AECOM

Supplemental Investigation Report #2 - Soil and Surface Water

Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin
FID No. 816010580
BRRTs No. 02-16-589282

January 21, 2025

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AECOM Project No.
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WDNR FID No.
816010580

WDNR BRRTS No.
02-16-589282

Mr. John Sager
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727

Supplemental Investigation Report #2 - Soil and Surface Water
Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Dear Mr. Sager:

On behalf of Enbridge Energy, Limited Partnership (Enbridge), AECOM is submitting the attached *Supplemental Investigation Report #2 - Soil and Surface Water* for the Superior Terminal located at 2800 East 21st Street in Superior, Wisconsin. This report describes the results of the site investigation following the activities presented in the *PFAS Site Investigation Work Plan – Supplement #2*, submitted on April 12, 2024 and approved by the Wisconsin Department of Natural Resources on June 11, 2024.

If you have any questions or comments about the report, please contact me at (608) 828-8208.

Yours sincerely,

Leo Linnemanstons, P.G. (WI)
Senior Project Hydrogeologist
AECOM

Supplemental Investigation Report #2
Soil and Surface Water

Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin
FID#: 816010580
BRRTS#: 02-16-589282

Prepared for:

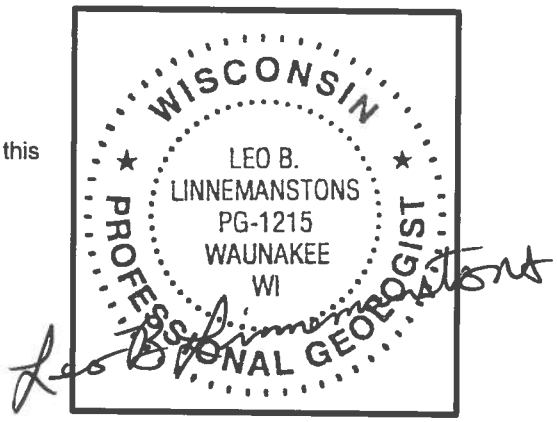
Enbridge Energy, Limited Partnership

Prepared by:

I, Leo B. Linnemanstons, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, the information contained in this document is correct and the document was prepared in compliance with applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Leo B. Linnemanstons

Leo B. Linnemanstons, P.G.
Senior Project Hydrogeologist



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Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

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	Yes	Enbridge Energy
	Yes	Wisconsin Department of Natural Resources

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Executive Summary

On behalf of Enbridge Energy, Limited Partnership (Enbridge), AECOM Technical Services, Inc. (AECOM) has prepared this *Supplemental Investigation Report #2* for Per- and Polyfluoroalkyl Substances (PFAS) in soils and surface water at Enbridge's Superior Terminal in Superior, Wisconsin (the Terminal). The Wisconsin Department of Natural Resources (WDNR) originally required a site investigation be performed in general accordance with Chapter NR 716, Wisconsin Administrative Code (WAC), in their letter dated February 28, 2022. In response, Enbridge retained AECOM to perform site investigation activities on their behalf beginning in 2022 through present. Enbridge has conducted phased investigations in 2022, 2023, and 2024. Work plans for each phase were approved by the WDNR, and each investigation report was also reviewed by the WDNR for comment.

The purpose of this supplemental investigation was the following:

- to assess if onsite surface water impacts may be present by collecting additional water samples from the identified storm water ponds at the Terminal, and
- to develop an understanding of the Terminal's storm water conveyance system that will aid with determining potential source(s) of surface water impacts discovered in storm water ponds (e.g. Ponds #2 and #3) and with other locations along storm water conveyance paths between the storm ponds and tank containment areas.

On October 25, 2024, the WDNR published new generic direct contact (DC) residual contaminant levels (RCLs) for multiple PFAS. Therefore, re-evaluation of previous site investigation results in light of the new regulatory standards was included as part of this investigation phase. Because the Terminal is zoned an industrial facility, the applicable soil standards are the Industrial DC-RCLs. Surface water quality standards remain unchanged from previous investigation phases.

Based on previous site investigations and the results of the supplemental investigation activities, AECOM concludes the following:

- PFAS was detected in soil samples at the Terminal from both the tank containment area (31 samples in 2022) and the storm water conveyances (22 samples in 2024).
- PFAS concentrations at the Terminal are generally low and are substantially lower (four to five orders of magnitude) than DC-RCLs except for PFOA and PFOS.
- Based on new DC-RCLs (updated October 2024), Perfluorooctanoic acid (PFOA) exceeded the Industrial RCL in 33 of 53 soil sample locations.
- Vertical soil profiling data from 2023 indicated that PFAS concentrations decrease rapidly with depth.
- Soil results indicate that the PFAS impacts in the Tank Containment Area and Storm water Conveyances are similar.
- PFAS was detected in the storm water ponds (Ponds #1 through #7, and 9) and fire ponds (North and South) that are similar to the compounds found in the soil samples taken adjacent in the tank containment areas and storm water conveyances.
    - Only PFOS in the Storm water Ponds #1 through #7 exceeded the Surface Water Quality Criteria (SWQC).
    - Both fire ponds (North and South) and Storm water Pond #9 have PFAS concentrations that are distinctly lower (one order of magnitude) than the other storm water ponds (Ponds #1 through #7).

Based on the results of the site investigation phases to date, an additional investigation phase will be performed to further evaluate and determine the extent of the impacts of PFAS at the Terminal.

1. Introduction

On behalf of Enbridge Energy, Limited Partnership (Enbridge), AECOM Technical Services, Inc. (AECOM) has prepared this *Supplemental Investigation Report #2* for Per- and Polyfluoroalkyl Substances (PFAS) in soils and surface water at Enbridge's Superior Terminal in Superior, Wisconsin (the Terminal). The Wisconsin Department of Natural Resources (WDNR) originally required a site investigation be performed in general accordance with Chapter NR 716, Wisconsin Administrative Code (WAC), in their letter dated February 28, 2022. In response, Enbridge retained AECOM to perform site investigation activities on their behalf. The initial Site Investigation Work Plan was submitted to the WDNR on April 28, 2022. The WDNR provided approval of the Work Plan on June 2, 2022.

The results of the initial site investigation were provided in a report submitted to the WDNR on November 4, 2022. Following review of the site investigation report, the WDNR provided comments in a letter dated January 20, 2023, which requested additional investigation. Therefore, Enbridge proposed to continue conducting the PFAS site investigation at the Terminal in a phased approach. AECOM prepared the *PFAS Site Investigation Work Plan – Supplement #1*, that was submitted on March 20, 2023, and approved by the WDNR on April 14, 2023. The results of the first supplemental site investigation were provided in a report submitted to the WDNR on November 4, 2023. Following review of the supplemental site investigation report, the WDNR provided comments in a letter dated February 14, 2024, which identified additional areas of investigation. AECOM prepared the *PFAS Site Investigation Work Plan – Supplement #2*, that was submitted on April 12, 2024, and approved by the WDNR on June 11, 2024.

The purpose of this second supplemental investigation was the following:

- to assess if onsite surface water impacts may be present by collecting additional water samples from the identified storm water ponds at the Terminal, and
- to develop an understanding of the Terminal's storm water conveyance system that will aid with determining potential source(s) of surface water impacts discovered in storm water ponds (e.g. Ponds #2 and #3) and with other locations along storm water conveyance paths between the storm ponds and tank containment areas.

This supplemental investigation report presents the results of the completed additional investigation and does not repeat site information regarding the background and site characteristics from the *Site Investigation Report* (AECOM, November 2022) or the *Supplemental Investigation Report #1* (AECOM, October 2023).

1.1 Owner Information

Enbridge Energy, Limited Partnership is the owner of the Superior Terminal Facility located in Superior, Wisconsin.

Owner Information
Enbridge Energy, Limited Partnership (Enbridge)
11 East Superior Street, Suite 125
Duluth, Minnesota 55802
Contact: Karl Beaster, PG, Senior Environment Advisor
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(715) 718-1040

1.2 Consultant and Subcontractor Identification

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WDNR Certification: 999407970

1.3 Site Description

The Superior Terminal Facility is located at 2800 East 21st Street, Superior, Wisconsin in Douglas County (see Figure 1) and is approximately 560 acres in size, which occupies portions of Sections 30 and 31, Township 49N, Range 13W and Section 36, Township 49N and Range 14W. Figure 2 shows the vicinity of the Terminal.

Based on the City of Superior Zoning Map, the Terminal property and surrounding land north and west is zoned Manufacturing-2 (M2), which is an industrial land use. Property located to the east and south of the Terminal is zoned Suburban (SUB) and One Family Residential (R1B). The Dome Petroleum natural gas facility borders the Terminal to the north, and the Husky Asphalt Terminal borders the Enbridge Terminal to the northwest across East 21st Street. The Nemadji River flows immediately south and east of the Terminal. Two railroad yards are located near the site; one approximately one mile south and the other approximately 0.75 miles west. An airport is present approximately 1.5 miles west of the Terminal.

The topography of the site and the general area around the site is relatively flat. Depth to groundwater is generally less than 10 ft below grade. The local groundwater flow varies on location and proximity to the Nemadji River and other small tributaries. The dominant regional flow direction is to the east towards Lake Superior.

2. Background

2.1 Evolving Regulatory Landscape

On October 25, 2024, the WDNR published new Chapter NR 720, WAC, generic direct contact (DC) residual contaminant limits (RCLs) for twelve PFAS compounds. Revised values for previously included PFAS compounds (Perfluorooctanoic acid [PFOA], Perfluorooctanoic acid [PFOS], and Perfluorobutanesulfonic acid [PFBS]) were lowered, and 10 PFAS compounds were added to the list of compounds with calculated DC-RCL values. The WDNR updated their RCL list according to updates the United States Environmental Protection Agency (EPA) made to their toxicity database for PFAS. The RCL updates were further driven by the revised designations of several PFAS compounds to carcinogenic. For reference, a complete table comparing previous to updated PFAS DC-RCLs is presented in Appendix A.

Soil sample results are compared to these updated generic RCLs per Chapter NR 720, WAC. There are no Wisconsin Background Threshold Values (BTVs) established for PFAS, nor generic groundwater protection RCLs. Generic groundwater protection RCLs have not yet been determined for PFAS because groundwater standards have yet to be promulgated, although recommended standards have been proposed.

Surface water quality standards remain unchanged from previous investigation phases. Surface water sample results are compared to the surface water quality criteria (SWQC) as listed in Water Quality Standards for Wisconsin Surface Waters under Chapter NR 102.04, WAC. At this time, WDNR has only established criteria for PFOA and PFOS. The applicable SWQC is determined according to whether the receiving surface water is used for drinking water supply. Under Chapter NR 104.22(4), WAC, the Nemadji River is not classified as a public water supply, and the applicable SWQC is for recreational use and fish and aquatic life.

2.2 Re-evaluating Previous Site Investigations

The previous site investigations in 2022 and 2023 found PFAS in soil and surface water and evaluated impact levels according to applicable standards at the time of investigation. Recommendations were given based on the findings of PFAS in soils at detectable but below-Chapter NR 720 RCL concentrations and in surface waters according to standards that remain unchanged.

After the RCL update, recommendations will follow the current standards for soils. Additional site investigation may be required following these changes to address the risks for direct contact and determine the extent of impacts. A re-evaluation of previous site investigation results in light of the new regulatory standards will help inform the continuation of this investigation.

Therefore, previous soil and surface water results are included in Tables 1 and 2, respectively. Likewise, the corresponding quality control sample results are presented on Table 3 and 4, respectively. Sample locations are shown on Figure 3.

2.2.1 Initial Site Investigation (2022)

The purpose of the 2022 investigation was to evaluate the potential of PFAS in soil associated with the storage and historic use of aqueous film forming foam (AFFF) for fire suppression at the Terminal. Site Investigation activities at the Terminal occurred in June, July, and August 2022. To evaluate the presence of PFAS in soil related to the use of AFFF at the Terminal, the site investigation included the following components:

- Surface Soil Samples (31 locations): one surface soil sample was collected from within the secondary containments of aboveground storage tanks (ASTs or Tanks) numbered 1-29. These sample locations were preferentially selected within the secondary containments to be from the lowest elevations following the apparent surface water drainage patterns. In addition, surface soil samples were collected at each of the two buildings in which AFFF and associated AFFF dispersal equipment were stored.
- Hydraulic Probe Boring (1 location): a direct push soil probe boring was conducted through the backfill of the former excavation at the 2012 AFFF discharge location. A soil sample was collected from the native soils encountered at base of the former excavation and second sample was collected approximately 2 ft below the first sample. The hydraulic probe boring was completed to 20 ft below ground surface (bgs).

While PFAS was not detected in any of the surface soil samples above the previous RCLs, some detections now exceed 2024 RCLs. The following updated observations were made:

- PFOA was detected at 30 of the 31 surface soil sample locations in concentrations ranging from 0.032 to 0.87 micrograms per kilogram (ug/kg), which exceeded the Industrial DC-RCL (0.0784 ug/kg) at 22 sample locations.
- PFOS was detected at 28 of the 31 surface soil sample locations in concentrations ranging from 0.063 to 45 ug/kg, which none exceeded the Industrial DC-RCL (58 ug/kg).
- None of the other eleven PFAS compounds were detected at concentrations within four to five orders of magnitude of the new DC-RCLs at any sample locations.
- None of the 33 Wisconsin-list PFAS compounds were detected in the samples taken from the Hydraulic Probe Boring.

2.2.2 Supplemental Site Investigation #1 (2023)

The purpose of the 2023 investigation was to assess the vertical extent of PFAS impacts in the tank containments and whether PFAS was present in surface waters on-site. This supplemental investigation occurred in July 2023 and included the following components:

- Vertical Profile Soil Samples (4 locations): Vertical soil profile samples were collected from within the containment areas for Tanks 11, 15, 24, and 25. These sample locations were selected based on the four highest PFAS concentrations detected during the 2022 surface soil investigation.
- Surface Water Samples (2 locations): Surface water samples were collected at two storm water ponds (Pond #2 and Pond #3) that collect storm water from the tank containment areas (Tanks 1 to 29), where PFAS were identified in the surface soil samples.

While PFAS was not detected in any of the surface soil samples above the previous RCLs, some detections now exceed 2024 RCLs. The following updated observations were made during this investigation:

- PFOA was detected in 8 of the 16 samples with concentrations ranging from 0.11 to 1.0 ug/kg, which exceeded the Industrial DC-RCL (0.0784 ug/kg).
- PFOS was detected 15 of 16 samples with concentrations ranging from 0.055 to 50.5 ug/kg, which none exceeded the Industrial RCL (58 ug/kg).
- None of the other eleven PFAS compounds were detected at concentrations within four to five orders of magnitude of the new DC-RCLs at any sample locations.
- Although some soil samples obtained during the 2023 supplemental site investigation have exceedances of PFOA when evaluated with the most recent RCLs, the conclusions gathered from the vertical soil profile investigation are unaffected. The vertical soil profile data at the four locations where the highest PFAS concentrations were observed in the surface soil of the tank containment areas strongly indicates that PFAS is quickly retarded from vertical migration in soil. At these worst-case locations, soil concentrations diminish by 2 and 3 orders of magnitude (10 to 100 times) over the span of 4 feet in depth. Given the extremely low permeability (assumed to be less than (<)10^{-7} cm/sec) of the unconsolidated formation (fat clay and hardpan) from the ground surface to a depth of more than 100 feet, contaminant migration through the formation is expected to be limited. All but PFOA in Tank 25 diminished to below-RCL levels of PFAS by four feet.
- The surface water data indicated that Ponds #2 and #3 contained water with PFAS detections. The two PFAS with SWQC (PFOA and PFOS) were detected in both ponds. Because the Nemadji River as the receiving water body is not identified for use as a public water supply, the PFOA concentrations were less than the applicable SWQC (95 nanograms per liter, ng/L). However, at the time they were sampled, PFOS concentrations at both ponds exceeded the SWQC (8 ng/L).
- These storm water ponds discharge water intermittently through control structures to the Nemadji River during periods of high flow, such as rain events.

These updated previous investigation results considering the updated RCLs are used in the evaluation of the 2024 investigation results, which is presented in Section 4.

3. Field Methodology Activities

Site Investigation activities at the Terminal were performed in August and September 2024, to evaluate the presence of PFAS in surface water related to the use of AFFF at the Terminal and develop an understanding of the Terminal's storm water conveyance system. The supplemental site investigation included the following components:

- Site Reconnaissance: Drainage mapping was completed by observing the following: storm pond locations (inlets and discharges), drainage culverts under roadways (inlets and outlets), and surface water divides (surface water drainage ways, including davits and manholes). This mapping also identified the following surface water sampling locations: Ponds #1, 2, 3, 4, 5, 6, 9, North Fire Pond, and South Fire Pond.
- Surface Soil Assessment: Surface soil samples were collected from the primary drainage ditches from the tank containment areas to the storm water ponds (i.e., those ditches immediately "upstream" of the ponds).
- Surface Water Sampling: Surface water samples were collected from storm water ponds as identified during site reconnaissance.

Pre-Field Planning

The site-specific Health and Safety Plan (HASP) was updated for the new field work to meet both AECOM and Enbridge health and safety requirements, processes, and procedures. Prior to the start of soil sampling activities, AECOM conducted a site reconnaissance to evaluate field conditions and determine locations for the proposed soil samples. Based on actual site conditions, field sampling methods were adjusted as later described, but still consistent with the methods described in the work plan.

General PFAS Sampling Considerations

Because of potential cross contamination issues associated with PFAS sampling due to the presence of these compounds in many commercial products, AECOM PFAS-certified field teams conducted the PFAS sample collection events. AECOM certification requires attending an internal PFAS sampling training course and reviewing the AECOM PFAS Sampling Guidance document designed to make AECOM samplers aware of the products known to have tested positive for PFAS compounds, as well as identifying PFAS-free products that are appropriate to use in the sampling environment.

3.1 Site Reconnaissance

On August 14, 2024, AECOM's project engineer and hydrogeologist conducted a site reconnaissance to identify features of the storm water conveyance system (including davits, culverts, and storm water ponds), soil sampling locations, and surface water sampling locations. Twenty-two (22) surface soil sample locations (SS01 to SS22) were selected to represent segments based on the flow direction of the conveyances from the lowest points (e.g. storm ponds) upstream to the highest points (e.g. surface water divides and tank containment areas). Figure 3 shows the surface sample locations.

Special note was taken of davits that are used to control discharges from the tank containment berms. Each tank containment had two or three davits that are used to periodically drain storm water that accumulates inside the containment area. The davits are operated manually based on visual inspection for the presence of petroleum in the basin before discharge. In some instances, davits from a particular containment area may discharge to separate segments of the storm water conveyance system.

Wooden lathes were used to mark soil sampling locations for coordinate survey. Soil sampling locations were selected near the outfalls of davits and similar elements of the storm water conveyance system.

3.2 Soil Sampling

On September 24, 2024, AECOM collected soil samples at 22 locations (SS01 to SS22) within storm water conveyances based on the results of the site reconnaissance (see Figure 3). The sample locations were selected to assess the impacts in drainages from the tank containment areas to the storm ponds. Soil sampling focused on the primary conveyances that drain to the storm water ponds (i.e., those ditches immediately "upstream" of the ponds).

Sample locations were planned along the centerline of the drainages. A photolog of each of the surface soil sample locations with a description of the immediate surroundings and encountered surface soil is presented in Appendix B.

Soil samples were collected using a decontaminated stainless-steel shovel to clear surface stone or remove a plug of vegetation, if present, to expose underlying fine-grained soils. The shovel was then used to dig a plug of soil to a depth of approximately 6 inches below ground surface, such that the total depth of the excavation was less than 12 inches. If ponded water was present, the sample location was offset within the drainage area. A grab soil sample was collected from the body of the soil plug with nitrile gloves for laboratory analysis of PFAS.

Following collection of the soil sample, the soil plug was placed back into its hole and the surface restored. Soil samples for laboratory analysis were placed in appropriate laboratory-supplied containers, labeled, and maintained on ice in insulated coolers.

3.3 Surface Water Sampling

On September 23 and 26, 2024, AECOM collected surface water samples at the following ten locations:

- Pond 1 (PR-PD01-SW01)
- Pond 2 (PR-PD02-SW01)
- Pond 3 (PR-PD03-SW01)
- Pond 4 (PR-PD04-SW01)
- Pond 5 (PR-PD05-SW01)
- Pond 6 (PR-PD06-SW01)
- Pond 7 (PR-PD07-SW01)
- Pond 9 (PR-PD09-SW01)
- North Fire Pond (PR-PDNF-SW01), and
- South Fire Pond (PR-PDSF-SW01)

Samples were obtained from upstream of the pond outfall at bank locations identified and marked during the site reconnaissance as shown on Figure 3.

Samples were collected from mid-water column (1.5 to 2 feet below the surface) approximately 5 feet from the shoreline using a peristaltic pump. The sampling train consisted of dedicated silicone and low-density polyethylene tubing. To avoid disturbing sediments by entering the pond, the sample tubing was fixed to a decontaminated PVC rod, extended out from shore, and suspended below the pond surface at the mid-column water depth. Once the tubing was positioned, water was pumped and allowed to discharge from the tubing, and then the laboratory-supplied sample container was filled directly via the tubing. Surface water samples for laboratory analysis were labeled and maintained on ice in insulated coolers.

3.4 Laboratory Analyses

Laboratory samples were transported in coolers, on ice, under chain-of-custody protocol to Pace Analytical in Duluth, Minnesota and then forwarded to Pace Analytical in Minneapolis, Minnesota (WDNR certified PFAS laboratory) for analyses. Samples were analyzed for the Wisconsin list of 33 PFAS using EPA modified Method 537.1 isotope dilution. The samples were analyzed on standard turn-around-time (TAT). Due to the use of the isotope dilution method, Matrix Spike/Spike Duplication (MS/MSD) analysis was not requested.

The laboratory reports are presented in Appendix C.

3.5 Quality Assurance

Standard sampling protocols for PFAS compounds included the use of field and equipment blanks due to the possible ubiquitous nature of these compounds including the potential presence of these compounds in sampling equipment and supplies, and to assess the possibility of cross-contamination during sampling, transport, and sample storage. As such, the following Quality Assurance samples were collected for both field events:

Field Blank: Two field blanks were obtained by pouring laboratory certified PFAS free water into a laboratory provided bottle, one per day samples were collected.

Equipment Blank: Equipment blanks were obtained by pouring laboratory certified PFAS free water over the decontaminated sampling equipment and collecting the water in a laboratory provided bottle. One equipment blank was taken of surface water sampling equipment the day surface water was sampled, and one equipment blank was taken of soil sampling equipment the day soil was sampled.

Rinsate Blank: Two rinsate blanks were obtained by pouring distilled water used for decontamination into a laboratory bottle, one per day samples were collected.

These blank samples were shipped to the laboratory with the field samples. AECOM provided a laboratory data validation review using procedures described in the National Functional Guidelines for High Resolution Superfund Method Data Review (USEPA, April 2016), as appropriate. The data validation reports are presented in Appendix D.

3.6 Equipment Decontamination

Decontamination of the stainless-steel soil sampling equipment was performed between the collection of each soil sample and consisted of removing solids from the equipment, washing with Alconox, and then double rinse with distilled water in first a designated “first-rinse” and then a designated “second-rinse” five-gallon HDPE bucket.

Decontamination of the PVC tube used in surface water sampling was performed between the collection of each surface water sample. A three-bucket Alconox-water-water method was also used. For the PVC tube, it consisted of removing solids, washing Alconox-treated water through the tube, scrubbing each end of the tube with Alconox, then washing “first-rinse” water through the tube, washing the ends of the tube with “first-rinse” water, then washing “second-rinse” water through the tube and washing the ends of the tube with “second-rinse” water. Dedicated tubing was used for each surface water sample, was disposed of after use, and therefore, did not require decontamination.

Additional decontamination as needed consisted of spraying the equipment with Decon-It and then triple-rinsing with laboratory-provided PFAS-free water from a spray bottle.

3.7 Investigation Derived Waste

Decontamination wash water and excess surface water generated during the investigation activities was managed in the Soil Management Area for the Terminal. Other investigation-derived waste (e.g., used tubing, used sampling gloves, etc.) was disposed of as nonhazardous solid waste.

4. Investigation Results

4.1 Quality Control

A total of 22 soil samples and 11 surface water samples were collected and placed into two data groups based on media. Quality control (QC) samples were collected for each data group including field, equipment, and rinsate water blanks. The following table summarizes the data groups and quality control samples:

Data Group	Sample Dates	# of Samples	# of Field Blanks	# of Equipment Blanks	# of Rinsate Water Blanks
Soil	9/24/2024	22	1	1	1
Surface Water	9/26/2024	11	1	1	1

An AECOM chemist reviewed the laboratory reports to ensure the data was useable and prepared a Data Validation Report for each data group, which are presented in Appendix D with their corresponding laboratory report presented in Appendix C.

Based on the QC review of the soil and surface water sample results, the data are valid as reported and may be used for decision making purposes, with the exception of results that were rejected (R) due to severely low extracted internal standards (EIS) recoveries. Because of low laboratory recoveries outside of data requirements, results for the following compounds were generally rejected: NEtFOSA, NMeFOSA, NMeFOSE, and NEtFOSE. However, this occurrence of rejected data will not limit the ability to interpret valid data.

Equipment blanks were collected on the sampling equipment used for soil and surface water sample collection and rinsate blanks were collected from the water used to decontaminate equipment. As identified on Tables 3 and 4, no PFAS compounds were detected in the surface water equipment blank; however, trace level (ppt) detections were found in the soil field blank. Because soil results (reported in ppb) were non-detect or were greater than 5 times the blank concentration for most of the analytes, these trace detections are not considered to compromise the validity of the soil results. No PFAS was detected in the equipment or rinsate blank samples.

Altogether, the quality of the soil and surface water sample data is considered acceptable for use in this investigation.

4.2 Surface Soil Results

During this Supplemental Investigation #2, a total of 22 surface soil samples (SS01 to SS22) were collected from the drainages immediately upstream from the storm ponds at depths of less than 6 inches bgs. As described in Section 2.1, surface soil sample results were compared to the new Chapter NR720 DC-RCLs. Generic RCLs were those calculated by WDNR (October 2024) using the USEPA Regional Screening Level Web Calculator in accordance with WDNR Draft PUB-RR-890. Therefore, the results for the current surface soil samples (SS01 to SS22) and previous surface soil results (TK01 to TK29) are presented in Table 1.

Based on the results of the previous site investigation and the current supplemental investigation, the following observations were made:

- PFAS was detected in 31 of 31 tank containment area samples and 21 of 22 storm water conveyance samples.
    - tank containment area detections ranged from 0.024 to 45 ug/kg with an average detection of 0.78 ug/kg.
    - storm water conveyance detection ranged from 0.02 to 17.3 ug/kg with an average detection of 0.68 ug/kg.
- PFOS was the only PFAS detected greater than 10 ug/kg in both the tank containment area samples (maximum 45 ug/kg) and the storm water conveyance samples (maximum 17.3 ug/kg).
- PFOA was the only PFAS that exceeded Industrial DC-RCLs.
    - In the Tank Containment Area samples, PFOA exceeded the Industrial DC-RCL at 22 of the 31 sample locations.

    - In the Storm water Conveyance samples, PFOA exceeded the Industrial DC-RCL at 11 of the 22 sample locations.

- None of the other eleven PFAS compounds were detected at concentrations within four to five orders of magnitude of the new DC-RCLs at any sample locations.

Because the only PFAS exceedances at the Terminal are PFOA (Industrial DC-RCL) and PFOS (SWQC for non-drinking water), they were selected for posting on the following referenced figures to show their occurrence and distribution across the Terminal:

- PFOA Results Map (Figure 4): Because of the very low Industrial DC-RCL (0.0784 ug/kg), exceedances were identified at 33 of 53 sample locations. However, PFOA concentrations were generally low (less than 1 ug/kg). The average concentrations and ranges for PFOA in the Tank Containment Areas and the Storm water Conveyances were similar; however, three tank containment areas (TK15, TK24, and TK25) represented the highest occurrences (>0.5 ug/kg).
- PFOS Results Map (Figure 5): While PFOS has the broadest range of PFAS concentrations up to 45 ug/kg (TK-25), none of 53 sample locations exceed the Industrial DC-RCL (58 ug/kg), and five tank containment areas (TK11, TK13, TK15, TK24, and TK25) represented the highest occurrences (>5.0 ug/kg).

Overall, PFAS concentrations at the Terminal are generally low and are substantially lower (four to five orders of magnitude) than DC-RCLs except for PFOA and PFOS. While average PFOA concentrations are less than 1 ug/kg, PFOS has the broadest range of concentrations up to 45 ug/kg.

In addition, the following two PFAS with DC-RCLs were omitted with an explanation of circumstance:

- Perfluorooctadecanoic acid (PFODA) was not detected at any of the sample locations. PFODA detections would have been disqualified due to a low recovery rate in the laboratory control sample, but because there were no PFODA detections, the qualification does not apply.
- Perfluoropropanoic acid (PFPrA) is not included in Method 537.1 isotope dilution, the laboratory analysis method used for this sampling event. The October 2024 RCL update occurred after the samples from this event had been analyzed, and the addition of this compound to the list of regulated compounds could not have been anticipated. However, all of the PFAS concentrations detected during this site investigation have been well below the 584,000 ug/kg Industrial DC-RCL for PFPrA, so it is unlikely there are any exceedances of PFPrA in the soils sampled. PFPrA will be included in future analysis.

4.3 Surface Water Results

A total of 10 surface water samples were collected from storm water ponds as identified during site reconnaissance. Surface water sample results are compared to the surface water quality criteria (SWQC) as listed in Water Quality Standards for Wisconsin Surface Waters under Chapter NR102.04, WAC. At this time, WDNR has only established criteria for PFOA and PFOS. For the purpose of determining the applicable SWQC, surface water from the site discharges to the Nemadji River, which is not classified as a public water supply under Chapter NR104, WAC.

Surface water results are presented in Table 2, and the corresponding quality control sample results are presented on Table 4. Sample locations for the current investigation are shown on Figure 6, along with the results for the following previously identified key PFAS (PFOA and PFOS).

Based on the results of the previous site investigation and the current supplemental investigation, the following observations were made:

- Similar PFAS compounds were detected in the storm water ponds (Ponds #1 through #7 and #9) and fire ponds (North and South) to those detected in the soil samples taken adjacent in the tank containment areas and storm water conveyances.
- Only PFOS in Storm water Ponds #1 through #7 exceeded the SWQC (8 ng/L).
- Both fire ponds (North and South) have PFAS concentrations that are distinctly lower (one order of magnitude) than Storm water Ponds #1 through #7.

- Storm water Pond #9 appears to receive storm water conveyed from along Barden Avenue outside but adjacent to the west boundary of the Terminal, and also has PFAS concentrations that are distinctly lower than the other storm water ponds (Ponds #1 through #7). Pond #9 discharges through storm water conveyances to Pond #7 before collecting in Ponds #1 and 2.
- Storm water Pond #7 appears to drain a limited portion of the west-central Terminal area (Tank Containment Areas 22, 23, and 24). Pond #7 discharges through storm water conveyances and collects in Ponds #1 and 2.
- Storm water Pond #6 appears to drain a large portion of the north and central Terminal area (Tank Containment Areas 2, 9 to 12, and 13 to 20). Pond #6 discharges through storm water conveyances and collects in Ponds #1 and 2.
- Storm water Pond #4 appears to drain a small portion of the south-central Terminal area (Tank Containment Areas 1, 2, 26, 27, and the Soil Management Area). Pond #4 discharges through storm water conveyances and collects in Ponds #1 and 2.
- Storm water Ponds #1 and #2 appear to drain the largest portion of the Terminal area (Tank Containment Areas 20 to 22, and collectively Ponds #6, #7, and #9), and both ponds have a similar magnitude of PFOS concentrations (range from 42.8 to 46.2 ng/L).
- Storm water Ponds #3 and #5 appear to drain a small portion of the east Terminal area (Tank Containment Areas 3 to 8, and 25), and both ponds have a similar magnitude of PFOS concentrations (range from 167 to 212 ng/L).
- Comparing the available 2023 and 2024 results for Storm water Ponds #2 and #3, the PFOS (and total PFAS) concentrations decreased notably over the past year.

In accordance with the WDNR-approved Water Management Plan, these storm water ponds discharge water intermittently through their control structures to the Nemadji River.

5. Conclusions and Recommendations

5.1 Conclusions

Supplemental site investigation activities were performed in August and September 2024. Based on previous and current site investigations results, AECOM concludes the following:

- PFAS was detected in soil samples from both the tank containment area (31 samples in 2022) and the storm water conveyances (22 samples in 2024).
- PFAS concentrations at the Terminal are generally low and are substantially lower (four to five orders of magnitude) than DC-RCLs except for PFOA and PFOS.
- Based on revised DC-RCLs (updated October 2024), only PFOA exceeded the Industrial RCL in 33 of 53 locations.
- Vertical profiling data from 2023 indicated that PFAS concentrations decrease rapidly with depth.
- Soil results indicate that the PFAS impacts in the Tank Containment Area and Storm water Conveyances are similar.
- PFAS was detected in the storm water ponds (Ponds #1 through #7, and #9) and fire ponds (North and South) that are similar to the compounds found in the soil samples taken adjacent in the tank containment areas and storm water conveyances.
    - Only PFOS in the Storm water Ponds #1 through #7 exceeded the SWQC (8 ng/L).
    - Both fire ponds (North and South) and Storm water Pond #9 have PFAS concentrations that are distinctly lower (one order of magnitude) than the Storm water Ponds #1 through #7.

5.2 Recommendations

Based on these conclusions, AECOM recommends that Enbridge proceed with an additional phase of investigation to provide further definition of the extent of impacts in soil and surface water. At the direction of Enbridge, AECOM will develop a supplemental site investigation work plan and provide it to WDNR for review and comment. The work plan will describe a specific scope of work and schedule to address identified soil and surface water impacts as well as present an approach for a preliminary groundwater assessment based on the results of the tank containment areas and storm water conveyances.

This *Supplemental Investigation Report #2* will be submitted to the WDNR with the required review fee and Technical Assistance Form 4400-237. Following receipt of WDNR's comments on this report, Enbridge will develop the work plan (Supplement #3) for the next phase of investigation planned for 2025.

Tables

Table 1 – PFAS Surface Soil Results

Table 2 – PFAS Surface Water Results

Table 3 – PFAS Surface Soil QC Blank Results

Table 4 – PFAS Surface Water QC Blank Results

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Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	Field ID: / Sample Date: / NR 720 Residual Contaminant Levels[1] Ind DC RCL (ppb)	PR-SS01 9/24/2024	PR-SS02 9/24/2024	PR-SS03 9/24/2024	PR-SS04 9/24/2024	PR-SS05 9/24/2024	PR-SS06 9/24/2024	PR-SS07 9/24/2024	PR-SS08 9/24/2024	PR-SS09 9/24/2024	PR-SS10 9/24/2024	PR-SS11 9/24/2024
Carboxylic Acids:															
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	**1,170,000**	0.079 J	0.054 J	0.25	< 0.048	0.26	< 0.046	< 0.041	0.049 J	0.11 J	< 0.047	0.045 J
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	--	0.096 J	0.098 J	0.19	0.053 J	1.1	0.039 J	0.030 J	0.13 J	< 0.034	< 0.027	0.080 J
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	**410,000**	0.061 J	0.048 J	0.12 J	0.034 J	0.38	0.030 J	0.046 J	0.081 J	< 0.027	< 0.022	0.058 J
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	--	0.039 J	0.030 J	0.13	0.026 J	0.25	0.018 J	0.017 J	0.035 J	< 0.019	< 0.016	0.050 J
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	**0.0784**	0.055 J	0.052 J	**0.18**	0.045 J	**0.28**	0.029 J	0.058 J	0.063 J	< 0.023	< 0.019	**0.079 J**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg	**2,460**	0.30	0.051 J	0.15	0.035 J	0.22	0.029 J	0.036 J	0.037 J	< 0.034	< 0.028	0.11 J
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	--	0.093 J	0.091 J	0.082 J	0.028 J	0.43	0.077 J	0.081 J	0.10 J	0.096 J	< 0.027	0.25
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	**246,000**	1.2	0.60	1.1	0.23	0.31	0.88	0.85	0.079 J	0.28	< 0.052	1.3
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	**41,000**	< 0.033	0.12 J	0.055 J	< 0.037	0.079 J	0.16	0.16	< 0.032	0.49	< 0.036	0.17
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	--	0.30	0.47	1.8	0.073 J	0.10 J	1.0	0.43	0.056 J	0.12 J	< 0.033	0.89
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	**821,000**	< 0.022	< 0.021	0.023 J	< 0.025	< 0.022	0.042 J	< 0.021	< 0.021	0.096 J	< 0.024	0.026 J
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg	--	< 0.020	< 0.020	< 0.017	< 0.023	< 0.020	< 0.022 UJ	< 0.020	< 0.020	< 0.027 UJ	< 0.022 UJ	< 0.018
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg	**32,800,000**	< 0.052	< 0.051	< 0.044	< 0.059	< 0.051	< 0.056	< 0.050	< 0.051	< 0.070	< 0.057	< 0.045
Sulfonic Acids:															
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	**246,000**	< 0.018	< 0.018	0.027 J	< 0.020	< 0.018	< 0.019	< 0.017	< 0.018	< 0.024	< 0.020	< 0.016
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	--	< 0.016	< 0.016	0.029 J	< 0.018	< 0.016	< 0.017	< 0.015	< 0.016	< 0.022	< 0.018	0.023 J
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg	**16,400**	0.020 J	0.017 J	0.42	0.039 J	0.071 J	0.039 J	0.022 J	0.022 J	< 0.021	< 0.017	0.14
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	--	< 0.033	< 0.033	0.031 J	< 0.038	< 0.033	< 0.036	< 0.032	< 0.033	< 0.045	< 0.037	< 0.029
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	**58**	0.21	0.11 J	3.1	0.29	1.3	1.3	0.52	0.36	0.28	< 0.066	1.1
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	--	< 0.038	< 0.038	< 0.033	< 0.044	< 0.038	< 0.042	< 0.037	< 0.038	< 0.052	< 0.042	< 0.034
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	--	< 0.041	< 0.040	< 0.035	< 0.046	< 0.040	0.060 J	< 0.039	< 0.040	< 0.055	< 0.045	< 0.036
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	--	< 0.033	< 0.032	< 0.028	< 0.038	< 0.033	< 0.036	< 0.032	< 0.033	< 0.045	< 0.037	< 0.029
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	--	< 0.017	< 0.017	< 0.015	< 0.020	< 0.017	< 0.019	< 0.017	< 0.017	< 0.024	< 0.019	< 0.015
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	--	< 0.028	0.033 J	< 0.024	< 0.032	0.031 J	0.058 J	0.43	0.070 J	0.056 J	< 0.031	< 0.025
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	--	< 0.056	< 0.055	< 0.048	< 0.064	< 0.056	0.073 J-	0.31	0.16 J-	0.19 J-	< 0.062	< 0.049
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg	--	< 0.035	0.17	< 0.030	< 0.040	0.24	0.53	0.27	0.047 J	4.6	< 0.039	0.099 J
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:															
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	--	< 0.021	< 0.020	< 0.018	< 0.024	< 0.021	< 0.022	< 0.020	< 0.021	0.031 R	< 0.023	< 0.018
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	--	< 0.050 R	< 0.049 R	< 0.043	< 0.057 R	< 0.050 R	< 0.054 R	< 0.049	< 0.050	< 0.068 R	< 0.055 R	< 0.044
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	--	< 0.032 R	< 0.031 R	< 0.027	< 0.036 R	< 0.032 R	< 0.034 R	< 0.031	< 0.032	< 0.043 R	< 0.035 R	< 0.028
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	--	< 0.059	< 0.058	< 0.050	< 0.067	< 0.058	< 0.064	< 0.057	< 0.058	< 0.080	< 0.065	< 0.052
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	--	< 0.024	< 0.023	< 0.020	< 0.027	< 0.024	< 0.026	< 0.023	< 0.024	< 0.032	< 0.026	< 0.021
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	--	< 0.027	< 0.027	< 0.023	< 0.031	< 0.027	< 0.030	< 0.027	< 0.027	< 0.037 R	< 0.030	< 0.024
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	--	0.032 J	< 0.028	0.043 J	< 0.033 R	< 0.029	< 0.031	< 0.028	< 0.028	0.58 R	< 0.032	< 0.025
Replacement Chemicals:															
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	**3,500**	< 0.024	< 0.024	< 0.021	< 0.028	< 0.024	< 0.026	< 0.024	< 0.024	< 0.033	< 0.027	< 0.021
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	--	< 0.015	< 0.015	< 0.013	< 0.017	< 0.015	< 0.016	< 0.015	< 0.015	< 0.021	< 0.017	< 0.013
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	--	< 0.025	< 0.025	< 0.021	< 0.029	< 0.025	< 0.027	< 0.024	< 0.025	< 0.034	< 0.028	< 0.022
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	--	< 0.024	< 0.024	< 0.020	< 0.027	< 0.024	< 0.026	< 0.023	< 0.024	< 0.033	< 0.027	< 0.021
Total PFAS[3]:		--	ug/kg	--	2.485	1.944	7.73	0.853	5.051	4.364	3.26	1.289	6.929	ND	4.42

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

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Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

				Field ID:	NR 720 Residual Contaminant Levels[1]	PR-SS12	PR-SS13	PR-SS14	PR-SS15	PR-SS16	PR-SS17	PR-SS18	PR-SS19	PR-SS20	PR-SS21	PR-SS22
				Sample Date:	Ind DC RCL (ppb)	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/24/2024	9/27/2024
Abbr	**Analyte[2]**	**Cas Number**	**Units**													
Carboxylic Acids:																
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg		**1,170,000**	0.10 J	0.34	0.063 J	0.19	0.33	0.16	0.12 J	0.055 J	< 0.039	< 0.038	0.77
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg		--	0.42	2.8	0.036 J	0.19	0.15	1.3	0.81	0.16	0.033 J	0.041 J	1.5
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg		**410,000**	0.22	1.2	0.033 J	0.16	0.17	0.45	0.47	0.080 J	< 0.019	0.019 J	0.91
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg		--	0.13	0.45	0.029 J	0.15	0.22	0.15	0.2	0.047 J	< 0.013	< 0.013	0.89
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg		**0.0784**	**0.15**	**0.41**	**0.082 J**	**0.16**	**0.27**	**0.14 J**	**0.22**	0.061 J	0.018 J	< 0.015	**1.2**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg		**2,460**	0.14	0.24	0.064 J	0.14	0.23	0.11 J	0.17	0.061 J	< 0.023	< 0.023	0.86
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg		--	0.33	0.51	0.053 J	0.087 J	0.14	0.39	1.0	0.14 J	0.025 J	< 0.022	1.7
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg		**246,000**	0.86	1.6	1.3	0.34	1.6	1.9	3.1	0.89	0.10 J	0.093 J	0.71
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg		**41,000**	0.26	2.5	0.22	< 0.028	0.079 J	0.28	1.4	0.17	< 0.030	< 0.029	0.33
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg		--	0.97	14.8	5.5	0.15	1.1	1.2	4.3	1.0	0.093 J	0.028 J	0.30
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg		**821,000**	0.048 J	0.8	0.075 J	< 0.018	0.023 J	< 0.022	0.22	0.023 J	< 0.020	< 0.019	0.061 J
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg		--	< 0.018	< 0.024 R	< 0.025 UJ	< 0.017	< 0.017	< 0.021	< 0.022 UJ	< 0.021	< 0.019	< 0.018	< 0.016
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg		**32,800,000**	< 0.047	< 0.061	< 0.063	< 0.044	< 0.044	< 0.053	< 0.058	< 0.053	< 0.048	< 0.046	< 0.041
Sulfonic Acids:																
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg		**246,000**	< 0.016	0.048 J	< 0.022	< 0.015	< 0.015	< 0.018	< 0.020	< 0.018	< 0.017	< 0.016	< 0.014
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg		--	< 0.014	0.080 J	< 0.019	< 0.013	< 0.014	< 0.016	< 0.018	< 0.016	< 0.015	< 0.014	0.017 J
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg		**16,400**	0.071 J	1.0	0.071 J	0.12	0.037 J	0.066 J	0.082 J	0.073 J	< 0.014	0.015 J	0.26
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg		--	< 0.030	0.062 J	< 0.041	< 0.028	< 0.028	< 0.034	< 0.037	< 0.034	< 0.031	< 0.030	0.028 J
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg		**58**	2.4	17.3	0.60	3.0	0.28	1.7	3.7	0.54	0.26	0.12	16.9
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg		--	0.059 J	0.48	< 0.047	< 0.033	< 0.033	< 0.040	0.080 J	< 0.039	< 0.036	< 0.034	0.11
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg		--	0.054 J	0.90	< 0.050	< 0.034	< 0.035	< 0.042	< 0.045	< 0.041	< 0.038	< 0.036	0.072 J
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg		--	0.063 J	1.3	< 0.040	< 0.028	< 0.028	< 0.034	< 0.037	< 0.034	< 0.031	< 0.030	< 0.026
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg		--	< 0.016	< 0.020	< 0.021	< 0.015	< 0.015	< 0.018	< 0.019	< 0.018	< 0.016	< 0.016	< 0.014
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg		--	0.086 J	4.1	< 0.034	< 0.024	< 0.024	0.090 J	2.4	< 0.029	< 0.026	< 0.025	0.10 J
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg		--	0.64 J-	6.3	< 0.069	< 0.047	< 0.048	0.26	3.8	< 0.057	< 0.052	< 0.050	0.37 J-
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg		--	1.4	13.8	< 0.043	< 0.030	< 0.030	0.34 J-	4.7 J-	0.076 J-	0.039 J-	< 0.031 UJ	1.5 J-
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg		--	0.055 J	0.74	< 0.025 UJ	< 0.018	< 0.018	< 0.021	0.080 J	< 0.021	< 0.019	< 0.019	0.046 J
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg		--	< 0.045	< 0.059 R	< 0.061 R	< 0.042	< 0.043	< 0.052 R	< 0.056 R	< 0.051 R	< 0.046	< 0.045 R	< 0.039
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg		--	< 0.029	< 0.037 R	< 0.039 R	< 0.027	< 0.027	< 0.033 R	< 0.036 R	< 0.032 R	< 0.029	< 0.028 R	< 0.025
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg		--	< 0.053	< 0.069	< 0.072	< 0.050	< 0.050	< 0.060	< 0.065	< 0.060	< 0.054	< 0.053	< 0.046
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg		--	< 0.021	< 0.028	< 0.029	< 0.020	< 0.020	< 0.025	< 0.027	< 0.024	< 0.022	< 0.021	< 0.019
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg		--	< 0.025	< 0.032	< 0.034 R	< 0.023	< 0.023	< 0.028	< 0.031	< 0.028	< 0.025	< 0.025	< 0.022
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg		--	< 0.026	< 0.034	< 0.035 R	< 0.024	< 0.025	< 0.030	< 0.032	< 0.029	< 0.027	< 0.026	< 0.023
Replacement Chemicals:																
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg		**3,500**	< 0.022	< 0.029	< 0.030	< 0.021	< 0.021	< 0.025	< 0.027	< 0.025	< 0.023	< 0.022	< 0.019
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg		--	< 0.014	< 0.018	< 0.019	< 0.013	< 0.013	< 0.016	< 0.017	< 0.015	< 0.014	< 0.014	< 0.012
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg		--	< 0.023	< 0.030	< 0.031	< 0.021	< 0.022	< 0.026	< 0.028	< 0.026	< 0.023	< 0.023	< 0.020
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg		--	< 0.022	< 0.028	< 0.029	< 0.020	< 0.021	< 0.025	< 0.027	< 0.025	< 0.022	< 0.022	< 0.019
Total PFAS[3]:		--	ug/kg		--	8.456	71.76	8.126	4.687	4.629	8.536	26.852	3.376	0.568	0.316	28.634

