Wentz, Robert G
1040 - 1040 - Lewison, Timothy
1226 - 1226 - Doering, Daniel

Notes

8/31/19 14:13	Dispatched: 828
8/31/19 14:17	16-11
8/31/19 14:18	Dispatched: 798, 1040
8/31/19 14:21	Dispatched: 414
8/31/19 14:22	West alley being blocked
8/31/19 14:23	No fire chief from cudahy
8/31/19 14:23	Oak creek chief responding
8/31/19 14:27	Dispatched: 833
8/31/19 14:28	Greendale med 44 to change of quarters
8/31/19 14:29	Cudahy chief in route
8/31/19 14:30	Dispatched: 1226
8/31/19 14:45	Plates Added : 2691439{}
8/31/19 14:45	Plates Updated : 2691439;
8/31/19 15:30	Keyholder called back and was advised of the information/
8/31/19 15:30	Names Added : Dang, Hung K;

Names

Contact

Dang, Hung K
3915 E MARTIN AV
CUDAHY, WI 53110

Sex> Male Race> Asian
DOB> 09/30/62

South Milwaukee

Call Detail

Unit History

CC	Date/Time	Unit	Officer	Operator	Disposition
DI	08/31/19 14:13:10	828	828	1432	
DI	08/31/19 14:18:45	1040	1040	1432	
DI	08/31/19 14:18:45	798	798	1432	
OS	08/31/19 14:18:50	828	828	1432	
OS	08/31/19 14:19:44	798	798	1432	
DI	08/31/19 14:21:08	414	414	1432	
OS	08/31/19 14:22:46	414	414	1432	
DI	08/31/19 14:27:28	833	833	1432	
OS	08/31/19 14:27:30	1040	1040	1432	
AC	08/31/19 14:27:35	833	833	833	
OS	08/31/19 14:28:23	833	833	1432	
DI	08/31/19 14:30:05	1226	1226	1432	
AC	08/31/19 14:30:11	1226	1226	1226	
OS	08/31/19 14:35:54	1226	1226	1432	
NC	08/31/19 14:44:50	1040	1040		
FI	08/31/19 14:49:39	1226	1226	1432	Finish
FI	08/31/19 14:49:39	833	833	1432	Finish
FI	08/31/19 14:52:34	414	414	1432	Finish
FI	08/31/19 15:38:54	1040	1040	1432	Finish
FI	08/31/19 15:38:54	798	798	1432	Finish
FI	08/31/19 15:38:54	828	828	1432	Miscellaneous Service Performed

Summary

Fd advised of smoke coming from roof
ref 19.002113 fd call

Incident Details Report

Printed On: 07/15/21 14:12

South Milwaukee

Incident# : 19-002113

Location	: 2418 10th Ave;SM SouthMilwaukee, WI 53172	**CFSCode**	: FI2 - Fire-Other
		Prime Unit#	: 1663
Reported	: 08/31/19 14:12:52	**Call Taker**	: 1432 - Champeau, Kelly
Priority	: 1	**Dispatcher**	: 1432 - Champeau, Kelly
Stacked	: 08/31/19 14:13:10	**District**	:
Dispatched	: 08/31/19 14:15:19	**Onscene**	: 08/31/19 14:19:02
Enroute	:	**Cleared**	: 08/31/19 15:37:05
Finished	: 08/31/19 15:37:06		

Units

Date Time	Activity	Operator	Comments
1663 - ENGINES			
08/31/19 14:15:19	DI - Dispatch	1432 - Champeau, Kelly	Prime Unit Units Recommended: (Not able to recommend); Dispatched: 1663
08/31/19 14:19:02	OS - On-Scene	1432 - Champeau, Kelly	
08/31/19 15:37:05	IN - In Station	1432 - Champeau, Kelly	
CH16 - COMMAND VEHICLE			
08/31/19 14:17:30	DI - Dispatch	1432 - Champeau, Kelly	Dispatched: CH16
08/31/19 14:19:02	OS - On-Scene	1432 - Champeau, Kelly	
08/31/19 15:37:05	IN - In Station	1432 - Champeau, Kelly	