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

AECOM

Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	Field ID: / Sample Date: / Ind DC RCL (ppb)	NR 720 Residual Contaminant Levels[1]	PR-TK11-SB01 (0-1) 7/10/2023	PR-TK11-SB01 (1-2) 7/10/2023	PR-TK11-SB01 (2-3) 7/10/2023	PR-TK11-SB01 (2-3)-Dup 7/10/2023	PR-TK11-SB01 (3-4) 7/10/2023	PR-TK15-SB01 (0-1) 7/10/2023	PR-TK15-SB01 (1-2) 7/10/2023	PR-TK15-SB01 (2-3) 7/10/2023	PR-TK15-SB01 (3-4) 7/10/2023	PR-TK24-SB01 (0-1) 7/10/2023	PR-TK24-SB01 (0-1)-Dup 7/10/2023
Carboxylic Acids:																
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	**1,170,000**	0.59	0.13	0.038 J	0.039 J	0.48	1.2	0.55	0.27	0.050 J	0.55	0.53
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	--	3.4	0.76	0.22	0.23	0.31	8.2	4.3	1.9	0.31	2.4	2.4
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	**410,000**	1.4	0.27	0.11 J	0.11 J	0.2	3.4	2.3	1.1	0.18	1.2	1.3
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	--	0.53	0.13 J	< 0.045	< 0.045	0.047 J	0.83	0.44	0.14	< 0.048	0.69	0.70
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	**0.0784**	**0.49**	< 0.041 U	< 0.041	< 0.041	< 0.040 U	**1.0**	**0.4**	< 0.043 U	< 0.043	**0.76**	**0.84**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg	**2,460**	0.27	0.055 J	< 0.041	< 0.041	< 0.040	0.71	0.30	0.062 J	< 0.043	0.55	0.52
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	--	1.1	0.18	< 0.030	< 0.030	< 0.029	0.74	0.038 J	< 0.032	< 0.031	0.53	0.50
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	**246,000**	1.8	0.10 J	< 0.039	< 0.039	< 0.039	1.4	0.055 J	< 0.042	< 0.041	2.1	1.8
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	**41,000**	2.1	0.059 J	< 0.043	< 0.043	< 0.042	0.19	< 0.046	< 0.046	< 0.045	0.070 J	0.11 J
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	--	0.53	< 0.042	< 0.042	< 0.042	< 0.041	1.5	0.057 J	< 0.044	< 0.044 UJ	0.34 J	0.81 J
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	**821,000**	0.34	< 0.045	< 0.045	< 0.045	< 0.044	0.061 J	< 0.048	< 0.048	< 0.047 UJ	< 0.045	< 0.045
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg	--	0.088 R	< 0.035	< 0.035	< 0.035 UJ	< 0.034	0.16 R	< 0.037	< 0.037	0.23 R	< 0.035	< 0.035
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg	**32,800,000**	< 0.041	< 0.043	< 0.043	< 0.043	< 0.042	0.061 J	< 0.046	< 0.045	0.095 J	< 0.043	< 0.043
Sulfonic Acids:																
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	**246,000**	< 0.033	< 0.034	< 0.034	< 0.034	< 0.034	0.088 J	0.058 J	0.044 J	< 0.036	0.039 J	0.038 J
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	--	0.064 J	< 0.031	< 0.031	< 0.031	< 0.031	0.041 J	0.048 J	< 0.033	< 0.033	0.058 J	0.061 J
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg	**16,400**	1.6	0.43	0.28	0.29	0.27	0.39	0.33	0.095 J	< 0.030	0.96	0.97
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	--	0.13	< 0.036	< 0.036	< 0.036	< 0.036	< 0.037	< 0.039	< 0.039	< 0.038	0.087 J	0.082 J
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	**58**	50.5	14.9	4.4	4.5	0.68	8.8	0.72	0.055 J	< 0.041	35.0	26.3
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	--	0.84	0.13	0.055 J	0.055 J	< 0.044	0.088 J	< 0.049	< 0.048	< 0.048	0.16	0.16
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	--	1.5	0.069 J	< 0.037	< 0.037	< 0.036	< 0.037	< 0.039	< 0.039	< 0.039	0.052 J	0.066 J
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	--	1.7	0.058 J	< 0.034	< 0.034	< 0.033	< 0.034	< 0.037	< 0.036	< 0.036	< 0.035	< 0.035
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	--	< 0.029	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.032	< 0.032	< 0.032	< 0.031	< 0.031
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	--	5.6	0.24	< 0.054	< 0.054	0.070 J	4.0	3.4	1.7	0.28	< 0.055	0.072 J
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	--	8.7	0.3	< 0.057	< 0.057	< 0.056	1.9	0.097 J	< 0.061	< 0.060	0.23 J-	0.34 J-
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg	--	21.5	0.53	0.066 J	0.069 J	< 0.057	2.2	0.14	< 0.061	< 0.061	0.42	0.54
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	--	1.9	0.53	< 0.038	< 0.038	< 0.038	< 0.039	< 0.041	< 0.041	< 0.040	0.13	0.10 J
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	--	0.072 R	< 0.036 R	< 0.036 R	< 0.035 R	< 0.035 R	< 0.036 R	< 0.038 R	< 0.038 R	< 0.037 R	< 0.036 R	< 0.036 R
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	--	< 0.032 R	< 0.033 R	< 0.033 R	< 0.033 R	< 0.033 R	< 0.034 R	< 0.036 R	< 0.036 R	< 0.035 R	< 0.034 R	< 0.034 R
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	--	0.094 J	< 0.037	< 0.037	< 0.037	< 0.036	< 0.037	< 0.039	< 0.039	< 0.039	< 0.037	< 0.037
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	--	< 0.051	< 0.053	< 0.053	< 0.052	< 0.051	< 0.053	< 0.056	< 0.056	< 0.055	< 0.053	< 0.053
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	--	< 0.038	< 0.040	< 0.040	< 0.040	< 0.039	< 0.040	< 0.042 R	< 0.042 R	< 0.042 R	< 0.040	< 0.040
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	--	< 0.041	< 0.042	< 0.042	< 0.042	< 0.041	< 0.042	< 0.045 R	< 0.045 R	< 0.044 R	< 0.043	< 0.043
Replacement Chemicals:																
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	**3,500**	< 0.035	< 0.036	< 0.036	< 0.036	< 0.036	< 0.037	< 0.039	< 0.039	< 0.038	< 0.037	< 0.037
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	--	< 0.046	< 0.047	< 0.047	< 0.047	< 0.046	< 0.048	< 0.051	< 0.050	< 0.050	< 0.048	< 0.048
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	--	< 0.032	< 0.033	< 0.033	< 0.033	< 0.032	< 0.033	< 0.035	< 0.035	< 0.034	< 0.033	< 0.033
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	--	< 0.032	< 0.033	< 0.033	< 0.033	< 0.032	< 0.033	< 0.035	< 0.035	< 0.035	< 0.034	< 0.034
Total PFAS[3]:		--	ug/kg	--	106.838	18.871	5.169	5.293	2.057	36.959	13.233	5.366	1.145	46.326	38.239

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

AECOM

Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	Field ID: / Sample Date:	NR 720 Residual Contaminant Levels[1] Ind DC RCL (ppb)	PR-TK24-SB01 (1-2) 7/10/2023	PR-TK24-SB01 (2-3) 7/10/2023	PR-TK24-SB01 (3-4) 7/10/2023	PR-TK25-SB01 (0-1) 7/10/2023	PR-TK25-SB01 (1-2) 7/10/2023	PR-TK25-SB01 (2-3) 7/10/2023	PR-TK25-SB01 (3-4) 7/10/2023	PR-AFFExcavation-SB01(17-17.5) 8/3/2022	PR-AFFFExcavation-SB01(14-15) 8/3/2022	PR-TK01-HA01(0-6) 7/6/2022	PR-TK02-HA01(0-6) 7/6/2022
Carboxylic Acids:																
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	**1,170,000**	0.091 J	0.043 J	0.045 J	0.36	0.51	0.37	0.26	< 0.041	< 0.043	0.082 J	0.15
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	--	0.63	0.22	0.11 J	1.8	1.9	1.9	1.1	< 0.041	< 0.044	0.26	0.62
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	**410,000**	0.36	0.096 J	0.061 J	1.2	1.5	1.9	1.4	< 0.040	< 0.042	0.14	0.25
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	--	0.12 J	< 0.045	< 0.047	0.25	0.23	0.22	0.14	< 0.050	< 0.053	0.15	0.19
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	**0.0784**	**0.11 J**	< 0.041	< 0.042	**0.32**	**0.38**	**0.42**	**0.26**	< 0.045	< 0.047	**0.15**	**0.19**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg	**2,460**	0.065 J	< 0.041	< 0.042	0.11 J	0.11 J	< 0.041	< 0.042	< 0.045	< 0.047	0.18	0.28
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	--	< 0.030	< 0.030	< 0.031	0.26	0.053 J	< 0.030	< 0.031	< 0.033	< 0.035	0.38	0.51
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	**246,000**	< 0.040	< 0.039	< 0.041	0.47	0.084 J	< 0.040	< 0.041	< 0.044	< 0.046	0.060 J	0.41
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	**41,000**	< 0.044	< 0.043	< 0.045	0.60	< 0.042	< 0.043	< 0.044	< 0.048	< 0.050	0.039 J	0.37
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	--	< 0.042	< 0.042	< 0.043	1.5	0.058 J	< 0.042	< 0.043	< 0.046	< 0.049	< 0.030	0.093 J
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	**821,000**	< 0.045	< 0.045	< 0.047	0.25	< 0.044	< 0.045	< 0.046	< 0.050	< 0.052	< 0.033	0.099
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg	--	< 0.035	< 0.035	< 0.036	0.10 J+	< 0.034	< 0.035	< 0.036	NA	NA	NA	NA
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg	**32,800,000**	< 0.043	< 0.043	< 0.045	< 0.043	< 0.042	< 0.043	< 0.044	NA	NA	NA	NA
Sulfonic Acids:																
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	**246,000**	< 0.035	0.035 J	< 0.036	0.12	0.18	0.31	0.29	< 0.038	< 0.040	< 0.025	< 0.025
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	--	0.032 J	< 0.031	< 0.033	0.20	0.27	0.45	0.36	< 0.035	< 0.037	< 0.023	< 0.023
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg	**16,400**	0.27	0.036 J	< 0.030	2.0	3.0	4.2	2.8	< 0.032	< 0.033	< 0.021	0.068 J
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	--	< 0.037	< 0.036	< 0.038	0.10 J	0.2	0.16	0.046 J	< 0.040	< 0.042	< 0.026	< 0.026
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	**58**	0.40	0.075 J	0.069 J	17.6	23.8	7.5	0.90	< 0.043	< 0.045	0.17	2.7
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	--	< 0.046	< 0.045	< 0.047	0.095 J	0.046 J	< 0.046	< 0.047	< 0.050	< 0.053	< 0.033	< 0.033
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	--	< 0.037	< 0.037	< 0.038	0.19	< 0.036	< 0.037	< 0.038	< 0.041	< 0.043	< 0.027	< 0.027
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	--	< 0.035	< 0.034	< 0.036	0.21	< 0.033	< 0.034	< 0.035	< 0.038	< 0.040	< 0.025	< 0.025
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	--	< 0.031	< 0.030	< 0.031	< 0.030	< 0.029	< 0.030	< 0.031	< 0.033	< 0.035	< 0.022	< 0.022
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	--	< 0.055	< 0.054	< 0.056	3.4	3.8	2.6	0.35	< 0.060	< 0.063	0.064 J	0.30
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	--	< 0.058	< 0.057	< 0.060	1.2	< 0.056	< 0.058	< 0.059	< 0.063	< 0.067	< 0.042	0.89
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg	--	< 0.058	0.059 J	< 0.060	6.8	0.078 J	< 0.058	< 0.060	NA	NA	NA	NA
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	--	< 0.039	< 0.038	< 0.040	0.33	0.24	< 0.039	< 0.040	< 0.043	< 0.045	< 0.028	0.032 J
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	--	< 0.036 R	< 0.035 R	< 0.037 R	< 0.036 R	< 0.035 R	< 0.036 R	< 0.037 R	< 0.039 UR	< 0.042 UR	< 0.026 UR	< 0.026 UR
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	--	< 0.034 R	< 0.033 R	< 0.035 R	< 0.034 R	< 0.033 R	< 0.034 R	< 0.035 R	< 0.037 UR	< 0.039 UR	< 0.024 UR	< 0.024 UR
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	--	< 0.037	< 0.037	< 0.038	< 0.037	< 0.036	< 0.037	< 0.038	< 0.041	< 0.043	< 0.027	< 0.027
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	--	< 0.053	< 0.052	< 0.055	< 0.053	< 0.051	< 0.053	< 0.054	< 0.058	< 0.061	< 0.038	< 0.038
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	--	< 0.040	< 0.040	< 0.041	< 0.040	< 0.039	< 0.040	< 0.041	< 0.044 UR	< 0.046 UR	< 0.029 UR	< 0.029 UR
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	--	< 0.043	< 0.042	< 0.044	< 0.042	< 0.041	< 0.042	< 0.043	< 0.047 UR	< 0.049 UR	< 0.031 UR	< 0.031 UR
Replacement Chemicals:																
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	**3,500**	< 0.037	< 0.036	< 0.038	< 0.037	< 0.035	< 0.037	< 0.037	< 0.040	< 0.042	< 0.026	< 0.026
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	--	< 0.048	< 0.047	< 0.049	< 0.048	< 0.046	< 0.048	< 0.049	< 0.053	< 0.055	< 0.035	< 0.034
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	--	< 0.033	< 0.033	< 0.034	< 0.033	< 0.032	< 0.033	< 0.034	< 0.036	< 0.038	< 0.024	< 0.024
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	--	< 0.033	< 0.033	< 0.034	< 0.033	< 0.032	< 0.033	< 0.034	< 0.037	< 0.039	< 0.024	< 0.024
Total PFAS[3]:		--	ug/kg	--	2.078	0.564	0.285	39.465	36.439	20.03	7.906	ND	ND	1.675	7.152

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
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U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
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1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
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AECOM

Table 1

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Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	Field ID: / Sample Date:	NR 720 Residual Contaminant Levels[1]	PR-TK03-HA01(0-6)	PR-TK04-HA01(0-6)	PR-TK05-HA01(0-6)	PR-TK06-HA01(0-6)	PR-TK07-HA01(0-6)	PR-TK08-HA01(0-6)	PR-TK09-HA01(0-6)	PR-TK10-HA01(0-6)	PR-TK11-HA01(0-6)	PR-TK12-HA01(0-6)	PR-TK13-HA01(0-6)
					Ind DC RCL (ppb)	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/5/2022
Carboxylic Acids:																
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg		**1,170,000**	< 0.028	< 0.028	< 0.028	0.11	0.17	0.11	0.097 J	< 0.026	0.62	0.070 J	0.23
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg		--	< 0.028	0.038 J	0.056 J	0.35	0.44	0.49	0.30	< 0.026	3.000	0.31	1.1
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg		**410,000**	< 0.027	0.030 J	< 0.027	0.16	0.24	0.24	0.19	< 0.025	1.2	0.19	0.43
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg		--	< 0.034	< 0.034	< 0.034	0.25	0.24	0.24	0.19	< 0.032	0.62	0.13	0.17
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg		**0.0784**	0.037 J	0.032 J	0.033 J	**0.20**	**0.38**	**0.31**	**0.39**	< 0.028	**0.43**	**0.13**	**0.15**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg		**2,460**	0.043 J	< 0.031	< 0.031	0.072 J	0.20	0.48	0.22	< 0.028	0.28	< 0.030	0.11
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg		--	0.052 J	< 0.022	< 0.023	0.13	0.24	0.71	0.19	0.058 J	0.87	< 0.022	0.11
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg		**246,000**	0.057 J	< 0.030	< 0.030	0.038 J	0.10	0.31	0.058 J	0.045 J	1.2	< 0.029	< 0.029
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg		**41,000**	< 0.032	< 0.032	< 0.033	0.035 J	0.060 J	0.20	0.054 J	< 0.030	1.3	< 0.032	< 0.031
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg		--	< 0.031	< 0.031	< 0.032	< 0.030	< 0.031	0.043 J	< 0.032	< 0.029	0.29	0.47 J	< 0.031
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg		**821,000**	< 0.033	< 0.034	< 0.034	< 0.032	< 0.033	< 0.032	< 0.034	< 0.031	0.36	< 0.033	< 0.033
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg		--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg		**32,800,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfonic Acids:																
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg		**246,000**	< 0.026	< 0.026	< 0.026	< 0.025	< 0.025	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	0.065 J
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg		--	< 0.023	< 0.024	< 0.024	< 0.023	< 0.023	< 0.023	< 0.024	< 0.022	0.051 J	< 0.023	0.094
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg		**16,400**	< 0.021	< 0.022	< 0.022	< 0.021	0.039 J	< 0.021	< 0.022	< 0.020	1.1	< 0.021	1.0
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg		--	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	< 0.026	< 0.028	< 0.025	0.11	< 0.027	0.051 J
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg		**58**	0.10	0.071 J	< 0.029	< 0.028	0.39	0.28	0.063 J	0.13	35	< 0.028	6.7
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg		--	< 0.034	< 0.034	< 0.034	< 0.033	< 0.034	< 0.033	< 0.035	< 0.032	0.43	< 0.033	< 0.033
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg		--	< 0.028	< 0.028	< 0.028	< 0.027	< 0.027	< 0.027	< 0.028	< 0.026	0.9	< 0.027	< 0.027
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg		--	< 0.025	< 0.026	< 0.026	< 0.025	< 0.025	< 0.025	< 0.026	< 0.024	0.17	< 0.025	< 0.025
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg		--	< 0.023	< 0.023	< 0.023	< 0.022	< 0.022	< 0.022	< 0.023	< 0.021	< 0.022	< 0.022	< 0.022
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg		--	< 0.040	0.043 J	< 0.041	< 0.039	< 0.040	0.084 J	< 0.041	< 0.038	3.5	< 0.040	0.23
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg		--	< 0.043	< 0.043	< 0.043	0.21	< 0.042	0.23	0.12	< 0.040	6.2	< 0.042	0.054 J
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg		--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg		--	< 0.029	< 0.029	< 0.029	< 0.028	< 0.028	< 0.028	< 0.029	< 0.027	1.4	< 0.028	0.034 J
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg		--	< 0.027 UR	< 0.027 UR	< 0.027 UR	< 0.026 UR	< 0.026 UR	< 0.026 UR	< 0.027 UR	< 0.025 UR	< 0.026 UR	< 0.026 UR	< 0.026 UR
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg		--	< 0.025 UR	< 0.025 UR	< 0.025 UR	< 0.024 UR	< 0.025 UR	< 0.024 UR	< 0.026 UR	< 0.023 UR	< 0.024 UR	< 0.025 UR	< 0.025 UR
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg		--	< 0.027	< 0.028	< 0.028	< 0.027	< 0.027	< 0.027	< 0.028	< 0.026	0.14	< 0.027	< 0.027
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg		--	< 0.039	< 0.040	< 0.040	< 0.038	< 0.039	< 0.038	< 0.040	< 0.037	0.073 J	< 0.039	< 0.038
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg		--	< 0.030 UR	< 0.030 UR	< 0.030 UR	< 0.029 UR	< 0.029 UR	< 0.029 UR	< 0.030 UR	< 0.028 UR	< 0.029	< 0.029 UR	< 0.029
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg		--	< 0.031 UR	< 0.032 UR	< 0.032 UR	< 0.030 UR	< 0.031 UR	< 0.030 UR	< 0.032 UR	< 0.029 UR	< 0.031	< 0.031 UR	< 0.031 UR
Replacement Chemicals:																
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg		**3,500**	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	< 0.026	< 0.028	< 0.025	< 0.027	< 0.027	< 0.027
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg		--	< 0.035	< 0.036	< 0.036	< 0.034	< 0.035	< 0.034	< 0.036	< 0.033	< 0.035	< 0.035	< 0.035
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg		--	< 0.024	< 0.025	< 0.025	< 0.024	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.024
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg		--	< 0.025	< 0.025	< 0.025	< 0.024	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.024
Total PFAS[3]:		--	ug/kg		--	0.289	0.214	0.089	1.555	2.499	3.727	1.872	0.233	59.244	1.3	10.528

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

AECOM

Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	Field ID: / Sample Date:	NR 720 Residual Contaminant Levels[1]	PR-TK14-HA01(0-6)	PR-TK15-HA01(0-6)	PR-TK16-HA01(0-6)	PR-TK17-HA01(0-6)	PR-TK18-HA01(0-6)	PR-TK19-HA01(0-6)	PR-TK20-HA01(0-6)	PR-TK21-HA01(0-6)	PR-TK22-HA01(0-6)	PR-TK23-HA01(0-6)	PR-TK24-HA01(0-6)
					Ind DC RCL (ppb)	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/6/2022	7/5/2022	7/5/2022	7/5/2022
Carboxylic Acids:																
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg		**1,170,000**	0.028 J	0.78	0.040 J	0.15	0.12	0.19	0.27	0.093	0.24	0.049 J	0.32
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg		--	0.11	3.8	0.12	0.30	0.41	0.90	1.5	0.24	0.49	0.17	1.2
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg		**410,000**	0.064 J	1.7	0.079 J	0.19	0.21	0.25	0.50	0.13	0.27	0.11	0.49
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg		--	0.046 J	0.58	0.073 J	0.11	0.30	0.14	0.21	0.13	0.3	0.13	0.43
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg		**0.0784**	**0.089 J**	**0.87**	0.069 J	**0.13**	**0.26**	**0.15**	**0.35**	**0.18**	**0.33**	**0.17**	**0.54**
PFNA	Perfluorononaoic acid	375-95-1	ug/kg		**2,460**	0.065 J	0.61	0.049 J	0.075 J	0.29	0.13	0.18	0.19	0.26	0.17	0.38
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg		--	0.027 J	1.9	0.090 J	0.043 J	1.0	0.11	0.23	0.62	0.74	0.50	0.81
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg		**246,000**	< 0.028	1.1	0.073 J	0.030 J	0.32	< 0.029	0.081 J	0.48	0.52	0.32 J-	0.28
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg		**41,000**	< 0.030	0.53	0.049 J	< 0.029	0.16	< 0.031	< 0.032	0.22	0.24	0.14	0.19
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg		--	< 0.029	0.096	< 0.030	< 0.028	< 0.030	< 0.030	< 0.031	0.041 J	0.059 J	0.057 J	0.059 J
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg		**821,000**	< 0.032	0.074 J	< 0.032	< 0.030	< 0.033	< 0.033	< 0.034	0.042 J	< 0.032	< 0.033	0.044 J
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg		--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg		**32,800,000**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfonic Acids:																
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg		**246,000**	< 0.024	< 0.025	< 0.025	< 0.023	< 0.025	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	< 0.024
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg		--	< 0.022	< 0.023	< 0.022	< 0.021	< 0.023	< 0.023	< 0.024	< 0.022	< 0.023	< 0.023	< 0.022
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg		**16,400**	0.064 J	0.20	< 0.020	< 0.019	< 0.021	< 0.021	0.089 J	0.035 J	< 0.021	0.13	0.28
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg		--	< 0.026	< 0.026	< 0.026	< 0.025	< 0.026	< 0.026	< 0.027	< 0.026	< 0.026	< 0.027	0.044 J
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg		**58**	0.20	9.2	0.085 J	0.10	0.19	0.37	1.2	0.69	0.82	2.7	18
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg		--	< 0.032	0.077 J	< 0.032	< 0.031	< 0.033	< 0.033	< 0.034	< 0.032	< 0.033	< 0.033	0.15
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg		--	< 0.026	0.040 J	< 0.026	< 0.025	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	< 0.027	0.060 J
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg		--	< 0.024	< 0.025	< 0.024	< 0.023	< 0.025	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	< 0.024
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg		--	< 0.021	< 0.022	< 0.022	< 0.021	< 0.022	< 0.022	< 0.023	< 0.021	< 0.022	< 0.022	< 0.021
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg		--	< 0.038	3.6	< 0.039	< 0.037	< 0.039	0.86	0.18	0.052 J	0.099	< 0.040	0.091
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg		--	< 0.040	3.5	0.086 J	< 0.039	0.32	0.65	0.13	0.28	1.3	0.35 J-	1.9
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg		--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg		--	< 0.027	0.075 J	< 0.027	< 0.026	< 0.028	< 0.028	< 0.029	< 0.027	< 0.028	< 0.028	0.33
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg		--	< 0.025 UR	< 0.026 UR	< 0.025 UR	< 0.024 UR	< 0.026 UR	< 0.026 UR	< 0.027 UR	< 0.025 UR	< 0.026 UR	< 0.026	< 0.025 UR
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg		--	< 0.024 UR	< 0.024 UR	< 0.024 UR	< 0.023 UR	< 0.024 UR	< 0.024 UR	< 0.025 UR	< 0.024 UR	< 0.024 UR	< 0.025	< 0.023 UR
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg		--	< 0.026	< 0.027	< 0.026	< 0.025	< 0.027	< 0.027	< 0.028	< 0.026	< 0.026	< 0.027	< 0.025
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg		--	< 0.037	< 0.038	< 0.038	< 0.036	< 0.038	< 0.038	< 0.039	< 0.037	< 0.038	< 0.039	< 0.036
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg		--	< 0.028 UR	< 0.029	< 0.028 UR	< 0.027 UR	< 0.029 UR	< 0.029 UR	< 0.030 UR	< 0.028	< 0.029	< 0.029	< 0.027
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg		--	< 0.030 UR	< 0.030 UR	< 0.030 UR	< 0.029 UR	< 0.031 UR	< 0.031 UR	< 0.032 UR	< 0.030	< 0.030	< 0.031	< 0.029
Replacement Chemicals:																
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg		**3,500**	< 0.026	< 0.026	< 0.026	< 0.025	< 0.026	< 0.026	< 0.027	< 0.026	< 0.026	< 0.027	< 0.025
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg		--	< 0.033	< 0.034	< 0.034	< 0.032	< 0.034	< 0.034	< 0.036	< 0.033	< 0.034	< 0.035	< 0.033
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg		--	< 0.023	< 0.024	< 0.023	< 0.022	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.023
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg		--	< 0.023	< 0.024	< 0.024	< 0.022	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.023
Total PFAS[3]:		--	ug/kg		--	0.693	28.732	0.813	1.128	3.58	3.75	4.92	3.423	5.668	4.676	25.598

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

AECOM

Table 1

PFAS Soil Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

Abbr	Analyte[2]	Cas Number	Units	NR 720 Residual Contaminant Levels[1] Ind DC RCL (ppb)	PR-TK25-HA01(0-6) 7/6/2022	PR-TK26-HA01(0-6) 7/6/2022	PR-TK27-HA01(0-6) 7/6/2022	PR-TK28-HA01(0-6) 7/6/2022	PR-TK29-HA01(0-6) 7/6/2022
Carboxylic Acids:									
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	**1,170,000**	0.41	0.11	< 0.027	0.13	0.11
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	--	1.7	0.42	0.090 J	0.041 J	0.030 J
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	**410,000**	1.1	0.2	0.045 J	0.046 J	0.029 J
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	--	0.34	0.098	< 0.033	0.073 J	0.047 J
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	**0.0784**	**0.57**	**0.16**	0.035 J	**0.22**	0.069 J
PFNA	Perfluorononaoic acid	375-95-1	ug/kg	**2,460**	0.36	0.13	0.053 J	0.10	0.074 J
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	--	1.4	0.52	0.077 J	0.054 J	0.060 J
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	**246,000**	1.0	0.098	< 0.029	0.063 J	0.062 J
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	**41,000**	1.5	0.037 J	< 0.032	< 0.032	< 0.030
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	--	0.33	< 0.030	< 0.031	< 0.031	< 0.029
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	**821,000**	0.72	< 0.032	< 0.033	< 0.033	< 0.031
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ug/kg	--	NA	NA	NA	NA	NA
PFODA	Perfluorooctadecanoic acid	16517-11-6	ug/kg	**32,800,000**	NA	NA	NA	NA	NA
Sulfonic Acids:									
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	**246,000**	0.077 J	< 0.025	< 0.025	< 0.025	0.024 J
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	--	0.16	0.033 J	< 0.023	< 0.023	< 0.022
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ug/kg	**16,400**	1.9	0.33	< 0.021	< 0.021	< 0.020
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	--	0.32	< 0.026	< 0.027	< 0.027	< 0.025
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	**58**	45	2.0	0.16	0.29	0.26
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	--	0.4	< 0.033	< 0.033	< 0.033	< 0.031
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	--	0.64	< 0.027	< 0.027	< 0.027	< 0.025
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	--	0.055 J	< 0.025	< 0.025	< 0.025	< 0.023
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	--	< 0.020	< 0.022	< 0.022	< 0.022	< 0.021
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	--	9.2	0.72	< 0.040	< 0.040	< 0.037
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	--	12	0.12	< 0.042	< 0.042	< 0.040
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ug/kg	--	NA	NA	NA	NA	NA
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:									
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	--	1.4	< 0.028	< 0.028	< 0.028	< 0.026
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	--	< 0.024 UR	< 0.026 UR	< 0.026 UR	< 0.026 UR	< 0.024 UR
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	--	< 0.023 UR	< 0.024 UR	< 0.025 UR	< 0.025 UR	0.30 R
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	--	0.1	< 0.027	< 0.027	< 0.027	< 0.025
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	--	0.12	< 0.038	< 0.038	< 0.039	< 0.036
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	--	< 0.027	< 0.029 UR	< 0.029	< 0.029 UR	< 0.027 UR
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	--	0.069 J	< 0.030 UR	< 0.031	< 0.031 UR	< 0.029 UR
Replacement Chemicals:									
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	**3,500**	< 0.025	< 0.026	< 0.027	< 0.027	< 0.025
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	--	< 0.032	< 0.034	< 0.035	< 0.035	< 0.033
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	--	< 0.022	< 0.024	< 0.024	< 0.024	< 0.023
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	--	< 0.022	< 0.024	< 0.024	< 0.024	< 0.023
Total PFAS[3]:		--	ug/kg	--	80.871	4.976	0.46	1.017	1.065

Note:
ug/kg - micrograms per kilogram.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to severe deficiencies in meeting QC criteria.
NA - Not analyzed.
ND - Not detected at or above limit of detection (LOD).
U - Qualified nondetect due to contamination.
UJ - Estimated LOD.
RCL - Residual Contaminant Level
Ind DC RCL - Industrial Direct Contact Residual Contaminant Level per NR 720.
Non-detects reported as < LOD.
Bold indicates an exceedance of the Ind DC RCL.
1. NR 720 Residual Contaminant Levels, per October 2024 RCL spreadsheet, WDNR.
2. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

AECOM

Table 2

PFAS Surface Water Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

				Field ID:	PR-PD01-SW01	PR-PD02-SW01	PR-PD03-SW01	PR-PD04-SW01	PR-PD05-SW01	PR-PD06-SW01	PR-PD07-SW01	PR-PD09-SW01	PR-PDNF-SW01	PR-Dup1-SW01	PR-PDSF-SW01	PR-PD02-SW01	PR-PD03-SW01	PR-PD03-SW01-DUP
				Sample Date:	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	9/26/2024	7/11/2023	7/11/2023	7/11/2023
Abbr	**Analyte[1]**	**Cas Number**	**Units**	**NR102.04[2]**														
Carboxylic Acids:																		
PFBA	Perfluorobutanoic acid	375-22-4	ng/L	--	47.1	50.6	43.5	46	42.4	34.6	51.5	16.1	9.0	9.0	6.1	44	43.7	48
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L	--	156	163	132	161	102	112	157	7.8	5.7	7.5	6.8	174	150	147
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L	--	63.3	65.6	82.7	70.1	62.8	49.7	63.1	3.7 J	4.0	4.1	2.4	76.2	138	138
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L	--	25.3	27.5	30.7	28.1	22.7	18.3	28.4	4.0	3.8	3.9	3.5	31.7	38.2	37.7
PFOA	Perfluorooctanoic acid	335-67-1	ng/L	95	22.6	23.4	29.5	23.4	23.7	36.4	32.5	17.4	2.6	2.6	1.7 J	30.9	51.6	50
PFNA	Perfluorononaoic acid	375-95-1	ng/L	--	6.5	7.8	9.5	7.6	8.1	6.7	9.0	< 0.40	1.3 J	1.5 J	1.4 J	8.6	12.4	12.1
PFDA	Perfluorodecanoic acid	335-76-2	ng/L	--	2.5	2.4	3.9	2.4	3.3	2.5	1.6 J	< 0.47	< 0.25	< 0.25	< 0.25	2.7	6.4	6.4
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L	--	5.8	5.2	5.8	1.4 J	6.2	9.1	2.9	2.9 J	< 0.65	< 0.64	1.1 J	6.5 J-	6.5 J-	6.7
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L	--	< 0.44	< 0.43	< 0.43	< 0.44	< 0.44	< 0.44	< 0.44	< 0.82	< 0.44	< 0.43	< 0.44	< 0.48	< 0.47	< 0.47
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L	--	< 0.29	< 0.28	< 0.28	< 0.29 UJ	< 0.29	0.47 J	< 0.29	< 0.54	< 0.29	< 0.28	< 0.29	< 0.62	< 0.61	< 0.61
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L	--	< 0.37	< 0.36	< 0.36	< 0.37 UJ	< 0.37	< 0.36	< 0.37	< 0.69	< 0.37	< 0.36	< 0.37	< 0.59	< 0.58	< 0.59
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ng/L	--	< 0.32	< 0.32 UJ	< 0.32	< 0.33 R	< 0.32 UJ	< 0.32	< 0.33	< 0.60	< 0.32 UJ	< 0.32	< 0.32	< 0.45	< 0.44	< 0.44
PFODA	Perfluorooctadecanoic acid	16517-11-6	ng/L	--	< 0.64 UJ	< 0.63 UJ	< 0.63 UJ	< 0.65 UJ	< 0.65 UJ	< 0.64 UJ	< 0.65 UJ	< 1.2 UJ	< 0.64 UJ	< 0.63 UJ	< 0.65 UJ	< 0.61	< 0.60	< 0.60
Sulfonic Acids:																		
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L	--	2.8	2.7	15.2	1.3 J	13	2.4	4.3	4.4	0.63 J	0.64 J	0.29 J	3.9	17.4	17.4
PFPeS	Perfluoropentane sulfonic acid	2706-91-4	ng/L	--	2.5	2.6	11.6	0.87 J	7.7	2.1	4.8	< 0.49	0.29 J	0.30 J	< 0.26	3.2	24.5	24.7
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/L	--	28	28	125	11.5	87.8	22.1	42.5	2.5 J	2.1	2.1	1.5 J	36.9	249	262
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L	--	< 0.64	0.67 J	3.7	< 0.65	2.8	0.75 J	1.2 J	< 1.2	< 0.64	< 0.63	< 0.64	0.96 J	10.2	10
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L	**8**	**46.2**	**42.8**	**212**	**17.4**	**167**	**49**	**54.2**	4.3	1.3 J	1.3 J	< 0.52 U	**65.9**	**683**	**671**
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L	--	< 0.48	< 0.47	< 0.48	< 0.49	< 0.48	< 0.48	< 0.49	< 0.90	< 0.48	< 0.47	< 0.48	< 0.58	2.5	2.5
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L	--	< 0.58	< 0.57	< 0.57	< 0.58	< 0.58	< 0.57	< 0.58	< 1.1	< 0.58	< 0.57	< 0.58	< 0.63	0.69 J	0.77 J
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L	--	< 0.54	< 0.53	< 0.53	< 0.55	< 0.54	< 0.54	< 0.55	< 1.0	< 0.54	< 0.53	< 0.54	< 0.59	< 0.58	< 0.58
4:2 FTS	4:2 Fluorotelomer sulfonic acid	757124-72-4	ng/L	--	< 0.37	< 0.36	< 0.36	< 0.37	< 0.37	< 0.37	< 0.37	< 0.69	< 0.37	< 0.36	< 0.37	< 0.46	< 0.45	< 0.46
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L	--	13.1 J-	5.3 J-	29.6 J-	< 0.59 U	16.9 J-	7.0 J-	2.4 J	< 1.1 U	< 0.58	< 0.57	< 0.58	47.9 J-	78.6 J-	79.9 J-
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L	--	1.1 J-	< 0.79	1.7 J-	< 0.81	< 0.81	1.2 J-	< 0.81	< 1.5	< 0.80	< 0.79	< 0.80	3.7 J-	11.7 J-	11.4 J-
10:2 FTS	10:2 Fluorotelomer sulfonic acid	120226-60-0	ng/L	--	< 0.89	< 0.87	< 0.88	< 0.90	< 0.89	< 0.88	< 0.90	< 1.7	< 0.89 UJ	< 0.87 UJ	< 0.89	< 0.91	0.97 J	0.94 J
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:																		
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L	--	< 0.40	< 0.40 UJ	1.6 J	< 0.41 UJ	1.5 J	0.43 J	< 0.41	< 0.76	< 0.40	< 0.40	< 0.41	< 0.71	5.4	4.8
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L	--	< 0.63 R	< 0.62 R	< 0.63 R	< 0.64 R	< 0.64 R	< 0.63 R	< 0.64 R	< 1.2	< 0.63	< 0.62	< 0.64 R	< 0.55	< 0.54	< 0.54 R
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L	--	< 0.46 R	< 0.45 R	< 0.46 R	< 0.47 R	< 0.46 R	< 0.46 R	< 0.47 R	< 0.86	< 0.46	< 0.45	< 0.46 R	< 0.57	< 0.56	< 0.56 R
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L	--	< 0.79	< 0.78	< 0.78	< 0.80	< 0.80	< 0.79	< 0.80	< 1.5	< 0.79	< 0.78	< 0.79	< 0.69	< 0.68	< 0.68
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L	--	< 0.58	< 0.57	< 0.57	< 0.58	< 0.58	< 0.57	< 0.58	< 1.1	< 0.58	< 0.57	< 0.58	< 0.81	< 0.79	< 0.80
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L	--	< 0.49 R	< 0.48 R	< 0.48	< 0.49 R	< 0.49	< 0.49	< 0.49	< 0.91	< 0.49	< 0.48	< 0.49	< 0.52	< 0.51	< 0.51
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L	--	< 0.61 R	< 0.60 R	< 0.60	< 0.62 R	< 0.61 R	< 0.61 R	< 0.62 R	< 1.1	< 0.61	< 0.60	< 0.61	< 0.88	< 0.87	< 0.87
Replacement Chemicals:																		
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L	--	< 0.26	< 0.25	< 0.25	< 0.26	< 0.26	< 0.25	< 0.26	< 0.48	< 0.26	< 0.25	< 0.26	< 0.49	< 0.48	< 0.48
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L	--	< 0.32	< 0.32	< 0.32	< 0.33	< 0.33	< 0.32	< 0.33	< 0.61	< 0.32	< 0.32	< 0.33	< 0.91	< 0.89	< 0.90
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L	--	< 0.36	< 0.35	< 0.35	< 0.36	< 0.36	< 0.36	< 0.36	< 0.67	< 0.36	< 0.35	< 0.36	< 0.47	< 0.46	< 0.46
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L	--	< 0.41	< 0.41	< 0.41	< 0.42	< 0.41	< 0.41	< 0.42	< 0.77	< 0.41	< 0.41	< 0.41	< 0.55	< 0.54	< 0.54
Total PFAS[3]:		--	ng/L	--	422.8	427.57	738	371.07	567.9	354.75	455.4	63.1	30.72	32.94	24.79	537.06	1530.76	1531.31

Note:
ng/L - nanograms per liter.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to serious deficiencies in meeting QC criteria.
U - Result qualified nondetect due to contamination.
UJ - Estimated limit of detection (LOD).
Non-detects reported as < LOD.
Bold indicates an exceedance of the NR 102.04 Surface Water Quality Standard.
1. Analytes included in this table are the Wisconsin List of 33 PFAS compounds.
2. Surface water criteria as listed in Water Quality Standards For Wisconsin Surface Waters NR102.04, January 2024.
3. Total PFAS calculated as the sum of all Wisconsin List of 33 PFAS compounds above their respective LOD.

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Table 3

PFAS Surface Soil QC Blank Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

				Field ID:	PR-ERB-02	PR-FB-02	PR-RW-02	PR-Decon-01	PR-ERB-01	PR-ERB-02	PR-FB-01
				Sample Date:	9/24/2024	9/24/2024	9/24/2024	7/6/2022	7/6/2022	7/7/2022	7/6/2022
Abbr	**Analyte**	**Cas Number**	**Units**								
Carboxylic Acids:											
PFBA	Perfluorobutanoic acid	375-22-4	ng/L		< 0.28	< 0.27	< 0.28	9.2	< 0.43	< 0.42	< 0.43
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L		< 0.18	< 0.18	< 0.18	1.3 J	< 0.42	< 0.42	< 0.43
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L		< 0.38	< 0.37	< 0.38	1.4 J	< 0.42	< 0.42	< 0.43
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L		< 0.24	< 0.23	< 0.24	0.97 J	< 0.53	< 0.53	< 0.54
PFOA	Perfluorooctanoic acid	335-67-1	ng/L		< 0.27	< 0.26	< 0.27	1.2 J	< 0.56	< 0.56	< 0.57
PFNA	Perfluorononaoic acid	375-95-1	ng/L		< 0.21	< 0.20	< 0.21	< 0.72	< 0.71	< 0.71	< 0.72
PFDA	Perfluorodecanoic acid	335-76-2	ng/L		< 0.25	< 0.24	< 0.25	< 0.55	< 0.54	< 0.54	< 0.55
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L		< 0.64	< 0.62	< 0.64	< 0.52	< 0.52	< 0.52	< 0.53
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L		< 0.43	< 0.42	< 0.43	< 0.47	< 0.47	< 0.46	< 0.47
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L		< 0.28	< 0.27	< 0.28	< 0.60	< 0.60	< 0.59	< 0.61
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L		< 0.36	< 0.35	< 0.36	< 0.46	< 0.46	< 0.45	< 0.46
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ng/L		< 0.32	< 0.31	< 0.32	NA	NA	NA	NA
PFODA	Perfluorooctadecanoic acid	16517-11-6	ng/L		< 0.63 UJ	< 0.62 UJ	< 0.63 UJ	NA	NA	NA	NA
Sulfonic Acids:											
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L		< 0.20	< 0.20	< 0.20	0.98 J	< 0.46	< 0.45	< 0.46
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L		< 0.26	< 0.25	< 0.26	< 0.46	< 0.46	< 0.45	< 0.46
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/L		< 0.23	< 0.23	< 0.23	< 0.49	< 0.49	< 0.49	< 0.50
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L		< 0.63	< 0.61	< 0.63	< 0.40	< 0.40	< 0.39	< 0.40
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L		< 0.51	< 0.50	< 0.51	< 0.53	< 0.53	< 0.52	< 0.53
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L		< 0.48	< 0.46	< 0.47	< 0.43	< 0.43	< 0.43	< 0.44
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L		< 0.57	< 0.55	< 0.57	< 0.43	< 0.43	< 0.43	< 0.44
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L		< 0.53	< 0.52	< 0.53	< 0.44	< 0.44	< 0.44	< 0.45
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L		< 0.36	< 0.35	< 0.36	< 0.54	< 0.54	< 0.53	< 0.54
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L		< 0.57 U	1.9 J+	< 0.57	< 0.62	< 0.62	< 0.62	< 0.63
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L		< 0.79	< 0.77	< 0.79	< 0.63	< 0.63	< 0.62	< 0.64
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ng/L		< 0.88 UJ	< 0.85 UJ	< 0.87 UJ	NA	NA	NA	NA
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:											
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L		< 0.40	< 0.39	< 0.40	< 0.79	< 0.79	< 0.78	< 0.80
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L		< 0.63	< 0.61	< 0.63	< 0.49 UR	< 0.49	< 0.49	< 0.50 UR
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L		< 0.46	< 0.44	< 0.46	< 0.59 UR	< 0.59	< 0.58	< 0.59 UR
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L		< 0.78	< 0.76	< 0.78	< 0.42	< 0.42	< 0.41	< 0.42
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L		< 0.57	< 0.55	< 0.57	< 0.54	< 0.53	< 0.53	< 0.54
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L		< 0.48	< 0.47	< 0.48	< 0.32	< 0.32	< 0.31	< 0.32
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L		< 0.60	< 0.58	< 0.60	< 0.48	< 0.48	< 0.47	< 0.48
Replacement Chemicals:											
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L		< 0.25	< 0.24	< 0.25	< 0.51	< 0.51	< 0.51	< 0.52
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L		< 0.32	< 0.31	< 0.32	< 0.50	< 0.50	< 0.49	< 0.50
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L		< 0.35	< 0.34	< 0.35	< 0.29	< 0.29	< 0.29	< 0.30
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L		< 0.41	< 0.39	< 0.41	< 0.42	< 0.42	< 0.42	< 0.43

Note:
ug/L - micrograms per liter.
J - Estimated concentration (+/- indicate the direction of bias).
R - Rejected due to serious deficiencies in meeting QC criteria.
U - Qualified nondetect due to contamination
UJ - Estimated limit of detection (LOD).
Non-detects reported as < MDL.

AECOM

Table 4

PFAS Surface Water QC Blank Results
Enbridge Superior Terminal (BRRTS #02-16-589282)
Superior, Wisconsin

				Field ID:	PR-ERB-01	PR-FB-01	PR-RW-01	PR-ER8-02-07112023
				Sample Date:	9/26/2024	9/26/2024	9/26/2024	7/11/2023
Abbr	**Analyte**	**Cas Number**	**Units**					
Carboxylic Acids:								
PFBA	Perfluorobutanoic acid	375-22-4	ng/L		< 0.27	< 0.28	< 0.29	< 0.49
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L		< 0.18	< 0.18	< 0.19	< 0.81
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L		< 0.36	< 0.37	< 0.40	< 0.90
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L		< 0.23	< 0.23	< 0.25	< 0.68
PFOA	Perfluorooctanoic acid	335-67-1	ng/L		< 0.26	< 0.26	< 0.28	< 0.85
PFNA	Perfluorononaoic acid	375-95-1	ng/L		< 0.20	< 0.21	< 0.22	< 0.78
PFDA	Perfluorodecanoic acid	335-76-2	ng/L		< 0.24	< 0.25	< 0.26	< 0.60
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L		< 0.62	< 0.63	< 0.67	< 0.48
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L		< 0.42	< 0.42	< 0.45	< 0.47
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L		< 0.27	< 0.28	< 0.30	< 0.61
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L		< 0.35	< 0.36	< 0.38	< 0.59
PFHxDA	Perfluorohexadecanoic acid	67905-19-5	ng/L		< 0.31	< 0.31	< 0.33	< 0.44
PFODA	Perfluorooctadecanoic acid	16517-11-6	ng/L		< 0.61 UJ	< 0.62 UJ	< 0.67 UJ	< 0.61
Sulfonic Acids:								
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L		< 0.20	< 0.20	< 0.21	< 0.48
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L		< 0.25	< 0.25	< 0.27	< 0.59
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	ng/L		< 0.23	< 0.23	< 0.25	< 0.52
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L		< 0.61	< 0.62	< 0.66	< 0.66
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L		< 0.49 U	< 0.50 U	< 0.54 U	< 0.66
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L		< 0.46	< 0.47	< 0.50	< 0.58
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L		< 0.55	< 0.56	< 0.60	< 0.63
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L		< 0.51	< 0.52	< 0.56	< 0.58
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L		< 0.35	< 0.36	< 0.38	< 0.46
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L		< 0.55	< 0.56 U	< 0.60	< 0.66
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L		< 0.76	< 0.78	< 0.83	< 0.50
10:2 FTS	10:2 Fluorotelomer Sulfonic Acid	120226-60-0	ng/L		< 0.84	< 0.86	< 0.92	< 0.90
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:								
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L		< 0.38	< 0.39	< 0.42	< 0.71
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L		< 0.60	< 0.61	< 0.66	< 0.54
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L		< 0.44	< 0.45	< 0.48	< 0.57
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L		< 0.75	< 0.77	< 0.82	< 0.68
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L		< 0.55	< 0.56	< 0.60	< 0.80
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L		< 0.46	< 0.47	< 0.51	< 0.51
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L		< 0.58	< 0.59	< 0.63	< 0.88
Replacement Chemicals:								
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L		< 0.24	< 0.25	< 0.27	< 0.49
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L		< 0.31	< 0.31	< 0.34	< 0.90
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L		< 0.34	< 0.35	< 0.37	< 0.46
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L		< 0.39	< 0.40	< 0.43	< 0.55

Note:
ng/L - nanograms per liter.
U - Result qualified nondetect due to contamination.
UJ - Estimated limit of detection (LOD).

Non-detects reported as < LOD.

Figures

ENBRIDGE

SITE LOCATION

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Site
- Terminal Property Boundary
- Non-Enbridge Owned Property
- Enbridge Pipelines

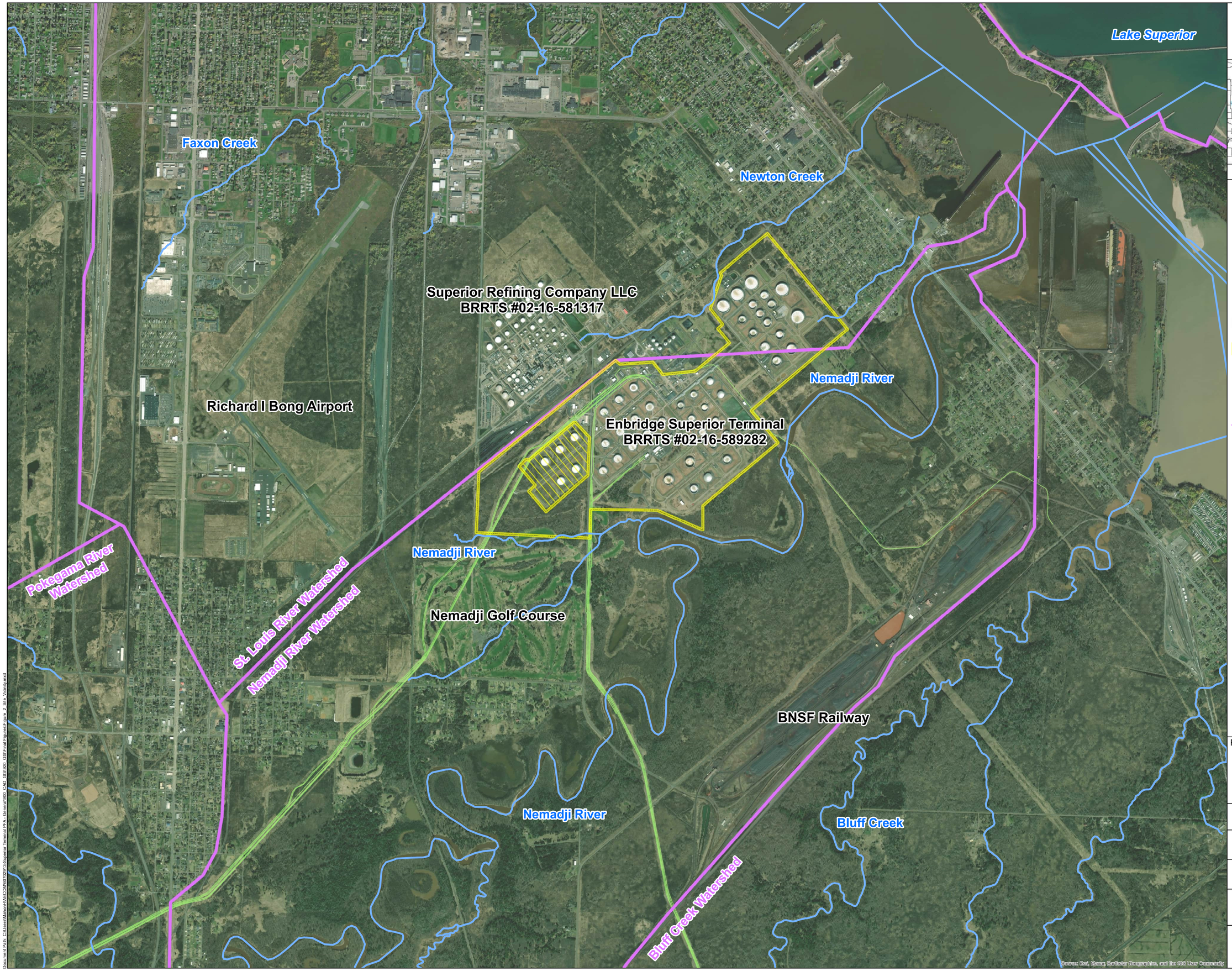
0 500 1,000 Feet

N

Prepared by:

AECOM
200 Indiana Avenue
Stevens Point, WI USA
www.AECOM.com

Drawn:	HM	1/21/2025
Approved:	LL	1/21/2025
Scale:	1:8,000	
Project No:	60731241	
Figure No:	1	



ENBRIDGE

SITE VICINITY

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Terminal Property Boundary
- Non-Enbridge Owned Property
- Rivers/ Streams
- Watershed Boundary
- Enbridge Pipelines

0 800 1,600 Feet

N

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AECOM

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Stevens Point, WI USA
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Project No:	60731241	
Figure No:	2	

Document Path: C:\Users\Mahoney\AECOM\60702913-Superior Terminal PFA - General\900_CAD_GIS\920_GIS\Final Figures\Figure_2_Site_Vicinity.mxd

Notes:
Results evaluated in reference to Industrial (Ind) Direct Contact Residual Contaminant Levels (DC RCLs), Ch NR 720, Wisconsin Administrative Code, October 2024.

ENBRIDGE

SITE FEATURES AND SAMPLE LOCATIONS

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Containment Berm
- Surface Flow Direction
- Enbridge Pipelines
- Terminal Property Boundary
- Non-Enbridge Owned Property
- Rivers/ Streams
- Culverts
- D01 → Davit Location and Number
- Manhole
- WPDES Outfalls
- PD01 ▼ 2024 Surface Water Sample Location and Number
- SS01 ■ 2024 Surface Soil Sample Location and Number
- TK01 ○ 2023 Vertical Profile Soil Sample Location and Number
- TK01 ○ 2022 Surface Soil Sample Location and Number

0 215 430 Feet

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Figure No:	3	

Document Path: C:\Users\Mahoe\AECOM\60720913-Superior Terminal PFA - General\900_CAD_GIS\920_GIS\Final Figures\Figure 3_Site_Features.mxd

Notes:
Results evaluated in reference to Industrial (Ind) Direct Contact Residual Contaminant Levels (DC RCLs), Ch NR 720, Wisconsin Administrative Code, October 2024.

North Fire Pond
Calumet
Calumet
Calumet
TK29 0.069 J
TK28 0.22
29
28
SS16 0.27
TK15 0.87
SS17 0.14 J
TK19 0.15
19
TK18 0.26
18
15
14
13
TK14 0.089 J
TK13 0.15
SS18 0.22
SS20 0.018 J
SS21 < 0.015
SS19 0.061 J
TK17 0.069 J
17
TK16 0.13
16
Building A
Building A 0.038 J
Building B
Building B 0.051 J
SS01 0.055 J
TK05 0.033 J
5
3
TK03 0.037 J
TK04 0.032 J
4
SS15 0.16
24
23
TK23 0.17
22
21
20
SS07 0.058 J
9
TK09 0.39
TK24 0.54
TK22 0.33
TK21 0.18
TK20 0.35
SS08 0.063 J
D-PD06
TK10 < 0.028
10
6
TK06 0.20
TK07 0.38
7
Pond#9
SS13 0.41
SS12 0.15
SS14 0.082 J
SS11 0.079 J
SS10 < 0.019
Pond#1
Pond#7 Outfall 004
Pond#2
SS09 < 0.023
Pond#6
11
TK11 0.43
South Fire Pond
SS06 0.029 J
TK01 0.15
1
TK02 0.19
2
12
TK12 0.13
8
TK08 0.31
Pond#4
SS05 0.28
D-SMA
SS04 0.045 J
TK27 0.035 J
27
TK26 0.16
26
SS22 1.2
SS03 0.18
TK25 0.57
25
SS02 0.052 J
Outfall 005
Pond#5
Pond#3

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ENBRIDGE

PFOA SOIL RESULTS MAP

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Containment Berm
- Surface Flow Direction
- Enbridge Pipelines
- Terminal Property Boundary
- Non-Enbridge Owned Property
- Rivers/ Streams
- Culverts
- D01 — Davit Location and Number
- Manhole
- WPDES Outfalls
- SS01 0.055 J — 2024 Surface Soil Sample Location, Number, and PFOA Result
- TK01 0.15 — 2022 Surface Soil Sample Location, Number, and PFOA Result
- PFOA detection less than Ind DC RCL (<0.0784 ug/kg) or non-detect
- PFOA detection above Ind DC RCL (>0.0784 ug/kg)

0 215 430 Feet

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Project No:	60731241	
Figure No:	4	

Notes:
Results evaluated in reference to Industrial (Ind) Direct Contact Residual Contaminant Levels (DC RCLs), Ch NR 720, Wisconsin Administrative Code, October 2024.

ENBRIDGE

PFOS SOIL RESULTS MAP

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Containment Berm
- Surface Flow Direction
- Enbridge Pipelines
- Terminal Property Boundary
- Non-Enbridge Owned Property
- Rivers/ Streams
- Culverts
- D01 Davit Location and Number
- Manhole
- WPDES Outfalls
- SS01 0.21 — 2024 Surface Soil Sample Location, Number, and PFOS Result
- TK01 0.17 — 2022 Surface Soil Sample Location, Number, and PFOS Result
- PFOS detection less than Ind DC RCL (<58 ug/L) or non-detect
- PFOS detection above Ind DC RCL (>58 ug/L) or non-detect

0 215 430 Feet

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AECOM
200 Indiana Avenue
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Figure No:	5	

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Notes:
1. Water Quality Standards for Wisconsin Surface Water, Wis. Admin. Code Ch NR 102.04, January 2024.
Bold indicates an exceedance of NR 102.04 Standards

NR 102.04[1] Standards	
PFOA	**95 ng/L**
PFOS	**8 ng/L**

Standards not established for other PFAS compounds

PR-PDNF-SW01		
9/26/2024		
	Result	Units
PFOA	2.6	ng/L
PFOS	1.3 J	ng/L

PR-PD06-SW01		
9/26/2024		
	Result	Units
PFOA	36.4	ng/L
PFOS	**49.0**	ng/L

PR-PD09-SW01		
9/26/2024		
	Result	Units
PFOA	17.4	ng/L
PFOS	4.3	ng/L

PR-PD07-SW01		
9/26/2024		
	Result	Units
PFOA	32.5	ng/L
PFOS	**54.2**	ng/L

PR-PD02-SW01		
9/26/2024		
	Result	Units
PFOA	23.4	ng/L
PFOS	**42.8**	ng/L

PR-PD01-SW01		
9/26/2024		
	Result	Units
PFOA	22.6	ng/L
PFOS	**46.2**	ng/L

PR-PD04-SW01		
9/26/2024		
	Result	Units
PFOA	23.4	ng/L
PFOS	**17.4**	ng/L

PR-PD03-SW01		
9/26/2024		
	Result	Units
PFOA	29.5	ng/L
PFOS	**212**	ng/L

PR-PD05-SW01		
9/26/2024		
	Result	Units
PFOA	23.7	ng/L
PFOS	**167**	ng/L

PR-PDSF-SW01		
9/26/2024		
	Result	Units
PFOA	1.7 J	ng/L
PFOS	< 0.52 U	ng/L

North Fire Pond
PDNF
Calumet
Pond#9
PD09
SS14
SS13
SS12
SS11
Pond#7
PD07
SS10
Pond#1
Outfall 004
PD01
Pond#2
PD02
SS09
SS16
SS17
SS18
SS19
SS20
SS21
SS15
SS07
SS08
Pond#6
PD06
SS06
PD04
Pond#4
SS05
SS04
D-SMA
SS22
SS03
SS01
SS02
PD05
Pond#5
Pond#3
Outfall 005
PD03
South Fire Pond
PDSF

SURFACE WATER RESULTS SUMMARY

Enbridge Energy
Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Legend

- Containment Berm
- Surface Flow Direction
- Enbridge Pipelines
- Terminal Property Boundary
- Non-Enbridge Owned Property
- Rivers/ Streams
- Culverts
- Davit Location and Number
- Manhole
- WPDES Outfalls
- PD01 — 2024 Surface Water Sample Location and Number
- SS01 — 2024 Surface Soil Sample Location and Number
- Pond without NR 102.04 exeedances
- Pond with one or more NR 102.04 exeedances

0 212.5 425 Feet

Prepared by:
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Stevens Point, WI USA
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Drawn:	HM	1/21/2025
Approved:	LL	1/21/2025
Scale:	1:3,000	
Project No:	60731241	
Figure No:	6	

Appendix A

PFAS RCL Comparison Table

AECOM

Comparison of Generic Direct Contact (DC) Residual Contaminant Limits (RCLs) for PFAS
Wisconsin Department of Natural Resources - Chapter NR 720, Wisconsin Administrative Code
October 25, 2024

Abbr	Analyte	Cas Number	NR 720 Residual Contaminant Levels		NR 720 Residual Contaminant Levels	
			Non-Industrial Direct Contact (ppb)	Industrial Direct Contact (ppb)	Non-Industrial Direct Contact (ppb)	Industrial Direct Contact (ppb)
Carboxylic Acids:			**OLD ppb**		**NEW ppb**	
PFBA	Perfluorobutanoic acid	375-22-4	--	--	78,200	1,170,000
PFPeA	Perfluoropentanoic acid	2706-90-3	--	--	--	--
PFHxA	Perfluorohexanoic acid	307-24-4	--	--	31,600	410,000
PFHpA	Perfluoroheptanoic acid	375-85-9	--	--	--	--
PFOA	Perfluorooctanoic acid	335-67-1	1,260	16,400	0.0185	0.0784
PFNA	Perfluorononaoic acid	375-95-1	--	--	190	2,460
PFDA	Perfluorodecanoic acid	335-76-2	--	--	--	--
PFUnA	Perfluoroundecanoic acid	2058-94-8	--	--	19,000	246,000
PFDoA	Perfluorododecanoic acid	307-55-1	--	--	3,160	41,000
PFTrDA	Perfluorotridecanoic acid	72629-94-8	--	--	--	--
PFTeDA	Perfluorotetradecanoic acid	376-06-7	--	--	63,200	821,000
PFODA	Perfluorooctadecanoic acid	16517-11-6	--	--	2,530,000	32,800,000
PFPrA	Perfluoropropanoic acid	422-64-0	--	--	39,100	584,000
Sulfonic Acids:						
PFBS	Perfluorobutanesulfonic acid	375-73-5	1,260,000	16,400,000	19,000	246,000
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	--	--	--	--
PFHxS	Perfluorohexanesulfonoic acid	355-46-4	--	--	1,260	16,400
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	--	--	--	--
PFOS	Perfluorooctanesulfonic acid	1763-23-1	1,260	16,400	6	58
PFNS	Perfluorononanesulfonic acid	68259-12-1	--	--	--	--
PFDS	Perfluorodecanesulfonic acid	335-77-3	--	--	--	--
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	--	--	--	--
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	--	--	--	--
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	--	--	--	--
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	--	--	--	--
Sulfonamides, Sulfomidoacetic acids, Sulfonamidoethanols:						
PFOSA	Perfluorooctane sulfonamide	754-91-6	--	--	--	--
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	--	--	--	--
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	--	--	--	--
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	--	--	--	--
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	--	--	--	--
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	--	--	--	--
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	--	--	--	--
Replacement Chemicals:						
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	--	--	235	3,500
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	--	--	--	--
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	--	--	--	--
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	--	--	--	--

Notes:
ppb - parts per billion (micrograms per kilogram)

Appendix B

Soil and Surface Water Sampling Photograph Log

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
1	09/27/24

Direction Photo Taken:

N/A

Description:

Surveyor measuring top of pipe for davit outfall. Method used for measuring davit locations.

Photo No.	**Date:**
2	09/24/24

Direction Photo Taken:

N/A

Description:

Three-bucket decontamination method (water with soap, water, water), shown for soil sampling.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
3	09/24/24

Direction Photo Taken:

South

Description:

PR-SS01 sampling location.

Flow direction: SE
Upstream: Culvert,
Downstream: Tank 5 davit

Sample soil description:
Brown/red silty clay

Photo No.	**Date:**
4	09/24/24

Direction Photo Taken:

North

Description:

PR-SS02 sampling location.

Flow direction: SE
Upstream: Culvert, Tank 8 davit
Downstream: Culvert to Pond 5

Sample soil description:
Brown/red silty clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
5	09/24/24

Direction Photo Taken:

Northwest

Description:

PR-SS03 sampling location.

Flow direction: NW to wide drainage ditch
Upstream: N/A
Downstream: Wide drainage ditch between Tanks 25 & 26

Sample soil description: Brown/red silty clay

Photo No.	**Date:**
6	09/24/24

Direction Photo Taken:

Northwest

Description:

PR-SS04 sampling location.

Flow direction: SW to Pond 4
Upstream: Davit from SMA Building
Downstream: Culvert flowing W to Pond 4

Sample soil description: Brown/red silty clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
7	09/24/24

Direction Photo Taken:

West

Description:

PR-SS05 sampling location.

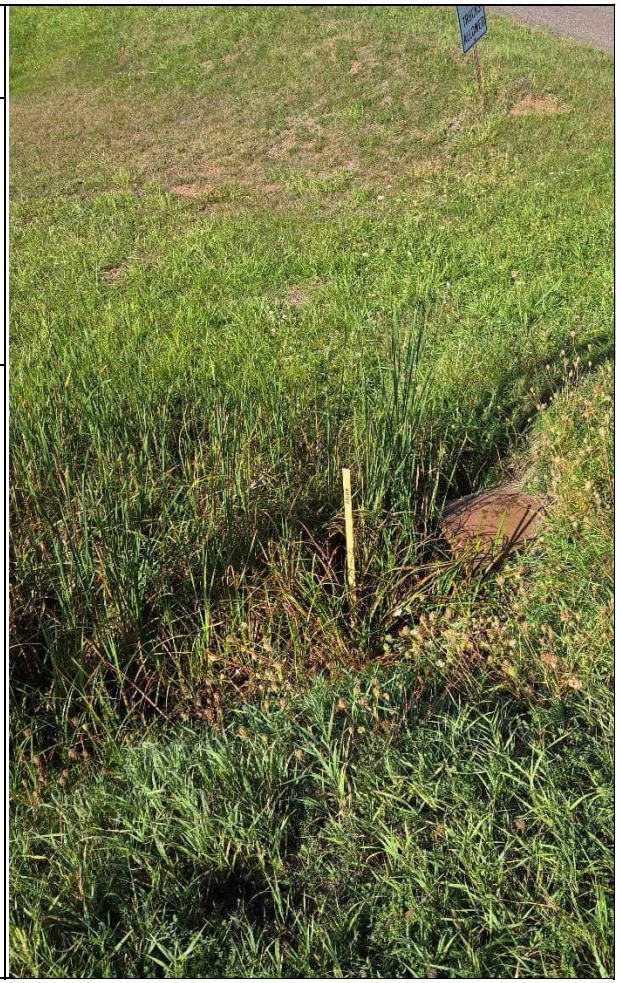
Flow direction: SW to Pond 4
Upstream: Tank 1 davit
Downstream: Culvert flowing SW to Pond 4

Sample soil description: Brown/red clay

Photo No.	**Date:**
8	09/24/24

Direction Photo Taken:

Southwest



Description:

PR-SS06 sampling location.

Flow direction: NW
Upstream: Tank 2 davit, culvert
Downstream: Culvert flowing NW

Sample soil description: Brown/red silty clay

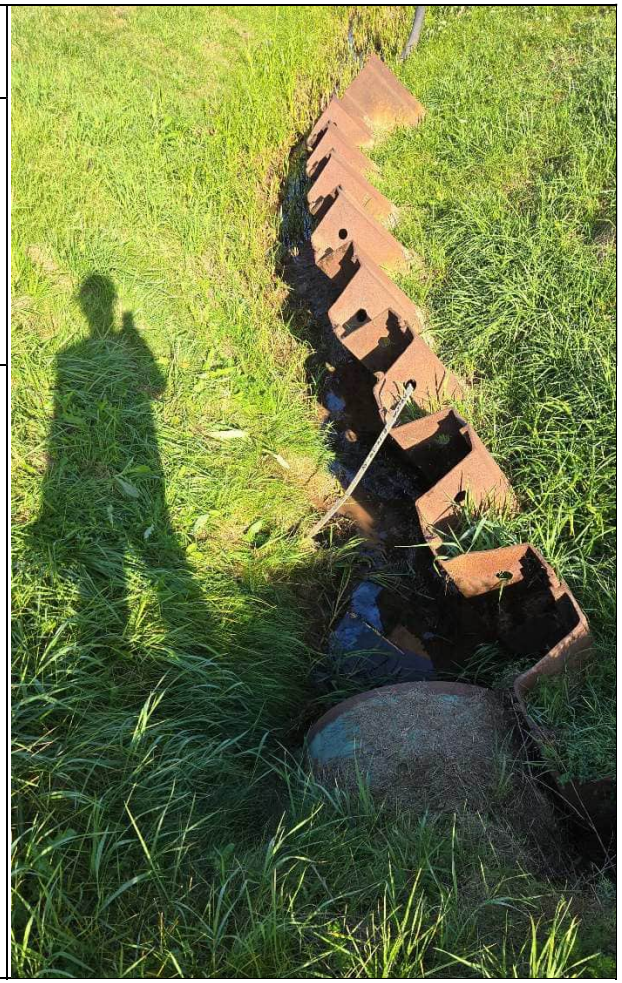
SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
9	09/24/24

Direction Photo Taken:

West



Description:

PR-SS07 sampling location.

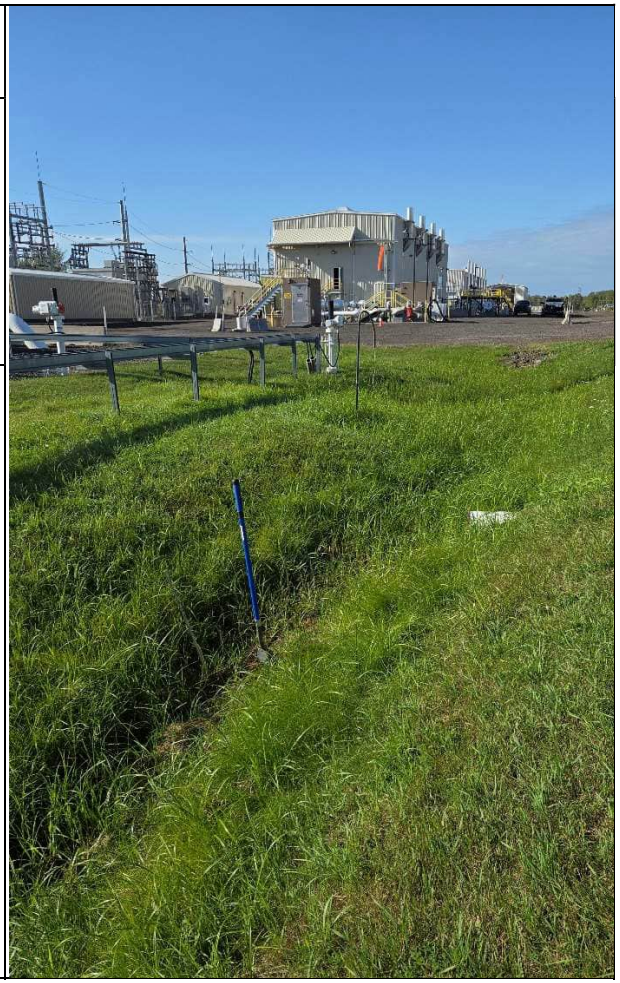
Flow direction: NE
Upstream: Tank 9 & 10 davits
Downstream: Culvert flowing SE

Sample soil description: Brown/red clay

Photo No.	**Date:**
10	09/24/24

Direction Photo Taken:

South



Description:

PR-SS08 sampling location (at shovel).

Flow direction: SE
Upstream: Culvert flowing SE
Downstream: Pond 6

Sample soil description: Brown/red clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
11	09/24/24

Direction Photo Taken:

Northeast

Description:

PR-SS09 sampling location.

Flow direction: SE
Upstream: Culvert flowing SE
Downstream: Wetland drainage to Pond 1

Sample soil description: Brown/red silty clay

Photo No.	**Date:**
12	09/24/24

Direction Photo Taken:

South

Description:

PR-SS10 sampling location.

Flow direction: E to Pond 2
Upstream: Culvert from drainage ditch alongside Tanks 20-24 to the SE
Downstream: Large drainage ditch to Pond 1

Sample soil description: Brown/red silty clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
13	09/24/24

Direction Photo Taken:

Southeast

Description:

PR-SS11 sampling location.

Flow direction: E to Pond 2
Upstream: Culvert from drainage ditch alongside Tanks 20-24 to the SE
Downstream: Large drainage ditch to Pond 1

Sample soil description: Brown/red silty clay

Photo No.	**Date:**
14	09/24/24

Direction Photo Taken:

Southeast

Description:

Drainage ditch flowing southeast from PR-SS11 sample location.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
15	09/24/24

Direction Photo Taken:

Northwest

Description:

PR-SS12 sampling location (in sediment at the mouth of the culvert pictured).

Flow direction: E
Upstream: Tank 24 & 25 davits
Downstream: Large drainage ditch to Pond 1

Sample soil description: Brown/red silty clay

Photo No.	**Date:**
16	09/24/24

Direction Photo Taken:

East

Description:

PR-SS13 sampling location (in sediment at the mouth of the culvert pictured).

Flow direction: SE
Upstream: Culvert from Tank 24 davit
Downstream: Pond 9

Sample soil description: Brown/red silty clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No. 17	**Date:** 09/24/24
Direction Photo Taken: Southeast	
Description: PR-SS14 sampling location. Flow direction: N to Pond 9 Upstream: Offsite to the west Downstream: Pond 9 Sample soil description: Brown/red clay	

Photo No. 18	**Date:** 09/24/24
Direction Photo Taken: East	
Description: PR-SS15 sampling location (at shovel). Flow direction: SE Upstream: N/A Downstream: Tank 24 davit Sample soil description: Brown organic soil, 30% silty clay	

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
19	09/24/24

Direction Photo Taken:

East

Description:

PR-SS16 sampling location.

Flow direction: SE
Upstream: Tank 19 davit (west)
Downstream: Tank 19 davit (east)

Sample soil description: Brown/red silty clay and organic soil

Photo No.	**Date:**
20	09/24/24

Direction Photo Taken:

Northeast

Description:

PR-SS16 sampling location.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
21	09/24/24

Direction Photo Taken:

South

Description:

PR-SS17 sampling location (at shovel).

Flow direction: SE
Upstream: Culvert from Tank 15 davit
Downstream: Drainage ditch along Tanks 16-19 to the NW, flowing NE

Sample soil description: Brown/red clay

Photo No.	**Date:**
22	09/24/24

Direction Photo Taken:

South

Description:

PR-SS18 sampling location.

Flow direction: S
Upstream: Culvert from Tank 14 & 15 davits
Downstream: Drainage ditch along Tanks 16-19 to the NW, flowing NE

Sample soil description: Brown/red clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
23	09/24/24

Direction Photo Taken:

East

Description:

PR-SS19 sampling location.

Flow direction: SE
Upstream: Culvert from Tank 14 davit, drainage ditches flowing NE and SW
Downstream: Culverts flowing NE to east of Tanks 13 and 16

Sample soil description: Brown/red silty clay

Photo No.	**Date:**
24	09/24/24

Direction Photo Taken:

West

Description:

PR-SS20 sampling location (at shovel).

Flow direction: E
Upstream: Tank 13 davit
Downstream: Drainage ditch flowing E to Pond 6

Sample soil description: Brown/red clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
25	09/24/24

Direction Photo Taken:

North

Description:

PR-SS21 sampling location (at shovel).

Flow direction: S
Upstream: Culvert from Tank 13, Tank 16 davit
Downstream: Drainage ditch flowing E to Pond 6

Sample soil description: Brown/red sand

Photo No.	**Date:**
26	09/27/24

Direction Photo Taken:

Northeast

Description:

PR-SS22 sampling location.

Flow direction: SW
Upstream: Tank 2 davit (east)
Downstream: Tank 2 davit (west)

Sample soil description: Brown/red silty clay

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
27	09/24/24

Direction Photo Taken:

East

Description:

PR-PD01-SW01 sampling location.

Sample taken approximately 1 ft. below the surface. Total depth at sampling point estimated to be 2 ft.

Moderate turbidity.

Photo No.	**Date:**
28	09/24/24

Direction Photo Taken:

Northwest

Description:

PR-PD02-SW01 sampling location.

Sample taken approximately 1.5 ft. below the surface. Total depth at sampling point estimated to be 3 ft.

Moderate turbidity.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
29	09/24/24

Direction Photo Taken:

West

Description:

PR-PD04-SW01 sampling location.

Sample taken approximately 1 ft. below the surface. Total depth at sampling point estimated to be 2 ft.

Moderate turbidity.

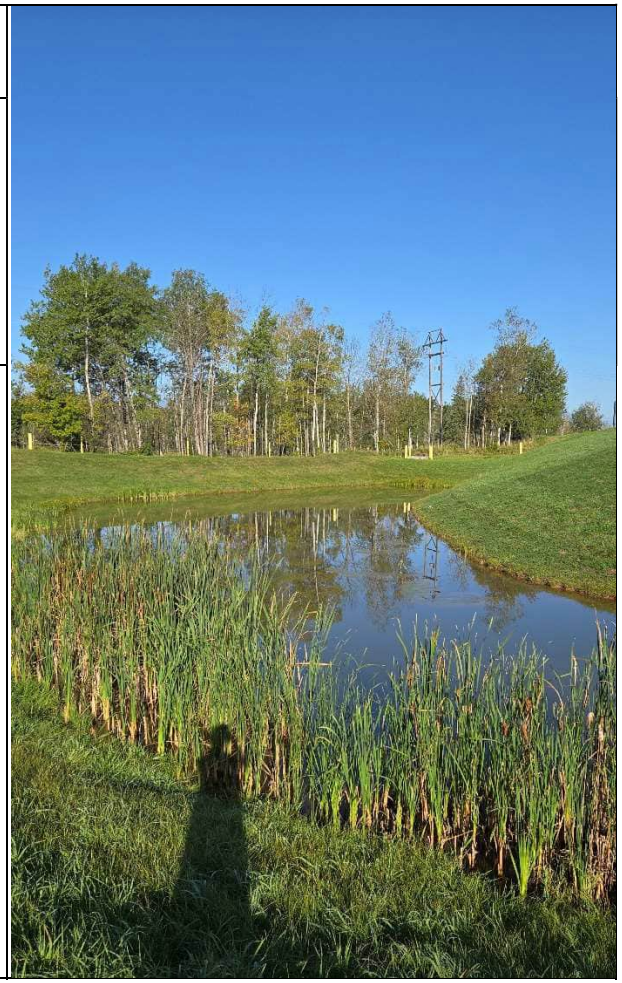


Photo No.	**Date:**
30	09/24/24

Direction Photo Taken:

Northeast

Description:

PR-PD05-SW01 sampling location.

Sample taken approximately 1.5 ft. below the surface. Total depth at sampling point estimated to be 3 ft.

Moderate turbidity.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
31	09/24/24

Direction Photo Taken:

South

Description:

PR-PD06-SW01 sampling location.

Sample taken approximately 0.3 ft. below the surface. Total depth at sampling point estimated to be 0.7 ft.

Moderate turbidity.

Photo No.	**Date:**
32	09/24/24

Direction Photo Taken:

South

Description:

PR-PD07-SW01 sampling location.

Sample taken approximately 0.3 ft. below the surface. Total depth at sampling point estimated to be 0.7 ft.

Moderate turbidity.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
33	09/24/24

Direction Photo Taken:

East

Description:

PR-PD09-SW01 sampling location.

Sample taken approximately 0.25 ft. below the surface. Total depth at sampling point estimated to be 0.5 ft.

Moderate to high turbidity.

Photo No.	**Date:**
34	09/24/24

Direction Photo Taken:

Southwest

Description:

PR-PDNF-SW01 sampling location.

Sample taken approximately 1 ft. below the surface. Total depth at sampling point estimated to be 2 ft.

Moderate turbidity.

SOIL AND SURFACE WATER SAMPLING PHOTOGRAPH LOG

Site Name: Enbridge Energy Superior Terminal, Supplemental Site Investigation #2	**Site Location:** 2800 East 21st Street, Superior, WI	**AECOM ID:** 60731241 **FID No.** 816010580 **BRRTS No.** 02-16-589282

Photo No.	**Date:**
35	09/24/24

Direction Photo Taken:

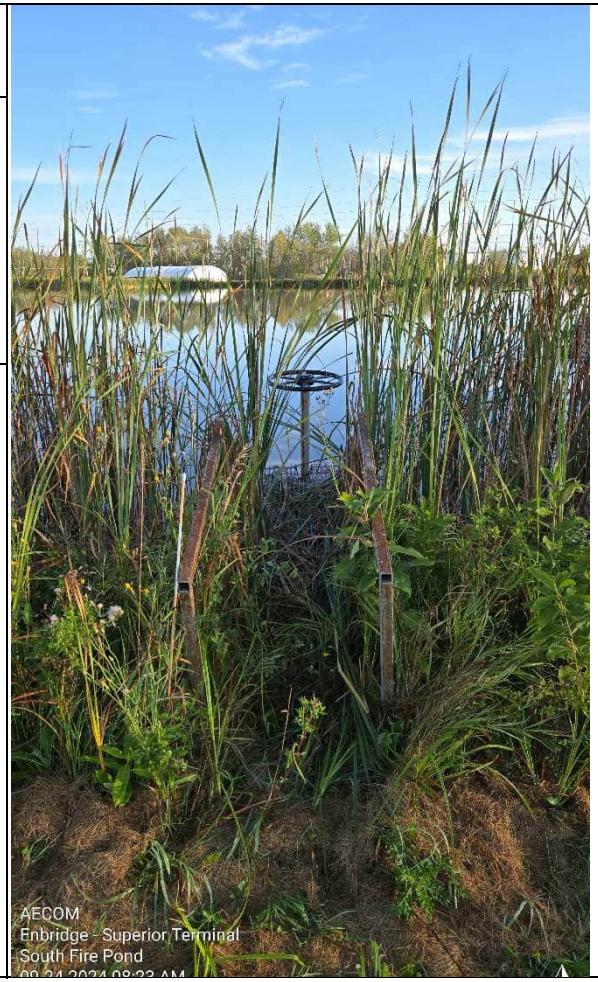
Southwest

Description:

PR-PDSF-SW01 sampling location.

Sample taken approximately 2 ft. below the surface. Total depth at sampling point estimated to be 4 ft.

Low to moderate turbidity.



Appendix C

Laboratory Reports (Soil and Surface Water)

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

October 30, 2024

Leo Linnemanstons
AECOM
1555 N. RiverCenter Drive
Ste. 214
Milwaukee, WI 53212

RE: Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Dear Leo Linnemanstons:

Enclosed are the analytical results for sample(s) received by the laboratory between September 26, 2024 and September 27, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Minneapolis

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

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10709546001	**PR-SS01**	Solid	09/24/24 08:00	09/26/24 10:40
10709546002	**PR-SS02**	Solid	09/24/24 08:25	09/26/24 10:40
10709546003	**PR-SS03**	Solid	09/24/24 08:40	09/26/24 10:40
10709546004	**PR-SS04**	Solid	09/24/24 09:00	09/26/24 10:40
10709546005	**PR-SS05**	Solid	09/24/24 09:10	09/26/24 10:40
10709546006	**PR-SS06**	Solid	09/24/24 09:25	09/26/24 10:40
10709546007	**PR-SS07**	Solid	09/24/24 09:40	09/26/24 10:40
10709546008	**PR-SS08**	Solid	09/24/24 09:50	09/26/24 10:40
10709546009	**PR-SS09**	Solid	09/24/24 10:05	09/26/24 10:40
10709546010	**PR-SS10**	Solid	09/24/24 10:15	09/26/24 10:40
10709546011	**PR-SS11**	Solid	09/24/24 10:50	09/26/24 10:40
10709546012	**PR-SS12**	Solid	09/24/24 11:00	09/26/24 10:40
10709546013	**PR-SS13**	Solid	09/24/24 11:15	09/26/24 10:40
10709546014	**PR-SS14**	Solid	09/24/24 11:20	09/26/24 10:40
10709546015	**PR-SS15**	Solid	09/24/24 11:30	09/26/24 10:40
10709546016	**PR-SS16**	Solid	09/24/24 11:45	09/26/24 10:40
10709546017	**PR-SS17**	Solid	09/24/24 11:55	09/26/24 10:40
10709546018	**PR-SS18**	Solid	09/24/24 12:15	09/26/24 10:40
10709546019	**PR-SS19**	Solid	09/24/24 12:30	09/26/24 10:40
10709546020	**PR-SS20**	Solid	09/24/24 12:45	09/26/24 10:40
10709546021	**PR-SS21**	Solid	09/24/24 12:50	09/26/24 10:40
10709546022	**PR-FB-02**	Water	09/24/24 13:05	09/26/24 10:40
10709546023	**PR-ERB-02**	Water	09/24/24 13:10	09/26/24 10:40
10709546024	**PR-RW-02**	Water	09/24/24 13:15	09/26/24 10:40
10709726001	**PR-SS22**	Solid	09/27/24 13:20	09/27/24 18:45

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10709546001	**PR-SS01**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546002	**PR-SS02**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546003	**PR-SS03**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546004	**PR-SS04**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546005	**PR-SS05**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546006	**PR-SS06**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546007	**PR-SS07**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546008	**PR-SS08**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546009	**PR-SS09**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546010	**PR-SS10**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546011	**PR-SS11**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546012	**PR-SS12**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546013	**PR-SS13**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546014	**PR-SS14**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546015	**PR-SS15**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546016	**PR-SS16**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546017	**PR-SS17**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	MJL	61	PASI-M
10709546018	**PR-SS18**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	MJL	61	PASI-M
10709546019	**PR-SS19**	ASTM D2974	MER	1	PASI-M

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		ENV-SOP-MIN4-0178	MJL	61	PASI-M
10709546020	**PR-SS20**	ASTM D2974	MER	1	PASI-M
		ENV-SOP-MIN4-0178	MJL	61	PASI-M
10709546021	**PR-SS21**	ASTM D2974	NJ1	1	PASI-M
		ENV-SOP-MIN4-0178	MJL	61	PASI-M
10709546022	**PR-FB-02**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546023	**PR-ERB-02**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709546024	**PR-RW-02**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709726001	**PR-SS22**	ASTM D2974	NJ1	1	PASI-M
		ENV-SOP-MIN4-0178	MJL, NBH	61	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546001	**PR-SS01**					
ASTM D2974	Percent Moisture	29.5	%	0.10	10/15/24 10:59	N2
ENV-SOP-MIN4-0178	NEtFOSE	0.032J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFDA	0.093J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFHxA	0.061J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFBA	0.079J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFPeA	0.096J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFHpA	0.039J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFHxS	0.020J	ug/kg	0.13	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFNA	0.30	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFOS	0.21	ug/kg	0.13	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFOA	0.055J	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFTrDA	0.30	ug/kg	0.14	10/11/24 19:15	
ENV-SOP-MIN4-0178	PFUnA	1.2	ug/kg	0.14	10/11/24 19:15	
10709546002	**PR-SS02**					
ASTM D2974	Percent Moisture	27.3	%	0.10	10/15/24 11:03	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.17	ug/kg	0.13	10/11/24 19:22	
ENV-SOP-MIN4-0178	6:2 FTS	0.033J	ug/kg	0.13	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFDA	0.091J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFHxA	0.048J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFBA	0.054J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFPeA	0.098J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFDoA	0.12J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFHpA	0.030J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFHxS	0.017J	ug/kg	0.12	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFNA	0.051J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFOS	0.11J	ug/kg	0.13	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFOA	0.052J	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFTrDA	0.47	ug/kg	0.14	10/11/24 19:22	
ENV-SOP-MIN4-0178	PFUnA	0.60	ug/kg	0.14	10/11/24 19:22	
10709546003	**PR-SS03**					
ASTM D2974	Percent Moisture	17.2	%	0.10	10/15/24 11:07	N2
ENV-SOP-MIN4-0178	NEtFOSE	0.043J	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFBS	0.027J	ug/kg	0.11	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFDA	0.082J	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFHxA	0.12J	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFBA	0.25	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFHpS	0.031J	ug/kg	0.11	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFPeA	0.19	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFPeS	0.029J	ug/kg	0.11	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFDoA	0.055J	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFHpA	0.13	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFHxS	0.42	ug/kg	0.11	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFNA	0.15	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFOS	3.1	ug/kg	0.11	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFOA	0.18	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFTeDA	0.023J	ug/kg	0.12	10/11/24 19:29	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546003	**PR-SS03**					
ENV-SOP-MIN4-0178	PFTrDA	1.8	ug/kg	0.12	10/11/24 19:29	
ENV-SOP-MIN4-0178	PFUnA	1.1	ug/kg	0.12	10/11/24 19:29	
10709546004	**PR-SS04**					
ASTM D2974	Percent Moisture	38.1	%	0.10	10/15/24 11:09	N2
ENV-SOP-MIN4-0178	PFDA	0.028J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFHxA	0.034J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFPeA	0.053J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFHpA	0.026J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFHxS	0.039J	ug/kg	0.14	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFNA	0.035J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFOS	0.29	ug/kg	0.15	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFOA	0.045J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFTrDA	0.073J	ug/kg	0.16	10/11/24 19:37	
ENV-SOP-MIN4-0178	PFUnA	0.23	ug/kg	0.16	10/11/24 19:37	
10709546005	**PR-SS05**					
ASTM D2974	Percent Moisture	30.3	%	0.10	10/15/24 11:10	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.24	ug/kg	0.13	10/11/24 19:44	
ENV-SOP-MIN4-0178	6:2 FTS	0.031J	ug/kg	0.13	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFDA	0.43	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFHxA	0.38	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFBA	0.26	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFPeA	1.1	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFDoA	0.079J	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFHpA	0.25	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFHxS	0.071J	ug/kg	0.13	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFNA	0.22	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFOS	1.3	ug/kg	0.13	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFOA	0.28	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFTrDA	0.10J	ug/kg	0.14	10/11/24 19:44	
ENV-SOP-MIN4-0178	PFUnA	0.31	ug/kg	0.14	10/11/24 19:44	
10709546006	**PR-SS06**					
ASTM D2974	Percent Moisture	37.8	%	0.10	10/15/24 11:13	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.53	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	6:2 FTS	0.058J	ug/kg	0.14	10/11/24 19:51	
ENV-SOP-MIN4-0178	8:2 FTS	0.073J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFDA	0.077J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFHxA	0.030J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFDS	0.060J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFPeA	0.039J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFDoA	0.16	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFHpA	0.018J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFHxS	0.039J	ug/kg	0.14	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFNA	0.029J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFOS	1.3	ug/kg	0.14	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFOA	0.029J	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFTeDA	0.042J	ug/kg	0.15	10/11/24 19:51	

REPORT OF LABORATORY ANALYSIS

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Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546006	**PR-SS06**					
ENV-SOP-MIN4-0178	PFTrDA	1.0	ug/kg	0.15	10/11/24 19:51	
ENV-SOP-MIN4-0178	PFUnA	0.88	ug/kg	0.15	10/11/24 19:51	
10709546007	**PR-SS07**					
ASTM D2974	Percent Moisture	27.4	%	0.10	10/15/24 11:15	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.27	ug/kg	0.13	10/11/24 19:58	
ENV-SOP-MIN4-0178	6:2 FTS	0.43	ug/kg	0.13	10/11/24 19:58	
ENV-SOP-MIN4-0178	8:2 FTS	0.31	ug/kg	0.13	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFDA	0.081J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFHxA	0.046J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFPeA	0.030J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFDoA	0.16	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFHpA	0.017J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFHxS	0.022J	ug/kg	0.12	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFNA	0.036J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFOS	0.52	ug/kg	0.13	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFOA	0.058J	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFTrDA	0.43	ug/kg	0.14	10/11/24 19:58	
ENV-SOP-MIN4-0178	PFUnA	0.85	ug/kg	0.14	10/11/24 19:58	
10709546008	**PR-SS08**					
ASTM D2974	Percent Moisture	28.7	%	0.10	10/15/24 11:17	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.047J	ug/kg	0.13	10/11/24 20:05	
ENV-SOP-MIN4-0178	6:2 FTS	0.070J	ug/kg	0.13	10/11/24 20:05	
ENV-SOP-MIN4-0178	8:2 FTS	0.16	ug/kg	0.13	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFDA	0.10J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFHxA	0.081J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFBA	0.049J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFPeA	0.13J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFHpA	0.035J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFHxS	0.022J	ug/kg	0.13	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFNA	0.037J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFOS	0.36	ug/kg	0.13	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFOA	0.063J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFTrDA	0.056J	ug/kg	0.14	10/11/24 20:05	
ENV-SOP-MIN4-0178	PFUnA	0.079J	ug/kg	0.14	10/11/24 20:05	
10709546009	**PR-SS09**					
ASTM D2974	Percent Moisture	48.4	%	0.10	10/15/24 11:19	N2
ENV-SOP-MIN4-0178	10:2 FTS	4.6	ug/kg	0.18	10/11/24 20:13	
ENV-SOP-MIN4-0178	6:2 FTS	0.056J	ug/kg	0.18	10/11/24 20:13	
ENV-SOP-MIN4-0178	8:2 FTS	0.19	ug/kg	0.18	10/11/24 20:13	
ENV-SOP-MIN4-0178	NEtFOSE	0.58	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFDA	0.096J	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFBA	0.11J	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFOSA	0.031J	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFDoA	0.49	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFOS	0.28	ug/kg	0.18	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFTeDA	0.096J	ug/kg	0.19	10/11/24 20:13	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546009	**PR-SS09**					
ENV-SOP-MIN4-0178	PFTrDA	0.12J	ug/kg	0.19	10/11/24 20:13	
ENV-SOP-MIN4-0178	PFUnA	0.28	ug/kg	0.19	10/11/24 20:13	
10709546010	**PR-SS10**					
ASTM D2974	Percent Moisture	36.7	%	0.10	10/15/24 11:21	N2
10709546011	**PR-SS11**					
ASTM D2974	Percent Moisture	21.2	%	0.10	10/16/24 09:31	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.099J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFDA	0.25	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFHxA	0.058J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFBA	0.045J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFPeA	0.080J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFPeS	0.023J	ug/kg	0.11	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFDoA	0.17	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFHpA	0.050J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFHxS	0.14	ug/kg	0.11	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFNA	0.11J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFOS	1.1	ug/kg	0.11	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFOA	0.079J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFTeDA	0.026J	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFTrDA	0.89	ug/kg	0.12	10/11/24 20:42	
ENV-SOP-MIN4-0178	PFUnA	1.3	ug/kg	0.12	10/11/24 20:42	
10709546012	**PR-SS12**					
ASTM D2974	Percent Moisture	23.5	%	0.10	10/16/24 09:32	N2
ENV-SOP-MIN4-0178	10:2 FTS	1.4	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	6:2 FTS	0.086J	ug/kg	0.12	10/11/24 20:49	B
ENV-SOP-MIN4-0178	8:2 FTS	0.64	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFDA	0.33	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFHxA	0.22	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFBA	0.10J	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFDS	0.054J	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFDoS	0.063J	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFNS	0.059J	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFOSA	0.055J	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFPeA	0.42	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFDoA	0.26	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFHpA	0.13	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFHxS	0.071J	ug/kg	0.11	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFNA	0.14	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFOS	2.4	ug/kg	0.12	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFOA	0.15	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFTeDA	0.048J	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFTrDA	0.97	ug/kg	0.13	10/11/24 20:49	
ENV-SOP-MIN4-0178	PFUnA	0.86	ug/kg	0.13	10/11/24 20:49	
10709546013	**PR-SS13**					
ASTM D2974	Percent Moisture	39.7	%	0.10	10/16/24 09:34	N2