Notes

Date	Unit	PFCode	Notes
08/31/2019 14:15:19		1432	Units Recommended: (Not able to recommend); Dispatched: 1663
08/31/2019 14:17:30		1432	Dispatched: CH16
08/31/2019 14:18:30	CH16	1432	Cudahy truck in route
08/31/2019 14:19:21	1663	1432	St Francis engine
08/31/2019 14:19:39	1663	1432	Oakk creek chief responsing
08/31/2019 14:20:29	1663	1432	Full evacation
08/31/2019 14:20:58	1663	1432	ARW responding
08/31/2019 14:22:00	1663	1432	Stage east of building
08/31/2019 14:22:42	1663	1432	Milwaukee als responding
08/31/2019 14:25:36	1663	1432	Oak creek on scene
08/31/2019 14:25:53	1663	1432	ARW on scene oak creek engine on scene
08/31/2019 14:26:09	1663	1432	Battalion chief responding
08/31/2019 14:26:19	1663	1432	From cudahy
08/31/2019 14:27:01	1663	1432	St francis not engine
08/31/2019 14:32:29	1663	1432	St francis chief is responding
08/31/2019 14:33:21	1663	1432	Cudahy battalion chief on scene
08/31/2019 14:33:37	1663	1432	Greendale med 44 to change of quarters at 14:28
08/31/2019 14:37:15	1663	1432	Oc(med) on scene

Incident Details Report

Printed On: 07/15/21 14:12

08/31/2019 14:42:50	CH16	1432	Cudahy Chief cleared
08/31/2019 14:47:26	CH16	1432	St francis chief is clear returning
08/31/2019 15:13:47	1663	1432	Leave property over to electrical contractor on scene
08/31/2019 15:20:04			Update reviewed by dispatcher- Champeau, Kelly

Unit Report Narrative

Unit# : 1663 - ENGINES

Unit# : CH16 - COMMAND VEHICLE

APPENDIX C.1.G
LOW-FLOW DEVELOPMENT FIELD LOGS
(EMERGING CONTAMINANT SAMPLING)

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: MW-1		Site: 6255 S. Milwaukee	
Field Staff: MG		Date: 8-4-21	Project #:
Well depth (ft bgs): 14.72		Purge equipment: Low flow	
Depth to water (ft bTOC): 3.94			
Water Column Depth (ft):		Pump Intake Depth: 10'	
Well Diameter (in): 2"			
Well Volume (gal):		Water quality meter:	
Screened Interval (ft bgs): 5'-15'			

Diameter	Gal per ft
(2")	0.163
3"	0.367
4"	0.653
6"	1.469
8"	2.611

Field Parameters

Time	Depth to Water (ft bgs)	Flow Rate (mL/min)	Total Volume (gal)	Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)	Color/Odor	
Stabilization	<0.3 ft	100 to 500		+/- 1 deg C	+/- 10%	+/- 3%	+/- 0.1	+/- 10 mV	+/- 10%	~~clear~~	~~N/O~~
11:35	3.84	400		21.5	7.47	6.95	7.99	27.5	—	clear	NO
11:40	5.35	100		20.5	4.85	6.79	8.20	29.7	—	clear	
11:45	5.38	200		21.7	4.40	6.80	8.26	29.3	—	clear	NO
11:50	5.64	500		21.3	4.00	6.28	8.27	28.3	—	clear	NO
11:55	6.33	500		21.7	3.47	6.81	8.34	30.1	—	clear	NO
12:00	6.59	400		21.8	3.37	7.05	8.38	30.0	—	clear	NO
12:05	6.83	400		21.5	3.11	7.19	8.38	29.5	—	clear	NO
12:10	7.19	500		21.9	3.07	7.16	8.37	29.1	—	clear	NO