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546013	**PR-SS13**					
ENV-SOP-MIN4-0178	10:2 FTS	13.8	ug/kg	0.79	10/16/24 00:48	
ENV-SOP-MIN4-0178	6:2 FTS	4.1	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	8:2 FTS	6.3	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFBS	0.048J	ug/kg	0.15	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFDA	0.51	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFHxA	1.2	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFBA	0.34	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFDS	0.90	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFDoS	1.3	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFHpS	0.062J	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFNS	0.48	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFOSA	0.74	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFPeA	2.8	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFPeS	0.080J	ug/kg	0.15	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFDoA	2.5	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFHpA	0.45	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFHxS	1.0	ug/kg	0.15	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFNA	0.24	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFOS	17.3	ug/kg	0.76	10/16/24 00:48	
ENV-SOP-MIN4-0178	PFOA	0.41	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFTeDA	0.80	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFTrDA	14.8	ug/kg	0.16	10/11/24 20:56	
ENV-SOP-MIN4-0178	PFUnA	1.6	ug/kg	0.16	10/11/24 20:56	
10709546014	**PR-SS14**					
ASTM D2974	Percent Moisture	42.4	%	0.10	10/16/24 09:36	N2
ENV-SOP-MIN4-0178	PFDA	0.053J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFHxA	0.033J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFBA	0.063J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFPeA	0.036J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFDoA	0.22	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFHpA	0.029J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFHxS	0.071J	ug/kg	0.15	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFNA	0.064J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFOS	0.60	ug/kg	0.16	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFOA	0.082J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFTeDA	0.075J	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFTrDA	5.5	ug/kg	0.17	10/11/24 21:03	
ENV-SOP-MIN4-0178	PFUnA	1.3	ug/kg	0.17	10/11/24 21:03	
10709546015	**PR-SS15**					
ASTM D2974	Percent Moisture	15.7	%	0.10	10/16/24 09:39	N2
ENV-SOP-MIN4-0178	PFDA	0.087J	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFHxA	0.16	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFBA	0.19	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFPeA	0.19	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFHpA	0.15	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFHxS	0.12	ug/kg	0.11	10/11/24 21:10	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546015	**PR-SS15**					
ENV-SOP-MIN4-0178	PFNA	0.14	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFOS	3.0	ug/kg	0.11	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFOA	0.16	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFTrDA	0.15	ug/kg	0.12	10/11/24 21:10	
ENV-SOP-MIN4-0178	PFUnA	0.34	ug/kg	0.12	10/11/24 21:10	
10709546016	**PR-SS16**					
ASTM D2974	Percent Moisture	19.7	%	0.10	10/16/24 09:44	N2
ENV-SOP-MIN4-0178	PFDA	0.14	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFHxA	0.17	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFBA	0.33	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFPeA	0.15	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFDoA	0.079J	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFHpA	0.22	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFHxS	0.037J	ug/kg	0.11	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFNA	0.23	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFOS	0.28	ug/kg	0.11	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFOA	0.27	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFTeDA	0.023J	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFTrDA	1.1	ug/kg	0.12	10/11/24 21:18	
ENV-SOP-MIN4-0178	PFUnA	1.6	ug/kg	0.12	10/11/24 21:18	
10709546017	**PR-SS17**					
ASTM D2974	Percent Moisture	30.6	%	0.10	10/16/24 09:46	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.34	ug/kg	0.14	10/23/24 00:40	L2
ENV-SOP-MIN4-0178	6:2 FTS	0.090J	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	8:2 FTS	0.26	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFDA	0.39	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFHxA	0.45	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFBA	0.16	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFPeA	1.3	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFDoA	0.28	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFHpA	0.15	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFHxS	0.066J	ug/kg	0.13	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFNA	0.11J	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFOS	1.7	ug/kg	0.13	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFOA	0.14J	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFTrDA	1.2	ug/kg	0.14	10/23/24 00:40	
ENV-SOP-MIN4-0178	PFUnA	1.9	ug/kg	0.14	10/23/24 00:40	
10709546018	**PR-SS18**					
ASTM D2974	Percent Moisture	35.5	%	0.10	10/16/24 09:47	N2
ENV-SOP-MIN4-0178	10:2 FTS	4.7	ug/kg	0.15	10/23/24 00:47	L2
ENV-SOP-MIN4-0178	6:2 FTS	2.4	ug/kg	0.15	10/23/24 00:47	
ENV-SOP-MIN4-0178	8:2 FTS	3.8	ug/kg	0.15	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFDA	1.0	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFHxA	0.47	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFBA	0.12J	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFNS	0.080J	ug/kg	0.15	10/23/24 00:47	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546018	**PR-SS18**					
ENV-SOP-MIN4-0178	PFOSA	0.080J	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFPeA	0.81	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFDoA	1.4	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFHpA	0.20	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFHxS	0.082J	ug/kg	0.14	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFNA	0.17	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFOS	3.7	ug/kg	0.14	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFOA	0.22	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFTeDA	0.22	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFTrDA	4.3	ug/kg	0.16	10/23/24 00:47	
ENV-SOP-MIN4-0178	PFUnA	3.1	ug/kg	0.16	10/23/24 00:47	
10709546019	**PR-SS19**					
ASTM D2974	Percent Moisture	30.2	%	0.10	10/16/24 09:49	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.076J	ug/kg	0.14	10/23/24 00:54	L2
ENV-SOP-MIN4-0178	PFDA	0.14J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFHxA	0.080J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFBA	0.055J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFPeA	0.16	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFDoA	0.17	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFHpA	0.047J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFHxS	0.073J	ug/kg	0.13	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFNA	0.061J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFOS	0.54	ug/kg	0.13	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFOA	0.061J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFTeDA	0.023J	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFTrDA	1.0	ug/kg	0.14	10/23/24 00:54	
ENV-SOP-MIN4-0178	PFUnA	0.89	ug/kg	0.14	10/23/24 00:54	
10709546020	**PR-SS20**					
ASTM D2974	Percent Moisture	23.1	%	0.10	10/16/24 09:51	N2
ENV-SOP-MIN4-0178	10:2 FTS	0.039J	ug/kg	0.12	10/23/24 01:02	L2
ENV-SOP-MIN4-0178	PFDA	0.025J	ug/kg	0.13	10/23/24 01:02	
ENV-SOP-MIN4-0178	PFPeA	0.033J	ug/kg	0.13	10/23/24 01:02	
ENV-SOP-MIN4-0178	PFOS	0.26	ug/kg	0.12	10/23/24 01:02	
ENV-SOP-MIN4-0178	PFOA	0.018J	ug/kg	0.13	10/23/24 01:02	
ENV-SOP-MIN4-0178	PFTrDA	0.093J	ug/kg	0.13	10/23/24 01:02	
ENV-SOP-MIN4-0178	PFUnA	0.10J	ug/kg	0.13	10/23/24 01:02	
10709546021	**PR-SS21**					
ASTM D2974	Percent Moisture	20.1	%	0.10	10/09/24 13:32	N2
ENV-SOP-MIN4-0178	PFHxA	0.019J	ug/kg	0.12	10/23/24 01:09	
ENV-SOP-MIN4-0178	PFPeA	0.041J	ug/kg	0.12	10/23/24 01:09	
ENV-SOP-MIN4-0178	PFHxS	0.015J	ug/kg	0.11	10/23/24 01:09	
ENV-SOP-MIN4-0178	PFOS	0.12	ug/kg	0.12	10/23/24 01:09	
ENV-SOP-MIN4-0178	PFTrDA	0.028J	ug/kg	0.12	10/23/24 01:09	
ENV-SOP-MIN4-0178	PFUnA	0.093J	ug/kg	0.12	10/23/24 01:09	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709546022	**PR-FB-02**					
ENV-SOP-MIN4-0178	6:2 FTS	1.9	ng/L	1.8	10/15/24 18:33	B
10709546023	**PR-ERB-02**					
ENV-SOP-MIN4-0178	6:2 FTS	1.3J	ng/L	1.9	10/15/24 18:41	B
10709726001	**PR-SS22**					
ASTM D2974	Percent Moisture	18.6	%	0.10	10/09/24 13:33	N2
ENV-SOP-MIN4-0178	10:2 FTS	1.5	ug/kg	0.11	10/23/24 01:16	L2
ENV-SOP-MIN4-0178	6:2 FTS	0.10J	ug/kg	0.10	10/23/24 01:16	
ENV-SOP-MIN4-0178	8:2 FTS	0.37	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFDA	1.7	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFHxA	0.91	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFBA	0.77	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFDS	0.072J	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFHpS	0.028J	ug/kg	0.10	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFNS	0.11	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFOSA	0.046J	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFPeA	1.5	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFPeS	0.017J	ug/kg	0.10	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFDoA	0.33	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFHpA	0.89	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFHxS	0.26	ug/kg	0.10	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFNA	0.86	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFOS	16.9	ug/kg	0.51	10/23/24 14:58	
ENV-SOP-MIN4-0178	PFOA	1.2	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFTeDA	0.061J	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFTrDA	0.30	ug/kg	0.11	10/23/24 01:16	
ENV-SOP-MIN4-0178	PFUnA	0.71	ug/kg	0.11	10/23/24 01:16	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS01 **Lab ID: 10709546001** Collected: 09/24/24 08:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**29.5**	%	0.10	0.10	1		10/15/24 10:59		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.035**	ug/kg	0.14	0.035	1	10/10/24 13:08	10/11/24 19:15	120226-60-0	
11Cl-PF3OUdS	**<0.024**	ug/kg	0.13	0.024	1	10/10/24 13:08	10/11/24 19:15	763051-92-9	
4:2 FTS	**<0.017**	ug/kg	0.13	0.017	1	10/10/24 13:08	10/11/24 19:15	757124-72-4	
6:2 FTS	**<0.028**	ug/kg	0.13	0.028	1	10/10/24 13:08	10/11/24 19:15	27619-97-2	
8:2 FTS	**<0.056**	ug/kg	0.14	0.056	1	10/10/24 13:08	10/11/24 19:15	39108-34-4	
9Cl-PF3ONS	**<0.025**	ug/kg	0.13	0.025	1	10/10/24 13:08	10/11/24 19:15	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:15	919005-14-4	
HFPO-DA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:15	13252-13-6	
NEtFOSAA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:15	2991-50-6	
NEtFOSA	**<0.032**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 19:15	4151-50-2	
NEtFOSE	**0.032J**	ug/kg	0.14	0.029	1	10/10/24 13:08	10/11/24 19:15	1691-99-2	
NMeFOSAA	**<0.059**	ug/kg	0.14	0.059	1	10/10/24 13:08	10/11/24 19:15	2355-31-9	
NMeFOSA	**<0.050**	ug/kg	0.14	0.050	1	10/10/24 13:08	10/11/24 19:15	31506-32-8	
NMeFOSE	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 19:15	24448-09-7	
PFBS	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 19:15	375-73-5	
PFDA	**0.093J**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:15	335-76-2	
PFHxA	**0.061J**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:15	307-24-4	
PFBA	**0.079J**	ug/kg	0.14	0.042	1	10/10/24 13:08	10/11/24 19:15	375-22-4	
PFDS	**<0.041**	ug/kg	0.14	0.041	1	10/10/24 13:08	10/11/24 19:15	335-77-3	
PFDoS	**<0.033**	ug/kg	0.14	0.033	1	10/10/24 13:08	10/11/24 19:15	79780-39-5	
PFHpS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 19:15	375-92-8	
PFHxDA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:15	67905-19-5	
PFNS	**<0.038**	ug/kg	0.13	0.038	1	10/10/24 13:08	10/11/24 19:15	68259-12-1	
PFODA	**<0.052**	ug/kg	0.14	0.052	1	10/10/24 13:08	10/11/24 19:15	16517-11-6	
PFOSA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 19:15	754-91-6	
PFPeA	**0.096J**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:15	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/10/24 13:08	10/11/24 19:15	2706-91-4	
PFDoA	**<0.033**	ug/kg	0.14	0.033	1	10/10/24 13:08	10/11/24 19:15	307-55-1	
PFHpA	**0.039J**	ug/kg	0.14	0.014	1	10/10/24 13:08	10/11/24 19:15	375-85-9	
PFHxS	**0.020J**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:15	355-46-4	
PFNA	**0.30**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:15	375-95-1	
PFOS	**0.21**	ug/kg	0.13	0.060	1	10/10/24 13:08	10/11/24 19:15	1763-23-1	
PFOA	**0.055J**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 19:15	335-67-1	
PFTeDA	**<0.022**	ug/kg	0.14	0.022	1	10/10/24 13:08	10/11/24 19:15	376-06-7	
PFTrDA	**0.30**	ug/kg	0.14	0.030	1	10/10/24 13:08	10/11/24 19:15	72629-94-8	
PFUnA	**1.2**	ug/kg	0.14	0.047	1	10/10/24 13:08	10/11/24 19:15	2058-94-8	
Surrogates									
13C2-PFDoA (S)	103	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C2-PFTA (S)	69	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C24:2FTS (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS01 **Lab ID: 10709546001** Collected: 09/24/24 08:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C28:2FTS (S)	216	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		S0
13C2PFHxDA (S)	63	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C3-PFBS (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C3-PFHxS (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C3HFPO-DA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C4-PFBA (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C4-PFHpA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C5-PFHxA (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C5-PFPeA (S)	78	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C6-PFDA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C7-PFUdA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C8-PFOA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C8-PFOS (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C8-PFOSA (S)	47	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
13C9-PFNA (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
d3-MeFOSAA (S)	111	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
d3-NMeFOSA (S)	8	%.	10-150		1	10/10/24 13:08	10/11/24 19:15		S0
d5-EtFOSAA (S)	117	%.	25-150		1	10/10/24 13:08	10/11/24 19:15		
d5-NEtFOSA (S)	8	%.	10-150		1	10/10/24 13:08	10/11/24 19:15		S0
d7-NMeFOSE (S)	21	%.	10-150		1	10/10/24 13:08	10/11/24 19:15		
d9-NEtFOSE (S)	21	%.	10-150		1	10/10/24 13:08	10/11/24 19:15		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS02 **Lab ID: 10709546002** Collected: 09/24/24 08:25 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**27.3**	%	0.10	0.10	1		10/15/24 11:03		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.17**	ug/kg	0.13	0.035	1	10/10/24 13:08	10/11/24 19:22	120226-60-0	
11Cl-PF3OUdS	**<0.024**	ug/kg	0.13	0.024	1	10/10/24 13:08	10/11/24 19:22	763051-92-9	
4:2 FTS	**<0.017**	ug/kg	0.13	0.017	1	10/10/24 13:08	10/11/24 19:22	757124-72-4	
6:2 FTS	**0.033J**	ug/kg	0.13	0.028	1	10/10/24 13:08	10/11/24 19:22	27619-97-2	
8:2 FTS	**<0.055**	ug/kg	0.13	0.055	1	10/10/24 13:08	10/11/24 19:22	39108-34-4	
9Cl-PF3ONS	**<0.025**	ug/kg	0.13	0.025	1	10/10/24 13:08	10/11/24 19:22	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:22	919005-14-4	
HFPO-DA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:22	13252-13-6	
NEtFOSAA	**<0.023**	ug/kg	0.14	0.023	1	10/10/24 13:08	10/11/24 19:22	2991-50-6	
NEtFOSA	**<0.031**	ug/kg	0.14	0.031	1	10/10/24 13:08	10/11/24 19:22	4151-50-2	
NEtFOSE	**<0.028**	ug/kg	0.14	0.028	1	10/10/24 13:08	10/11/24 19:22	1691-99-2	
NMeFOSAA	**<0.058**	ug/kg	0.14	0.058	1	10/10/24 13:08	10/11/24 19:22	2355-31-9	
NMeFOSA	**<0.049**	ug/kg	0.14	0.049	1	10/10/24 13:08	10/11/24 19:22	31506-32-8	
NMeFOSE	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 19:22	24448-09-7	
PFBS	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 19:22	375-73-5	
PFDA	**0.091J**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:22	335-76-2	
PFHxA	**0.048J**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:22	307-24-4	
PFBA	**0.054J**	ug/kg	0.14	0.041	1	10/10/24 13:08	10/11/24 19:22	375-22-4	
PFDS	**<0.040**	ug/kg	0.13	0.040	1	10/10/24 13:08	10/11/24 19:22	335-77-3	
PFDoS	**<0.032**	ug/kg	0.13	0.032	1	10/10/24 13:08	10/11/24 19:22	79780-39-5	
PFHpS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 19:22	375-92-8	
PFHxDA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:22	67905-19-5	
PFNS	**<0.038**	ug/kg	0.13	0.038	1	10/10/24 13:08	10/11/24 19:22	68259-12-1	
PFODA	**<0.051**	ug/kg	0.14	0.051	1	10/10/24 13:08	10/11/24 19:22	16517-11-6	
PFOSA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:22	754-91-6	
PFPeA	**0.098J**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:22	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/10/24 13:08	10/11/24 19:22	2706-91-4	
PFDoA	**0.12J**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 19:22	307-55-1	
PFHpA	**0.030J**	ug/kg	0.14	0.014	1	10/10/24 13:08	10/11/24 19:22	375-85-9	
PFHxS	**0.017J**	ug/kg	0.12	0.015	1	10/10/24 13:08	10/11/24 19:22	355-46-4	
PFNA	**0.051J**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:22	375-95-1	
PFOS	**0.11J**	ug/kg	0.13	0.059	1	10/10/24 13:08	10/11/24 19:22	1763-23-1	
PFOA	**0.052J**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 19:22	335-67-1	
PFTeDA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 19:22	376-06-7	
PFTrDA	**0.47**	ug/kg	0.14	0.029	1	10/10/24 13:08	10/11/24 19:22	72629-94-8	
PFUnA	**0.60**	ug/kg	0.14	0.046	1	10/10/24 13:08	10/11/24 19:22	2058-94-8	
Surrogates									
13C2-PFDoA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C2-PFTA (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C24:2FTS (S)	77	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS02 **Lab ID: 10709546002** Collected: 09/24/24 08:25 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C28:2FTS (S)	123	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C2PFHxDA (S)	51	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C3-PFBS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C3-PFHxS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C3HFPO-DA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C4-PFBA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C4-PFHpA (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C5-PFHxA (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C5-PFPeA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C6-PFDA (S)	112	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C7-PFUdA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C8-PFOA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C8-PFOS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C8-PFOSA (S)	51	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
13C9-PFNA (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
d3-MeFOSAA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
d3-NMeFOSA (S)	8	%.	10-150		1	10/10/24 13:08	10/11/24 19:22		S0
d5-EtFOSAA (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 19:22		
d5-NEtFOSA (S)	7	%.	10-150		1	10/10/24 13:08	10/11/24 19:22		S0
d7-NMeFOSE (S)	29	%.	10-150		1	10/10/24 13:08	10/11/24 19:22		
d9-NEtFOSE (S)	21	%.	10-150		1	10/10/24 13:08	10/11/24 19:22		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS03 **Lab ID: 10709546003** Collected: 09/24/24 08:40 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**17.2**	%	0.10	0.10	1		10/15/24 11:07		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.030**	ug/kg	0.11	0.030	1	10/10/24 13:08	10/11/24 19:29	120226-60-0	
11Cl-PF3OUdS	**<0.020**	ug/kg	0.11	0.020	1	10/10/24 13:08	10/11/24 19:29	763051-92-9	
4:2 FTS	**<0.015**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 19:29	757124-72-4	
6:2 FTS	**<0.024**	ug/kg	0.11	0.024	1	10/10/24 13:08	10/11/24 19:29	27619-97-2	
8:2 FTS	**<0.048**	ug/kg	0.11	0.048	1	10/10/24 13:08	10/11/24 19:29	39108-34-4	
9Cl-PF3ONS	**<0.021**	ug/kg	0.11	0.021	1	10/10/24 13:08	10/11/24 19:29	756426-58-1	
ADONA	**<0.013**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 19:29	919005-14-4	
HFPO-DA	**<0.021**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 19:29	13252-13-6	
NEtFOSAA	**<0.020**	ug/kg	0.12	0.020	1	10/10/24 13:08	10/11/24 19:29	2991-50-6	
NEtFOSA	**<0.027**	ug/kg	0.12	0.027	1	10/10/24 13:08	10/11/24 19:29	4151-50-2	
NEtFOSE	**0.043J**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 19:29	1691-99-2	
NMeFOSAA	**<0.050**	ug/kg	0.12	0.050	1	10/10/24 13:08	10/11/24 19:29	2355-31-9	
NMeFOSA	**<0.043**	ug/kg	0.12	0.043	1	10/10/24 13:08	10/11/24 19:29	31506-32-8	
NMeFOSE	**<0.023**	ug/kg	0.12	0.023	1	10/10/24 13:08	10/11/24 19:29	24448-09-7	
PFBS	**0.027J**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 19:29	375-73-5	
PFDA	**0.082J**	ug/kg	0.12	0.020	1	10/10/24 13:08	10/11/24 19:29	335-76-2	
PFHxA	**0.12J**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 19:29	307-24-4	
PFBA	**0.25**	ug/kg	0.12	0.036	1	10/10/24 13:08	10/11/24 19:29	375-22-4	
PFDS	**<0.035**	ug/kg	0.11	0.035	1	10/10/24 13:08	10/11/24 19:29	335-77-3	
PFDoS	**<0.028**	ug/kg	0.11	0.028	1	10/10/24 13:08	10/11/24 19:29	79780-39-5	
PFHpS	**0.031J**	ug/kg	0.11	0.028	1	10/10/24 13:08	10/11/24 19:29	375-92-8	
PFHxDA	**<0.017**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 19:29	67905-19-5	
PFNS	**<0.033**	ug/kg	0.11	0.033	1	10/10/24 13:08	10/11/24 19:29	68259-12-1	
PFODA	**<0.044**	ug/kg	0.12	0.044	1	10/10/24 13:08	10/11/24 19:29	16517-11-6	
PFOSA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 19:29	754-91-6	
PFPeA	**0.19**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 19:29	2706-90-3	
PFPeS	**0.029J**	ug/kg	0.11	0.014	1	10/10/24 13:08	10/11/24 19:29	2706-91-4	
PFDoA	**0.055J**	ug/kg	0.12	0.028	1	10/10/24 13:08	10/11/24 19:29	307-55-1	
PFHpA	**0.13**	ug/kg	0.12	0.012	1	10/10/24 13:08	10/11/24 19:29	375-85-9	
PFHxS	**0.42**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 19:29	355-46-4	
PFNA	**0.15**	ug/kg	0.12	0.022	1	10/10/24 13:08	10/11/24 19:29	375-95-1	
PFOS	**3.1**	ug/kg	0.11	0.051	1	10/10/24 13:08	10/11/24 19:29	1763-23-1	
PFOA	**0.18**	ug/kg	0.12	0.014	1	10/10/24 13:08	10/11/24 19:29	335-67-1	
PFTeDA	**0.023J**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 19:29	376-06-7	
PFTrDA	**1.8**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 19:29	72629-94-8	
PFUnA	**1.1**	ug/kg	0.12	0.040	1	10/10/24 13:08	10/11/24 19:29	2058-94-8	
Surrogates									
13C2-PFDoA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C2-PFTA (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C24:2FTS (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS03 **Lab ID: 10709546003** Collected: 09/24/24 08:40 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	143	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C28:2FTS (S)	217	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		S0
13C2PFHxDA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C3-PFBS (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C3-PFHxS (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C3HFPO-DA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C4-PFBA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C4-PFHpA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C5-PFHxA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C5-PFPeA (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C6-PFDA (S)	108	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C7-PFUdA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C8-PFOA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C8-PFOS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C8-PFOSA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
13C9-PFNA (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
d3-MeFOSAA (S)	118	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
d3-NMeFOSA (S)	36	%.	10-150		1	10/10/24 13:08	10/11/24 19:29		
d5-EtFOSAA (S)	120	%.	25-150		1	10/10/24 13:08	10/11/24 19:29		
d5-NEtFOSA (S)	24	%.	10-150		1	10/10/24 13:08	10/11/24 19:29		
d7-NMeFOSE (S)	58	%.	10-150		1	10/10/24 13:08	10/11/24 19:29		
d9-NEtFOSE (S)	34	%.	10-150		1	10/10/24 13:08	10/11/24 19:29		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS04 **Lab ID: 10709546004** Collected: 09/24/24 09:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**38.1**	%	0.10	0.10	1		10/15/24 11:09		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.040**	ug/kg	0.15	0.040	1	10/10/24 13:08	10/11/24 19:37	120226-60-0	
11Cl-PF3OUdS	**<0.027**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 19:37	763051-92-9	
4:2 FTS	**<0.020**	ug/kg	0.15	0.020	1	10/10/24 13:08	10/11/24 19:37	757124-72-4	
6:2 FTS	**<0.032**	ug/kg	0.15	0.032	1	10/10/24 13:08	10/11/24 19:37	27619-97-2	
8:2 FTS	**<0.064**	ug/kg	0.15	0.064	1	10/10/24 13:08	10/11/24 19:37	39108-34-4	
9Cl-PF3ONS	**<0.029**	ug/kg	0.15	0.029	1	10/10/24 13:08	10/11/24 19:37	756426-58-1	
ADONA	**<0.017**	ug/kg	0.15	0.017	1	10/10/24 13:08	10/11/24 19:37	919005-14-4	
HFPO-DA	**<0.028**	ug/kg	0.16	0.028	1	10/10/24 13:08	10/11/24 19:37	13252-13-6	
NEtFOSAA	**<0.027**	ug/kg	0.16	0.027	1	10/10/24 13:08	10/11/24 19:37	2991-50-6	
NEtFOSA	**<0.036**	ug/kg	0.16	0.036	1	10/10/24 13:08	10/11/24 19:37	4151-50-2	
NEtFOSE	**<0.033**	ug/kg	0.16	0.033	1	10/10/24 13:08	10/11/24 19:37	1691-99-2	
NMeFOSAA	**<0.067**	ug/kg	0.16	0.067	1	10/10/24 13:08	10/11/24 19:37	2355-31-9	
NMeFOSA	**<0.057**	ug/kg	0.16	0.057	1	10/10/24 13:08	10/11/24 19:37	31506-32-8	
NMeFOSE	**<0.031**	ug/kg	0.16	0.031	1	10/10/24 13:08	10/11/24 19:37	24448-09-7	
PFBS	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:37	375-73-5	
PFDA	**0.028J**	ug/kg	0.16	0.027	1	10/10/24 13:08	10/11/24 19:37	335-76-2	
PFHxA	**0.034J**	ug/kg	0.16	0.023	1	10/10/24 13:08	10/11/24 19:37	307-24-4	
PFBA	**<0.048**	ug/kg	0.16	0.048	1	10/10/24 13:08	10/11/24 19:37	375-22-4	
PFDS	**<0.046**	ug/kg	0.15	0.046	1	10/10/24 13:08	10/11/24 19:37	335-77-3	
PFDoS	**<0.038**	ug/kg	0.15	0.038	1	10/10/24 13:08	10/11/24 19:37	79780-39-5	
PFHpS	**<0.038**	ug/kg	0.15	0.038	1	10/10/24 13:08	10/11/24 19:37	375-92-8	
PFHxDA	**<0.023**	ug/kg	0.16	0.023	1	10/10/24 13:08	10/11/24 19:37	67905-19-5	
PFNS	**<0.044**	ug/kg	0.15	0.044	1	10/10/24 13:08	10/11/24 19:37	68259-12-1	
PFODA	**<0.059**	ug/kg	0.16	0.059	1	10/10/24 13:08	10/11/24 19:37	16517-11-6	
PFOSA	**<0.024**	ug/kg	0.16	0.024	1	10/10/24 13:08	10/11/24 19:37	754-91-6	
PFPeA	**0.053J**	ug/kg	0.16	0.028	1	10/10/24 13:08	10/11/24 19:37	2706-90-3	
PFPeS	**<0.018**	ug/kg	0.15	0.018	1	10/10/24 13:08	10/11/24 19:37	2706-91-4	
PFDoA	**<0.037**	ug/kg	0.16	0.037	1	10/10/24 13:08	10/11/24 19:37	307-55-1	
PFHpA	**0.026J**	ug/kg	0.16	0.016	1	10/10/24 13:08	10/11/24 19:37	375-85-9	
PFHxS	**0.039J**	ug/kg	0.14	0.018	1	10/10/24 13:08	10/11/24 19:37	355-46-4	
PFNA	**0.035J**	ug/kg	0.16	0.029	1	10/10/24 13:08	10/11/24 19:37	375-95-1	
PFOS	**0.29**	ug/kg	0.15	0.068	1	10/10/24 13:08	10/11/24 19:37	1763-23-1	
PFOA	**0.045J**	ug/kg	0.16	0.019	1	10/10/24 13:08	10/11/24 19:37	335-67-1	
PFTeDA	**<0.025**	ug/kg	0.16	0.025	1	10/10/24 13:08	10/11/24 19:37	376-06-7	
PFTrDA	**0.073J**	ug/kg	0.16	0.034	1	10/10/24 13:08	10/11/24 19:37	72629-94-8	
PFUnA	**0.23**	ug/kg	0.16	0.053	1	10/10/24 13:08	10/11/24 19:37	2058-94-8	
Surrogates									
13C2-PFDoA (S)	103	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C2-PFTA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C24:2FTS (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS04 **Lab ID: 10709546004** Collected: 09/24/24 09:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C28:2FTS (S)	141	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C2PFHxDA (S)	45	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C3-PFBS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C3-PFHxS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C3HFPO-DA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C4-PFBA (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C4-PFHpA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C5-PFHxA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C5-PFPeA (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C6-PFDA (S)	111	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C7-PFUdA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C8-PFOA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C8-PFOS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C8-PFOSA (S)	45	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
13C9-PFNA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
d3-MeFOSAA (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
d3-NMeFOSA (S)	5	%.	10-150		1	10/10/24 13:08	10/11/24 19:37		S0
d5-EtFOSAA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 19:37		
d5-NEtFOSA (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 19:37		S0
d7-NMeFOSE (S)	14	%.	10-150		1	10/10/24 13:08	10/11/24 19:37		
d9-NEtFOSE (S)	9	%.	10-150		1	10/10/24 13:08	10/11/24 19:37		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS05 **Lab ID: 10709546005** Collected: 09/24/24 09:10 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**30.3**	%	0.10	0.10	1		10/15/24 11:10		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.24**	ug/kg	0.13	0.035	1	10/10/24 13:08	10/11/24 19:44	120226-60-0	
11Cl-PF3OUdS	**<0.024**	ug/kg	0.13	0.024	1	10/10/24 13:08	10/11/24 19:44	763051-92-9	
4:2 FTS	**<0.017**	ug/kg	0.13	0.017	1	10/10/24 13:08	10/11/24 19:44	757124-72-4	
6:2 FTS	**0.031J**	ug/kg	0.13	0.028	1	10/10/24 13:08	10/11/24 19:44	27619-97-2	
8:2 FTS	**<0.056**	ug/kg	0.13	0.056	1	10/10/24 13:08	10/11/24 19:44	39108-34-4	
9Cl-PF3ONS	**<0.025**	ug/kg	0.13	0.025	1	10/10/24 13:08	10/11/24 19:44	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:44	919005-14-4	
HFPO-DA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:44	13252-13-6	
NEtFOSAA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:44	2991-50-6	
NEtFOSA	**<0.032**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 19:44	4151-50-2	
NEtFOSE	**<0.029**	ug/kg	0.14	0.029	1	10/10/24 13:08	10/11/24 19:44	1691-99-2	
NMeFOSAA	**<0.058**	ug/kg	0.14	0.058	1	10/10/24 13:08	10/11/24 19:44	2355-31-9	
NMeFOSA	**<0.050**	ug/kg	0.14	0.050	1	10/10/24 13:08	10/11/24 19:44	31506-32-8	
NMeFOSE	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 19:44	24448-09-7	
PFBS	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 19:44	375-73-5	
PFDA	**0.43**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:44	335-76-2	
PFHxA	**0.38**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:44	307-24-4	
PFBA	**0.26**	ug/kg	0.14	0.042	1	10/10/24 13:08	10/11/24 19:44	375-22-4	
PFDS	**<0.040**	ug/kg	0.13	0.040	1	10/10/24 13:08	10/11/24 19:44	335-77-3	
PFDoS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 19:44	79780-39-5	
PFHpS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 19:44	375-92-8	
PFHxDA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:44	67905-19-5	
PFNS	**<0.038**	ug/kg	0.13	0.038	1	10/10/24 13:08	10/11/24 19:44	68259-12-1	
PFODA	**<0.051**	ug/kg	0.14	0.051	1	10/10/24 13:08	10/11/24 19:44	16517-11-6	
PFOSA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 19:44	754-91-6	
PFPeA	**1.1**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:44	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/10/24 13:08	10/11/24 19:44	2706-91-4	
PFDoA	**0.079J**	ug/kg	0.14	0.033	1	10/10/24 13:08	10/11/24 19:44	307-55-1	
PFHpA	**0.25**	ug/kg	0.14	0.014	1	10/10/24 13:08	10/11/24 19:44	375-85-9	
PFHxS	**0.071J**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:44	355-46-4	
PFNA	**0.22**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:44	375-95-1	
PFOS	**1.3**	ug/kg	0.13	0.060	1	10/10/24 13:08	10/11/24 19:44	1763-23-1	
PFOA	**0.28**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 19:44	335-67-1	
PFTeDA	**<0.022**	ug/kg	0.14	0.022	1	10/10/24 13:08	10/11/24 19:44	376-06-7	
PFTrDA	**0.10J**	ug/kg	0.14	0.030	1	10/10/24 13:08	10/11/24 19:44	72629-94-8	
PFUnA	**0.31**	ug/kg	0.14	0.047	1	10/10/24 13:08	10/11/24 19:44	2058-94-8	
Surrogates									
13C2-PFDoA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C2-PFTA (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C24:2FTS (S)	76	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS05 **Lab ID: 10709546005** Collected: 09/24/24 09:10 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C28:2FTS (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C2PFHxDA (S)	61	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C3-PFBS (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C3-PFHxS (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C3HFPO-DA (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C4-PFBA (S)	77	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C4-PFHpA (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C5-PFHxA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C5-PFPeA (S)	79	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C6-PFDA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C7-PFUdA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C8-PFOA (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C8-PFOS (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C8-PFOSA (S)	34	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
13C9-PFNA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
d3-MeFOSAA (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
d3-NMeFOSA (S)	4	%.	10-150		1	10/10/24 13:08	10/11/24 19:44		S0
d5-EtFOSAA (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:44		
d5-NEtFOSA (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 19:44		S0
d7-NMeFOSE (S)	16	%.	10-150		1	10/10/24 13:08	10/11/24 19:44		
d9-NEtFOSE (S)	13	%.	10-150		1	10/10/24 13:08	10/11/24 19:44		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS06 **Lab ID: 10709546006** Collected: 09/24/24 09:25 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**37.8**	%	0.10	0.10	1		10/15/24 11:13		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.53**	ug/kg	0.15	0.038	1	10/10/24 13:08	10/11/24 19:51	120226-60-0	
11Cl-PF3OUdS	**<0.026**	ug/kg	0.14	0.026	1	10/10/24 13:08	10/11/24 19:51	763051-92-9	
4:2 FTS	**<0.019**	ug/kg	0.14	0.019	1	10/10/24 13:08	10/11/24 19:51	757124-72-4	
6:2 FTS	**0.058J**	ug/kg	0.14	0.030	1	10/10/24 13:08	10/11/24 19:51	27619-97-2	
8:2 FTS	**0.073J**	ug/kg	0.15	0.061	1	10/10/24 13:08	10/11/24 19:51	39108-34-4	
9Cl-PF3ONS	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 19:51	756426-58-1	
ADONA	**<0.016**	ug/kg	0.14	0.016	1	10/10/24 13:08	10/11/24 19:51	919005-14-4	
HFPO-DA	**<0.026**	ug/kg	0.15	0.026	1	10/10/24 13:08	10/11/24 19:51	13252-13-6	
NEtFOSAA	**<0.026**	ug/kg	0.15	0.026	1	10/10/24 13:08	10/11/24 19:51	2991-50-6	
NEtFOSA	**<0.034**	ug/kg	0.15	0.034	1	10/10/24 13:08	10/11/24 19:51	4151-50-2	
NEtFOSE	**<0.031**	ug/kg	0.15	0.031	1	10/10/24 13:08	10/11/24 19:51	1691-99-2	
NMeFOSAA	**<0.064**	ug/kg	0.15	0.064	1	10/10/24 13:08	10/11/24 19:51	2355-31-9	
NMeFOSA	**<0.054**	ug/kg	0.15	0.054	1	10/10/24 13:08	10/11/24 19:51	31506-32-8	
NMeFOSE	**<0.030**	ug/kg	0.15	0.030	1	10/10/24 13:08	10/11/24 19:51	24448-09-7	
PFBS	**<0.019**	ug/kg	0.13	0.019	1	10/10/24 13:08	10/11/24 19:51	375-73-5	
PFDA	**0.077J**	ug/kg	0.15	0.026	1	10/10/24 13:08	10/11/24 19:51	335-76-2	
PFHxA	**0.030J**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 19:51	307-24-4	
PFBA	**<0.046**	ug/kg	0.15	0.046	1	10/10/24 13:08	10/11/24 19:51	375-22-4	
PFDS	**0.060J**	ug/kg	0.15	0.044	1	10/10/24 13:08	10/11/24 19:51	335-77-3	
PFDoS	**<0.036**	ug/kg	0.15	0.036	1	10/10/24 13:08	10/11/24 19:51	79780-39-5	
PFHpS	**<0.036**	ug/kg	0.14	0.036	1	10/10/24 13:08	10/11/24 19:51	375-92-8	
PFHxDA	**<0.022**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 19:51	67905-19-5	
PFNS	**<0.042**	ug/kg	0.14	0.042	1	10/10/24 13:08	10/11/24 19:51	68259-12-1	
PFODA	**<0.056**	ug/kg	0.15	0.056	1	10/10/24 13:08	10/11/24 19:51	16517-11-6	
PFOSA	**<0.022**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 19:51	754-91-6	
PFPeA	**0.039J**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 19:51	2706-90-3	
PFPeS	**<0.017**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 19:51	2706-91-4	
PFDoA	**0.16**	ug/kg	0.15	0.035	1	10/10/24 13:08	10/11/24 19:51	307-55-1	
PFHpA	**0.018J**	ug/kg	0.15	0.015	1	10/10/24 13:08	10/11/24 19:51	375-85-9	
PFHxS	**0.039J**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 19:51	355-46-4	
PFNA	**0.029J**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 19:51	375-95-1	
PFOS	**1.3**	ug/kg	0.14	0.065	1	10/10/24 13:08	10/11/24 19:51	1763-23-1	
PFOA	**0.029J**	ug/kg	0.15	0.018	1	10/10/24 13:08	10/11/24 19:51	335-67-1	
PFTeDA	**0.042J**	ug/kg	0.15	0.023	1	10/10/24 13:08	10/11/24 19:51	376-06-7	
PFTrDA	**1.0**	ug/kg	0.15	0.032	1	10/10/24 13:08	10/11/24 19:51	72629-94-8	
PFUnA	**0.88**	ug/kg	0.15	0.051	1	10/10/24 13:08	10/11/24 19:51	2058-94-8	
Surrogates									
13C2-PFDoA (S)	109	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C2-PFTA (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C24:2FTS (S)	80	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS06 **Lab ID: 10709546006** Collected: 09/24/24 09:25 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C28:2FTS (S)	212	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		S0
13C2PFHxDA (S)	16	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		S0
13C3-PFBS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C3-PFHxS (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C3HFPO-DA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C4-PFBA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C4-PFHpA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C5-PFHxA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C5-PFPeA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C6-PFDA (S)	116	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C7-PFUdA (S)	113	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C8-PFOA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C8-PFOS (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C8-PFOSA (S)	39	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
13C9-PFNA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
d3-MeFOSAA (S)	114	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
d3-NMeFOSA (S)	6	%.	10-150		1	10/10/24 13:08	10/11/24 19:51		S0
d5-EtFOSAA (S)	124	%.	25-150		1	10/10/24 13:08	10/11/24 19:51		
d5-NEtFOSA (S)	5	%.	10-150		1	10/10/24 13:08	10/11/24 19:51		S0
d7-NMeFOSE (S)	19	%.	10-150		1	10/10/24 13:08	10/11/24 19:51		
d9-NEtFOSE (S)	17	%.	10-150		1	10/10/24 13:08	10/11/24 19:51		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS07 **Lab ID: 10709546007** Collected: 09/24/24 09:40 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**27.4**	%	0.10	0.10	1		10/15/24 11:15		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.27**	ug/kg	0.13	0.034	1	10/10/24 13:08	10/11/24 19:58	120226-60-0	
11Cl-PF3OUdS	**<0.023**	ug/kg	0.13	0.023	1	10/10/24 13:08	10/11/24 19:58	763051-92-9	
4:2 FTS	**<0.017**	ug/kg	0.13	0.017	1	10/10/24 13:08	10/11/24 19:58	757124-72-4	
6:2 FTS	**0.43**	ug/kg	0.13	0.027	1	10/10/24 13:08	10/11/24 19:58	27619-97-2	
8:2 FTS	**0.31**	ug/kg	0.13	0.054	1	10/10/24 13:08	10/11/24 19:58	39108-34-4	
9Cl-PF3ONS	**<0.024**	ug/kg	0.13	0.024	1	10/10/24 13:08	10/11/24 19:58	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:58	919005-14-4	
HFPO-DA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:58	13252-13-6	
NEtFOSAA	**<0.023**	ug/kg	0.14	0.023	1	10/10/24 13:08	10/11/24 19:58	2991-50-6	
NEtFOSA	**<0.031**	ug/kg	0.14	0.031	1	10/10/24 13:08	10/11/24 19:58	4151-50-2	
NEtFOSE	**<0.028**	ug/kg	0.14	0.028	1	10/10/24 13:08	10/11/24 19:58	1691-99-2	
NMeFOSAA	**<0.057**	ug/kg	0.14	0.057	1	10/10/24 13:08	10/11/24 19:58	2355-31-9	
NMeFOSA	**<0.049**	ug/kg	0.14	0.049	1	10/10/24 13:08	10/11/24 19:58	31506-32-8	
NMeFOSE	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 19:58	24448-09-7	
PFBS	**<0.017**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 19:58	375-73-5	
PFDA	**0.081J**	ug/kg	0.14	0.023	1	10/10/24 13:08	10/11/24 19:58	335-76-2	
PFHxA	**0.046J**	ug/kg	0.14	0.019	1	10/10/24 13:08	10/11/24 19:58	307-24-4	
PFBA	**<0.041**	ug/kg	0.14	0.041	1	10/10/24 13:08	10/11/24 19:58	375-22-4	
PFDS	**<0.039**	ug/kg	0.13	0.039	1	10/10/24 13:08	10/11/24 19:58	335-77-3	
PFDoS	**<0.032**	ug/kg	0.13	0.032	1	10/10/24 13:08	10/11/24 19:58	79780-39-5	
PFHpS	**<0.032**	ug/kg	0.13	0.032	1	10/10/24 13:08	10/11/24 19:58	375-92-8	
PFHxDA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:58	67905-19-5	
PFNS	**<0.037**	ug/kg	0.13	0.037	1	10/10/24 13:08	10/11/24 19:58	68259-12-1	
PFODA	**<0.050**	ug/kg	0.14	0.050	1	10/10/24 13:08	10/11/24 19:58	16517-11-6	
PFOSA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 19:58	754-91-6	
PFPeA	**0.030J**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 19:58	2706-90-3	
PFPeS	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 19:58	2706-91-4	
PFDoA	**0.16**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 19:58	307-55-1	
PFHpA	**0.017J**	ug/kg	0.14	0.014	1	10/10/24 13:08	10/11/24 19:58	375-85-9	
PFHxS	**0.022J**	ug/kg	0.12	0.015	1	10/10/24 13:08	10/11/24 19:58	355-46-4	
PFNA	**0.036J**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 19:58	375-95-1	
PFOS	**0.52**	ug/kg	0.13	0.059	1	10/10/24 13:08	10/11/24 19:58	1763-23-1	
PFOA	**0.058J**	ug/kg	0.14	0.016	1	10/10/24 13:08	10/11/24 19:58	335-67-1	
PFTeDA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 19:58	376-06-7	
PFTrDA	**0.43**	ug/kg	0.14	0.029	1	10/10/24 13:08	10/11/24 19:58	72629-94-8	
PFUnA	**0.85**	ug/kg	0.14	0.046	1	10/10/24 13:08	10/11/24 19:58	2058-94-8	
Surrogates									
13C2-PFDoA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C2-PFTA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C24:2FTS (S)	71	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS07 **Lab ID: 10709546007** Collected: 09/24/24 09:40 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C28:2FTS (S)	143	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C2PFHxDA (S)	77	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C3-PFBS (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C3-PFHxS (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C3HFPO-DA (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C4-PFBA (S)	78	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C4-PFHpA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C5-PFHxA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C5-PFPeA (S)	77	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C6-PFDA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C7-PFUdA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C8-PFOA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C8-PFOS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C8-PFOSA (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
13C9-PFNA (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
d3-MeFOSAA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
d3-NMeFOSA (S)	15	%.	10-150		1	10/10/24 13:08	10/11/24 19:58		
d5-EtFOSAA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 19:58		
d5-NEtFOSA (S)	14	%.	10-150		1	10/10/24 13:08	10/11/24 19:58		
d7-NMeFOSE (S)	42	%.	10-150		1	10/10/24 13:08	10/11/24 19:58		
d9-NEtFOSE (S)	37	%.	10-150		1	10/10/24 13:08	10/11/24 19:58		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS08 **Lab ID: 10709546008** Collected: 09/24/24 09:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**28.7**	%	0.10	0.10	1		10/15/24 11:17		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.047J**	ug/kg	0.13	0.035	1	10/10/24 13:08	10/11/24 20:05	120226-60-0	
11Cl-PF3OUdS	**<0.024**	ug/kg	0.13	0.024	1	10/10/24 13:08	10/11/24 20:05	763051-92-9	
4:2 FTS	**<0.017**	ug/kg	0.13	0.017	1	10/10/24 13:08	10/11/24 20:05	757124-72-4	
6:2 FTS	**0.070J**	ug/kg	0.13	0.028	1	10/10/24 13:08	10/11/24 20:05	27619-97-2	
8:2 FTS	**0.16**	ug/kg	0.13	0.055	1	10/10/24 13:08	10/11/24 20:05	39108-34-4	
9Cl-PF3ONS	**<0.025**	ug/kg	0.13	0.025	1	10/10/24 13:08	10/11/24 20:05	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 20:05	919005-14-4	
HFPO-DA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 20:05	13252-13-6	
NEtFOSAA	**<0.024**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 20:05	2991-50-6	
NEtFOSA	**<0.032**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 20:05	4151-50-2	
NEtFOSE	**<0.028**	ug/kg	0.14	0.028	1	10/10/24 13:08	10/11/24 20:05	1691-99-2	
NMeFOSAA	**<0.058**	ug/kg	0.14	0.058	1	10/10/24 13:08	10/11/24 20:05	2355-31-9	
NMeFOSA	**<0.050**	ug/kg	0.14	0.050	1	10/10/24 13:08	10/11/24 20:05	31506-32-8	
NMeFOSE	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 20:05	24448-09-7	
PFBS	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 20:05	375-73-5	
PFDA	**0.10J**	ug/kg	0.14	0.024	1	10/10/24 13:08	10/11/24 20:05	335-76-2	
PFHxA	**0.081J**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 20:05	307-24-4	
PFBA	**0.049J**	ug/kg	0.14	0.042	1	10/10/24 13:08	10/11/24 20:05	375-22-4	
PFDS	**<0.040**	ug/kg	0.13	0.040	1	10/10/24 13:08	10/11/24 20:05	335-77-3	
PFDoS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 20:05	79780-39-5	
PFHpS	**<0.033**	ug/kg	0.13	0.033	1	10/10/24 13:08	10/11/24 20:05	375-92-8	
PFHxDA	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 20:05	67905-19-5	
PFNS	**<0.038**	ug/kg	0.13	0.038	1	10/10/24 13:08	10/11/24 20:05	68259-12-1	
PFODA	**<0.051**	ug/kg	0.14	0.051	1	10/10/24 13:08	10/11/24 20:05	16517-11-6	
PFOSA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 20:05	754-91-6	
PFPeA	**0.13J**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 20:05	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/10/24 13:08	10/11/24 20:05	2706-91-4	
PFDoA	**<0.032**	ug/kg	0.14	0.032	1	10/10/24 13:08	10/11/24 20:05	307-55-1	
PFHpA	**0.035J**	ug/kg	0.14	0.014	1	10/10/24 13:08	10/11/24 20:05	375-85-9	
PFHxS	**0.022J**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 20:05	355-46-4	
PFNA	**0.037J**	ug/kg	0.14	0.025	1	10/10/24 13:08	10/11/24 20:05	375-95-1	
PFOS	**0.36**	ug/kg	0.13	0.060	1	10/10/24 13:08	10/11/24 20:05	1763-23-1	
PFOA	**0.063J**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 20:05	335-67-1	
PFTeDA	**<0.021**	ug/kg	0.14	0.021	1	10/10/24 13:08	10/11/24 20:05	376-06-7	
PFTrDA	**0.056J**	ug/kg	0.14	0.029	1	10/10/24 13:08	10/11/24 20:05	72629-94-8	
PFUnA	**0.079J**	ug/kg	0.14	0.046	1	10/10/24 13:08	10/11/24 20:05	2058-94-8	
Surrogates									
13C2-PFDoA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C2-PFTA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C24:2FTS (S)	73	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS08 **Lab ID: 10709546008** Collected: 09/24/24 09:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C28:2FTS (S)	159	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		S0
13C2PFHxDA (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C3-PFBS (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C3-PFHxS (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C3HFPO-DA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C4-PFBA (S)	80	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C4-PFHpA (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C5-PFHxA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C5-PFPeA (S)	82	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C6-PFDA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C7-PFUdA (S)	104	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C8-PFOA (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C8-PFOS (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C8-PFOSA (S)	71	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
13C9-PFNA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
d3-MeFOSAA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
d3-NMeFOSA (S)	19	%.	10-150		1	10/10/24 13:08	10/11/24 20:05		
d5-EtFOSAA (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:05		
d5-NEtFOSA (S)	13	%.	10-150		1	10/10/24 13:08	10/11/24 20:05		
d7-NMeFOSE (S)	50	%.	10-150		1	10/10/24 13:08	10/11/24 20:05		
d9-NEtFOSE (S)	40	%.	10-150		1	10/10/24 13:08	10/11/24 20:05		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS09 **Lab ID: 10709546009** Collected: 09/24/24 10:05 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**48.4**	%	0.10	0.10	1		10/15/24 11:19		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**4.6**	ug/kg	0.18	0.048	1	10/10/24 13:08	10/11/24 20:13	120226-60-0	
11Cl-PF3OUdS	**<0.033**	ug/kg	0.18	0.033	1	10/10/24 13:08	10/11/24 20:13	763051-92-9	
4:2 FTS	**<0.024**	ug/kg	0.18	0.024	1	10/10/24 13:08	10/11/24 20:13	757124-72-4	
6:2 FTS	**0.056J**	ug/kg	0.18	0.038	1	10/10/24 13:08	10/11/24 20:13	27619-97-2	
8:2 FTS	**0.19**	ug/kg	0.18	0.076	1	10/10/24 13:08	10/11/24 20:13	39108-34-4	
9Cl-PF3ONS	**<0.034**	ug/kg	0.18	0.034	1	10/10/24 13:08	10/11/24 20:13	756426-58-1	
ADONA	**<0.021**	ug/kg	0.18	0.021	1	10/10/24 13:08	10/11/24 20:13	919005-14-4	
HFPO-DA	**<0.033**	ug/kg	0.19	0.033	1	10/10/24 13:08	10/11/24 20:13	13252-13-6	
NEtFOSAA	**<0.032**	ug/kg	0.19	0.032	1	10/10/24 13:08	10/11/24 20:13	2991-50-6	
NEtFOSA	**<0.043**	ug/kg	0.19	0.043	1	10/10/24 13:08	10/11/24 20:13	4151-50-2	
NEtFOSE	**0.58**	ug/kg	0.19	0.039	1	10/10/24 13:08	10/11/24 20:13	1691-99-2	
NMeFOSAA	**<0.080**	ug/kg	0.19	0.080	1	10/10/24 13:08	10/11/24 20:13	2355-31-9	
NMeFOSA	**<0.068**	ug/kg	0.19	0.068	1	10/10/24 13:08	10/11/24 20:13	31506-32-8	
NMeFOSE	**<0.037**	ug/kg	0.19	0.037	1	10/10/24 13:08	10/11/24 20:13	24448-09-7	
PFBS	**<0.024**	ug/kg	0.17	0.024	1	10/10/24 13:08	10/11/24 20:13	375-73-5	
PFDA	**0.096J**	ug/kg	0.19	0.033	1	10/10/24 13:08	10/11/24 20:13	335-76-2	
PFHxA	**<0.027**	ug/kg	0.19	0.027	1	10/10/24 13:08	10/11/24 20:13	307-24-4	
PFBA	**0.11J**	ug/kg	0.19	0.057	1	10/10/24 13:08	10/11/24 20:13	375-22-4	
PFDS	**<0.055**	ug/kg	0.18	0.055	1	10/10/24 13:08	10/11/24 20:13	335-77-3	
PFDoS	**<0.045**	ug/kg	0.18	0.045	1	10/10/24 13:08	10/11/24 20:13	79780-39-5	
PFHpS	**<0.045**	ug/kg	0.18	0.045	1	10/10/24 13:08	10/11/24 20:13	375-92-8	
PFHxDA	**<0.027**	ug/kg	0.19	0.027	1	10/10/24 13:08	10/11/24 20:13	67905-19-5	
PFNS	**<0.052**	ug/kg	0.18	0.052	1	10/10/24 13:08	10/11/24 20:13	68259-12-1	
PFODA	**<0.070**	ug/kg	0.19	0.070	1	10/10/24 13:08	10/11/24 20:13	16517-11-6	
PFOSA	**0.031J**	ug/kg	0.19	0.028	1	10/10/24 13:08	10/11/24 20:13	754-91-6	
PFPeA	**<0.034**	ug/kg	0.19	0.034	1	10/10/24 13:08	10/11/24 20:13	2706-90-3	
PFPeS	**<0.022**	ug/kg	0.18	0.022	1	10/10/24 13:08	10/11/24 20:13	2706-91-4	
PFDoA	**0.49**	ug/kg	0.19	0.044	1	10/10/24 13:08	10/11/24 20:13	307-55-1	
PFHpA	**<0.019**	ug/kg	0.19	0.019	1	10/10/24 13:08	10/11/24 20:13	375-85-9	
PFHxS	**<0.021**	ug/kg	0.17	0.021	1	10/10/24 13:08	10/11/24 20:13	355-46-4	
PFNA	**<0.034**	ug/kg	0.19	0.034	1	10/10/24 13:08	10/11/24 20:13	375-95-1	
PFOS	**0.28**	ug/kg	0.18	0.082	1	10/10/24 13:08	10/11/24 20:13	1763-23-1	
PFOA	**<0.023**	ug/kg	0.19	0.023	1	10/10/24 13:08	10/11/24 20:13	335-67-1	
PFTeDA	**0.096J**	ug/kg	0.19	0.030	1	10/10/24 13:08	10/11/24 20:13	376-06-7	
PFTrDA	**0.12J**	ug/kg	0.19	0.040	1	10/10/24 13:08	10/11/24 20:13	72629-94-8	
PFUnA	**0.28**	ug/kg	0.19	0.064	1	10/10/24 13:08	10/11/24 20:13	2058-94-8	
Surrogates									
13C2-PFDoA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C2-PFTA (S)	28	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C24:2FTS (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS09 **Lab ID: 10709546009** Collected: 09/24/24 10:05 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	114	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C28:2FTS (S)	170	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		S0
13C2PFHxDA (S)	10	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		S0
13C3-PFBS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C3-PFHxS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C3HFPO-DA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C4-PFBA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C4-PFHpA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C5-PFHxA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C5-PFPeA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C6-PFDA (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C7-PFUdA (S)	104	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C8-PFOA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C8-PFOS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
13C8-PFOSA (S)	9	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		S0
13C9-PFNA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
d3-MeFOSAA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
d3-NMeFOSA (S)	1	%.	10-150		1	10/10/24 13:08	10/11/24 20:13		S0
d5-EtFOSAA (S)	116	%.	25-150		1	10/10/24 13:08	10/11/24 20:13		
d5-NEtFOSA (S)	1	%.	10-150		1	10/10/24 13:08	10/11/24 20:13		S0
d7-NMeFOSE (S)	4	%.	10-150		1	10/10/24 13:08	10/11/24 20:13		S0
d9-NEtFOSE (S)	2	%.	10-150		1	10/10/24 13:08	10/11/24 20:13		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS10 **Lab ID: 10709546010** Collected: 09/24/24 10:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**36.7**	%	0.10	0.10	1		10/15/24 11:21		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.039**	ug/kg	0.15	0.039	1	10/10/24 13:08	10/11/24 20:20	120226-60-0	
11Cl-PF3OUdS	**<0.027**	ug/kg	0.14	0.027	1	10/10/24 13:08	10/11/24 20:20	763051-92-9	
4:2 FTS	**<0.019**	ug/kg	0.14	0.019	1	10/10/24 13:08	10/11/24 20:20	757124-72-4	
6:2 FTS	**<0.031**	ug/kg	0.15	0.031	1	10/10/24 13:08	10/11/24 20:20	27619-97-2	
8:2 FTS	**<0.062**	ug/kg	0.15	0.062	1	10/10/24 13:08	10/11/24 20:20	39108-34-4	
9Cl-PF3ONS	**<0.028**	ug/kg	0.14	0.028	1	10/10/24 13:08	10/11/24 20:20	756426-58-1	
ADONA	**<0.017**	ug/kg	0.15	0.017	1	10/10/24 13:08	10/11/24 20:20	919005-14-4	
HFPO-DA	**<0.027**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 20:20	13252-13-6	
NEtFOSAA	**<0.026**	ug/kg	0.15	0.026	1	10/10/24 13:08	10/11/24 20:20	2991-50-6	
NEtFOSA	**<0.035**	ug/kg	0.15	0.035	1	10/10/24 13:08	10/11/24 20:20	4151-50-2	
NEtFOSE	**<0.032**	ug/kg	0.15	0.032	1	10/10/24 13:08	10/11/24 20:20	1691-99-2	
NMeFOSAA	**<0.065**	ug/kg	0.15	0.065	1	10/10/24 13:08	10/11/24 20:20	2355-31-9	
NMeFOSA	**<0.055**	ug/kg	0.15	0.055	1	10/10/24 13:08	10/11/24 20:20	31506-32-8	
NMeFOSE	**<0.030**	ug/kg	0.15	0.030	1	10/10/24 13:08	10/11/24 20:20	24448-09-7	
PFBS	**<0.020**	ug/kg	0.14	0.020	1	10/10/24 13:08	10/11/24 20:20	375-73-5	
PFDA	**<0.027**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 20:20	335-76-2	
PFHxA	**<0.022**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 20:20	307-24-4	
PFBA	**<0.047**	ug/kg	0.15	0.047	1	10/10/24 13:08	10/11/24 20:20	375-22-4	
PFDS	**<0.045**	ug/kg	0.15	0.045	1	10/10/24 13:08	10/11/24 20:20	335-77-3	
PFDoS	**<0.037**	ug/kg	0.15	0.037	1	10/10/24 13:08	10/11/24 20:20	79780-39-5	
PFHpS	**<0.037**	ug/kg	0.15	0.037	1	10/10/24 13:08	10/11/24 20:20	375-92-8	
PFHxDA	**<0.022**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 20:20	67905-19-5	
PFNS	**<0.042**	ug/kg	0.15	0.042	1	10/10/24 13:08	10/11/24 20:20	68259-12-1	
PFODA	**<0.057**	ug/kg	0.15	0.057	1	10/10/24 13:08	10/11/24 20:20	16517-11-6	
PFOSA	**<0.023**	ug/kg	0.15	0.023	1	10/10/24 13:08	10/11/24 20:20	754-91-6	
PFPeA	**<0.027**	ug/kg	0.15	0.027	1	10/10/24 13:08	10/11/24 20:20	2706-90-3	
PFPeS	**<0.018**	ug/kg	0.14	0.018	1	10/10/24 13:08	10/11/24 20:20	2706-91-4	
PFDoA	**<0.036**	ug/kg	0.15	0.036	1	10/10/24 13:08	10/11/24 20:20	307-55-1	
PFHpA	**<0.016**	ug/kg	0.15	0.016	1	10/10/24 13:08	10/11/24 20:20	375-85-9	
PFHxS	**<0.017**	ug/kg	0.14	0.017	1	10/10/24 13:08	10/11/24 20:20	355-46-4	
PFNA	**<0.028**	ug/kg	0.15	0.028	1	10/10/24 13:08	10/11/24 20:20	375-95-1	
PFOS	**<0.066**	ug/kg	0.14	0.066	1	10/10/24 13:08	10/11/24 20:20	1763-23-1	
PFOA	**<0.019**	ug/kg	0.15	0.019	1	10/10/24 13:08	10/11/24 20:20	335-67-1	
PFTeDA	**<0.024**	ug/kg	0.15	0.024	1	10/10/24 13:08	10/11/24 20:20	376-06-7	
PFTrDA	**<0.033**	ug/kg	0.15	0.033	1	10/10/24 13:08	10/11/24 20:20	72629-94-8	
PFUnA	**<0.052**	ug/kg	0.15	0.052	1	10/10/24 13:08	10/11/24 20:20	2058-94-8	
Surrogates									
13C2-PFDoA (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C2-PFTA (S)	65	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C24:2FTS (S)	76	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS10 **Lab ID: 10709546010** Collected: 09/24/24 10:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C28:2FTS (S)	176	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		S3
13C2PFHxDA (S)	18	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		S0
13C3-PFBS (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C3-PFHxS (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C3HFPO-DA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C4-PFBA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C4-PFHpA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C5-PFHxA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C5-PFPeA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C6-PFDA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C7-PFUdA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C8-PFOA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C8-PFOS (S)	104	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C8-PFOSA (S)	53	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
13C9-PFNA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
d3-MeFOSAA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
d3-NMeFOSA (S)	4	%.	10-150		1	10/10/24 13:08	10/11/24 20:20		S0
d5-EtFOSAA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 20:20		
d5-NEtFOSA (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 20:20		S0
d7-NMeFOSE (S)	17	%.	10-150		1	10/10/24 13:08	10/11/24 20:20		
d9-NEtFOSE (S)	15	%.	10-150		1	10/10/24 13:08	10/11/24 20:20		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS11 **Lab ID: 10709546011** Collected: 09/24/24 10:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**21.2**	%	0.10	0.10	1		10/16/24 09:31		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.099J**	ug/kg	0.12	0.031	1	10/10/24 13:08	10/11/24 20:42	120226-60-0	
11Cl-PF3OUdS	**<0.021**	ug/kg	0.11	0.021	1	10/10/24 13:08	10/11/24 20:42	763051-92-9	
4:2 FTS	**<0.015**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 20:42	757124-72-4	
6:2 FTS	**<0.025**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 20:42	27619-97-2	
8:2 FTS	**<0.049**	ug/kg	0.12	0.049	1	10/10/24 13:08	10/11/24 20:42	39108-34-4	
9Cl-PF3ONS	**<0.022**	ug/kg	0.11	0.022	1	10/10/24 13:08	10/11/24 20:42	756426-58-1	
ADONA	**<0.013**	ug/kg	0.12	0.013	1	10/10/24 13:08	10/11/24 20:42	919005-14-4	
HFPO-DA	**<0.021**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 20:42	13252-13-6	
NEtFOSAA	**<0.021**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 20:42	2991-50-6	
NEtFOSA	**<0.028**	ug/kg	0.12	0.028	1	10/10/24 13:08	10/11/24 20:42	4151-50-2	
NEtFOSE	**<0.025**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 20:42	1691-99-2	
NMeFOSAA	**<0.052**	ug/kg	0.12	0.052	1	10/10/24 13:08	10/11/24 20:42	2355-31-9	
NMeFOSA	**<0.044**	ug/kg	0.12	0.044	1	10/10/24 13:08	10/11/24 20:42	31506-32-8	
NMeFOSE	**<0.024**	ug/kg	0.12	0.024	1	10/10/24 13:08	10/11/24 20:42	24448-09-7	
PFBS	**<0.016**	ug/kg	0.11	0.016	1	10/10/24 13:08	10/11/24 20:42	375-73-5	
PFDA	**0.25**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 20:42	335-76-2	
PFHxA	**0.058J**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 20:42	307-24-4	
PFBA	**0.045J**	ug/kg	0.12	0.037	1	10/10/24 13:08	10/11/24 20:42	375-22-4	
PFDS	**<0.036**	ug/kg	0.12	0.036	1	10/10/24 13:08	10/11/24 20:42	335-77-3	
PFDoS	**<0.029**	ug/kg	0.12	0.029	1	10/10/24 13:08	10/11/24 20:42	79780-39-5	
PFHpS	**<0.029**	ug/kg	0.12	0.029	1	10/10/24 13:08	10/11/24 20:42	375-92-8	
PFHxDA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 20:42	67905-19-5	
PFNS	**<0.034**	ug/kg	0.12	0.034	1	10/10/24 13:08	10/11/24 20:42	68259-12-1	
PFODA	**<0.045**	ug/kg	0.12	0.045	1	10/10/24 13:08	10/11/24 20:42	16517-11-6	
PFOSA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 20:42	754-91-6	
PFPeA	**0.080J**	ug/kg	0.12	0.022	1	10/10/24 13:08	10/11/24 20:42	2706-90-3	
PFPeS	**0.023J**	ug/kg	0.11	0.014	1	10/10/24 13:08	10/11/24 20:42	2706-91-4	
PFDoA	**0.17**	ug/kg	0.12	0.029	1	10/10/24 13:08	10/11/24 20:42	307-55-1	
PFHpA	**0.050J**	ug/kg	0.12	0.012	1	10/10/24 13:08	10/11/24 20:42	375-85-9	
PFHxS	**0.14**	ug/kg	0.11	0.014	1	10/10/24 13:08	10/11/24 20:42	355-46-4	
PFNA	**0.11J**	ug/kg	0.12	0.022	1	10/10/24 13:08	10/11/24 20:42	375-95-1	
PFOS	**1.1**	ug/kg	0.11	0.053	1	10/10/24 13:08	10/11/24 20:42	1763-23-1	
PFOA	**0.079J**	ug/kg	0.12	0.015	1	10/10/24 13:08	10/11/24 20:42	335-67-1	
PFTeDA	**0.026J**	ug/kg	0.12	0.019	1	10/10/24 13:08	10/11/24 20:42	376-06-7	
PFTrDA	**0.89**	ug/kg	0.12	0.026	1	10/10/24 13:08	10/11/24 20:42	72629-94-8	
PFUnA	**1.3**	ug/kg	0.12	0.041	1	10/10/24 13:08	10/11/24 20:42	2058-94-8	
Surrogates									
13C2-PFDoA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C2-PFTA (S)	104	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C24:2FTS (S)	77	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS11 **Lab ID: 10709546011** Collected: 09/24/24 10:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C28:2FTS (S)	155	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		S0
13C2PFHxDA (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C3-PFBS (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C3-PFHxS (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C3HFPO-DA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C4-PFBA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C4-PFHpA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C5-PFHxA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C5-PFPeA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C6-PFDA (S)	113	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C7-PFUdA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C8-PFOA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C8-PFOS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C8-PFOSA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
13C9-PFNA (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
d3-MeFOSAA (S)	103	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
d3-NMeFOSA (S)	35	%.	10-150		1	10/10/24 13:08	10/11/24 20:42		
d5-EtFOSAA (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 20:42		
d5-NEtFOSA (S)	31	%.	10-150		1	10/10/24 13:08	10/11/24 20:42		
d7-NMeFOSE (S)	70	%.	10-150		1	10/10/24 13:08	10/11/24 20:42		
d9-NEtFOSE (S)	58	%.	10-150		1	10/10/24 13:08	10/11/24 20:42		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS12 **Lab ID: 10709546012** Collected: 09/24/24 11:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**23.5**	%	0.10	0.10	1		10/16/24 09:32		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**1.4**	ug/kg	0.12	0.032	1	10/10/24 13:08	10/11/24 20:49	120226-60-0	
11Cl-PF3OUdS	**<0.022**	ug/kg	0.12	0.022	1	10/10/24 13:08	10/11/24 20:49	763051-92-9	
4:2 FTS	**<0.016**	ug/kg	0.12	0.016	1	10/10/24 13:08	10/11/24 20:49	757124-72-4	
6:2 FTS	**0.086J**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 20:49	27619-97-2	B
8:2 FTS	**0.64**	ug/kg	0.12	0.051	1	10/10/24 13:08	10/11/24 20:49	39108-34-4	
9Cl-PF3ONS	**<0.023**	ug/kg	0.12	0.023	1	10/10/24 13:08	10/11/24 20:49	756426-58-1	
ADONA	**<0.014**	ug/kg	0.12	0.014	1	10/10/24 13:08	10/11/24 20:49	919005-14-4	
HFPO-DA	**<0.022**	ug/kg	0.13	0.022	1	10/10/24 13:08	10/11/24 20:49	13252-13-6	
NEtFOSAA	**<0.021**	ug/kg	0.13	0.021	1	10/10/24 13:08	10/11/24 20:49	2991-50-6	
NEtFOSA	**<0.029**	ug/kg	0.13	0.029	1	10/10/24 13:08	10/11/24 20:49	4151-50-2	
NEtFOSE	**<0.026**	ug/kg	0.13	0.026	1	10/10/24 13:08	10/11/24 20:49	1691-99-2	
NMeFOSAA	**<0.053**	ug/kg	0.13	0.053	1	10/10/24 13:08	10/11/24 20:49	2355-31-9	
NMeFOSA	**<0.045**	ug/kg	0.13	0.045	1	10/10/24 13:08	10/11/24 20:49	31506-32-8	
NMeFOSE	**<0.025**	ug/kg	0.13	0.025	1	10/10/24 13:08	10/11/24 20:49	24448-09-7	
PFBS	**<0.016**	ug/kg	0.11	0.016	1	10/10/24 13:08	10/11/24 20:49	375-73-5	
PFDA	**0.33**	ug/kg	0.13	0.022	1	10/10/24 13:08	10/11/24 20:49	335-76-2	
PFHxA	**0.22**	ug/kg	0.13	0.018	1	10/10/24 13:08	10/11/24 20:49	307-24-4	
PFBA	**0.10J**	ug/kg	0.13	0.038	1	10/10/24 13:08	10/11/24 20:49	375-22-4	
PFDS	**0.054J**	ug/kg	0.12	0.037	1	10/10/24 13:08	10/11/24 20:49	335-77-3	
PFDoS	**0.063J**	ug/kg	0.12	0.030	1	10/10/24 13:08	10/11/24 20:49	79780-39-5	
PFHpS	**<0.030**	ug/kg	0.12	0.030	1	10/10/24 13:08	10/11/24 20:49	375-92-8	
PFHxDA	**<0.018**	ug/kg	0.13	0.018	1	10/10/24 13:08	10/11/24 20:49	67905-19-5	
PFNS	**0.059J**	ug/kg	0.12	0.035	1	10/10/24 13:08	10/11/24 20:49	68259-12-1	
PFODA	**<0.047**	ug/kg	0.13	0.047	1	10/10/24 13:08	10/11/24 20:49	16517-11-6	
PFOSA	**0.055J**	ug/kg	0.13	0.019	1	10/10/24 13:08	10/11/24 20:49	754-91-6	
PFPeA	**0.42**	ug/kg	0.13	0.023	1	10/10/24 13:08	10/11/24 20:49	2706-90-3	
PFPeS	**<0.014**	ug/kg	0.12	0.014	1	10/10/24 13:08	10/11/24 20:49	2706-91-4	
PFDoA	**0.26**	ug/kg	0.13	0.030	1	10/10/24 13:08	10/11/24 20:49	307-55-1	
PFHpA	**0.13**	ug/kg	0.13	0.013	1	10/10/24 13:08	10/11/24 20:49	375-85-9	
PFHxS	**0.071J**	ug/kg	0.11	0.014	1	10/10/24 13:08	10/11/24 20:49	355-46-4	
PFNA	**0.14**	ug/kg	0.13	0.023	1	10/10/24 13:08	10/11/24 20:49	375-95-1	
PFOS	**2.4**	ug/kg	0.12	0.054	1	10/10/24 13:08	10/11/24 20:49	1763-23-1	
PFOA	**0.15**	ug/kg	0.13	0.015	1	10/10/24 13:08	10/11/24 20:49	335-67-1	
PFTeDA	**0.048J**	ug/kg	0.13	0.020	1	10/10/24 13:08	10/11/24 20:49	376-06-7	
PFTrDA	**0.97**	ug/kg	0.13	0.027	1	10/10/24 13:08	10/11/24 20:49	72629-94-8	
PFUnA	**0.86**	ug/kg	0.13	0.042	1	10/10/24 13:08	10/11/24 20:49	2058-94-8	
Surrogates									
13C2-PFDoA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C2-PFTA (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C24:2FTS (S)	82	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS12 **Lab ID: 10709546012** Collected: 09/24/24 11:00 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C28:2FTS (S)	164	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		S0
13C2PFHxDA (S)	44	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C3-PFBS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C3-PFHxS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C3HFPO-DA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C4-PFBA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C4-PFHpA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C5-PFHxA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C5-PFPeA (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C6-PFDA (S)	114	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C7-PFUdA (S)	108	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C8-PFOA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C8-PFOS (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C8-PFOSA (S)	72	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
13C9-PFNA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
d3-MeFOSAA (S)	103	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
d3-NMeFOSA (S)	16	%.	10-150		1	10/10/24 13:08	10/11/24 20:49		
d5-EtFOSAA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 20:49		
d5-NEtFOSA (S)	14	%.	10-150		1	10/10/24 13:08	10/11/24 20:49		
d7-NMeFOSE (S)	49	%.	10-150		1	10/10/24 13:08	10/11/24 20:49		
d9-NEtFOSE (S)	35	%.	10-150		1	10/10/24 13:08	10/11/24 20:49		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS13 **Lab ID: 10709546013** Collected: 09/24/24 11:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**39.7**	%	0.10	0.10	1		10/16/24 09:34		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**13.8**	ug/kg	0.79	0.21	5	10/10/24 13:08	10/16/24 00:48	120226-60-0	
11Cl-PF3OUdS	**<0.028**	ug/kg	0.15	0.028	1	10/10/24 13:08	10/11/24 20:56	763051-92-9	
4:2 FTS	**<0.020**	ug/kg	0.15	0.020	1	10/10/24 13:08	10/11/24 20:56	757124-72-4	
6:2 FTS	**4.1**	ug/kg	0.16	0.033	1	10/10/24 13:08	10/11/24 20:56	27619-97-2	
8:2 FTS	**6.3**	ug/kg	0.16	0.066	1	10/10/24 13:08	10/11/24 20:56	39108-34-4	
9Cl-PF3ONS	**<0.030**	ug/kg	0.15	0.030	1	10/10/24 13:08	10/11/24 20:56	756426-58-1	
ADONA	**<0.018**	ug/kg	0.16	0.018	1	10/10/24 13:08	10/11/24 20:56	919005-14-4	
HFPO-DA	**<0.029**	ug/kg	0.16	0.029	1	10/10/24 13:08	10/11/24 20:56	13252-13-6	
NEtFOSAA	**<0.028**	ug/kg	0.16	0.028	1	10/10/24 13:08	10/11/24 20:56	2991-50-6	
NEtFOSA	**<0.037**	ug/kg	0.16	0.037	1	10/10/24 13:08	10/11/24 20:56	4151-50-2	
NEtFOSE	**<0.034**	ug/kg	0.16	0.034	1	10/10/24 13:08	10/11/24 20:56	1691-99-2	
NMeFOSAA	**<0.069**	ug/kg	0.16	0.069	1	10/10/24 13:08	10/11/24 20:56	2355-31-9	
NMeFOSA	**<0.059**	ug/kg	0.16	0.059	1	10/10/24 13:08	10/11/24 20:56	31506-32-8	
NMeFOSE	**<0.032**	ug/kg	0.16	0.032	1	10/10/24 13:08	10/11/24 20:56	24448-09-7	
PFBS	**0.048J**	ug/kg	0.15	0.021	1	10/10/24 13:08	10/11/24 20:56	375-73-5	
PFDA	**0.51**	ug/kg	0.16	0.028	1	10/10/24 13:08	10/11/24 20:56	335-76-2	
PFHxA	**1.2**	ug/kg	0.16	0.024	1	10/10/24 13:08	10/11/24 20:56	307-24-4	
PFBA	**0.34**	ug/kg	0.16	0.050	1	10/10/24 13:08	10/11/24 20:56	375-22-4	
PFDS	**0.90**	ug/kg	0.16	0.048	1	10/10/24 13:08	10/11/24 20:56	335-77-3	
PFDoS	**1.3**	ug/kg	0.16	0.039	1	10/10/24 13:08	10/11/24 20:56	79780-39-5	
PFHpS	**0.062J**	ug/kg	0.16	0.039	1	10/10/24 13:08	10/11/24 20:56	375-92-8	
PFHxDA	**<0.024**	ug/kg	0.16	0.024	1	10/10/24 13:08	10/11/24 20:56	67905-19-5	
PFNS	**0.48**	ug/kg	0.16	0.045	1	10/10/24 13:08	10/11/24 20:56	68259-12-1	
PFODA	**<0.061**	ug/kg	0.16	0.061	1	10/10/24 13:08	10/11/24 20:56	16517-11-6	
PFOSA	**0.74**	ug/kg	0.16	0.024	1	10/10/24 13:08	10/11/24 20:56	754-91-6	
PFPeA	**2.8**	ug/kg	0.16	0.029	1	10/10/24 13:08	10/11/24 20:56	2706-90-3	
PFPeS	**0.080J**	ug/kg	0.15	0.019	1	10/10/24 13:08	10/11/24 20:56	2706-91-4	
PFDoA	**2.5**	ug/kg	0.16	0.038	1	10/10/24 13:08	10/11/24 20:56	307-55-1	
PFHpA	**0.45**	ug/kg	0.16	0.017	1	10/10/24 13:08	10/11/24 20:56	375-85-9	
PFHxS	**1.0**	ug/kg	0.15	0.018	1	10/10/24 13:08	10/11/24 20:56	355-46-4	
PFNA	**0.24**	ug/kg	0.16	0.030	1	10/10/24 13:08	10/11/24 20:56	375-95-1	
PFOS	**17.3**	ug/kg	0.76	0.35	5	10/10/24 13:08	10/16/24 00:48	1763-23-1	
PFOA	**0.41**	ug/kg	0.16	0.020	1	10/10/24 13:08	10/11/24 20:56	335-67-1	
PFTeDA	**0.80**	ug/kg	0.16	0.025	1	10/10/24 13:08	10/11/24 20:56	376-06-7	
PFTrDA	**14.8**	ug/kg	0.16	0.035	1	10/10/24 13:08	10/11/24 20:56	72629-94-8	
PFUnA	**1.6**	ug/kg	0.16	0.055	1	10/10/24 13:08	10/11/24 20:56	2058-94-8	
Surrogates									
13C2-PFDoA (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C2-PFTA (S)	28	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C24:2FTS (S)	70	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS13 **Lab ID: 10709546013** Collected: 09/24/24 11:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	76	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C28:2FTS (S)	121	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C2PFHxDA (S)	8	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		S0
13C3-PFBS (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C3-PFHxS (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C3HFPO-DA (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C4-PFBA (S)	69	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C4-PFHpA (S)	82	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C5-PFHxA (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C5-PFPeA (S)	71	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C6-PFDA (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C7-PFUdA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C8-PFOA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C8-PFOS (S)	88	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C8-PFOSA (S)	38	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
13C9-PFNA (S)	84	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
d3-MeFOSAA (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
d3-NMeFOSA (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 20:56		S0
d5-EtFOSAA (S)	96	%.	25-150		1	10/10/24 13:08	10/11/24 20:56		
d5-NEtFOSA (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 20:56		S0
d7-NMeFOSE (S)	19	%.	10-150		1	10/10/24 13:08	10/11/24 20:56		
d9-NEtFOSE (S)	11	%.	10-150		1	10/10/24 13:08	10/11/24 20:56		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS14 **Lab ID: 10709546014** Collected: 09/24/24 11:20 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**42.4**	%	0.10	0.10	1		10/16/24 09:36		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.043**	ug/kg	0.17	0.043	1	10/10/24 13:08	10/11/24 21:03	120226-60-0	
11Cl-PF3OUdS	**<0.029**	ug/kg	0.16	0.029	1	10/10/24 13:08	10/11/24 21:03	763051-92-9	
4:2 FTS	**<0.021**	ug/kg	0.16	0.021	1	10/10/24 13:08	10/11/24 21:03	757124-72-4	
6:2 FTS	**<0.034**	ug/kg	0.16	0.034	1	10/10/24 13:08	10/11/24 21:03	27619-97-2	
8:2 FTS	**<0.069**	ug/kg	0.17	0.069	1	10/10/24 13:08	10/11/24 21:03	39108-34-4	
9Cl-PF3ONS	**<0.031**	ug/kg	0.16	0.031	1	10/10/24 13:08	10/11/24 21:03	756426-58-1	
ADONA	**<0.019**	ug/kg	0.16	0.019	1	10/10/24 13:08	10/11/24 21:03	919005-14-4	
HFPO-DA	**<0.030**	ug/kg	0.17	0.030	1	10/10/24 13:08	10/11/24 21:03	13252-13-6	
NEtFOSAA	**<0.029**	ug/kg	0.17	0.029	1	10/10/24 13:08	10/11/24 21:03	2991-50-6	
NEtFOSA	**<0.039**	ug/kg	0.17	0.039	1	10/10/24 13:08	10/11/24 21:03	4151-50-2	
NEtFOSE	**<0.035**	ug/kg	0.17	0.035	1	10/10/24 13:08	10/11/24 21:03	1691-99-2	
NMeFOSAA	**<0.072**	ug/kg	0.17	0.072	1	10/10/24 13:08	10/11/24 21:03	2355-31-9	
NMeFOSA	**<0.061**	ug/kg	0.17	0.061	1	10/10/24 13:08	10/11/24 21:03	31506-32-8	
NMeFOSE	**<0.034**	ug/kg	0.17	0.034	1	10/10/24 13:08	10/11/24 21:03	24448-09-7	
PFBS	**<0.022**	ug/kg	0.15	0.022	1	10/10/24 13:08	10/11/24 21:03	375-73-5	
PFDA	**0.053J**	ug/kg	0.17	0.029	1	10/10/24 13:08	10/11/24 21:03	335-76-2	
PFHxA	**0.033J**	ug/kg	0.17	0.024	1	10/10/24 13:08	10/11/24 21:03	307-24-4	
PFBA	**0.063J**	ug/kg	0.17	0.052	1	10/10/24 13:08	10/11/24 21:03	375-22-4	
PFDS	**<0.050**	ug/kg	0.17	0.050	1	10/10/24 13:08	10/11/24 21:03	335-77-3	
PFDoS	**<0.040**	ug/kg	0.17	0.040	1	10/10/24 13:08	10/11/24 21:03	79780-39-5	
PFHpS	**<0.041**	ug/kg	0.16	0.041	1	10/10/24 13:08	10/11/24 21:03	375-92-8	
PFHxDA	**<0.025**	ug/kg	0.17	0.025	1	10/10/24 13:08	10/11/24 21:03	67905-19-5	
PFNS	**<0.047**	ug/kg	0.16	0.047	1	10/10/24 13:08	10/11/24 21:03	68259-12-1	
PFODA	**<0.063**	ug/kg	0.17	0.063	1	10/10/24 13:08	10/11/24 21:03	16517-11-6	
PFOSA	**<0.025**	ug/kg	0.17	0.025	1	10/10/24 13:08	10/11/24 21:03	754-91-6	
PFPeA	**0.036J**	ug/kg	0.17	0.030	1	10/10/24 13:08	10/11/24 21:03	2706-90-3	
PFPeS	**<0.019**	ug/kg	0.16	0.019	1	10/10/24 13:08	10/11/24 21:03	2706-91-4	
PFDoA	**0.22**	ug/kg	0.17	0.040	1	10/10/24 13:08	10/11/24 21:03	307-55-1	
PFHpA	**0.029J**	ug/kg	0.17	0.017	1	10/10/24 13:08	10/11/24 21:03	375-85-9	
PFHxS	**0.071J**	ug/kg	0.15	0.019	1	10/10/24 13:08	10/11/24 21:03	355-46-4	
PFNA	**0.064J**	ug/kg	0.17	0.031	1	10/10/24 13:08	10/11/24 21:03	375-95-1	
PFOS	**0.60**	ug/kg	0.16	0.074	1	10/10/24 13:08	10/11/24 21:03	1763-23-1	
PFOA	**0.082J**	ug/kg	0.17	0.021	1	10/10/24 13:08	10/11/24 21:03	335-67-1	
PFTeDA	**0.075J**	ug/kg	0.17	0.027	1	10/10/24 13:08	10/11/24 21:03	376-06-7	
PFTrDA	**5.5**	ug/kg	0.17	0.036	1	10/10/24 13:08	10/11/24 21:03	72629-94-8	
PFUnA	**1.3**	ug/kg	0.17	0.057	1	10/10/24 13:08	10/11/24 21:03	2058-94-8	
Surrogates									
13C2-PFDoA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C2-PFTA (S)	63	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C24:2FTS (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS14 **Lab ID: 10709546014** Collected: 09/24/24 11:20 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	123	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C28:2FTS (S)	158	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		S0
13C2PFHxDA (S)	21	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		S0
13C3-PFBS (S)	87	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C3-PFHxS (S)	91	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C3HFPO-DA (S)	74	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C4-PFBA (S)	72	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C4-PFHpA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C5-PFHxA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C5-PFPeA (S)	72	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C6-PFDA (S)	97	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C7-PFUdA (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C8-PFOA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C8-PFOS (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
13C8-PFOSA (S)	22	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		S0
13C9-PFNA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
d3-MeFOSAA (S)	110	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
d3-NMeFOSA (S)	1	%.	10-150		1	10/10/24 13:08	10/11/24 21:03		S0
d5-EtFOSAA (S)	125	%.	25-150		1	10/10/24 13:08	10/11/24 21:03		
d5-NEtFOSA (S)	1	%.	10-150		1	10/10/24 13:08	10/11/24 21:03		S0
d7-NMeFOSE (S)	4	%.	10-150		1	10/10/24 13:08	10/11/24 21:03		S0
d9-NEtFOSE (S)	3	%.	10-150		1	10/10/24 13:08	10/11/24 21:03		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS15 **Lab ID: 10709546015** Collected: 09/24/24 11:30 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**15.7**	%	0.10	0.10	1		10/16/24 09:39		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.030**	ug/kg	0.11	0.030	1	10/10/24 13:08	10/11/24 21:10	120226-60-0	
11Cl-PF3OUdS	**<0.020**	ug/kg	0.11	0.020	1	10/10/24 13:08	10/11/24 21:10	763051-92-9	
4:2 FTS	**<0.015**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 21:10	757124-72-4	
6:2 FTS	**<0.024**	ug/kg	0.11	0.024	1	10/10/24 13:08	10/11/24 21:10	27619-97-2	
8:2 FTS	**<0.047**	ug/kg	0.11	0.047	1	10/10/24 13:08	10/11/24 21:10	39108-34-4	
9Cl-PF3ONS	**<0.021**	ug/kg	0.11	0.021	1	10/10/24 13:08	10/11/24 21:10	756426-58-1	
ADONA	**<0.013**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 21:10	919005-14-4	
HFPO-DA	**<0.021**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:10	13252-13-6	
NEtFOSAA	**<0.020**	ug/kg	0.12	0.020	1	10/10/24 13:08	10/11/24 21:10	2991-50-6	
NEtFOSA	**<0.027**	ug/kg	0.12	0.027	1	10/10/24 13:08	10/11/24 21:10	4151-50-2	
NEtFOSE	**<0.024**	ug/kg	0.12	0.024	1	10/10/24 13:08	10/11/24 21:10	1691-99-2	
NMeFOSAA	**<0.050**	ug/kg	0.12	0.050	1	10/10/24 13:08	10/11/24 21:10	2355-31-9	
NMeFOSA	**<0.042**	ug/kg	0.12	0.042	1	10/10/24 13:08	10/11/24 21:10	31506-32-8	
NMeFOSE	**<0.023**	ug/kg	0.12	0.023	1	10/10/24 13:08	10/11/24 21:10	24448-09-7	
PFBS	**<0.015**	ug/kg	0.10	0.015	1	10/10/24 13:08	10/11/24 21:10	375-73-5	
PFDA	**0.087J**	ug/kg	0.12	0.020	1	10/10/24 13:08	10/11/24 21:10	335-76-2	
PFHxA	**0.16**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 21:10	307-24-4	
PFBA	**0.19**	ug/kg	0.12	0.036	1	10/10/24 13:08	10/11/24 21:10	375-22-4	
PFDS	**<0.034**	ug/kg	0.11	0.034	1	10/10/24 13:08	10/11/24 21:10	335-77-3	
PFDoS	**<0.028**	ug/kg	0.11	0.028	1	10/10/24 13:08	10/11/24 21:10	79780-39-5	
PFHpS	**<0.028**	ug/kg	0.11	0.028	1	10/10/24 13:08	10/11/24 21:10	375-92-8	
PFHxDA	**<0.017**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 21:10	67905-19-5	
PFNS	**<0.033**	ug/kg	0.11	0.033	1	10/10/24 13:08	10/11/24 21:10	68259-12-1	
PFODA	**<0.044**	ug/kg	0.12	0.044	1	10/10/24 13:08	10/11/24 21:10	16517-11-6	
PFOSA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 21:10	754-91-6	
PFPeA	**0.19**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:10	2706-90-3	
PFPeS	**<0.013**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 21:10	2706-91-4	
PFDoA	**<0.028**	ug/kg	0.12	0.028	1	10/10/24 13:08	10/11/24 21:10	307-55-1	
PFHpA	**0.15**	ug/kg	0.12	0.012	1	10/10/24 13:08	10/11/24 21:10	375-85-9	
PFHxS	**0.12**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 21:10	355-46-4	
PFNA	**0.14**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:10	375-95-1	
PFOS	**3.0**	ug/kg	0.11	0.051	1	10/10/24 13:08	10/11/24 21:10	1763-23-1	
PFOA	**0.16**	ug/kg	0.12	0.014	1	10/10/24 13:08	10/11/24 21:10	335-67-1	
PFTeDA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 21:10	376-06-7	
PFTrDA	**0.15**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 21:10	72629-94-8	
PFUnA	**0.34**	ug/kg	0.12	0.040	1	10/10/24 13:08	10/11/24 21:10	2058-94-8	
Surrogates									
13C2-PFDoA (S)	109	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C2-PFTA (S)	108	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C24:2FTS (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS15 **Lab ID: 10709546015** Collected: 09/24/24 11:30 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C28:2FTS (S)	174	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		S0
13C2PFHxDA (S)	89	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C3-PFBS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C3-PFHxS (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C3HFPO-DA (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C4-PFBA (S)	86	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C4-PFHpA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C5-PFHxA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C5-PFPeA (S)	81	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C6-PFDA (S)	115	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C7-PFUdA (S)	114	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C8-PFOA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C8-PFOS (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C8-PFOSA (S)	90	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
13C9-PFNA (S)	101	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
d3-MeFOSAA (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
d3-NMeFOSA (S)	48	%.	10-150		1	10/10/24 13:08	10/11/24 21:10		
d5-EtFOSAA (S)	102	%.	25-150		1	10/10/24 13:08	10/11/24 21:10		
d5-NEtFOSA (S)	40	%.	10-150		1	10/10/24 13:08	10/11/24 21:10		
d7-NMeFOSE (S)	73	%.	10-150		1	10/10/24 13:08	10/11/24 21:10		
d9-NEtFOSE (S)	55	%.	10-150		1	10/10/24 13:08	10/11/24 21:10		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS16 **Lab ID: 10709546016** Collected: 09/24/24 11:45 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**19.7**	%	0.10	0.10	1		10/16/24 09:44		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.030**	ug/kg	0.12	0.030	1	10/10/24 13:08	10/11/24 21:18	120226-60-0	
11Cl-PF3OUdS	**<0.021**	ug/kg	0.11	0.021	1	10/10/24 13:08	10/11/24 21:18	763051-92-9	
4:2 FTS	**<0.015**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 21:18	757124-72-4	
6:2 FTS	**<0.024**	ug/kg	0.11	0.024	1	10/10/24 13:08	10/11/24 21:18	27619-97-2	
8:2 FTS	**<0.048**	ug/kg	0.12	0.048	1	10/10/24 13:08	10/11/24 21:18	39108-34-4	
9Cl-PF3ONS	**<0.022**	ug/kg	0.11	0.022	1	10/10/24 13:08	10/11/24 21:18	756426-58-1	
ADONA	**<0.013**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 21:18	919005-14-4	
HFPO-DA	**<0.021**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:18	13252-13-6	
NEtFOSAA	**<0.020**	ug/kg	0.12	0.020	1	10/10/24 13:08	10/11/24 21:18	2991-50-6	
NEtFOSA	**<0.027**	ug/kg	0.12	0.027	1	10/10/24 13:08	10/11/24 21:18	4151-50-2	
NEtFOSE	**<0.025**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 21:18	1691-99-2	
NMeFOSAA	**<0.050**	ug/kg	0.12	0.050	1	10/10/24 13:08	10/11/24 21:18	2355-31-9	
NMeFOSA	**<0.043**	ug/kg	0.12	0.043	1	10/10/24 13:08	10/11/24 21:18	31506-32-8	
NMeFOSE	**<0.023**	ug/kg	0.12	0.023	1	10/10/24 13:08	10/11/24 21:18	24448-09-7	
PFBS	**<0.015**	ug/kg	0.11	0.015	1	10/10/24 13:08	10/11/24 21:18	375-73-5	
PFDA	**0.14**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:18	335-76-2	
PFHxA	**0.17**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 21:18	307-24-4	
PFBA	**0.33**	ug/kg	0.12	0.036	1	10/10/24 13:08	10/11/24 21:18	375-22-4	
PFDS	**<0.035**	ug/kg	0.12	0.035	1	10/10/24 13:08	10/11/24 21:18	335-77-3	
PFDoS	**<0.028**	ug/kg	0.12	0.028	1	10/10/24 13:08	10/11/24 21:18	79780-39-5	
PFHpS	**<0.028**	ug/kg	0.11	0.028	1	10/10/24 13:08	10/11/24 21:18	375-92-8	
PFHxDA	**<0.017**	ug/kg	0.12	0.017	1	10/10/24 13:08	10/11/24 21:18	67905-19-5	
PFNS	**<0.033**	ug/kg	0.11	0.033	1	10/10/24 13:08	10/11/24 21:18	68259-12-1	
PFODA	**<0.044**	ug/kg	0.12	0.044	1	10/10/24 13:08	10/11/24 21:18	16517-11-6	
PFOSA	**<0.018**	ug/kg	0.12	0.018	1	10/10/24 13:08	10/11/24 21:18	754-91-6	
PFPeA	**0.15**	ug/kg	0.12	0.021	1	10/10/24 13:08	10/11/24 21:18	2706-90-3	
PFPeS	**<0.014**	ug/kg	0.11	0.014	1	10/10/24 13:08	10/11/24 21:18	2706-91-4	
PFDoA	**0.079J**	ug/kg	0.12	0.028	1	10/10/24 13:08	10/11/24 21:18	307-55-1	
PFHpA	**0.22**	ug/kg	0.12	0.012	1	10/10/24 13:08	10/11/24 21:18	375-85-9	
PFHxS	**0.037J**	ug/kg	0.11	0.013	1	10/10/24 13:08	10/11/24 21:18	355-46-4	
PFNA	**0.23**	ug/kg	0.12	0.022	1	10/10/24 13:08	10/11/24 21:18	375-95-1	
PFOS	**0.28**	ug/kg	0.11	0.051	1	10/10/24 13:08	10/11/24 21:18	1763-23-1	
PFOA	**0.27**	ug/kg	0.12	0.014	1	10/10/24 13:08	10/11/24 21:18	335-67-1	
PFTeDA	**0.023J**	ug/kg	0.12	0.019	1	10/10/24 13:08	10/11/24 21:18	376-06-7	
PFTrDA	**1.1**	ug/kg	0.12	0.025	1	10/10/24 13:08	10/11/24 21:18	72629-94-8	
PFUnA	**1.6**	ug/kg	0.12	0.040	1	10/10/24 13:08	10/11/24 21:18	2058-94-8	
Surrogates									
13C2-PFDoA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C2-PFTA (S)	100	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C24:2FTS (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS16 **Lab ID: 10709546016** Collected: 09/24/24 11:45 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	111	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C28:2FTS (S)	176	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		S0
13C2PFHxDA (S)	82	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C3-PFBS (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C3-PFHxS (S)	99	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C3HFPO-DA (S)	85	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C4-PFBA (S)	83	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C4-PFHpA (S)	92	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C5-PFHxA (S)	93	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C5-PFPeA (S)	78	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C6-PFDA (S)	105	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C7-PFUdA (S)	107	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C8-PFOA (S)	94	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C8-PFOS (S)	98	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C8-PFOSA (S)	80	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
13C9-PFNA (S)	95	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
d3-MeFOSAA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
d3-NMeFOSA (S)	29	%.	10-150		1	10/10/24 13:08	10/11/24 21:18		
d5-EtFOSAA (S)	106	%.	25-150		1	10/10/24 13:08	10/11/24 21:18		
d5-NEtFOSA (S)	25	%.	10-150		1	10/10/24 13:08	10/11/24 21:18		
d7-NMeFOSE (S)	55	%.	10-150		1	10/10/24 13:08	10/11/24 21:18		
d9-NEtFOSE (S)	39	%.	10-150		1	10/10/24 13:08	10/11/24 21:18		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS17 **Lab ID: 10709546017** Collected: 09/24/24 11:55 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**30.6**	%	0.10	0.10	1		10/16/24 09:46		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.34**	ug/kg	0.14	0.036	1	10/21/24 13:32	10/23/24 00:40	120226-60-0	L2