Comments

Sampling

Depth to Water Before Sampling:	
Sample Methodology:	
Sample Name:	
Sample Date/Time:	
Sampler:	
Filtered Metals Collected: Y/N	Filter Size:
Sample Observations	
Parameters:	

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: MW-2		Site: 6255 S. Milwaukee	
Field Staff: MG		Date:	Project #: 6255
Well depth (ft bgs): 12.90		Purge equipment: Low Flow	Diameter / Gal per ft: 2" (circled) 0.163; 3" 0.367; 4" 0.653; 6" 1.469; 8" 2.611
Depth to water (ft bTOC): 8.20			
Water Column Depth (ft):		Pump Intake Depth: 10'	
Well Diameter (in): 2"			
Well Volume (gal):		Water quality meter: YSI	
Screened Interval (ft bgs): 5-15'			

Field Parameters

Time	Depth to Water (ft bgs)	Flow Rate (mL/min)	Total Volume (gal)	Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)	Color/Odor	
Stabilization	<0.3 ft	100 to 500		+/- 1 deg C	+/- 10%	+/- 3%	+/- 0.1	+/- 10 mV	+/- 10%		
12:25	8.02	400		19.4	4.86	8.80	6.67	7.0	—	clear	NO
12:30	8.64	300		19.7	4.40	8.90	6.62	22.8	—	clear	NO
12:35	9.32	400		19.1	4.18	8.99	6.47	28.3	—	clear	NO
12:40	9.52	400		19.2	3.97	8.86	6.42	28.7	—	clear	NO
12:45	9.75	500		18.7	3.68	8.69	6.49	27.9	—	clear	NO
12:50	10.10	500		18.5	3.74	8.55	7.27	28.2	—	clear	NO
12:55	10.48	400		18.2	3.63	8.68	7.33	27.9	—	clear	NO
1:00	10.50	400		18.8	3.60	8.78	7.30	28.1	—	clear	NO
1:05											

Comments

Sampling

Depth to Water Before Sampling:	
Sample Methodology:	
Sample Name:	
Sample Date/Time:	
Sampler:	
Filtered Metals Collected: Y/N	Filter Size:
Sample Observations	
Parameters:	

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: MW-4		Site: S. Milwaukee	
Field Staff: MB		Date: 8.5.21	Project #: 6255
Well depth (ft bgs): 14.39		Purge equipment: Low Flow	
Depth to water (ft bTOC): 7.82			
Water Column Depth (ft):		Pump Intake Depth: 10'	
Well Diameter (in): 2"			
Well Volume (gal):		Water quality meter: YSI	
Screened Interval (ft bgs): 5'-10'			

Diameter	Gal per ft
(2")	0.163
3"	0.367
4"	0.653
6"	1.469
8"	2.611

Field Parameters

Time	Depth to Water (ft bgs)	Flow Rate (mL/min)	Total Volume (gal)	Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)	Color/Odor
Stabilization	<0.3 ft	100 to 500		+/- 1 deg C	+/- 10%	+/- 3%	+/- 0.1	+/- 10 mV	+/- 10%	
11:20	7.82	400		18.00	4.15	2.94	8.09	-8.1	—	clear
11:25	8.66	400		17.90	2.74	3.11	8.39	12.2	—	clear
11:30	9.08	400		18.00	2.49	3.36	8.54	15.9	—	clear
11:35	10.00	400		18.1	2.42	3.55	8.98	16.3	—	clear
11:40	10.24	400		18.3	2.32	3.59	8.78	13.6	—	clear
11:45	Sampled									
11:50										

Petroleum odor

Comments

Sampling

Depth to Water Before Sampling:	
Sample Methodology:	
Sample Name:	
Sample Date/Time:	
Sampler:	
Filtered Metals Collected:	Y/N Filter Size:
Sample Observations	
Parameters:	

matt.nottelmann@pacelabs.com

Low-Flow Groundwater Sampling: Field Data Sheet

Well Number: MW-5		Site: S. Milwaukee	
Field Staff: MG		Date: 8-5-21	Project #: 6255
Well depth (ft bgs): 14.24		Purge equipment: Low Flow	
Depth to water (ft bTOC): 6.35			
Water Column Depth (ft):		Pump Intake Depth: 10'	
Well Diameter (in): 2"			
Well Volume (gal):		Water quality meter: YSI	
Screened Interval (ft bgs): 5'-10'			