11Cl-PF3OUdS	**<0.025**	ug/kg	0.13	0.025	1	10/21/24 13:32	10/23/24 00:40	763051-92-9	
4:2 FTS	**<0.018**	ug/kg	0.13	0.018	1	10/21/24 13:32	10/23/24 00:40	757124-72-4	
6:2 FTS	**0.090J**	ug/kg	0.14	0.029	1	10/21/24 13:32	10/23/24 00:40	27619-97-2	
8:2 FTS	**0.26**	ug/kg	0.14	0.058	1	10/21/24 13:32	10/23/24 00:40	39108-34-4	
9Cl-PF3ONS	**<0.026**	ug/kg	0.13	0.026	1	10/21/24 13:32	10/23/24 00:40	756426-58-1	
ADONA	**<0.016**	ug/kg	0.14	0.016	1	10/21/24 13:32	10/23/24 00:40	919005-14-4	
HFPO-DA	**<0.025**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:40	13252-13-6	
NEtFOSAA	**<0.025**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:40	2991-50-6	
NEtFOSA	**<0.033**	ug/kg	0.14	0.033	1	10/21/24 13:32	10/23/24 00:40	4151-50-2	
NEtFOSE	**<0.030**	ug/kg	0.14	0.030	1	10/21/24 13:32	10/23/24 00:40	1691-99-2	
NMeFOSAA	**<0.060**	ug/kg	0.14	0.060	1	10/21/24 13:32	10/23/24 00:40	2355-31-9	
NMeFOSA	**<0.052**	ug/kg	0.14	0.052	1	10/21/24 13:32	10/23/24 00:40	31506-32-8	
NMeFOSE	**<0.028**	ug/kg	0.14	0.028	1	10/21/24 13:32	10/23/24 00:40	24448-09-7	
PFBS	**<0.018**	ug/kg	0.13	0.018	1	10/21/24 13:32	10/23/24 00:40	375-73-5	
PFDA	**0.39**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:40	335-76-2	
PFHxA	**0.45**	ug/kg	0.14	0.021	1	10/21/24 13:32	10/23/24 00:40	307-24-4	
PFBA	**0.16**	ug/kg	0.14	0.044	1	10/21/24 13:32	10/23/24 00:40	375-22-4	
PFDS	**<0.042**	ug/kg	0.14	0.042	1	10/21/24 13:32	10/23/24 00:40	335-77-3	
PFDoS	**<0.034**	ug/kg	0.14	0.034	1	10/21/24 13:32	10/23/24 00:40	79780-39-5	
PFHpS	**<0.034**	ug/kg	0.14	0.034	1	10/21/24 13:32	10/23/24 00:40	375-92-8	
PFHxDA	**<0.021**	ug/kg	0.14	0.021	1	10/21/24 13:32	10/23/24 00:40	67905-19-5	
PFNS	**<0.040**	ug/kg	0.14	0.040	1	10/21/24 13:32	10/23/24 00:40	68259-12-1	
PFODA	**<0.053**	ug/kg	0.14	0.053	1	10/21/24 13:32	10/23/24 00:40	16517-11-6	
PFOSA	**<0.021**	ug/kg	0.14	0.021	1	10/21/24 13:32	10/23/24 00:40	754-91-6	
PFPeA	**1.3**	ug/kg	0.14	0.026	1	10/21/24 13:32	10/23/24 00:40	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/21/24 13:32	10/23/24 00:40	2706-91-4	
PFDoA	**0.28**	ug/kg	0.14	0.034	1	10/21/24 13:32	10/23/24 00:40	307-55-1	
PFHpA	**0.15**	ug/kg	0.14	0.015	1	10/21/24 13:32	10/23/24 00:40	375-85-9	
PFHxS	**0.066J**	ug/kg	0.13	0.016	1	10/21/24 13:32	10/23/24 00:40	355-46-4	
PFNA	**0.11J**	ug/kg	0.14	0.026	1	10/21/24 13:32	10/23/24 00:40	375-95-1	
PFOS	**1.7**	ug/kg	0.13	0.062	1	10/21/24 13:32	10/23/24 00:40	1763-23-1	
PFOA	**0.14J**	ug/kg	0.14	0.017	1	10/21/24 13:32	10/23/24 00:40	335-67-1	
PFTeDA	**<0.022**	ug/kg	0.14	0.022	1	10/21/24 13:32	10/23/24 00:40	376-06-7	
PFTrDA	**1.2**	ug/kg	0.14	0.031	1	10/21/24 13:32	10/23/24 00:40	72629-94-8	
PFUnA	**1.9**	ug/kg	0.14	0.048	1	10/21/24 13:32	10/23/24 00:40	2058-94-8	
Surrogates									
13C2-PFDoA (S)	92	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C2-PFTA (S)	84	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C24:2FTS (S)	67	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS17 **Lab ID: 10709546017** Collected: 09/24/24 11:55 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	83	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C28:2FTS (S)	145	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C2PFHxDA (S)	55	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C3-PFBS (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C3-PFHxS (S)	79	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C3HFPO-DA (S)	69	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C4-PFBA (S)	67	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C4-PFHpA (S)	77	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C5-PFHxA (S)	75	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C5-PFPeA (S)	68	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C6-PFDA (S)	90	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C7-PFUdA (S)	93	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C8-PFOA (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C8-PFOS (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C8-PFOSA (S)	50	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
13C9-PFNA (S)	85	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
d3-MeFOSAA (S)	94	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
d3-NMeFOSA (S)	5	%.	10-150		1	10/21/24 13:32	10/23/24 00:40		S0
d5-EtFOSAA (S)	101	%.	25-150		1	10/21/24 13:32	10/23/24 00:40		
d5-NEtFOSA (S)	5	%.	10-150		1	10/21/24 13:32	10/23/24 00:40		S0
d7-NMeFOSE (S)	19	%.	10-150		1	10/21/24 13:32	10/23/24 00:40		
d9-NEtFOSE (S)	13	%.	10-150		1	10/21/24 13:32	10/23/24 00:40		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS18 **Lab ID: 10709546018** Collected: 09/24/24 12:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**35.5**	%	0.10	0.10	1		10/16/24 09:47		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**4.7**	ug/kg	0.15	0.039	1	10/21/24 13:32	10/23/24 00:47	120226-60-0	L2
11Cl-PF3OUdS	**<0.027**	ug/kg	0.15	0.027	1	10/21/24 13:32	10/23/24 00:47	763051-92-9	
4:2 FTS	**<0.019**	ug/kg	0.15	0.019	1	10/21/24 13:32	10/23/24 00:47	757124-72-4	
6:2 FTS	**2.4**	ug/kg	0.15	0.031	1	10/21/24 13:32	10/23/24 00:47	27619-97-2	
8:2 FTS	**3.8**	ug/kg	0.15	0.063	1	10/21/24 13:32	10/23/24 00:47	39108-34-4	
9Cl-PF3ONS	**<0.028**	ug/kg	0.14	0.028	1	10/21/24 13:32	10/23/24 00:47	756426-58-1	
ADONA	**<0.017**	ug/kg	0.15	0.017	1	10/21/24 13:32	10/23/24 00:47	919005-14-4	
HFPO-DA	**<0.027**	ug/kg	0.16	0.027	1	10/21/24 13:32	10/23/24 00:47	13252-13-6	
NEtFOSAA	**<0.027**	ug/kg	0.16	0.027	1	10/21/24 13:32	10/23/24 00:47	2991-50-6	
NEtFOSA	**<0.036**	ug/kg	0.16	0.036	1	10/21/24 13:32	10/23/24 00:47	4151-50-2	
NEtFOSE	**<0.032**	ug/kg	0.16	0.032	1	10/21/24 13:32	10/23/24 00:47	1691-99-2	
NMeFOSAA	**<0.065**	ug/kg	0.16	0.065	1	10/21/24 13:32	10/23/24 00:47	2355-31-9	
NMeFOSA	**<0.056**	ug/kg	0.16	0.056	1	10/21/24 13:32	10/23/24 00:47	31506-32-8	
NMeFOSE	**<0.031**	ug/kg	0.16	0.031	1	10/21/24 13:32	10/23/24 00:47	24448-09-7	
PFBS	**<0.020**	ug/kg	0.14	0.020	1	10/21/24 13:32	10/23/24 00:47	375-73-5	
PFDA	**1.0**	ug/kg	0.16	0.027	1	10/21/24 13:32	10/23/24 00:47	335-76-2	
PFHxA	**0.47**	ug/kg	0.16	0.022	1	10/21/24 13:32	10/23/24 00:47	307-24-4	
PFBA	**0.12J**	ug/kg	0.16	0.047	1	10/21/24 13:32	10/23/24 00:47	375-22-4	
PFDS	**<0.045**	ug/kg	0.15	0.045	1	10/21/24 13:32	10/23/24 00:47	335-77-3	
PFDoS	**<0.037**	ug/kg	0.15	0.037	1	10/21/24 13:32	10/23/24 00:47	79780-39-5	
PFHpS	**<0.037**	ug/kg	0.15	0.037	1	10/21/24 13:32	10/23/24 00:47	375-92-8	
PFHxDA	**<0.022**	ug/kg	0.16	0.022	1	10/21/24 13:32	10/23/24 00:47	67905-19-5	
PFNS	**0.080J**	ug/kg	0.15	0.043	1	10/21/24 13:32	10/23/24 00:47	68259-12-1	
PFODA	**<0.058**	ug/kg	0.16	0.058	1	10/21/24 13:32	10/23/24 00:47	16517-11-6	
PFOSA	**0.080J**	ug/kg	0.16	0.023	1	10/21/24 13:32	10/23/24 00:47	754-91-6	
PFPeA	**0.81**	ug/kg	0.16	0.028	1	10/21/24 13:32	10/23/24 00:47	2706-90-3	
PFPeS	**<0.018**	ug/kg	0.15	0.018	1	10/21/24 13:32	10/23/24 00:47	2706-91-4	
PFDoA	**1.4**	ug/kg	0.16	0.036	1	10/21/24 13:32	10/23/24 00:47	307-55-1	
PFHpA	**0.20**	ug/kg	0.16	0.016	1	10/21/24 13:32	10/23/24 00:47	375-85-9	
PFHxS	**0.082J**	ug/kg	0.14	0.017	1	10/21/24 13:32	10/23/24 00:47	355-46-4	
PFNA	**0.17**	ug/kg	0.16	0.028	1	10/21/24 13:32	10/23/24 00:47	375-95-1	
PFOS	**3.7**	ug/kg	0.14	0.067	1	10/21/24 13:32	10/23/24 00:47	1763-23-1	
PFOA	**0.22**	ug/kg	0.16	0.019	1	10/21/24 13:32	10/23/24 00:47	335-67-1	
PFTeDA	**0.22**	ug/kg	0.16	0.024	1	10/21/24 13:32	10/23/24 00:47	376-06-7	
PFTrDA	**4.3**	ug/kg	0.16	0.033	1	10/21/24 13:32	10/23/24 00:47	72629-94-8	
PFUnA	**3.1**	ug/kg	0.16	0.052	1	10/21/24 13:32	10/23/24 00:47	2058-94-8	
Surrogates									
13C2-PFDoA (S)	95	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C2-PFTA (S)	81	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C24:2FTS (S)	67	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS18 **Lab ID: 10709546018** Collected: 09/24/24 12:15 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	106	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C28:2FTS (S)	133	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C2PFHxDA (S)	22	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		S0
13C3-PFBS (S)	82	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C3-PFHxS (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C3HFPO-DA (S)	72	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C4-PFBA (S)	69	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C4-PFHpA (S)	81	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C5-PFHxA (S)	77	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C5-PFPeA (S)	72	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C6-PFDA (S)	97	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C7-PFUdA (S)	93	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C8-PFOA (S)	84	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C8-PFOS (S)	85	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C8-PFOSA (S)	62	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
13C9-PFNA (S)	88	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
d3-MeFOSAA (S)	95	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
d3-NMeFOSA (S)	5	%.	10-150		1	10/21/24 13:32	10/23/24 00:47		S0
d5-EtFOSAA (S)	105	%.	25-150		1	10/21/24 13:32	10/23/24 00:47		
d5-NEtFOSA (S)	4	%.	10-150		1	10/21/24 13:32	10/23/24 00:47		S0
d7-NMeFOSE (S)	25	%.	10-150		1	10/21/24 13:32	10/23/24 00:47		
d9-NEtFOSE (S)	16	%.	10-150		1	10/21/24 13:32	10/23/24 00:47		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS19 **Lab ID: 10709546019** Collected: 09/24/24 12:30 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**30.2**	%	0.10	0.10	1		10/16/24 09:49		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.076J**	ug/kg	0.14	0.036	1	10/21/24 13:32	10/23/24 00:54	120226-60-0	L2
11Cl-PF3OUdS	**<0.025**	ug/kg	0.13	0.025	1	10/21/24 13:32	10/23/24 00:54	763051-92-9	
4:2 FTS	**<0.018**	ug/kg	0.13	0.018	1	10/21/24 13:32	10/23/24 00:54	757124-72-4	
6:2 FTS	**<0.029**	ug/kg	0.13	0.029	1	10/21/24 13:32	10/23/24 00:54	27619-97-2	
8:2 FTS	**<0.057**	ug/kg	0.14	0.057	1	10/21/24 13:32	10/23/24 00:54	39108-34-4	
9Cl-PF3ONS	**<0.026**	ug/kg	0.13	0.026	1	10/21/24 13:32	10/23/24 00:54	756426-58-1	
ADONA	**<0.015**	ug/kg	0.13	0.015	1	10/21/24 13:32	10/23/24 00:54	919005-14-4	
HFPO-DA	**<0.025**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:54	13252-13-6	
NEtFOSAA	**<0.024**	ug/kg	0.14	0.024	1	10/21/24 13:32	10/23/24 00:54	2991-50-6	
NEtFOSA	**<0.032**	ug/kg	0.14	0.032	1	10/21/24 13:32	10/23/24 00:54	4151-50-2	
NEtFOSE	**<0.029**	ug/kg	0.14	0.029	1	10/21/24 13:32	10/23/24 00:54	1691-99-2	
NMeFOSAA	**<0.060**	ug/kg	0.14	0.060	1	10/21/24 13:32	10/23/24 00:54	2355-31-9	
NMeFOSA	**<0.051**	ug/kg	0.14	0.051	1	10/21/24 13:32	10/23/24 00:54	31506-32-8	
NMeFOSE	**<0.028**	ug/kg	0.14	0.028	1	10/21/24 13:32	10/23/24 00:54	24448-09-7	
PFBS	**<0.018**	ug/kg	0.13	0.018	1	10/21/24 13:32	10/23/24 00:54	375-73-5	
PFDA	**0.14J**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:54	335-76-2	
PFHxA	**0.080J**	ug/kg	0.14	0.020	1	10/21/24 13:32	10/23/24 00:54	307-24-4	
PFBA	**0.055J**	ug/kg	0.14	0.043	1	10/21/24 13:32	10/23/24 00:54	375-22-4	
PFDS	**<0.041**	ug/kg	0.14	0.041	1	10/21/24 13:32	10/23/24 00:54	335-77-3	
PFDoS	**<0.034**	ug/kg	0.14	0.034	1	10/21/24 13:32	10/23/24 00:54	79780-39-5	
PFHpS	**<0.034**	ug/kg	0.13	0.034	1	10/21/24 13:32	10/23/24 00:54	375-92-8	
PFHxDA	**<0.021**	ug/kg	0.14	0.021	1	10/21/24 13:32	10/23/24 00:54	67905-19-5	
PFNS	**<0.039**	ug/kg	0.14	0.039	1	10/21/24 13:32	10/23/24 00:54	68259-12-1	
PFODA	**<0.053**	ug/kg	0.14	0.053	1	10/21/24 13:32	10/23/24 00:54	16517-11-6	
PFOSA	**<0.021**	ug/kg	0.14	0.021	1	10/21/24 13:32	10/23/24 00:54	754-91-6	
PFPeA	**0.16**	ug/kg	0.14	0.025	1	10/21/24 13:32	10/23/24 00:54	2706-90-3	
PFPeS	**<0.016**	ug/kg	0.13	0.016	1	10/21/24 13:32	10/23/24 00:54	2706-91-4	
PFDoA	**0.17**	ug/kg	0.14	0.033	1	10/21/24 13:32	10/23/24 00:54	307-55-1	
PFHpA	**0.047J**	ug/kg	0.14	0.014	1	10/21/24 13:32	10/23/24 00:54	375-85-9	
PFHxS	**0.073J**	ug/kg	0.13	0.016	1	10/21/24 13:32	10/23/24 00:54	355-46-4	
PFNA	**0.061J**	ug/kg	0.14	0.026	1	10/21/24 13:32	10/23/24 00:54	375-95-1	
PFOS	**0.54**	ug/kg	0.13	0.061	1	10/21/24 13:32	10/23/24 00:54	1763-23-1	
PFOA	**0.061J**	ug/kg	0.14	0.017	1	10/21/24 13:32	10/23/24 00:54	335-67-1	
PFTeDA	**0.023J**	ug/kg	0.14	0.022	1	10/21/24 13:32	10/23/24 00:54	376-06-7	
PFTrDA	**1.0**	ug/kg	0.14	0.030	1	10/21/24 13:32	10/23/24 00:54	72629-94-8	
PFUnA	**0.89**	ug/kg	0.14	0.048	1	10/21/24 13:32	10/23/24 00:54	2058-94-8	
Surrogates									
13C2-PFDoA (S)	91	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C2-PFTA (S)	84	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C24:2FTS (S)	70	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS19 **Lab ID: 10709546019** Collected: 09/24/24 12:30 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	106	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C28:2FTS (S)	181	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		S0
13C2PFHxDA (S)	63	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C3-PFBS (S)	82	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C3-PFHxS (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C3HFPO-DA (S)	68	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C4-PFBA (S)	70	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C4-PFHpA (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C5-PFHxA (S)	77	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C5-PFPeA (S)	71	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C6-PFDA (S)	93	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C7-PFUdA (S)	91	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C8-PFOA (S)	83	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C8-PFOS (S)	83	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C8-PFOSA (S)	47	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
13C9-PFNA (S)	85	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
d3-MeFOSAA (S)	104	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
d3-NMeFOSA (S)	5	%.	10-150		1	10/21/24 13:32	10/23/24 00:54		S0
d5-EtFOSAA (S)	103	%.	25-150		1	10/21/24 13:32	10/23/24 00:54		
d5-NEtFOSA (S)	4	%.	10-150		1	10/21/24 13:32	10/23/24 00:54		S0
d7-NMeFOSE (S)	17	%.	10-150		1	10/21/24 13:32	10/23/24 00:54		
d9-NEtFOSE (S)	13	%.	10-150		1	10/21/24 13:32	10/23/24 00:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS20 **Lab ID: 10709546020** Collected: 09/24/24 12:45 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**23.1**	%	0.10	0.10	1		10/16/24 09:51		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**0.039J**	ug/kg	0.12	0.033	1	10/21/24 13:32	10/23/24 01:02	120226-60-0	L2
11Cl-PF3OUdS	**<0.022**	ug/kg	0.12	0.022	1	10/21/24 13:32	10/23/24 01:02	763051-92-9	
4:2 FTS	**<0.016**	ug/kg	0.12	0.016	1	10/21/24 13:32	10/23/24 01:02	757124-72-4	
6:2 FTS	**<0.026**	ug/kg	0.12	0.026	1	10/21/24 13:32	10/23/24 01:02	27619-97-2	
8:2 FTS	**<0.052**	ug/kg	0.12	0.052	1	10/21/24 13:32	10/23/24 01:02	39108-34-4	
9Cl-PF3ONS	**<0.023**	ug/kg	0.12	0.023	1	10/21/24 13:32	10/23/24 01:02	756426-58-1	
ADONA	**<0.014**	ug/kg	0.12	0.014	1	10/21/24 13:32	10/23/24 01:02	919005-14-4	
HFPO-DA	**<0.023**	ug/kg	0.13	0.023	1	10/21/24 13:32	10/23/24 01:02	13252-13-6	
NEtFOSAA	**<0.022**	ug/kg	0.13	0.022	1	10/21/24 13:32	10/23/24 01:02	2991-50-6	
NEtFOSA	**<0.029**	ug/kg	0.13	0.029	1	10/21/24 13:32	10/23/24 01:02	4151-50-2	
NEtFOSE	**<0.027**	ug/kg	0.13	0.027	1	10/21/24 13:32	10/23/24 01:02	1691-99-2	
NMeFOSAA	**<0.054**	ug/kg	0.13	0.054	1	10/21/24 13:32	10/23/24 01:02	2355-31-9	
NMeFOSA	**<0.046**	ug/kg	0.13	0.046	1	10/21/24 13:32	10/23/24 01:02	31506-32-8	
NMeFOSE	**<0.025**	ug/kg	0.13	0.025	1	10/21/24 13:32	10/23/24 01:02	24448-09-7	
PFBS	**<0.017**	ug/kg	0.11	0.017	1	10/21/24 13:32	10/23/24 01:02	375-73-5	
PFDA	**0.025J**	ug/kg	0.13	0.022	1	10/21/24 13:32	10/23/24 01:02	335-76-2	
PFHxA	**<0.019**	ug/kg	0.13	0.019	1	10/21/24 13:32	10/23/24 01:02	307-24-4	
PFBA	**<0.039**	ug/kg	0.13	0.039	1	10/21/24 13:32	10/23/24 01:02	375-22-4	
PFDS	**<0.038**	ug/kg	0.12	0.038	1	10/21/24 13:32	10/23/24 01:02	335-77-3	
PFDoS	**<0.031**	ug/kg	0.12	0.031	1	10/21/24 13:32	10/23/24 01:02	79780-39-5	
PFHpS	**<0.031**	ug/kg	0.12	0.031	1	10/21/24 13:32	10/23/24 01:02	375-92-8	
PFHxDA	**<0.019**	ug/kg	0.13	0.019	1	10/21/24 13:32	10/23/24 01:02	67905-19-5	
PFNS	**<0.036**	ug/kg	0.12	0.036	1	10/21/24 13:32	10/23/24 01:02	68259-12-1	
PFODA	**<0.048**	ug/kg	0.13	0.048	1	10/21/24 13:32	10/23/24 01:02	16517-11-6	
PFOSA	**<0.019**	ug/kg	0.13	0.019	1	10/21/24 13:32	10/23/24 01:02	754-91-6	
PFPeA	**0.033J**	ug/kg	0.13	0.023	1	10/21/24 13:32	10/23/24 01:02	2706-90-3	
PFPeS	**<0.015**	ug/kg	0.12	0.015	1	10/21/24 13:32	10/23/24 01:02	2706-91-4	
PFDoA	**<0.030**	ug/kg	0.13	0.030	1	10/21/24 13:32	10/23/24 01:02	307-55-1	
PFHpA	**<0.013**	ug/kg	0.13	0.013	1	10/21/24 13:32	10/23/24 01:02	375-85-9	
PFHxS	**<0.014**	ug/kg	0.12	0.014	1	10/21/24 13:32	10/23/24 01:02	355-46-4	
PFNA	**<0.023**	ug/kg	0.13	0.023	1	10/21/24 13:32	10/23/24 01:02	375-95-1	
PFOS	**0.26**	ug/kg	0.12	0.056	1	10/21/24 13:32	10/23/24 01:02	1763-23-1	
PFOA	**0.018J**	ug/kg	0.13	0.016	1	10/21/24 13:32	10/23/24 01:02	335-67-1	
PFTeDA	**<0.020**	ug/kg	0.13	0.020	1	10/21/24 13:32	10/23/24 01:02	376-06-7	
PFTrDA	**0.093J**	ug/kg	0.13	0.028	1	10/21/24 13:32	10/23/24 01:02	72629-94-8	
PFUnA	**0.10J**	ug/kg	0.13	0.043	1	10/21/24 13:32	10/23/24 01:02	2058-94-8	
Surrogates									
13C2-PFDoA (S)	94	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C2-PFTA (S)	93	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C24:2FTS (S)	65	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS20 **Lab ID: 10709546020** Collected: 09/24/24 12:45 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	106	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C28:2FTS (S)	138	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C2PFHxDA (S)	83	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C3-PFBS (S)	83	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C3-PFHxS (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C3HFPO-DA (S)	74	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C4-PFBA (S)	72	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C4-PFHpA (S)	82	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C5-PFHxA (S)	80	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C5-PFPeA (S)	75	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C6-PFDA (S)	99	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C7-PFUdA (S)	92	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C8-PFOA (S)	84	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C8-PFOS (S)	82	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C8-PFOSA (S)	73	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
13C9-PFNA (S)	91	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
d3-MeFOSAA (S)	91	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
d3-NMeFOSA (S)	19	%.	10-150		1	10/21/24 13:32	10/23/24 01:02		
d5-EtFOSAA (S)	101	%.	25-150		1	10/21/24 13:32	10/23/24 01:02		
d5-NEtFOSA (S)	13	%.	10-150		1	10/21/24 13:32	10/23/24 01:02		
d7-NMeFOSE (S)	47	%.	10-150		1	10/21/24 13:32	10/23/24 01:02		
d9-NEtFOSE (S)	39	%.	10-150		1	10/21/24 13:32	10/23/24 01:02		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS21 **Lab ID: 10709546021** Collected: 09/24/24 12:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**20.1**	%	0.10	0.10	1		10/09/24 13:32		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.031**	ug/kg	0.12	0.031	1	10/21/24 13:32	10/23/24 01:09	120226-60-0	L2
11Cl-PF3OUdS	**<0.022**	ug/kg	0.12	0.022	1	10/21/24 13:32	10/23/24 01:09	763051-92-9	
4:2 FTS	**<0.016**	ug/kg	0.12	0.016	1	10/21/24 13:32	10/23/24 01:09	757124-72-4	
6:2 FTS	**<0.025**	ug/kg	0.12	0.025	1	10/21/24 13:32	10/23/24 01:09	27619-97-2	
8:2 FTS	**<0.050**	ug/kg	0.12	0.050	1	10/21/24 13:32	10/23/24 01:09	39108-34-4	
9Cl-PF3ONS	**<0.023**	ug/kg	0.12	0.023	1	10/21/24 13:32	10/23/24 01:09	756426-58-1	
ADONA	**<0.014**	ug/kg	0.12	0.014	1	10/21/24 13:32	10/23/24 01:09	919005-14-4	
HFPO-DA	**<0.022**	ug/kg	0.12	0.022	1	10/21/24 13:32	10/23/24 01:09	13252-13-6	
NEtFOSAA	**<0.021**	ug/kg	0.12	0.021	1	10/21/24 13:32	10/23/24 01:09	2991-50-6	
NEtFOSA	**<0.028**	ug/kg	0.12	0.028	1	10/21/24 13:32	10/23/24 01:09	4151-50-2	
NEtFOSE	**<0.026**	ug/kg	0.12	0.026	1	10/21/24 13:32	10/23/24 01:09	1691-99-2	
NMeFOSAA	**<0.053**	ug/kg	0.12	0.053	1	10/21/24 13:32	10/23/24 01:09	2355-31-9	
NMeFOSA	**<0.045**	ug/kg	0.12	0.045	1	10/21/24 13:32	10/23/24 01:09	31506-32-8	
NMeFOSE	**<0.025**	ug/kg	0.12	0.025	1	10/21/24 13:32	10/23/24 01:09	24448-09-7	
PFBS	**<0.016**	ug/kg	0.11	0.016	1	10/21/24 13:32	10/23/24 01:09	375-73-5	
PFDA	**<0.022**	ug/kg	0.12	0.022	1	10/21/24 13:32	10/23/24 01:09	335-76-2	
PFHxA	**0.019J**	ug/kg	0.12	0.018	1	10/21/24 13:32	10/23/24 01:09	307-24-4	
PFBA	**<0.038**	ug/kg	0.12	0.038	1	10/21/24 13:32	10/23/24 01:09	375-22-4	
PFDS	**<0.036**	ug/kg	0.12	0.036	1	10/21/24 13:32	10/23/24 01:09	335-77-3	
PFDoS	**<0.030**	ug/kg	0.12	0.030	1	10/21/24 13:32	10/23/24 01:09	79780-39-5	
PFHpS	**<0.030**	ug/kg	0.12	0.030	1	10/21/24 13:32	10/23/24 01:09	375-92-8	
PFHxDA	**<0.018**	ug/kg	0.12	0.018	1	10/21/24 13:32	10/23/24 01:09	67905-19-5	
PFNS	**<0.034**	ug/kg	0.12	0.034	1	10/21/24 13:32	10/23/24 01:09	68259-12-1	
PFODA	**<0.046**	ug/kg	0.12	0.046	1	10/21/24 13:32	10/23/24 01:09	16517-11-6	
PFOSA	**<0.019**	ug/kg	0.12	0.019	1	10/21/24 13:32	10/23/24 01:09	754-91-6	
PFPeA	**0.041J**	ug/kg	0.12	0.022	1	10/21/24 13:32	10/23/24 01:09	2706-90-3	
PFPeS	**<0.014**	ug/kg	0.12	0.014	1	10/21/24 13:32	10/23/24 01:09	2706-91-4	
PFDoA	**<0.029**	ug/kg	0.12	0.029	1	10/21/24 13:32	10/23/24 01:09	307-55-1	
PFHpA	**<0.013**	ug/kg	0.12	0.013	1	10/21/24 13:32	10/23/24 01:09	375-85-9	
PFHxS	**0.015J**	ug/kg	0.11	0.014	1	10/21/24 13:32	10/23/24 01:09	355-46-4	
PFNA	**<0.023**	ug/kg	0.12	0.023	1	10/21/24 13:32	10/23/24 01:09	375-95-1	
PFOS	**0.12**	ug/kg	0.12	0.054	1	10/21/24 13:32	10/23/24 01:09	1763-23-1	
PFOA	**<0.015**	ug/kg	0.12	0.015	1	10/21/24 13:32	10/23/24 01:09	335-67-1	
PFTeDA	**<0.019**	ug/kg	0.12	0.019	1	10/21/24 13:32	10/23/24 01:09	376-06-7	
PFTrDA	**0.028J**	ug/kg	0.12	0.027	1	10/21/24 13:32	10/23/24 01:09	72629-94-8	
PFUnA	**0.093J**	ug/kg	0.12	0.042	1	10/21/24 13:32	10/23/24 01:09	2058-94-8	
Surrogates									
13C2-PFDoA (S)	98	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C2-PFTA (S)	92	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C24:2FTS (S)	69	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS21 **Lab ID: 10709546021** Collected: 09/24/24 12:50 Received: 09/26/24 10:40 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	119	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C28:2FTS (S)	140	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C2PFHxDA (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C3-PFBS (S)	91	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C3-PFHxS (S)	86	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C3HFPO-DA (S)	76	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C4-PFBA (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C4-PFHpA (S)	87	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C5-PFHxA (S)	86	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C5-PFPeA (S)	81	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C6-PFDA (S)	98	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C7-PFUdA (S)	93	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C8-PFOA (S)	90	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C8-PFOS (S)	88	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C8-PFOSA (S)	66	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
13C9-PFNA (S)	96	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
d3-MeFOSAA (S)	95	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
d3-NMeFOSA (S)	7	%.	10-150		1	10/21/24 13:32	10/23/24 01:09		S0
d5-EtFOSAA (S)	98	%.	25-150		1	10/21/24 13:32	10/23/24 01:09		
d5-NEtFOSA (S)	5	%.	10-150		1	10/21/24 13:32	10/23/24 01:09		S0
d7-NMeFOSE (S)	21	%.	10-150		1	10/21/24 13:32	10/23/24 01:09		
d9-NEtFOSE (S)	18	%.	10-150		1	10/21/24 13:32	10/23/24 01:09		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-FB-02 **Lab ID: 10709546022** Collected: 09/24/24 13:05 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.85**	ng/L	1.9	0.85	1	10/11/24 14:00	10/15/24 18:33	120226-60-0	L2
11Cl-PF3OUdS	**<0.39**	ng/L	1.8	0.39	1	10/11/24 14:00	10/15/24 18:33	763051-92-9	
4:2 FTS	**<0.35**	ng/L	1.8	0.35	1	10/11/24 14:00	10/15/24 18:33	757124-72-4	
6:2 FTS	**1.9**	ng/L	1.8	0.56	1	10/11/24 14:00	10/15/24 18:33	27619-97-2	B
8:2 FTS	**<0.77**	ng/L	1.9	0.77	1	10/11/24 14:00	10/15/24 18:33	39108-34-4	
9Cl-PF3ONS	**<0.34**	ng/L	1.8	0.34	1	10/11/24 14:00	10/15/24 18:33	756426-58-1	
ADONA	**<0.31**	ng/L	1.8	0.31	1	10/11/24 14:00	10/15/24 18:33	919005-14-4	
HFPO-DA	**<0.24**	ng/L	1.9	0.24	1	10/11/24 14:00	10/15/24 18:33	13252-13-6	
NEtFOSAA	**<0.55**	ng/L	1.9	0.55	1	10/11/24 14:00	10/15/24 18:33	2991-50-6	
NEtFOSA	**<0.44**	ng/L	1.9	0.44	1	10/11/24 14:00	10/15/24 18:33	4151-50-2	
NEtFOSE	**<0.58**	ng/L	1.9	0.58	1	10/11/24 14:00	10/15/24 18:33	1691-99-2	
NMeFOSAA	**<0.76**	ng/L	1.9	0.76	1	10/11/24 14:00	10/15/24 18:33	2355-31-9	
NMeFOSA	**<0.61**	ng/L	1.9	0.61	1	10/11/24 14:00	10/15/24 18:33	31506-32-8	
NMeFOSE	**<0.47**	ng/L	1.9	0.47	1	10/11/24 14:00	10/15/24 18:33	24448-09-7	
PFBS	**<0.20**	ng/L	1.7	0.20	1	10/11/24 14:00	10/15/24 18:33	375-73-5	
PFDA	**<0.24**	ng/L	1.9	0.24	1	10/11/24 14:00	10/15/24 18:33	335-76-2	
PFHxA	**<0.37**	ng/L	1.9	0.37	1	10/11/24 14:00	10/15/24 18:33	307-24-4	
PFBA	**<0.27**	ng/L	1.9	0.27	1	10/11/24 14:00	10/15/24 18:33	375-22-4	
PFDS	**<0.55**	ng/L	1.9	0.55	1	10/11/24 14:00	10/15/24 18:33	335-77-3	
PFDoS	**<0.52**	ng/L	1.9	0.52	1	10/11/24 14:00	10/15/24 18:33	79780-39-5	
PFHpS	**<0.61**	ng/L	1.8	0.61	1	10/11/24 14:00	10/15/24 18:33	375-92-8	
PFHxDA	**<0.31**	ng/L	1.9	0.31	1	10/11/24 14:00	10/15/24 18:33	67905-19-5	
PFNS	**<0.46**	ng/L	1.9	0.46	1	10/11/24 14:00	10/15/24 18:33	68259-12-1	
PFODA	**<0.62**	ng/L	1.9	0.62	1	10/11/24 14:00	10/15/24 18:33	16517-11-6	L2
PFOSA	**<0.39**	ng/L	1.9	0.39	1	10/11/24 14:00	10/15/24 18:33	754-91-6	
PFPeA	**<0.18**	ng/L	1.9	0.18	1	10/11/24 14:00	10/15/24 18:33	2706-90-3	
PFPeS	**<0.25**	ng/L	1.8	0.25	1	10/11/24 14:00	10/15/24 18:33	2706-91-4	
PFDoA	**<0.42**	ng/L	1.9	0.42	1	10/11/24 14:00	10/15/24 18:33	307-55-1	
PFHpA	**<0.23**	ng/L	1.9	0.23	1	10/11/24 14:00	10/15/24 18:33	375-85-9	
PFHxS	**<0.23**	ng/L	1.8	0.23	1	10/11/24 14:00	10/15/24 18:33	355-46-4	
PFNA	**<0.20**	ng/L	1.9	0.20	1	10/11/24 14:00	10/15/24 18:33	375-95-1	
PFOS	**<0.50**	ng/L	1.8	0.50	1	10/11/24 14:00	10/15/24 18:33	1763-23-1	
PFOA	**<0.26**	ng/L	1.9	0.26	1	10/11/24 14:00	10/15/24 18:33	335-67-1	
PFTeDA	**<0.35**	ng/L	1.9	0.35	1	10/11/24 14:00	10/15/24 18:33	376-06-7	
PFTrDA	**<0.27**	ng/L	1.9	0.27	1	10/11/24 14:00	10/15/24 18:33	72629-94-8	
PFUnA	**<0.62**	ng/L	1.9	0.62	1	10/11/24 14:00	10/15/24 18:33	2058-94-8	
Surrogates									
13C4-PFBA (S)	109	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C5-PFPeA (S)	110	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C3-PFBS (S)	113	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C24:2FTS (S)	55	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C3HFPO-DA (S)	99	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C4-PFHpA (S)	110	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C3-PFHxS (S)	113	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C26:2FTS (S)	58	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-FB-02 **Lab ID: 10709546022** Collected: 09/24/24 13:05 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	114	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C8-PFOS (S)	112	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C9-PFNA (S)	111	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C6-PFDA (S)	127	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C28:2FTS (S)	191	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		S0
d3-MeFOSAA (S)	79	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C7-PFUdA (S)	100	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C8-PFOSA (S)	93	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
d5-EtFOSAA (S)	80	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C2-PFDoA (S)	94	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
d3-NMeFOSA (S)	75	%.	10-150		1	10/11/24 14:00	10/15/24 18:33		
d7-NMeFOSE (S)	86	%.	10-150		1	10/11/24 14:00	10/15/24 18:33		
13C2-PFTA (S)	91	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
d9-NEtFOSE (S)	81	%.	10-150		1	10/11/24 14:00	10/15/24 18:33		
d5-NEtFOSA (S)	77	%.	10-150		1	10/11/24 14:00	10/15/24 18:33		
13C2PFHxDA (S)	69	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		
13C5-PFHxA (S)	111	%.	25-150		1	10/11/24 14:00	10/15/24 18:33		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-ERB-02 **Lab ID: 10709546023** Collected: 09/24/24 13:10 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.88**	ng/L	1.9	0.88	1	10/11/24 14:00	10/15/24 18:41	120226-60-0	L2
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/11/24 14:00	10/15/24 18:41	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.9	0.36	1	10/11/24 14:00	10/15/24 18:41	757124-72-4	
6:2 FTS	**1.3J**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 18:41	27619-97-2	B
8:2 FTS	**<0.79**	ng/L	1.9	0.79	1	10/11/24 14:00	10/15/24 18:41	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.9	0.35	1	10/11/24 14:00	10/15/24 18:41	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/11/24 14:00	10/15/24 18:41	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 18:41	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/11/24 14:00	10/15/24 18:41	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/11/24 14:00	10/15/24 18:41	4151-50-2	
NEtFOSE	**<0.60**	ng/L	2.0	0.60	1	10/11/24 14:00	10/15/24 18:41	1691-99-2	
NMeFOSAA	**<0.78**	ng/L	2.0	0.78	1	10/11/24 14:00	10/15/24 18:41	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 18:41	31506-32-8	
NMeFOSE	**<0.48**	ng/L	2.0	0.48	1	10/11/24 14:00	10/15/24 18:41	24448-09-7	
PFBS	**<0.20**	ng/L	1.8	0.20	1	10/11/24 14:00	10/15/24 18:41	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 18:41	335-76-2	
PFHxA	**<0.38**	ng/L	2.0	0.38	1	10/11/24 14:00	10/15/24 18:41	307-24-4	
PFBA	**<0.28**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 18:41	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 18:41	335-77-3	
PFDoS	**<0.53**	ng/L	1.9	0.53	1	10/11/24 14:00	10/15/24 18:41	79780-39-5	
PFHpS	**<0.63**	ng/L	1.9	0.63	1	10/11/24 14:00	10/15/24 18:41	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/11/24 14:00	10/15/24 18:41	67905-19-5	
PFNS	**<0.48**	ng/L	1.9	0.48	1	10/11/24 14:00	10/15/24 18:41	68259-12-1	
PFODA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 18:41	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/11/24 14:00	10/15/24 18:41	754-91-6	
PFPeA	**<0.18**	ng/L	2.0	0.18	1	10/11/24 14:00	10/15/24 18:41	2706-90-3	
PFPeS	**<0.26**	ng/L	1.9	0.26	1	10/11/24 14:00	10/15/24 18:41	2706-91-4	
PFDoA	**<0.43**	ng/L	2.0	0.43	1	10/11/24 14:00	10/15/24 18:41	307-55-1	
PFHpA	**<0.24**	ng/L	2.0	0.24	1	10/11/24 14:00	10/15/24 18:41	375-85-9	
PFHxS	**<0.23**	ng/L	1.8	0.23	1	10/11/24 14:00	10/15/24 18:41	355-46-4	
PFNA	**<0.21**	ng/L	2.0	0.21	1	10/11/24 14:00	10/15/24 18:41	375-95-1	
PFOS	**<0.51**	ng/L	1.9	0.51	1	10/11/24 14:00	10/15/24 18:41	1763-23-1	
PFOA	**<0.27**	ng/L	2.0	0.27	1	10/11/24 14:00	10/15/24 18:41	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/11/24 14:00	10/15/24 18:41	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 18:41	72629-94-8	
PFUnA	**<0.64**	ng/L	2.0	0.64	1	10/11/24 14:00	10/15/24 18:41	2058-94-8	
Surrogates									
13C4-PFBA (S)	116	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C5-PFPeA (S)	118	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C3-PFBS (S)	122	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C24:2FTS (S)	63	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C3HFPO-DA (S)	104	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C4-PFHpA (S)	115	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C3-PFHxS (S)	119	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C26:2FTS (S)	71	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-ERB-02 **Lab ID: 10709546023** Collected: 09/24/24 13:10 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	117	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C8-PFOS (S)	115	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C9-PFNA (S)	120	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C6-PFDA (S)	144	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C28:2FTS (S)	344	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		S3
d3-MeFOSAA (S)	91	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C7-PFUdA (S)	109	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C8-PFOSA (S)	109	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
d5-EtFOSAA (S)	95	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C2-PFDoA (S)	106	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
d3-NMeFOSA (S)	76	%.	10-150		1	10/11/24 14:00	10/15/24 18:41		
d7-NMeFOSE (S)	113	%.	10-150		1	10/11/24 14:00	10/15/24 18:41		
13C2-PFTA (S)	134	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
d9-NEtFOSE (S)	115	%.	10-150		1	10/11/24 14:00	10/15/24 18:41		
d5-NEtFOSA (S)	87	%.	10-150		1	10/11/24 14:00	10/15/24 18:41		
13C2PFHxDA (S)	111	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		
13C5-PFHxA (S)	115	%.	25-150		1	10/11/24 14:00	10/15/24 18:41		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-RW-02 **Lab ID: 10709546024** Collected: 09/24/24 13:15 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.87**	ng/L	1.9	0.87	1	10/11/24 14:00	10/15/24 19:02	120226-60-0	L2
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/11/24 14:00	10/15/24 19:02	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.9	0.36	1	10/11/24 14:00	10/15/24 19:02	757124-72-4	
6:2 FTS	**<0.57**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 19:02	27619-97-2	
8:2 FTS	**<0.79**	ng/L	1.9	0.79	1	10/11/24 14:00	10/15/24 19:02	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.9	0.35	1	10/11/24 14:00	10/15/24 19:02	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/11/24 14:00	10/15/24 19:02	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 19:02	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/11/24 14:00	10/15/24 19:02	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/11/24 14:00	10/15/24 19:02	4151-50-2	
NEtFOSE	**<0.60**	ng/L	2.0	0.60	1	10/11/24 14:00	10/15/24 19:02	1691-99-2	
NMeFOSAA	**<0.78**	ng/L	2.0	0.78	1	10/11/24 14:00	10/15/24 19:02	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 19:02	31506-32-8	
NMeFOSE	**<0.48**	ng/L	2.0	0.48	1	10/11/24 14:00	10/15/24 19:02	24448-09-7	
PFBS	**<0.20**	ng/L	1.8	0.20	1	10/11/24 14:00	10/15/24 19:02	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 19:02	335-76-2	
PFHxA	**<0.38**	ng/L	2.0	0.38	1	10/11/24 14:00	10/15/24 19:02	307-24-4	
PFBA	**<0.28**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 19:02	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 19:02	335-77-3	
PFDoS	**<0.53**	ng/L	1.9	0.53	1	10/11/24 14:00	10/15/24 19:02	79780-39-5	
PFHpS	**<0.63**	ng/L	1.9	0.63	1	10/11/24 14:00	10/15/24 19:02	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/11/24 14:00	10/15/24 19:02	67905-19-5	
PFNS	**<0.47**	ng/L	1.9	0.47	1	10/11/24 14:00	10/15/24 19:02	68259-12-1	
PFODA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 19:02	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/11/24 14:00	10/15/24 19:02	754-91-6	
PFPeA	**<0.18**	ng/L	2.0	0.18	1	10/11/24 14:00	10/15/24 19:02	2706-90-3	
PFPeS	**<0.26**	ng/L	1.9	0.26	1	10/11/24 14:00	10/15/24 19:02	2706-91-4	
PFDoA	**<0.43**	ng/L	2.0	0.43	1	10/11/24 14:00	10/15/24 19:02	307-55-1	
PFHpA	**<0.24**	ng/L	2.0	0.24	1	10/11/24 14:00	10/15/24 19:02	375-85-9	
PFHxS	**<0.23**	ng/L	1.8	0.23	1	10/11/24 14:00	10/15/24 19:02	355-46-4	
PFNA	**<0.21**	ng/L	2.0	0.21	1	10/11/24 14:00	10/15/24 19:02	375-95-1	
PFOS	**<0.51**	ng/L	1.9	0.51	1	10/11/24 14:00	10/15/24 19:02	1763-23-1	
PFOA	**<0.27**	ng/L	2.0	0.27	1	10/11/24 14:00	10/15/24 19:02	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/11/24 14:00	10/15/24 19:02	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 19:02	72629-94-8	
PFUnA	**<0.64**	ng/L	2.0	0.64	1	10/11/24 14:00	10/15/24 19:02	2058-94-8	
Surrogates									
13C4-PFBA (S)	114	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C5-PFPeA (S)	118	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C3-PFBS (S)	120	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C24:2FTS (S)	77	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C3HFPO-DA (S)	100	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C4-PFHpA (S)	112	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C3-PFHxS (S)	113	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C26:2FTS (S)	79	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-RW-02 **Lab ID: 10709546024** Collected: 09/24/24 13:15 Received: 09/26/24 10:40 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	115	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C8-PFOS (S)	117	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C9-PFNA (S)	117	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C6-PFDA (S)	137	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C28:2FTS (S)	315	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		S3
d3-MeFOSAA (S)	104	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C7-PFUdA (S)	128	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C8-PFOSA (S)	92	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
d5-EtFOSAA (S)	120	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C2-PFDoA (S)	122	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
d3-NMeFOSA (S)	63	%.	10-150		1	10/11/24 14:00	10/15/24 19:02		
d7-NMeFOSE (S)	96	%.	10-150		1	10/11/24 14:00	10/15/24 19:02		
13C2-PFTA (S)	140	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
d9-NEtFOSE (S)	69	%.	10-150		1	10/11/24 14:00	10/15/24 19:02		
d5-NEtFOSA (S)	49	%.	10-150		1	10/11/24 14:00	10/15/24 19:02		
13C2PFHxDA (S)	110	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		
13C5-PFHxA (S)	116	%.	25-150		1	10/11/24 14:00	10/15/24 19:02		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS22 **Lab ID: 10709726001** Collected: 09/27/24 13:20 Received: 09/27/24 18:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Dry Weight / %M by ASTM D2974	Analytical Method: ASTM D2974 Pace Analytical Services - Minneapolis								
Percent Moisture	**18.6**	%	0.10	0.10	1		10/09/24 13:33		N2
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
10:2 FTS	**1.5**	ug/kg	0.11	0.028	1	10/21/24 13:32	10/23/24 01:16	120226-60-0	L2
11Cl-PF3OUdS	**<0.019**	ug/kg	0.10	0.019	1	10/21/24 13:32	10/23/24 01:16	763051-92-9	
4:2 FTS	**<0.014**	ug/kg	0.10	0.014	1	10/21/24 13:32	10/23/24 01:16	757124-72-4	
6:2 FTS	**0.10J**	ug/kg	0.10	0.022	1	10/21/24 13:32	10/23/24 01:16	27619-97-2	
8:2 FTS	**0.37**	ug/kg	0.11	0.044	1	10/21/24 13:32	10/23/24 01:16	39108-34-4	
9Cl-PF3ONS	**<0.020**	ug/kg	0.10	0.020	1	10/21/24 13:32	10/23/24 01:16	756426-58-1	
ADONA	**<0.012**	ug/kg	0.10	0.012	1	10/21/24 13:32	10/23/24 01:16	919005-14-4	
HFPO-DA	**<0.019**	ug/kg	0.11	0.019	1	10/21/24 13:32	10/23/24 01:16	13252-13-6	
NEtFOSAA	**<0.019**	ug/kg	0.11	0.019	1	10/21/24 13:32	10/23/24 01:16	2991-50-6	
NEtFOSA	**<0.025**	ug/kg	0.11	0.025	1	10/21/24 13:32	10/23/24 01:16	4151-50-2	
NEtFOSE	**<0.023**	ug/kg	0.11	0.023	1	10/21/24 13:32	10/23/24 01:16	1691-99-2	
NMeFOSAA	**<0.046**	ug/kg	0.11	0.046	1	10/21/24 13:32	10/23/24 01:16	2355-31-9	
NMeFOSA	**<0.039**	ug/kg	0.11	0.039	1	10/21/24 13:32	10/23/24 01:16	31506-32-8	
NMeFOSE	**<0.022**	ug/kg	0.11	0.022	1	10/21/24 13:32	10/23/24 01:16	24448-09-7	
PFBS	**<0.014**	ug/kg	0.097	0.014	1	10/21/24 13:32	10/23/24 01:16	375-73-5	
PFDA	**1.7**	ug/kg	0.11	0.019	1	10/21/24 13:32	10/23/24 01:16	335-76-2	
PFHxA	**0.91**	ug/kg	0.11	0.016	1	10/21/24 13:32	10/23/24 01:16	307-24-4	
PFBA	**0.77**	ug/kg	0.11	0.033	1	10/21/24 13:32	10/23/24 01:16	375-22-4	
PFDS	**0.072J**	ug/kg	0.11	0.032	1	10/21/24 13:32	10/23/24 01:16	335-77-3	
PFDoS	**<0.026**	ug/kg	0.11	0.026	1	10/21/24 13:32	10/23/24 01:16	79780-39-5	
PFHpS	**0.028J**	ug/kg	0.10	0.026	1	10/21/24 13:32	10/23/24 01:16	375-92-8	
PFHxDA	**<0.016**	ug/kg	0.11	0.016	1	10/21/24 13:32	10/23/24 01:16	67905-19-5	
PFNS	**0.11**	ug/kg	0.11	0.030	1	10/21/24 13:32	10/23/24 01:16	68259-12-1	
PFODA	**<0.041**	ug/kg	0.11	0.041	1	10/21/24 13:32	10/23/24 01:16	16517-11-6	
PFOSA	**0.046J**	ug/kg	0.11	0.016	1	10/21/24 13:32	10/23/24 01:16	754-91-6	
PFPeA	**1.5**	ug/kg	0.11	0.020	1	10/21/24 13:32	10/23/24 01:16	2706-90-3	
PFPeS	**0.017J**	ug/kg	0.10	0.012	1	10/21/24 13:32	10/23/24 01:16	2706-91-4	
PFDoA	**0.33**	ug/kg	0.11	0.026	1	10/21/24 13:32	10/23/24 01:16	307-55-1	
PFHpA	**0.89**	ug/kg	0.11	0.011	1	10/21/24 13:32	10/23/24 01:16	375-85-9	
PFHxS	**0.26**	ug/kg	0.10	0.012	1	10/21/24 13:32	10/23/24 01:16	355-46-4	
PFNA	**0.86**	ug/kg	0.11	0.020	1	10/21/24 13:32	10/23/24 01:16	375-95-1	
PFOS	**16.9**	ug/kg	0.51	0.24	5	10/21/24 13:32	10/23/24 14:58	1763-23-1	
PFOA	**1.2**	ug/kg	0.11	0.013	1	10/21/24 13:32	10/23/24 01:16	335-67-1	
PFTeDA	**0.061J**	ug/kg	0.11	0.017	1	10/21/24 13:32	10/23/24 01:16	376-06-7	
PFTrDA	**0.30**	ug/kg	0.11	0.023	1	10/21/24 13:32	10/23/24 01:16	72629-94-8	
PFUnA	**0.71**	ug/kg	0.11	0.037	1	10/21/24 13:32	10/23/24 01:16	2058-94-8	
Surrogates									
13C2-PFDoA (S)	84	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C2-PFTA (S)	79	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C24:2FTS (S)	74	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Sample: PR-SS22 **Lab ID: 10709726001** Collected: 09/27/24 13:20 Received: 09/27/24 18:45 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID SL	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C26:2FTS (S)	129	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C28:2FTS (S)	181	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		S0
13C2PFHxDA (S)	56	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C3-PFBS (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C3-PFHxS (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C3HFPO-DA (S)	69	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C4-PFBA (S)	68	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C4-PFHpA (S)	81	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C5-PFHxA (S)	79	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C5-PFPeA (S)	68	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C6-PFDA (S)	89	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C7-PFUdA (S)	87	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C8-PFOA (S)	85	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C8-PFOS (S)	76	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C8-PFOSA (S)	71	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
13C9-PFNA (S)	78	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
d3-MeFOSAA (S)	101	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
d3-NMeFOSA (S)	31	%.	10-150		1	10/21/24 13:32	10/23/24 01:16		
d5-EtFOSAA (S)	102	%.	25-150		1	10/21/24 13:32	10/23/24 01:16		
d5-NEtFOSA (S)	27	%.	10-150		1	10/21/24 13:32	10/23/24 01:16		
d7-NMeFOSE (S)	52	%.	10-150		1	10/21/24 13:32	10/23/24 01:16		
d9-NEtFOSE (S)	34	%.	10-150		1	10/21/24 13:32	10/23/24 01:16		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 972582
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546021, 10709726001

SAMPLE DUPLICATE: 5082550

Parameter	Units	10710745001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	5.7	5.6	2	30	N2

SAMPLE DUPLICATE: 5082551

Parameter	Units	10709584001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	2.6	2.7	1	30	N2

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 973596
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546001, 10709546002, 10709546003, 10709546004, 10709546005, 10709546006, 10709546007, 10709546008, 10709546009, 10709546010

SAMPLE DUPLICATE: 5088310

Parameter	Units	10709546001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	29.5	27.8	6	30	N2

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 973830
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight / %M by ASTM D2974
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546011, 10709546012, 10709546013, 10709546014, 10709546015, 10709546016, 10709546017, 10709546018, 10709546019, 10709546020

SAMPLE DUPLICATE: 5089938

Parameter	Units	10709546015 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	15.7	16.3	4	30	N2

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 972825
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID NPW
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546022, 10709546023, 10709546024

METHOD BLANK: 5083866 Matrix: Water
Associated Lab Samples: 10709546022, 10709546023, 10709546024

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	<0.88	2.0	10/15/24 17:14	
11Cl-PF3OUdS	ng/L	<0.41	1.9	10/15/24 17:14	
4:2 FTS	ng/L	<0.37	1.9	10/15/24 17:14	
6:2 FTS	ng/L	0.64J	1.9	10/15/24 17:14	
8:2 FTS	ng/L	<0.80	2.0	10/15/24 17:14	
9Cl-PF3ONS	ng/L	<0.36	1.9	10/15/24 17:14	
ADONA	ng/L	<0.32	1.9	10/15/24 17:14	
HFPO-DA	ng/L	<0.25	2.0	10/15/24 17:14	
NEtFOSA	ng/L	<0.46	2.0	10/15/24 17:14	
NEtFOSAA	ng/L	<0.57	2.0	10/15/24 17:14	
NEtFOSE	ng/L	<0.61	2.0	10/15/24 17:14	
NMeFOSA	ng/L	<0.63	2.0	10/15/24 17:14	
NMeFOSAA	ng/L	<0.79	2.0	10/15/24 17:14	
NMeFOSE	ng/L	<0.49	2.0	10/15/24 17:14	
PFBA	ng/L	<0.28	2.0	10/15/24 17:14	
PFBS	ng/L	<0.21	1.8	10/15/24 17:14	
PFDA	ng/L	<0.25	2.0	10/15/24 17:14	
PFDoA	ng/L	<0.44	2.0	10/15/24 17:14	
PFDoS	ng/L	<0.54	2.0	10/15/24 17:14	
PFDS	ng/L	<0.57	2.0	10/15/24 17:14	
PFHpA	ng/L	<0.24	2.0	10/15/24 17:14	
PFHpS	ng/L	<0.64	1.9	10/15/24 17:14	
PFHxA	ng/L	<0.38	2.0	10/15/24 17:14	
PFHxDA	ng/L	<0.32	2.0	10/15/24 17:14	
PFHxS	ng/L	<0.24	1.8	10/15/24 17:14	
PFNA	ng/L	<0.21	2.0	10/15/24 17:14	
PFNS	ng/L	<0.48	1.9	10/15/24 17:14	
PFOA	ng/L	<0.27	2.0	10/15/24 17:14	
PFODA	ng/L	<0.64	2.0	10/15/24 17:14	
PFOS	ng/L	<0.52	1.9	10/15/24 17:14	
PFOSA	ng/L	<0.40	2.0	10/15/24 17:14	
PFPeA	ng/L	<0.18	2.0	10/15/24 17:14	
PFPeS	ng/L	<0.26	1.9	10/15/24 17:14	
PFTeDA	ng/L	<0.36	2.0	10/15/24 17:14	
PFTrDA	ng/L	<0.29	2.0	10/15/24 17:14	
PFUnA	ng/L	<0.65	2.0	10/15/24 17:14	
13C2-PFDoA (S)	%.	120	25-150	10/15/24 17:14	
13C2-PFTA (S)	%.	113	25-150	10/15/24 17:14	
13C24:2FTS (S)	%.	126	25-150	10/15/24 17:14	
13C26:2FTS (S)	%.	126	25-150	10/15/24 17:14	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

METHOD BLANK: 5083866 Matrix: Water
Associated Lab Samples: 10709546022, 10709546023, 10709546024

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	272	25-150	10/15/24 17:14	S3
13C2PFHxDA (S)	%.	88	25-150	10/15/24 17:14	
13C3-PFBS (S)	%.	129	25-150	10/15/24 17:14	
13C3-PFHxS (S)	%.	123	25-150	10/15/24 17:14	
13C3HFPO-DA (S)	%.	107	25-150	10/15/24 17:14	
13C4-PFBA (S)	%.	123	25-150	10/15/24 17:14	
13C4-PFHpA (S)	%.	122	25-150	10/15/24 17:14	
13C5-PFHxA (S)	%.	121	25-150	10/15/24 17:14	
13C5-PFPeA (S)	%.	125	25-150	10/15/24 17:14	
13C6-PFDA (S)	%.	135	25-150	10/15/24 17:14	
13C7-PFUdA (S)	%.	123	25-150	10/15/24 17:14	
13C8-PFOA (S)	%.	124	25-150	10/15/24 17:14	
13C8-PFOS (S)	%.	121	25-150	10/15/24 17:14	
13C8-PFOSA (S)	%.	116	25-150	10/15/24 17:14	
13C9-PFNA (S)	%.	120	25-150	10/15/24 17:14	
d3-MeFOSAA (S)	%.	110	25-150	10/15/24 17:14	
d3-NMeFOSA (S)	%.	91	20-150	10/15/24 17:14	
d5-EtFOSAA (S)	%.	112	25-150	10/15/24 17:14	
d5-NEtFOSA (S)	%.	94	20-150	10/15/24 17:14	
d7-NMeFOSE (S)	%.	104	20-150	10/15/24 17:14	
d9-NEtFOSE (S)	%.	102	20-150	10/15/24 17:14	

LABORATORY CONTROL SAMPLE & LCSD: 5083867 5083868

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.9	2.0	1.3J	50	35	50-150		30	L2
11Cl-PF3OUdS	ng/L	3.8	3.1	3.2	81	85	50-150	3	30	
4:2 FTS	ng/L	3.8	3.5	3.3	92	88	50-150	7	30	
6:2 FTS	ng/L	3.9	3.4	3.5	89	94	50-150	3	30	
8:2 FTS	ng/L	3.9	3.4	3.3	88	88	50-150	2	30	
9Cl-PF3ONS	ng/L	3.8	3.3	3.3	87	90	50-150	1	30	
ADONA	ng/L	3.8	3.4	3.2	88	85	50-150	6	30	
HFPO-DA	ng/L	4.1	3.6	3.3	89	83	50-150	9	30	
NEtFOSA	ng/L	4.1	3.6	3.5	90	88	50-150	4	30	
NEtFOSAA	ng/L	4.1	3.5	3.6	86	91	50-150	3	30	
NEtFOSE	ng/L	4.1	3.5	3.8	85	95	50-150	9	30	
NMeFOSA	ng/L	4.1	3.5	3.6	85	91	50-150	4	30	
NMeFOSAA	ng/L	4.1	4.2	3.6	103	91	50-150	15	30	
NMeFOSE	ng/L	4.1	3.6	3.6	90	90	50-150	2	30	
PFBA	ng/L	4.1	3.7	3.5	91	89	50-150	5	30	
PFBS	ng/L	3.6	3.4	3.1	94	89	50-150	8	30	
PFDA	ng/L	4.1	3.7	3.5	90	88	50-150	5	30	
PFDoA	ng/L	4.1	3.7	3.7	90	93	50-150	1	30	
PFDoS	ng/L	3.9	2.8	2.8	71	74	50-150	1	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

LABORATORY CONTROL SAMPLE & LCSD: 5083867 5083868

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PFDS	ng/L	3.9	3.1	3.3	78	86	50-150	8	30	
PFHpA	ng/L	4.1	3.6	3.5	88	87	50-150	3	30	
PFHpS	ng/L	3.9	3.8	3.6	97	96	50-150	3	30	
PFHxA	ng/L	4.1	3.7	3.5	92	89	50-150	6	30	
PFHxDA	ng/L	4.1	3.8	3.4	93	85	50-150	11	30	
PFHxS	ng/L	3.7	3.3	3.3	90	91	50-150	2	30	
PFNA	ng/L	4.1	3.7	3.6	91	92	50-150	1	30	
PFNS	ng/L	3.9	3.5	3.4	90	91	50-150	2	30	
PFOA	ng/L	4.1	3.7	3.5	91	88	50-150	6	30	
PFODA	ng/L	4.1	1.0J	1.6J	26	39	50-150		30	L2
PFOS	ng/L	3.8	3.4	3.5	90	94	50-150	2	30	
PFOSA	ng/L	4.1	3.9	3.4	96	85	50-150	14	30	
PFPeA	ng/L	4.1	3.6	3.5	89	88	50-150	4	30	
PFPeS	ng/L	3.8	3.4	3.3	88	89	50-150	2	30	
PFTeDA	ng/L	4.1	3.5	3.5	87	89	50-150	0	30	
PFTrDA	ng/L	4.1	3.5	3.3	87	84	50-150	6	30	
PFUnA	ng/L	4.1	3.8	3.3	93	84	50-150	13	30	
13C2-PFDoA (S)	%.				113	123	25-150			
13C2-PFTA (S)	%.				114	107	25-150			
13C24:2FTS (S)	%.				117	130	25-150			
13C26:2FTS (S)	%.				132	129	25-150			
13C28:2FTS (S)	%.				200	235	25-150			S0
13C2PFHxDA (S)	%.				76	71	25-150			
13C3-PFBS (S)	%.				124	132	25-150			
13C3-PFHxS (S)	%.				123	124	25-150			
13C3HFPO-DA (S)	%.				105	118	25-150			
13C4-PFBA (S)	%.				117	122	25-150			
13C4-PFHpA (S)	%.				118	125	25-150			
13C5-PFHxA (S)	%.				117	124	25-150			
13C5-PFPeA (S)	%.				121	124	25-150			
13C6-PFDA (S)	%.				129	140	25-150			
13C7-PFUdA (S)	%.				119	129	25-150			
13C8-PFOA (S)	%.				121	129	25-150			
13C8-PFOS (S)	%.				120	121	25-150			
13C8-PFOSA (S)	%.				111	118	25-150			
13C9-PFNA (S)	%.				122	128	25-150			
d3-MeFOSAA (S)	%.				109	116	25-150			
d3-NMeFOSA (S)	%.				65	76	20-150			
d5-EtFOSAA (S)	%.				121	120	25-150			
d5-NEtFOSA (S)	%.				66	73	20-150			
d7-NMeFOSE (S)	%.				91	102	20-150			
d9-NEtFOSE (S)	%.				93	101	20-150			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 972819
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID SL
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546001, 10709546002, 10709546003, 10709546004, 10709546005, 10709546006, 10709546007, 10709546008, 10709546009, 10709546010, 10709546011, 10709546012, 10709546013, 10709546014, 10709546015, 10709546016

METHOD BLANK: 5083844
Matrix: Solid
Associated Lab Samples: 10709546001, 10709546002, 10709546003, 10709546004, 10709546005, 10709546006, 10709546007, 10709546008, 10709546009, 10709546010, 10709546011, 10709546012, 10709546013, 10709546014, 10709546015, 10709546016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ug/kg	<0.025	0.097	10/11/24 18:53	
11Cl-PF3OUdS	ug/kg	<0.017	0.094	10/11/24 18:53	
4:2 FTS	ug/kg	<0.012	0.094	10/11/24 18:53	
6:2 FTS	ug/kg	<0.020	0.095	10/11/24 18:53	
8:2 FTS	ug/kg	<0.040	0.097	10/11/24 18:53	
9Cl-PF3ONS	ug/kg	<0.018	0.093	10/11/24 18:53	
ADONA	ug/kg	<0.011	0.095	10/11/24 18:53	
HFPO-DA	ug/kg	<0.018	0.10	10/11/24 18:53	
NEtFOSA	ug/kg	<0.023	0.10	10/11/24 18:53	
NEtFOSAA	ug/kg	<0.017	0.10	10/11/24 18:53	
NEtFOSE	ug/kg	<0.021	0.10	10/11/24 18:53	
NMeFOSA	ug/kg	<0.036	0.10	10/11/24 18:53	
NMeFOSAA	ug/kg	<0.042	0.10	10/11/24 18:53	
NMeFOSE	ug/kg	<0.020	0.10	10/11/24 18:53	
PFBA	ug/kg	<0.030	0.10	10/11/24 18:53	
PFBS	ug/kg	<0.013	0.089	10/11/24 18:53	
PFDA	ug/kg	<0.017	0.10	10/11/24 18:53	
PFDoA	ug/kg	<0.024	0.10	10/11/24 18:53	
PFDoS	ug/kg	<0.024	0.097	10/11/24 18:53	
PFDS	ug/kg	<0.029	0.097	10/11/24 18:53	
PFHpA	ug/kg	<0.010	0.10	10/11/24 18:53	
PFHpS	ug/kg	<0.024	0.095	10/11/24 18:53	
PFHxA	ug/kg	<0.014	0.10	10/11/24 18:53	
PFHxDA	ug/kg	<0.014	0.10	10/11/24 18:53	
PFHxS	ug/kg	<0.011	0.091	10/11/24 18:53	
PFNA	ug/kg	<0.018	0.10	10/11/24 18:53	
PFNS	ug/kg	<0.028	0.096	10/11/24 18:53	
PFOA	ug/kg	<0.012	0.10	10/11/24 18:53	
PFODA	ug/kg	<0.037	0.10	10/11/24 18:53	
PFOS	ug/kg	<0.043	0.093	10/11/24 18:53	
PFOSA	ug/kg	<0.015	0.10	10/11/24 18:53	
PFPeA	ug/kg	<0.018	0.10	10/11/24 18:53	
PFPeS	ug/kg	<0.011	0.094	10/11/24 18:53	
PFTeDA	ug/kg	<0.016	0.10	10/11/24 18:53	
PFTrDA	ug/kg	<0.021	0.10	10/11/24 18:53	
PFUnA	ug/kg	<0.034	0.10	10/11/24 18:53	
13C2-PFDoA (S)	%.	107	25-150	10/11/24 18:53	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

METHOD BLANK: 5083844 Matrix: Solid

Associated Lab Samples: 10709546001, 10709546002, 10709546003, 10709546004, 10709546005, 10709546006, 10709546007, 10709546008, 10709546009, 10709546010, 10709546011, 10709546012, 10709546013, 10709546014, 10709546015, 10709546016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C2-PFTA (S)	%.	100	25-150	10/11/24 18:53	
13C24:2FTS (S)	%.	93	25-150	10/11/24 18:53	
13C26:2FTS (S)	%.	109	25-150	10/11/24 18:53	
13C28:2FTS (S)	%.	130	25-150	10/11/24 18:53	
13C2PFHxDA (S)	%.	95	25-150	10/11/24 18:53	
13C3-PFBS (S)	%.	107	25-150	10/11/24 18:53	
13C3-PFHxS (S)	%.	103	25-150	10/11/24 18:53	
13C3HFPO-DA (S)	%.	95	25-150	10/11/24 18:53	
13C4-PFBA (S)	%.	92	25-150	10/11/24 18:53	
13C4-PFHpA (S)	%.	101	25-150	10/11/24 18:53	
13C5-PFHxA (S)	%.	101	25-150	10/11/24 18:53	
13C5-PFPeA (S)	%.	94	25-150	10/11/24 18:53	
13C6-PFDA (S)	%.	111	25-150	10/11/24 18:53	
13C7-PFUdA (S)	%.	106	25-150	10/11/24 18:53	
13C8-PFOA (S)	%.	100	25-150	10/11/24 18:53	
13C8-PFOS (S)	%.	107	25-150	10/11/24 18:53	
13C8-PFOSA (S)	%.	94	25-150	10/11/24 18:53	
13C9-PFNA (S)	%.	103	25-150	10/11/24 18:53	
d3-MeFOSAA (S)	%.	101	25-150	10/11/24 18:53	
d3-NMeFOSA (S)	%.	45	20-150	10/11/24 18:53	
d5-EtFOSAA (S)	%.	105	25-150	10/11/24 18:53	
d5-NEtFOSA (S)	%.	47	20-150	10/11/24 18:53	
d7-NMeFOSE (S)	%.	58	20-150	10/11/24 18:53	
d9-NEtFOSE (S)	%.	58	20-150	10/11/24 18:53	

LABORATORY CONTROL SAMPLE & LCSD: 5083845 5083846

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ug/kg	0.19	0.11	0.11	56	58	50-150	4	30	
11Cl-PF3OUdS	ug/kg	0.19	0.16	0.15	84	81	50-150	4	30	
4:2 FTS	ug/kg	0.19	0.17	0.16	89	84	50-150	6	30	
6:2 FTS	ug/kg	0.19	0.16	0.17	85	87	50-150	3	30	
8:2 FTS	ug/kg	0.19	0.16	0.15	85	77	50-150	11	30	
9Cl-PF3ONS	ug/kg	0.19	0.15	0.17	82	88	50-150	7	30	
ADONA	ug/kg	0.19	0.16	0.16	87	87	50-150	0	30	
HFPO-DA	ug/kg	0.2	0.17	0.16	86	81	50-150	6	30	
NEtFOSA	ug/kg	0.2	0.19	0.18	95	89	50-150	6	30	
NEtFOSAA	ug/kg	0.2	0.18	0.20	91	99	50-150	9	30	
NEtFOSE	ug/kg	0.2	0.19	0.18	93	89	50-150	4	30	
NMeFOSA	ug/kg	0.2	0.16	0.17	78	84	50-150	7	30	
NMeFOSAA	ug/kg	0.2	0.17	0.16	86	79	50-150	8	30	
NMeFOSE	ug/kg	0.2	0.21	0.17	104	86	50-150	18	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

LABORATORY CONTROL SAMPLE & LCSD: 5083845 5083846

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PFBA	ug/kg	0.2	0.19	0.18	93	90	50-150	3	30	
PFBS	ug/kg	0.18	0.16	0.15	90	87	50-150	4	30	
PFDA	ug/kg	0.2	0.16	0.17	81	85	50-150	4	30	
PFDoA	ug/kg	0.2	0.18	0.18	89	91	50-150	1	30	
PFDoS	ug/kg	0.19	0.15	0.17	79	86	50-150	9	30	
PFDS	ug/kg	0.19	0.17	0.17	87	88	50-150	0	30	
PFHpA	ug/kg	0.2	0.17	0.17	87	86	50-150	1	30	
PFHpS	ug/kg	0.19	0.19	0.15	98	81	50-150	19	30	
PFHxA	ug/kg	0.2	0.18	0.17	91	87	50-150	5	30	
PFHxDA	ug/kg	0.2	0.19	0.18	94	91	50-150	3	30	
PFHxS	ug/kg	0.18	0.16	0.17	89	92	50-150	4	30	
PFNA	ug/kg	0.2	0.18	0.16	92	82	50-150	12	30	
PFNS	ug/kg	0.19	0.17	0.19	86	99	50-150	14	30	
PFOA	ug/kg	0.2	0.19	0.19	95	95	50-150	0	30	
PFODA	ug/kg	0.2	0.18	0.18	91	90	50-150	2	30	
PFOS	ug/kg	0.19	0.16	0.16	87	87	50-150	0	30	
PFOSA	ug/kg	0.2	0.19	0.19	94	97	50-150	3	30	
PFPeA	ug/kg	0.2	0.18	0.17	89	87	50-150	3	30	
PFPeS	ug/kg	0.19	0.17	0.16	88	88	50-150	0	30	
PFTeDA	ug/kg	0.2	0.19	0.17	94	86	50-150	9	30	
PFTrDA	ug/kg	0.2	0.18	0.18	88	90	50-150	2	30	
PFUnA	ug/kg	0.2	0.18	0.17	91	83	50-150	9	30	
13C2-PFDoA (S)	%.				99	99	25-150			
13C2-PFTA (S)	%.				94	98	25-150			
13C24:2FTS (S)	%.				85	94	25-150			
13C26:2FTS (S)	%.				104	99	25-150			
13C28:2FTS (S)	%.				120	133	25-150			
13C2PFHxDA (S)	%.				93	94	25-150			
13C3-PFBS (S)	%.				102	105	25-150			
13C3-PFHxS (S)	%.				99	100	25-150			
13C3HFPO-DA (S)	%.				87	94	25-150			
13C4-PFBA (S)	%.				87	91	25-150			
13C4-PFHpA (S)	%.				94	98	25-150			
13C5-PFHxA (S)	%.				95	98	25-150			
13C5-PFPeA (S)	%.				89	93	25-150			
13C6-PFDA (S)	%.				109	110	25-150			
13C7-PFUdA (S)	%.				99	101	25-150			
13C8-PFOA (S)	%.				95	98	25-150			
13C8-PFOS (S)	%.				105	103	25-150			
13C8-PFOSA (S)	%.				73	89	25-150			
13C9-PFNA (S)	%.				94	101	25-150			
d3-MeFOSAA (S)	%.				96	104	25-150			
d3-NMeFOSA (S)	%.				64	93	20-150			
d5-EtFOSAA (S)	%.				99	102	25-150			
d5-NEtFOSA (S)	%.				63	93	20-150			
d7-NMeFOSE (S)	%.				63	85	20-150			
d9-NEtFOSE (S)	%.				67	84	20-150			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

QC Batch: 974380
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID SL
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709546017, 10709546018, 10709546019, 10709546020, 10709546021, 10709726001

METHOD BLANK: 5092922 Matrix: Solid
Associated Lab Samples: 10709546017, 10709546018, 10709546019, 10709546020, 10709546021, 10709726001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ug/kg	<0.025	0.097	10/23/24 00:18	
11Cl-PF3OUdS	ug/kg	<0.017	0.094	10/23/24 00:18	
4:2 FTS	ug/kg	<0.012	0.094	10/23/24 00:18	
6:2 FTS	ug/kg	<0.020	0.095	10/23/24 00:18	
8:2 FTS	ug/kg	<0.040	0.097	10/23/24 00:18	
9Cl-PF3ONS	ug/kg	<0.018	0.093	10/23/24 00:18	
ADONA	ug/kg	<0.011	0.095	10/23/24 00:18	
HFPO-DA	ug/kg	<0.018	0.10	10/23/24 00:18	
NEtFOSA	ug/kg	<0.023	0.10	10/23/24 00:18	
NEtFOSAA	ug/kg	<0.017	0.10	10/23/24 00:18	
NEtFOSE	ug/kg	<0.021	0.10	10/23/24 00:18	
NMeFOSA	ug/kg	<0.036	0.10	10/23/24 00:18	
NMeFOSAA	ug/kg	<0.042	0.10	10/23/24 00:18	
NMeFOSE	ug/kg	<0.020	0.10	10/23/24 00:18	
PFBA	ug/kg	<0.030	0.10	10/23/24 00:18	
PFBS	ug/kg	<0.013	0.089	10/23/24 00:18	
PFDA	ug/kg	<0.017	0.10	10/23/24 00:18	
PFDoA	ug/kg	<0.024	0.10	10/23/24 00:18	
PFDoS	ug/kg	<0.024	0.097	10/23/24 00:18	
PFDS	ug/kg	<0.029	0.097	10/23/24 00:18	
PFHpA	ug/kg	<0.010	0.10	10/23/24 00:18	
PFHpS	ug/kg	<0.024	0.095	10/23/24 00:18	
PFHxA	ug/kg	<0.014	0.10	10/23/24 00:18	
PFHxDA	ug/kg	<0.014	0.10	10/23/24 00:18	
PFHxS	ug/kg	<0.011	0.091	10/23/24 00:18	
PFNA	ug/kg	<0.018	0.10	10/23/24 00:18	
PFNS	ug/kg	<0.028	0.096	10/23/24 00:18	
PFOA	ug/kg	<0.012	0.10	10/23/24 00:18	
PFODA	ug/kg	<0.037	0.10	10/23/24 00:18	
PFOS	ug/kg	<0.043	0.093	10/23/24 00:18	
PFOSA	ug/kg	<0.015	0.10	10/23/24 00:18	
PFPeA	ug/kg	<0.018	0.10	10/23/24 00:18	
PFPeS	ug/kg	<0.011	0.094	10/23/24 00:18	
PFTeDA	ug/kg	<0.016	0.10	10/23/24 00:18	
PFTrDA	ug/kg	<0.021	0.10	10/23/24 00:18	
PFUnA	ug/kg	<0.034	0.10	10/23/24 00:18	
13C2-PFDoA (S)	%.	91	25-150	10/23/24 00:18	
13C2-PFTA (S)	%.	91	25-150	10/23/24 00:18	
13C24:2FTS (S)	%.	66	25-150	10/23/24 00:18	
13C26:2FTS (S)	%.	123	25-150	10/23/24 00:18	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

METHOD BLANK: 5092922 Matrix: Solid
Associated Lab Samples: 10709546017, 10709546018, 10709546019, 10709546020, 10709546021, 10709726001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	155	25-150	10/23/24 00:18	S3
13C2PFHxDA (S)	%.	81	25-150	10/23/24 00:18	
13C3-PFBS (S)	%.	87	25-150	10/23/24 00:18	
13C3-PFHxS (S)	%.	82	25-150	10/23/24 00:18	
13C3HFPO-DA (S)	%.	75	25-150	10/23/24 00:18	
13C4-PFBA (S)	%.	77	25-150	10/23/24 00:18	
13C4-PFHpA (S)	%.	86	25-150	10/23/24 00:18	
13C5-PFHxA (S)	%.	82	25-150	10/23/24 00:18	
13C5-PFPeA (S)	%.	79	25-150	10/23/24 00:18	
13C6-PFDA (S)	%.	96	25-150	10/23/24 00:18	
13C7-PFUdA (S)	%.	95	25-150	10/23/24 00:18	
13C8-PFOA (S)	%.	88	25-150	10/23/24 00:18	
13C8-PFOS (S)	%.	83	25-150	10/23/24 00:18	
13C8-PFOSA (S)	%.	84	25-150	10/23/24 00:18	
13C9-PFNA (S)	%.	92	25-150	10/23/24 00:18	
d3-MeFOSAA (S)	%.	89	25-150	10/23/24 00:18	
d3-NMeFOSA (S)	%.	78	20-150	10/23/24 00:18	
d5-EtFOSAA (S)	%.	100	25-150	10/23/24 00:18	
d5-NEtFOSA (S)	%.	80	20-150	10/23/24 00:18	
d7-NMeFOSE (S)	%.	72	20-150	10/23/24 00:18	
d9-NEtFOSE (S)	%.	74	20-150	10/23/24 00:18	

LABORATORY CONTROL SAMPLE & LCSD: 5092923 5092924

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ug/kg	0.19	0.14	0.085J	73	44	50-150		30	L2
11Cl-PF3OUdS	ug/kg	0.19	0.17	0.19	89	99	50-150	11	30	
4:2 FTS	ug/kg	0.19	0.17	0.17	89	90	50-150	2	30	
6:2 FTS	ug/kg	0.19	0.18	0.18	97	97	50-150	0	30	
8:2 FTS	ug/kg	0.19	0.15	0.18	80	92	50-150	15	30	
9Cl-PF3ONS	ug/kg	0.19	0.18	0.20	97	106	50-150	9	30	
ADONA	ug/kg	0.19	0.16	0.17	86	90	50-150	4	30	
HFPO-DA	ug/kg	0.2	0.20	0.20	98	99	50-150	1	30	
NEtFOSA	ug/kg	0.2	0.18	0.21	89	103	50-150	15	30	
NEtFOSAA	ug/kg	0.2	0.19	0.19	94	95	50-150	1	30	
NEtFOSE	ug/kg	0.2	0.19	0.18	94	92	50-150	3	30	
NMeFOSA	ug/kg	0.2	0.17	0.23	83	113	50-150	31	30	R1
NMeFOSAA	ug/kg	0.2	0.17	0.20	83	98	50-150	16	30	
NMeFOSE	ug/kg	0.2	0.19	0.20	94	99	50-150	5	30	
PFBA	ug/kg	0.2	0.19	0.19	96	94	50-150	2	30	
PFBS	ug/kg	0.18	0.16	0.17	91	94	50-150	4	30	
PFDA	ug/kg	0.2	0.18	0.19	88	94	50-150	7	30	
PFDoA	ug/kg	0.2	0.18	0.18	88	90	50-150	3	30	
PFDoS	ug/kg	0.19	0.16	0.18	83	95	50-150	13	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

LABORATORY CONTROL SAMPLE & LCSD: 5092923 5092924

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PFDS	ug/kg	0.19	0.17	0.19	89	100	50-150	12	30	
PFHpA	ug/kg	0.2	0.18	0.18	91	92	50-150	1	30	
PFHpS	ug/kg	0.19	0.18	0.21	92	108	50-150	16	30	
PFHxA	ug/kg	0.2	0.18	0.19	91	93	50-150	2	30	
PFHxDA	ug/kg	0.2	0.19	0.20	97	102	50-150	5	30	
PFHxS	ug/kg	0.18	0.17	0.18	92	96	50-150	4	30	
PFNA	ug/kg	0.2	0.16	0.18	81	88	50-150	9	30	
PFNS	ug/kg	0.19	0.18	0.22	94	114	50-150	19	30	
PFOA	ug/kg	0.2	0.20	0.19	98	93	50-150	5	30	
PFODA	ug/kg	0.2	0.18	0.19	91	94	50-150	3	30	
PFOS	ug/kg	0.19	0.20	0.19	108	102	50-150	5	30	
PFOSA	ug/kg	0.2	0.18	0.18	90	92	50-150	2	30	
PFPeA	ug/kg	0.2	0.19	0.19	93	94	50-150	1	30	
PFPeS	ug/kg	0.19	0.17	0.17	89	93	50-150	5	30	
PFTeDA	ug/kg	0.2	0.18	0.18	92	91	50-150	2	30	
PFTrDA	ug/kg	0.2	0.18	0.19	90	96	50-150	7	30	
PFUnA	ug/kg	0.2	0.18	0.18	92	92	50-150	0	30	
13C2-PFDoA (S)	%.				92	87	25-150			
13C2-PFTA (S)	%.				89	88	25-150			
13C24:2FTS (S)	%.				71	65	25-150			
13C26:2FTS (S)	%.				128	107	25-150			
13C28:2FTS (S)	%.				132	178	25-150			S0
13C2PFHxDA (S)	%.				81	81	25-150			
13C3-PFBS (S)	%.				87	87	25-150			
13C3-PFHxS (S)	%.				84	82	25-150			
13C3HFPO-DA (S)	%.				75	74	25-150			
13C4-PFBA (S)	%.				77	76	25-150			
13C4-PFHpA (S)	%.				84	82	25-150			
13C5-PFHxA (S)	%.				81	81	25-150			
13C5-PFPeA (S)	%.				79	78	25-150			
13C6-PFDA (S)	%.				96	96	25-150			
13C7-PFUdA (S)	%.				91	93	25-150			
13C8-PFOA (S)	%.				86	86	25-150			
13C8-PFOS (S)	%.				82	78	25-150			
13C8-PFOSA (S)	%.				86	82	25-150			
13C9-PFNA (S)	%.				94	92	25-150			
d3-MeFOSAA (S)	%.				95	86	25-150			
d3-NMeFOSA (S)	%.				77	72	20-150			
d5-EtFOSAA (S)	%.				97	96	25-150			
d5-NEtFOSA (S)	%.				77	75	20-150			
d7-NMeFOSE (S)	%.				73	74	20-150			
d9-NEtFOSE (S)	%.				71	77	20-150			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

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 - The reported result is an estimated value.

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

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

DL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

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

B	Analyte was detected in the associated method blank.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10709546001	**PR-SS01**	ASTM D2974	973596		
10709546002	**PR-SS02**	ASTM D2974	973596		
10709546003	**PR-SS03**	ASTM D2974	973596		
10709546004	**PR-SS04**	ASTM D2974	973596		
10709546005	**PR-SS05**	ASTM D2974	973596		
10709546006	**PR-SS06**	ASTM D2974	973596		
10709546007	**PR-SS07**	ASTM D2974	973596		
10709546008	**PR-SS08**	ASTM D2974	973596		
10709546009	**PR-SS09**	ASTM D2974	973596		
10709546010	**PR-SS10**	ASTM D2974	973596		
10709546011	**PR-SS11**	ASTM D2974	973830		
10709546012	**PR-SS12**	ASTM D2974	973830		
10709546013	**PR-SS13**	ASTM D2974	973830		
10709546014	**PR-SS14**	ASTM D2974	973830		
10709546015	**PR-SS15**	ASTM D2974	973830		
10709546016	**PR-SS16**	ASTM D2974	973830		
10709546017	**PR-SS17**	ASTM D2974	973830		
10709546018	**PR-SS18**	ASTM D2974	973830		
10709546019	**PR-SS19**	ASTM D2974	973830		
10709546020	**PR-SS20**	ASTM D2974	973830		
10709546021	**PR-SS21**	ASTM D2974	972582		
10709726001	**PR-SS22**	ASTM D2974	972582		
10709546022	**PR-FB-02**	ENV-SOP-MIN4-0178	972825	ENV-SOP-MIN4-0178	974062
10709546023	**PR-ERB-02**	ENV-SOP-MIN4-0178	972825	ENV-SOP-MIN4-0178	974062
10709546024	**PR-RW-02**	ENV-SOP-MIN4-0178	972825	ENV-SOP-MIN4-0178	974062
10709546001	**PR-SS01**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546002	**PR-SS02**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546003	**PR-SS03**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546004	**PR-SS04**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546005	**PR-SS05**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546006	**PR-SS06**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546007	**PR-SS07**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546008	**PR-SS08**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546009	**PR-SS09**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546010	**PR-SS10**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546011	**PR-SS11**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546012	**PR-SS12**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546013	**PR-SS13**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546014	**PR-SS14**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546015	**PR-SS15**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546016	**PR-SS16**	ENV-SOP-MIN4-0178	972819	ENV-SOP-MIN4-0178	973495
10709546017	**PR-SS17**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253
10709546018	**PR-SS18**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253
10709546019	**PR-SS19**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253
10709546020	**PR-SS20**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253
10709546021	**PR-SS21**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10709726001	**PR-SS22**	ENV-SOP-MIN4-0178	974380	ENV-SOP-MIN4-0178	975253

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

WO#: 10709546

10709546

Company Name: AECOM	Contact/Report To: Leo Linnemanstons
Street Address: 11 E Superior St, Suite ~~260~~ 548 Duluth, MN 55802	Phone #: 608-828-8208
	E-Mail: Leo.Linnemanstons@aecom.com
	Cc E-Mail:
Customer Project #: 60731241	Invoice to: Leo Linnemanstons
Project Name: Enbridge Superior Terminal	Invoice E-mail: Leo.Linnemanstons@aecom.com
Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal	Purchase Order # (if applicable):
	Quote #:
Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET	County / State origin of sample(s): Douglas County, Wisconsin

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

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

Specify Container Size**: 9

Identify Container Preservative Type***: 1

Analysis Requested: WIS 1D36 (PFAS)

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: / AcctNum / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID: 44709

Preservation non-conformance identified for sample.