Diameter	Gal per ft
(2")	0.163
3"	0.367
4"	0.653
6"	1.469
8"	2.611

Field Parameters

Time	Depth to Water (ft bgs)	Flow Rate (mL/min)	Total Volume (gal)	Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)	Color/Odor	
Stabilization	<0.3 ft	100 to 500		+/- 1 deg C	+/- 10%	+/- 3%	+/- 0.1	+/- 10 mV	+/- 10%		
10:05	6.35	400		18.6	4.51	6.14	6.77	27.3	—	clear	NO
10:10	6.73	400		19.7	3.03	6.36	6.82	16.4	—	clear	NO
10:15	6.93	400		18.8	2.18	6.33	6.86	9.7	—	clear	NO
10:20	7.19	400		19.1	1.92	6.23	6.84	7.7	—	clear	NO
10:25	7.35	200		19.5	1.86	6.11	6.81	6.0	—	clear	NO
10:30	7.92	300		19.4	1.71	5.84	6.80	4.8	—	clear	NO
10:35	8.09	300		19.2	1.94	5.35	6.91	5.9	—	clear	NO
10:40	8.37	300		19.5	1.57	5.52	6.91	6.1	—	clear	NO
10:45	8.73	300		18.8	1.48	5.56	6.98	5.1	—	clear	NO
10:50	9.36	400		19.0	1.43	5.81	6.79	4.9	—	clear	NO
10:55	Sampled										

Comments

Sampling

Depth to Water Before Sampling:

Sample Methodology:

Sample Name:

Sample Date/Time:

Sampler:

Filtered Metals Collected: Y/N Filter Size:

Sample Observations

Parameters:

Low-Flow Groundwater Sampling: Field Data Sheet

6.93
6.98

Well Number: MW-201		Site: S. Milwaukee	
Field Staff: MG		Date: 8-4-21	Project #: 6255
Well depth (ft bgs): 14.44		Purge equipment: Low Flow	Diameter / Gal per ft
Depth to water (ft bTOC): 8.41			(2") 0.163
Water Column Depth (ft):		Pump Intake Depth: 10'	3" 0.367
Well Diameter (in): 2"			4" 0.653
Well Volume (gal):		Water quality meter: YSI	6" 1.469
Screened Interval (ft bgs): 5-15'			8" 2.611

Field Parameters

Time	Depth to Water (ft bgs)	Flow Rate (mL/min)	Total Volume (gal)	Temp (deg C)	Dissolved Oxygen (mg/L)	Conductivity (mS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)	Color/Odor	
Stabilization	<0.3 ft	100 to 500		+/- 1 deg C	+/- 10%	+/- 3%	+/- 0.1	+/- 10 mV	+/- 10%		
1:20	8.75	400		18.7	6.03	1.58	6.69	30.6	—	clear	NJ
1:25	9.02	300		18.4	3.57	1.51	6.68	23.4	—	clear	NG
1:30	9.64	500		19.2	2.98	1.43	6.61	12.5	—	clear	NO
1:35	10.09	500		19.8	2.46	1.45	6.65	9.4	—	clear	NO
1:40	10.39	500		20.1	2.13	1.47	6.68	9.1	—	clear	NO
1:45	11.00	500		19.1	1.98	1.46	6.69	8.7	—	clear	NO
1:50											

Comments

Sampling

Depth to Water Before Sampling:	
Sample Methodology:	
Sample Name:	
Sample Date/Time:	
Sampler:	
Filtered Metals Collected: Y/N	Filter Size:
Sample Observations	
Parameters:	