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	WIS 1D36 (PFAS)	Sample Comment
PR-SS01	SS	G			9/24/24	0800	1			1	001
PR-SS02	SS	G			9/24/24	0825	1			1	002
PR-SS03	SS	G			9/24/24	0840	1			1	003
PR-SS04	SS	G			9/24/24	0900	1			1	004
PR-SS05	SS	G			9/24/24	0910	1			1	005
PR-SS06	SS	G			9/24/24	0925	1			1	006
PR-SS07	SS	G			9/24/24	0940	1			1	007
PR-SS08	SS	G			9/24/24	0950	1			1	008
PR-SS09	SS	G			9/24/24	1005	1			1	009
PR-SS10	SS	G			9/24/24	1015	1			1	010

Additional Instructions from Pace®:

Collected By: Printed Name: Charlie Bills Signature: Charlie

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	[ ] On Ice
1	T1	[illegible]	4.3	4.3	ice

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
[signature] / AECOM	9/24/24 1625	SVelacich/Pace	9/24/24 1625
SVelacich/Pace	9/24/24 1625	Patrick/Pace	~~26Sep2024~~ 1040

Tracking Number: on 16.8°C

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 1 of 3

ENV-FRM-CORQ-0019_v02_110123 ©

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name: AECOM
Street Address: 11 E Superior St, Suite ~~260~~ 548 Duluth, MN 55802
Customer Project #: 60731241
Project Name: Enbridge Superior Terminal
Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal
Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

Contact/Report To: Leo Linnemanstons
Phone #: 608-828-8208
E-Mail: Leo.Linnemanstons@aecom.com
Cc E-Mail:
Invoice to: Leo Linnemanstons
Invoice E-mail: Leo.Linnemanstons@aecom.com
Purchase Order # (if applicable):
Quote #:
County / State origin of sample(s): Douglas County, Wisconsin

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other____

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other ______

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

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

Specify Container Size **: 9
Identify Container Preservative Type***: 1

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: | AcctNum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID: 44709

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	Analysis Requested: WIS ID36 (PFAS)	Sample Comment	Preservation non-conformance identified for sample.
PR-SS11	SS	G			9/24/24	1050	1			1	011	
PR-SS12	SS	G			9/24/24	1100	1			1	012	
PR-SS13	SS	G			9/24/24	1115	1			1	013	
PR-SS14	SS	G			9/24/24	1120	1			1	014	
PR-SS15	SS	G			9/24/24	1130	1			1	015	
PR-SS16	SS	G			9/24/24	1145	1			1	016	
PR-SS17	SS	G			9/24/24	1155	1			1	017	
PR-SS18	SS	G			9/24/24	1215	1			1	018	
PR-SS19	SS	G			9/24/24	1230	1			1	019	
PR-SS20	SS	G			9/24/24	1245	1			1	020	

Additional Instructions from Pace®:

Collected By: Printed Name: Charlie Bills
Signature: [signature]

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	[ ] On Ice
	T1	true	4.3	4.3	yes

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
[signature] / AECOM	9/24/24 1625	[signature] / Pace	9/24/24 1625 on 16.8°C
[signature] / Pace	9/24/24 1625	[signature] / Pace	26 Sep 2024 0940

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 2 of 3

ENV-FRM-CORQ-0019_v02_110123 ©

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name: AECOM
Street Address: 11 E Superior St, Suite ~~200~~ HM 548 ~~260~~ Duluth, MN 55802
Customer Project #: 60702913
Project Name: Enbridge Superior Terminal
Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal

Contact/Report To: Leo Linnemanstons
Phone #: 608-828-8208
E-Mail: Leo.Linnemanstons@aecom.com
Cc E-Mail:
Invoice to: Leo Linnemanstons
Invoice E-mail: ~~608-828-8208~~ HM Leo.Linnemanstons@aecom.com
Purchase Order # (if applicable):
Quote #:

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET
County / State origin of sample(s): Douglas County, Wisconsin

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No
Analysis:

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

Specify Container Size **: 9 | 3
Identify Container Preservative Type***: 1 | 1

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: | AcctNum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID: 44709

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	WIS 1D36 (PFAS)	WIS 1D36 (PFAS)	Sample Comment	Preservation non-conformance identified for sample.
PR-SS21	SS	G			9/24/24	1250	1			1		021	
PR-FB-02	W	G			9/24/24	1305	2				2	022	
PR-ERB-02	W	G			9/24/24	1310	2				2	023	
PR-RW-02	W	G			9/24/24	1315	2				2	024	

Additional Instructions from Pace®:

Collected By: Printed Name: Charlie Bills
Signature: [signature]

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	[ ] On Ice
	T1	true	4.3	4.3	yes

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
[signature] AECOM	9/24/24 1625	[signature] / Pace	9/24/24 1625 on 16.8°C
[signature] / Pace	9/24/24 1625	[signature] / Pace	26Sep2024 1040

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 2 of 3

ENV-FRM-CORQ-0019_v02_110123 ©

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt

CLIENT NAME: AECOM **PROJECT #:**

WO#: 10709546
PM: TS1 Due Date: 10/25/24
CLIENT: AECOM

COURIER: ☐ Client ☐ Commercial ☐ FedEx ☑ Pace ☐ SpeeDee ☐ UPS ☐ USPS

TRACKING NUMBER: n/a ☐ See Exceptions form ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present: ☐ YES ☑ NO **Seals Intact:** ☐ YES ☑ NO **Biological Tissue Frozen:** ☐ YES ☐ NO ☑ N/A

Packing Material: ☑ Bubble Bags ☐ Bubble Wrap ☐ None ☐ Other **Temp Blank:** ☑ YES ☐ NO **Type of Ice:** ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Thermometer: ☑ T1 (0461) ☐ T2 (0436) ☐ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710)

Did Samples Originate in West Virginia: ☐ YES ☑ NO	**Were All Container Temps taken:** ☐ YES ☐ NO ☑ N/A
Correction Factor: 0.0 **Cooler Temp Read w/Temp Blank:** 4.3 °C **Cooler Temp Corrected w/Temp Blank:** 4.3 °C	**Average Corrected Temp (no Temp Blank Only):** ____ °C
***NOTE:** Temp should be above freezing to 6°C.*	☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container
USDA Regulated Soil: ☐ N/A – Water Sample/Other (describe): ____	**Initials & Date of Person Examining Contents:** AJL 27 Sep 2024
Did Samples originate from one of the following states (check maps) – AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: ☐ YES ☑ NO	Did samples originate from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☑ NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.	

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☑	☐	☐	3.
Samples Arrived within Hold Time?	☑	☐		4. If Fecal: ☐ <8 hrs ☐ >8 hr, <24 hr ☐ No
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Other: ____
Rush Turn Around Time Requested?	☐	☑		6.
Sufficient Sample Volume?	☑	☐		7.
Correct Containers Used? – Pace Containers Used?	☑ ☑	☐ ☐	☐	8.
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☑	☐	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC? **NOTE:** If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☑ Soil ☑ Water ☐ Other	☑	☐		11. **If NO, write ID/Date/Time of container below:** ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐	☐	☑	12. Sample #:
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☐	☐	☑	☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS	☐	☐	☑	Positive for Residual Chlorine: ☐ YES ☐ NO
NOTE: If adding preservation to the container, **verify with the PM first.** Clients may require adding preservative to the field and equipment blanks when this occurs.				**pH Paper Lot #**
				Residual Chlorine / 0-6 Roll / 0-6 Strip / 0-14 Strip (blank)
				☐ See Exceptions form ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container?	☐	☐	☑	13.
Extra labels present on soil VOA or WIDRO containers?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): ____

CLIENT NOTIFICATION / RESOLUTION **FIELD DATA REQUIRED:** ☐ YES ☐ NO

Person Contacted: ____ Date & Time: ____

Comments / Resolution: ____

Project Manager Review: Jina Soltani **Date:** 9/27/24

***NOTE:** When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Labeled By: PJL **Line:** 2

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

WO# : 10709726

10709726

Container Label Here

Company Name: AECOM

Street Address: 11 E Superior Street, Suite 548 Duluth, MN 55802

Customer Project #: 60731241

Project Name: Enbridge Superior Terminal

Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal

Contact/Report To: Leo Linnemanstons

Phone #: 608-828-8208

E-Mail: Leo.Linnemanstons@aecom.com

Cc E-Mail:

Invoice To: Leo Linnemanstons

Invoice E-Mail: Leo.Linnemanstons@aecom.com

Purchase Order # (if applicable):

Quote #:

Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET

County / State origin of sample(s): Douglas County, Wisconsin

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other ______

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

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

Specify Container Size **: 9

Identify Container Preservative Type***: 1

Analysis Requested: WIS 1D36 (PFAS)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	WIS 1D36 (PFAS)	Sample Comment
PR-SS22	SS	G			9/27/24	1320	1			1	001

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: / AcctNum / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: (Printed Name) Hope Mahon

Signature: Hope Mahon

Customer Remarks / Special Conditions / Possible Hazards: DU Temp

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
		-0.2	19.5	19.3	Y

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Hope Mahon AECOM	9/27/2024 1406	[signature] Pace	9/27/24 1406
[signature] Pace	9/27/24 1406	[signature]	9/27/24 1845

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other

Page: 1 of 1

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

ENV-FRM-CORQ-0019_v02_110123 ©

T3 0.4

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt

CLIENT NAME: AECOM **PROJECT #:** **WO#: 10709726**

PM: TS1 **Due Date: 10/29/24**

CLIENT: AECOM

COURIER: ☐ Client ☐ Commercial ☐ FedEx ☑ Pace ☐ SpeeDee ☐ UPS ☐ USPS

TRACKING NUMBER: _____ ☐ See Exceptions form ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present: ☑ YES ☐ NO **Seals Intact:** ☑ YES ☐ NO **Biological Tissue Frozen:** ☐ YES ☐ NO ☑ N/A

Packing Material: ☐ Bubble Bags ☐ Bubble Wrap ☑ None ☐ Other **Temp Blank:** ☑ YES ☐ NO **Type of Ice:** ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☑ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710)

Did Samples Originate in West Virginia: ☐ YES ☑ NO	**Were All Container Temps taken:** ☐ YES ☐ NO ☑ N/A
Correction Factor: -0.1 **Cooler Temp Read w/Temp Blank:** 0.5 °C **Cooler Temp Corrected w/Temp Blank:** 0.4 °C	**Average Corrected Temp (no Temp Blank Only):** _____ °C
***NOTE:** Temp should be above freezing to 6°C.*	☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container
USDA Regulated Soil: ☐ N/A – Water Sample/Other (describe): Soil	**Initials & Date of Person Examining Contents:** SRC 9/28/24
Did Samples originate from one of the following states (check maps) – AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: ☐ YES ☑ NO	Did samples originate from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☑ NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.	

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☑	☐	☐	3.
Samples Arrived within Hold Time?	☑	☐		4. If Fecal: ☐ <8 hrs ☐ >8 hr, <24 hr ☐ No
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Other: _____
Rush Turn Around Time Requested?	☐	☑		6.
Sufficient Sample Volume?	☑	☐		7.
Correct Containers Used? – Pace Containers Used?	☑ ☐	☐ ☑	☐	8.
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☐	☑	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC? **NOTE:** If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☑ Soil ☐ Water ☐ Other	☑	☐		11. **If NO, write ID/Date/Time of container below:** ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐	☐	☑	12. Sample #:
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☐	☐	☑	☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS	☐	☐	☑	Positive for Residual Chlorine: ☐ YES ☐ NO
NOTE: If adding preservation to the container, **verify with the PM first.** Clients may require adding preservative to the field and equipment blanks when this occurs.				**pH Paper Lot #**
				Residual Chlorine / 0-6 Roll / 0-6 Strip / 0-14 Strip (blank)
				☐ See Exceptions form ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container?	☐	☐	☑	13.
Extra labels present on soil VOA or WIDRO containers?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION **FIELD DATA REQUIRED:** ☐ YES ☐ NO

Person Contacted: _____ Date & Time: _____

Comments / Resolution: _____

Project Manager Review: Tina Stair **Date:** 10/1/24

***NOTE:** When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Labeled By: MMM **Line:** 3

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

October 30, 2024

Leo Linnemanstons
AECOM
1555 N. RiverCenter Drive
Ste. 214
Milwaukee, WI 53212

RE: Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Dear Leo Linnemanstons:

Enclosed are the analytical results for sample(s) received by the laboratory on September 27, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

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

- Pace Analytical Services - Minneapolis

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

Sincerely,

Tina Soltani
tina.soltani@pacelabs.com
(612) 607-6384
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Pace Analytical Services, LLC - Minneapolis MN
1700 Elm Street SE, Minneapolis, MN 55414
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
DoD Certification via A2LA #: 2926.01
EPA Region 8 Tribal Water Systems+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
GMP+ Certification #: GMP050884
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
ISO/IEC 17025 Certification via A2LA #: 2926.01
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: AI-03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Approval: via MN 027-053-137
Minnesota Petrofund Registration #: 1240
Mississippi Certification #: MN00064
Missouri Certification #: 10100
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification (A2LA) #: R-036
North Dakota Certification (MN) #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification (1700) #: CL101
Oklahoma Certification #: 9507
Oregon Primary Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Vermont Certification #: VT-027053137
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DEP Certification #: 382
West Virginia DW Certification #: 9952 C
Wisconsin Certification #: 999407970
Wyoming UST Certification via A2LA #: 2926.01
USDA Permit #: P330-19-00208

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10709704001	**PR-PDNF-SW01**	Water	09/26/24 07:35	09/27/24 18:45
10709704002	**PR-Dup1-SW01**	Water	09/26/24 07:35	09/27/24 18:45
10709704003	**PR-PD07-SW01**	Water	09/26/24 08:05	09/27/24 18:45
10709704004	**PR-PD01-SW01**	Water	09/26/24 08:20	09/27/24 18:45
10709704005	**PR-PD02-SW01**	Water	09/26/24 08:40	09/27/24 18:45
10709704006	**PR-PD04-SW01**	Water	09/26/24 08:55	09/27/24 18:45
10709704007	**PR-PDSF-SW01**	Water	09/26/24 09:20	09/27/24 18:45
10709704008	**PR-PD05-SW01**	Water	09/26/24 09:35	09/27/24 18:45
10709704009	**PR-PD03-SW01**	Water	09/26/24 09:45	09/27/24 18:45
10709704010	**PR-PD06-SW01**	Water	09/26/24 10:05	09/27/24 18:45
10709704011	**PR-PD09-SW01**	Water	09/26/24 10:30	09/27/24 18:45
10709704012	**PR-FB-01**	Water	09/26/24 10:50	09/27/24 18:45
10709704013	**PR-RW-01**	Water	09/26/24 10:55	09/27/24 18:45
10709704014	**PR-ERB-01**	Water	09/26/24 11:00	09/27/24 18:45

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10709704001	**PR-PDNF-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704002	**PR-Dup1-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704003	**PR-PD07-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704004	**PR-PD01-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704005	**PR-PD02-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704006	**PR-PD04-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704007	**PR-PDSF-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704008	**PR-PD05-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704009	**PR-PD03-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704010	**PR-PD06-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704011	**PR-PD09-SW01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704012	**PR-FB-01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704013	**PR-RW-01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M
10709704014	**PR-ERB-01**	ENV-SOP-MIN4-0178	NBH	61	PASI-M

PASI-M = Pace Analytical Services - Minneapolis

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709704001	**PR-PDNF-SW01**					
ENV-SOP-MIN4-0178	PFBS	0.63J	ng/L	1.8	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFHxA	4.0	ng/L	2.0	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFBA	9.0	ng/L	2.0	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFPeA	5.7	ng/L	2.0	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFPeS	0.29J	ng/L	1.9	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFHpA	3.8	ng/L	2.0	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFHxS	2.1	ng/L	1.8	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFNA	1.3J	ng/L	2.0	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFOS	1.3J	ng/L	1.9	10/15/24 19:31	
ENV-SOP-MIN4-0178	PFOA	2.6	ng/L	2.0	10/15/24 19:31	
10709704002	**PR-Dup1-SW01**					
ENV-SOP-MIN4-0178	PFBS	0.64J	ng/L	1.8	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFHxA	4.1	ng/L	2.0	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFBA	9.0	ng/L	2.0	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFPeA	7.5	ng/L	2.0	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFPeS	0.30J	ng/L	1.9	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFHpA	3.9	ng/L	2.0	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFHxS	2.1	ng/L	1.8	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFNA	1.5J	ng/L	2.0	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFOS	1.3J	ng/L	1.8	10/15/24 19:38	
ENV-SOP-MIN4-0178	PFOA	2.6	ng/L	2.0	10/15/24 19:38	
10709704003	**PR-PD07-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	2.4	ng/L	2.0	10/22/24 11:04	B
ENV-SOP-MIN4-0178	PFBS	4.3	ng/L	1.8	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFDA	1.6J	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFHxA	63.1	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFBA	51.5	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFHpS	1.2J	ng/L	2.0	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFPeA	157	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFPeS	4.8	ng/L	1.9	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFHpA	28.4	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFHxS	42.5	ng/L	1.9	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFNA	9.0	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFOS	54.2	ng/L	1.9	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFOA	32.5	ng/L	2.1	10/22/24 11:04	
ENV-SOP-MIN4-0178	PFUnA	2.9	ng/L	2.1	10/22/24 11:04	
10709704004	**PR-PD01-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	13.1	ng/L	1.9	10/22/24 11:11	
ENV-SOP-MIN4-0178	8:2 FTS	1.1J	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFBS	2.8	ng/L	1.8	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFDA	2.5	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFHxA	63.3	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFBA	47.1	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFPeA	156	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFPeS	2.5	ng/L	1.9	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFHpA	25.3	ng/L	2.0	10/22/24 11:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709704004	**PR-PD01-SW01**					
ENV-SOP-MIN4-0178	PFHxS	28.0	ng/L	1.8	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFNA	6.5	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFOS	46.2	ng/L	1.9	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFOA	22.6	ng/L	2.0	10/22/24 11:11	
ENV-SOP-MIN4-0178	PFUnA	5.8	ng/L	2.0	10/22/24 11:11	
10709704005	**PR-PD02-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	5.3	ng/L	1.9	10/22/24 18:24	B
ENV-SOP-MIN4-0178	PFBS	2.7	ng/L	1.8	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFDA	2.4	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFHxA	65.6	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFBA	50.6	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFHpS	0.67J	ng/L	1.9	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFPeA	163	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFPeS	2.6	ng/L	1.9	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFHpA	27.5	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFHxS	28.0	ng/L	1.8	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFNA	7.8	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFOS	42.8	ng/L	1.8	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFOA	23.4	ng/L	2.0	10/22/24 18:24	
ENV-SOP-MIN4-0178	PFUnA	5.2	ng/L	2.0	10/22/24 18:24	
10709704006	**PR-PD04-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	1.9J	ng/L	2.0	10/22/24 18:32	B
ENV-SOP-MIN4-0178	PFBS	1.3J	ng/L	1.8	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFDA	2.4	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFHxA	70.1	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFBA	46.0	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFPeA	161	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFPeS	0.87J	ng/L	1.9	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFHpA	28.1	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFHxS	11.5	ng/L	1.9	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFNA	7.6	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFOS	17.4	ng/L	1.9	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFOA	23.4	ng/L	2.1	10/22/24 18:32	
ENV-SOP-MIN4-0178	PFUnA	1.4J	ng/L	2.1	10/22/24 18:32	
10709704007	**PR-PDSF-SW01**					
ENV-SOP-MIN4-0178	PFBS	0.29J	ng/L	1.8	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFHxA	2.4	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFBA	6.1	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFPeA	6.8	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFHpA	3.5	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFHxS	1.5J	ng/L	1.9	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFNA	1.4J	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFOS	1.9J	ng/L	1.9	10/22/24 11:32	B
ENV-SOP-MIN4-0178	PFOA	1.7J	ng/L	2.0	10/22/24 11:32	
ENV-SOP-MIN4-0178	PFUnA	1.1J	ng/L	2.0	10/22/24 11:32	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709704008	**PR-PD05-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	16.9	ng/L	1.9	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFBS	13.0	ng/L	1.8	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFDA	3.3	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFHxA	62.8	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFBA	42.4	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFHpS	2.8	ng/L	1.9	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFOSA	1.5J	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFPeA	102	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFPeS	7.7	ng/L	1.9	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFHpA	22.7	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFHxS	87.8	ng/L	1.9	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFNA	8.1	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFOS	167	ng/L	1.9	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFOA	23.7	ng/L	2.0	10/22/24 11:40	
ENV-SOP-MIN4-0178	PFUnA	6.2	ng/L	2.0	10/22/24 11:40	
10709704009	**PR-PD03-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	29.6	ng/L	1.9	10/22/24 11:47	
ENV-SOP-MIN4-0178	8:2 FTS	1.7J	ng/L	1.9	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFBS	15.2	ng/L	1.8	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFDA	3.9	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFHxA	82.7	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFBA	43.5	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFHpS	3.7	ng/L	1.9	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFOSA	1.6J	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFPeA	132	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFPeS	11.6	ng/L	1.9	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFHpA	30.7	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFHxS	125	ng/L	1.8	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFNA	9.5	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFOS	212	ng/L	9.3	10/22/24 18:17	
ENV-SOP-MIN4-0178	PFOA	29.5	ng/L	2.0	10/22/24 11:47	
ENV-SOP-MIN4-0178	PFUnA	5.8	ng/L	2.0	10/22/24 11:47	
10709704010	**PR-PD06-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	7.0	ng/L	1.9	10/22/24 11:54	
ENV-SOP-MIN4-0178	8:2 FTS	1.2J	ng/L	1.9	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFBS	2.4	ng/L	1.8	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFDA	2.5	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFHxA	49.7	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFBA	34.6	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFHpS	0.75J	ng/L	1.9	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFOSA	0.43J	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFPeA	112	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFPeS	2.1	ng/L	1.9	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFHpA	18.3	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFHxS	22.1	ng/L	1.8	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFNA	6.7	ng/L	2.0	10/22/24 11:54	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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SUMMARY OF DETECTION

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
10709704010	**PR-PD06-SW01**					
ENV-SOP-MIN4-0178	PFOS	49.0	ng/L	1.9	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFOA	36.4	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFTrDA	0.47J	ng/L	2.0	10/22/24 11:54	
ENV-SOP-MIN4-0178	PFUnA	9.1	ng/L	2.0	10/22/24 11:54	
10709704011	**PR-PD09-SW01**					
ENV-SOP-MIN4-0178	6:2 FTS	1.4J	ng/L	3.6	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFBS	4.4	ng/L	3.4	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFHxA	3.7J	ng/L	3.8	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFBA	16.1	ng/L	3.8	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFPeA	7.8	ng/L	3.8	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFHpA	4.0	ng/L	3.8	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFHxS	2.5J	ng/L	3.5	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFOS	4.3	ng/L	3.5	10/22/24 12:01	B
ENV-SOP-MIN4-0178	PFOA	17.4	ng/L	3.8	10/22/24 12:01	
ENV-SOP-MIN4-0178	PFUnA	2.9J	ng/L	3.8	10/22/24 12:01	
10709704012	**PR-FB-01**					
ENV-SOP-MIN4-0178	6:2 FTS	0.66J	ng/L	1.9	10/22/24 12:23	B
ENV-SOP-MIN4-0178	PFOS	1.2J	ng/L	1.8	10/22/24 12:23	B
10709704013	**PR-RW-01**					
ENV-SOP-MIN4-0178	PFOS	0.54J	ng/L	1.9	10/22/24 12:30	B
10709704014	**PR-ERB-01**					
ENV-SOP-MIN4-0178	PFOS	0.98J	ng/L	1.8	10/22/24 12:37	B

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Method: **ENV-SOP-MIN4-0178**
Description: WI ID NPW
Client: AECOM MN ND
Date: October 30, 2024

General Information:
14 samples were analyzed for ENV-SOP-MIN4-0178 by Pace Analytical Services Minneapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with ENV-SOP-MIN4-0178 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

QC Batch: 972825

S0: Surrogate recovery outside laboratory control limits.

- LCS (Lab ID: 5083867)
  - 13C28:2FTS (S)
- LCSD (Lab ID: 5083868)
  - 13C28:2FTS (S)
- PR-Dup1-SW01 (Lab ID: 10709704002)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
- PR-PDNF-SW01 (Lab ID: 10709704001)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- BLANK (Lab ID: 5083866)
  - 13C28:2FTS (S)

QC Batch: 974259

S0: Surrogate recovery outside laboratory control limits.

- LCS (Lab ID: 5092263)
  - 13C28:2FTS (S)
- LCSD (Lab ID: 5092264)

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PROJECT NARRATIVE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Method: **ENV-SOP-MIN4-0178**
Description: WI ID NPW
Client: AECOM MN ND
Date: October 30, 2024

QC Batch: 974259

S0: Surrogate recovery outside laboratory control limits.

- 13C26:2FTS (S)
- 13C28:2FTS (S)

- PR-PD01-SW01 (Lab ID: 10709704004)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d7-NMeFOSE (S)
  - d9-NEtFOSE (S)
- PR-PD02-SW01 (Lab ID: 10709704005)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C8-PFOSA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d7-NMeFOSE (S)
  - d9-NEtFOSE (S)
- PR-PD03-SW01 (Lab ID: 10709704009)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
- PR-PD04-SW01 (Lab ID: 10709704006)
  - 13C2-PFTA (S)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - 13C8-PFOSA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d7-NMeFOSE (S)
  - d9-NEtFOSE (S)
- PR-PD05-SW01 (Lab ID: 10709704008)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - 13C2PFHxDA (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d9-NEtFOSE (S)
- PR-PD06-SW01 (Lab ID: 10709704010)
  - 13C24:2FTS (S)

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PROJECT NARRATIVE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Method: **ENV-SOP-MIN4-0178**
Description: WI ID NPW
Client: AECOM MN ND
Date: October 30, 2024

QC Batch: 974259

S0: Surrogate recovery outside laboratory control limits.

- 13C26:2FTS (S)
- 13C28:2FTS (S)
- d3-NMeFOSA (S)
- d5-NEtFOSA (S)
- d9-NEtFOSE (S)

- PR-PD07-SW01 (Lab ID: 10709704003)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)
  - d9-NEtFOSE (S)
- PR-PD09-SW01 (Lab ID: 10709704011)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
- PR-PDSF-SW01 (Lab ID: 10709704007)
  - 13C24:2FTS (S)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
  - d3-NMeFOSA (S)
  - d5-NEtFOSA (S)

S3: Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

- BLANK (Lab ID: 5092262)
  - 13C26:2FTS (S)
  - 13C28:2FTS (S)
- PR-ERB-01 (Lab ID: 10709704014)
  - 13C28:2FTS (S)
- PR-FB-01 (Lab ID: 10709704012)
  - 13C28:2FTS (S)
- PR-RW-01 (Lab ID: 10709704013)
  - 13C28:2FTS (S)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 974259

B: Analyte was detected in the associated method blank.

- BLANK for HBN 974259 [PFAS/472 (Lab ID: 5092262)
  - 6:2 FTS
  - PFOS

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PROJECT NARRATIVE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Method: **ENV-SOP-MIN4-0178**
Description: WI ID NPW
Client: AECOM MN ND
Date: October 30, 2024

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 972825

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 5083867)
  - PFODA
- LCSD (Lab ID: 5083868)
  - 10:2 FTS
  - PFODA

QC Batch: 974259

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 5092263)
  - PFODA
- LCSD (Lab ID: 5092264)
  - PFODA

R1: RPD value was outside control limits.

- LCSD (Lab ID: 5092264)
  - PFODA

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PDNF-SW01 **Lab ID: 10709704001** Collected: 09/26/24 07:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.89**	ng/L	2.0	0.89	1	10/11/24 14:00	10/15/24 19:31	120226-60-0	L2
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/11/24 14:00	10/15/24 19:31	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/11/24 14:00	10/15/24 19:31	757124-72-4	
6:2 FTS	**<0.58**	ng/L	1.9	0.58	1	10/11/24 14:00	10/15/24 19:31	27619-97-2	
8:2 FTS	**<0.80**	ng/L	2.0	0.80	1	10/11/24 14:00	10/15/24 19:31	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/11/24 14:00	10/15/24 19:31	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/11/24 14:00	10/15/24 19:31	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.0	0.26	1	10/11/24 14:00	10/15/24 19:31	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.0	0.58	1	10/11/24 14:00	10/15/24 19:31	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/11/24 14:00	10/15/24 19:31	4151-50-2	
NEtFOSE	**<0.61**	ng/L	2.0	0.61	1	10/11/24 14:00	10/15/24 19:31	1691-99-2	
NMeFOSAA	**<0.79**	ng/L	2.0	0.79	1	10/11/24 14:00	10/15/24 19:31	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 19:31	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.0	0.49	1	10/11/24 14:00	10/15/24 19:31	24448-09-7	
PFBS	**0.63J**	ng/L	1.8	0.21	1	10/11/24 14:00	10/15/24 19:31	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 19:31	335-76-2	
PFHxA	**4.0**	ng/L	2.0	0.38	1	10/11/24 14:00	10/15/24 19:31	307-24-4	
PFBA	**9.0**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 19:31	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/11/24 14:00	10/15/24 19:31	335-77-3	
PFDoS	**<0.54**	ng/L	2.0	0.54	1	10/11/24 14:00	10/15/24 19:31	79780-39-5	
PFHpS	**<0.64**	ng/L	1.9	0.64	1	10/11/24 14:00	10/15/24 19:31	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/11/24 14:00	10/15/24 19:31	67905-19-5	
PFNS	**<0.48**	ng/L	1.9	0.48	1	10/11/24 14:00	10/15/24 19:31	68259-12-1	
PFODA	**<0.64**	ng/L	2.0	0.64	1	10/11/24 14:00	10/15/24 19:31	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/11/24 14:00	10/15/24 19:31	754-91-6	
PFPeA	**5.7**	ng/L	2.0	0.19	1	10/11/24 14:00	10/15/24 19:31	2706-90-3	
PFPeS	**0.29J**	ng/L	1.9	0.26	1	10/11/24 14:00	10/15/24 19:31	2706-91-4	
PFDoA	**<0.44**	ng/L	2.0	0.44	1	10/11/24 14:00	10/15/24 19:31	307-55-1	
PFHpA	**3.8**	ng/L	2.0	0.24	1	10/11/24 14:00	10/15/24 19:31	375-85-9	
PFHxS	**2.1**	ng/L	1.8	0.24	1	10/11/24 14:00	10/15/24 19:31	355-46-4	
PFNA	**1.3J**	ng/L	2.0	0.21	1	10/11/24 14:00	10/15/24 19:31	375-95-1	
PFOS	**1.3J**	ng/L	1.9	0.52	1	10/11/24 14:00	10/15/24 19:31	1763-23-1	
PFOA	**2.6**	ng/L	2.0	0.27	1	10/11/24 14:00	10/15/24 19:31	335-67-1	
PFTeDA	**<0.37**	ng/L	2.0	0.37	1	10/11/24 14:00	10/15/24 19:31	376-06-7	
PFTrDA	**<0.29**	ng/L	2.0	0.29	1	10/11/24 14:00	10/15/24 19:31	72629-94-8	
PFUnA	**<0.65**	ng/L	2.0	0.65	1	10/11/24 14:00	10/15/24 19:31	2058-94-8	
Surrogates									
13C4-PFBA (S)	70	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C5-PFPeA (S)	71	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C3-PFBS (S)	95	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C24:2FTS (S)	135	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C3HFPO-DA (S)	76	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C4-PFHpA (S)	107	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C3-PFHxS (S)	110	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C26:2FTS (S)	166	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		S0

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PDNF-SW01 **Lab ID: 10709704001** Collected: 09/26/24 07:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	111	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C8-PFOS (S)	115	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C9-PFNA (S)	114	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C6-PFDA (S)	123	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C28:2FTS (S)	239	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		S0
d3-MeFOSAA (S)	106	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C7-PFUdA (S)	117	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C8-PFOSA (S)	78	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
d5-EtFOSAA (S)	114	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
13C2-PFDoA (S)	101	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
d3-NMeFOSA (S)	11	%.	10-150		1	10/11/24 14:00	10/15/24 19:31		
d7-NMeFOSE (S)	39	%.	10-150		1	10/11/24 14:00	10/15/24 19:31		
13C2-PFTA (S)	57	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		
d9-NEtFOSE (S)	34	%.	10-150		1	10/11/24 14:00	10/15/24 19:31		
d5-NEtFOSA (S)	10	%.	10-150		1	10/11/24 14:00	10/15/24 19:31		
13C2PFHxDA (S)	15	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		S0
13C5-PFHxA (S)	106	%.	25-150		1	10/11/24 14:00	10/15/24 19:31		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-Dup1-SW01 **Lab ID: 10709704002** Collected: 09/26/24 07:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.87**	ng/L	1.9	0.87	1	10/11/24 14:00	10/15/24 19:38	120226-60-0	L2
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/11/24 14:00	10/15/24 19:38	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.9	0.36	1	10/11/24 14:00	10/15/24 19:38	757124-72-4	
6:2 FTS	**<0.57**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 19:38	27619-97-2	
8:2 FTS	**<0.79**	ng/L	1.9	0.79	1	10/11/24 14:00	10/15/24 19:38	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.9	0.35	1	10/11/24 14:00	10/15/24 19:38	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/11/24 14:00	10/15/24 19:38	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 19:38	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/11/24 14:00	10/15/24 19:38	2991-50-6	
NEtFOSA	**<0.45**	ng/L	2.0	0.45	1	10/11/24 14:00	10/15/24 19:38	4151-50-2	
NEtFOSE	**<0.60**	ng/L	2.0	0.60	1	10/11/24 14:00	10/15/24 19:38	1691-99-2	
NMeFOSAA	**<0.78**	ng/L	2.0	0.78	1	10/11/24 14:00	10/15/24 19:38	2355-31-9	
NMeFOSA	**<0.62**	ng/L	2.0	0.62	1	10/11/24 14:00	10/15/24 19:38	31506-32-8	
NMeFOSE	**<0.48**	ng/L	2.0	0.48	1	10/11/24 14:00	10/15/24 19:38	24448-09-7	
PFBS	**0.64J**	ng/L	1.8	0.20	1	10/11/24 14:00	10/15/24 19:38	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/11/24 14:00	10/15/24 19:38	335-76-2	
PFHxA	**4.1**	ng/L	2.0	0.38	1	10/11/24 14:00	10/15/24 19:38	307-24-4	
PFBA	**9.0**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 19:38	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/11/24 14:00	10/15/24 19:38	335-77-3	
PFDoS	**<0.53**	ng/L	1.9	0.53	1	10/11/24 14:00	10/15/24 19:38	79780-39-5	
PFHpS	**<0.63**	ng/L	1.9	0.63	1	10/11/24 14:00	10/15/24 19:38	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/11/24 14:00	10/15/24 19:38	67905-19-5	
PFNS	**<0.47**	ng/L	1.9	0.47	1	10/11/24 14:00	10/15/24 19:38	68259-12-1	
PFODA	**<0.63**	ng/L	2.0	0.63	1	10/11/24 14:00	10/15/24 19:38	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/11/24 14:00	10/15/24 19:38	754-91-6	
PFPeA	**7.5**	ng/L	2.0	0.18	1	10/11/24 14:00	10/15/24 19:38	2706-90-3	
PFPeS	**0.30J**	ng/L	1.9	0.26	1	10/11/24 14:00	10/15/24 19:38	2706-91-4	
PFDoA	**<0.43**	ng/L	2.0	0.43	1	10/11/24 14:00	10/15/24 19:38	307-55-1	
PFHpA	**3.9**	ng/L	2.0	0.23	1	10/11/24 14:00	10/15/24 19:38	375-85-9	
PFHxS	**2.1**	ng/L	1.8	0.23	1	10/11/24 14:00	10/15/24 19:38	355-46-4	
PFNA	**1.5J**	ng/L	2.0	0.21	1	10/11/24 14:00	10/15/24 19:38	375-95-1	
PFOS	**1.3J**	ng/L	1.8	0.51	1	10/11/24 14:00	10/15/24 19:38	1763-23-1	
PFOA	**2.6**	ng/L	2.0	0.27	1	10/11/24 14:00	10/15/24 19:38	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/11/24 14:00	10/15/24 19:38	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/11/24 14:00	10/15/24 19:38	72629-94-8	
PFUnA	**<0.64**	ng/L	2.0	0.64	1	10/11/24 14:00	10/15/24 19:38	2058-94-8	
Surrogates									
13C4-PFBA (S)	70	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C5-PFPeA (S)	72	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C3-PFBS (S)	96	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C24:2FTS (S)	143	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C3HFPO-DA (S)	79	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C4-PFHpA (S)	109	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C3-PFHxS (S)	111	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C26:2FTS (S)	185	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-Dup1-SW01 **Lab ID: 10709704002** Collected: 09/26/24 07:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	112	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C8-PFOS (S)	113	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C9-PFNA (S)	113	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C6-PFDA (S)	123	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C28:2FTS (S)	258	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		S0
d3-MeFOSAA (S)	107	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C7-PFUdA (S)	114	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C8-PFOSA (S)	85	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
d5-EtFOSAA (S)	110	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C2-PFDoA (S)	93	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
d3-NMeFOSA (S)	22	%.	10-150		1	10/11/24 14:00	10/15/24 19:38		
d7-NMeFOSE (S)	55	%.	10-150		1	10/11/24 14:00	10/15/24 19:38		
13C2-PFTA (S)	50	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
d9-NEtFOSE (S)	52	%.	10-150		1	10/11/24 14:00	10/15/24 19:38		
d5-NEtFOSA (S)	20	%.	10-150		1	10/11/24 14:00	10/15/24 19:38		
13C2PFHxDA (S)	25	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		
13C5-PFHxA (S)	108	%.	25-150		1	10/11/24 14:00	10/15/24 19:38		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD07-SW01 **Lab ID: 10709704003** Collected: 09/26/24 08:05 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.90**	ng/L	2.0	0.90	1	10/19/24 10:30	10/22/24 11:04	120226-60-0	
11Cl-PF3OUdS	**<0.42**	ng/L	1.9	0.42	1	10/19/24 10:30	10/22/24 11:04	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 11:04	757124-72-4	
6:2 FTS	**2.4**	ng/L	2.0	0.59	1	10/19/24 10:30	10/22/24 11:04	27619-97-2	B
8:2 FTS	**<0.81**	ng/L	2.0	0.81	1	10/19/24 10:30	10/22/24 11:04	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:04	756426-58-1	
ADONA	**<0.33**	ng/L	1.9	0.33	1	10/19/24 10:30	10/22/24 11:04	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.1	0.26	1	10/19/24 10:30	10/22/24 11:04	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.1	0.58	1	10/19/24 10:30	10/22/24 11:04	2991-50-6	
NEtFOSA	**<0.47**	ng/L	2.1	0.47	1	10/19/24 10:30	10/22/24 11:04	4151-50-2	
NEtFOSE	**<0.62**	ng/L	2.1	0.62	1	10/19/24 10:30	10/22/24 11:04	1691-99-2	
NMeFOSAA	**<0.80**	ng/L	2.1	0.80	1	10/19/24 10:30	10/22/24 11:04	2355-31-9	
NMeFOSA	**<0.64**	ng/L	2.1	0.64	1	10/19/24 10:30	10/22/24 11:04	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.1	0.49	1	10/19/24 10:30	10/22/24 11:04	24448-09-7	
PFBS	**4.3**	ng/L	1.8	0.21	1	10/19/24 10:30	10/22/24 11:04	375-73-5	
PFDA	**1.6J**	ng/L	2.1	0.26	1	10/19/24 10:30	10/22/24 11:04	335-76-2	
PFHxA	**63.1**	ng/L	2.1	0.39	1	10/19/24 10:30	10/22/24 11:04	307-24-4	
PFBA	**51.5**	ng/L	2.1	0.29	1	10/19/24 10:30	10/22/24 11:04	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:04	335-77-3	
PFDoS	**<0.55**	ng/L	2.0	0.55	1	10/19/24 10:30	10/22/24 11:04	79780-39-5	
PFHpS	**1.2J**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:04	375-92-8	
PFHxDA	**<0.33**	ng/L	2.1	0.33	1	10/19/24 10:30	10/22/24 11:04	67905-19-5	
PFNS	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 11:04	68259-12-1	
PFODA	**<0.65**	ng/L	2.1	0.65	1	10/19/24 10:30	10/22/24 11:04	16517-11-6	L2
PFOSA	**<0.41**	ng/L	2.1	0.41	1	10/19/24 10:30	10/22/24 11:04	754-91-6	
PFPeA	**157**	ng/L	2.1	0.19	1	10/19/24 10:30	10/22/24 11:04	2706-90-3	
PFPeS	**4.8**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:04	2706-91-4	
PFDoA	**<0.44**	ng/L	2.1	0.44	1	10/19/24 10:30	10/22/24 11:04	307-55-1	
PFHpA	**28.4**	ng/L	2.1	0.24	1	10/19/24 10:30	10/22/24 11:04	375-85-9	
PFHxS	**42.5**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 11:04	355-46-4	
PFNA	**9.0**	ng/L	2.1	0.21	1	10/19/24 10:30	10/22/24 11:04	375-95-1	
PFOS	**54.2**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 11:04	1763-23-1	
PFOA	**32.5**	ng/L	2.1	0.27	1	10/19/24 10:30	10/22/24 11:04	335-67-1	
PFTeDA	**<0.37**	ng/L	2.1	0.37	1	10/19/24 10:30	10/22/24 11:04	376-06-7	
PFTrDA	**<0.29**	ng/L	2.1	0.29	1	10/19/24 10:30	10/22/24 11:04	72629-94-8	
PFUnA	**2.9**	ng/L	2.1	0.66	1	10/19/24 10:30	10/22/24 11:04	2058-94-8	
Surrogates									
13C4-PFBA (S)	38	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C5-PFPeA (S)	46	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C3-PFBS (S)	68	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C24:2FTS (S)	190	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		S0
13C3HFPO-DA (S)	52	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C4-PFHpA (S)	79	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C3-PFHxS (S)	78	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C26:2FTS (S)	238	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD07-SW01 **Lab ID: 10709704003** Collected: 09/26/24 08:05 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	83	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C8-PFOS (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C9-PFNA (S)	85	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C6-PFDA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C28:2FTS (S)	268	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		S0
d3-MeFOSAA (S)	117	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C7-PFUdA (S)	100	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C8-PFOSA (S)	27	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
d5-EtFOSAA (S)	123	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C2-PFDoA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
d3-NMeFOSA (S)	3	%.	10-150		1	10/19/24 10:30	10/22/24 11:04		S0
d7-NMeFOSE (S)	10	%.	10-150		1	10/19/24 10:30	10/22/24 11:04		
13C2-PFTA (S)	68	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
d9-NEtFOSE (S)	9	%.	10-150		1	10/19/24 10:30	10/22/24 11:04		S0
d5-NEtFOSA (S)	4	%.	10-150		1	10/19/24 10:30	10/22/24 11:04		S0
13C2PFHxDA (S)	32	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		
13C5-PFHxA (S)	80	%.	25-150		1	10/19/24 10:30	10/22/24 11:04		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD01-SW01 **Lab ID: 10709704004** Collected: 09/26/24 08:20 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.89**	ng/L	2.0	0.89	1	10/19/24 10:30	10/22/24 11:11	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 11:11	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 11:11	757124-72-4	
6:2 FTS	**13.1**	ng/L	1.9	0.58	1	10/19/24 10:30	10/22/24 11:11	27619-97-2	
8:2 FTS	**1.1J**	ng/L	2.0	0.80	1	10/19/24 10:30	10/22/24 11:11	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:11	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/19/24 10:30	10/22/24 11:11	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.0	0.26	1	10/19/24 10:30	10/22/24 11:11	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:11	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/19/24 10:30	10/22/24 11:11	4151-50-2	
NEtFOSE	**<0.61**	ng/L	2.0	0.61	1	10/19/24 10:30	10/22/24 11:11	1691-99-2	
NMeFOSAA	**<0.79**	ng/L	2.0	0.79	1	10/19/24 10:30	10/22/24 11:11	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 11:11	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 11:11	24448-09-7	
PFBS	**2.8**	ng/L	1.8	0.21	1	10/19/24 10:30	10/22/24 11:11	375-73-5	
PFDA	**2.5**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:11	335-76-2	
PFHxA	**63.3**	ng/L	2.0	0.38	1	10/19/24 10:30	10/22/24 11:11	307-24-4	
PFBA	**47.1**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 11:11	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:11	335-77-3	
PFDoS	**<0.54**	ng/L	2.0	0.54	1	10/19/24 10:30	10/22/24 11:11	79780-39-5	
PFHpS	**<0.64**	ng/L	1.9	0.64	1	10/19/24 10:30	10/22/24 11:11	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 11:11	67905-19-5	
PFNS	**<0.48**	ng/L	1.9	0.48	1	10/19/24 10:30	10/22/24 11:11	68259-12-1	
PFODA	**<0.64**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 11:11	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/19/24 10:30	10/22/24 11:11	754-91-6	
PFPeA	**156**	ng/L	2.0	0.19	1	10/19/24 10:30	10/22/24 11:11	2706-90-3	
PFPeS	**2.5**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:11	2706-91-4	
PFDoA	**<0.44**	ng/L	2.0	0.44	1	10/19/24 10:30	10/22/24 11:11	307-55-1	
PFHpA	**25.3**	ng/L	2.0	0.24	1	10/19/24 10:30	10/22/24 11:11	375-85-9	
PFHxS	**28.0**	ng/L	1.8	0.24	1	10/19/24 10:30	10/22/24 11:11	355-46-4	
PFNA	**6.5**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 11:11	375-95-1	
PFOS	**46.2**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 11:11	1763-23-1	
PFOA	**22.6**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 11:11	335-67-1	
PFTeDA	**<0.37**	ng/L	2.0	0.37	1	10/19/24 10:30	10/22/24 11:11	376-06-7	
PFTrDA	**<0.29**	ng/L	2.0	0.29	1	10/19/24 10:30	10/22/24 11:11	72629-94-8	
PFUnA	**5.8**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:11	2058-94-8	
Surrogates									
13C4-PFBA (S)	65	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C5-PFPeA (S)	63	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C3-PFBS (S)	83	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C24:2FTS (S)	150	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C3HFPO-DA (S)	71	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C4-PFHpA (S)	97	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C3-PFHxS (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C26:2FTS (S)	191	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD01-SW01 **Lab ID: 10709704004** Collected: 09/26/24 08:20 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	100	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C8-PFOS (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C9-PFNA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C6-PFDA (S)	112	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C28:2FTS (S)	260	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		S0
d3-MeFOSAA (S)	130	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C7-PFUdA (S)	111	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C8-PFOSA (S)	36	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
d5-EtFOSAA (S)	135	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C2-PFDoA (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
d3-NMeFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:11		S0
d7-NMeFOSE (S)	8	%.	10-150		1	10/19/24 10:30	10/22/24 11:11		S0
13C2-PFTA (S)	86	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
d9-NEtFOSE (S)	7	%.	10-150		1	10/19/24 10:30	10/22/24 11:11		S0
d5-NEtFOSA (S)	1	%.	10-150		1	10/19/24 10:30	10/22/24 11:11		S0
13C2PFHxDA (S)	53	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		
13C5-PFHxA (S)	94	%.	25-150		1	10/19/24 10:30	10/22/24 11:11		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD02-SW01 **Lab ID: 10709704005** Collected: 09/26/24 08:40 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.87**	ng/L	1.9	0.87	1	10/19/24 10:30	10/22/24 18:24	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 18:24	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 18:24	757124-72-4	
6:2 FTS	**5.3**	ng/L	1.9	0.57	1	10/19/24 10:30	10/22/24 18:24	27619-97-2	B
8:2 FTS	**<0.79**	ng/L	1.9	0.79	1	10/19/24 10:30	10/22/24 18:24	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.9	0.35	1	10/19/24 10:30	10/22/24 18:24	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/19/24 10:30	10/22/24 18:24	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 18:24	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/19/24 10:30	10/22/24 18:24	2991-50-6	
NEtFOSA	**<0.45**	ng/L	2.0	0.45	1	10/19/24 10:30	10/22/24 18:24	4151-50-2	
NEtFOSE	**<0.60**	ng/L	2.0	0.60	1	10/19/24 10:30	10/22/24 18:24	1691-99-2	
NMeFOSAA	**<0.78**	ng/L	2.0	0.78	1	10/19/24 10:30	10/22/24 18:24	2355-31-9	
NMeFOSA	**<0.62**	ng/L	2.0	0.62	1	10/19/24 10:30	10/22/24 18:24	31506-32-8	
NMeFOSE	**<0.48**	ng/L	2.0	0.48	1	10/19/24 10:30	10/22/24 18:24	24448-09-7	
PFBS	**2.7**	ng/L	1.8	0.20	1	10/19/24 10:30	10/22/24 18:24	375-73-5	
PFDA	**2.4**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 18:24	335-76-2	
PFHxA	**65.6**	ng/L	2.0	0.38	1	10/19/24 10:30	10/22/24 18:24	307-24-4	
PFBA	**50.6**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 18:24	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/19/24 10:30	10/22/24 18:24	335-77-3	
PFDoS	**<0.53**	ng/L	1.9	0.53	1	10/19/24 10:30	10/22/24 18:24	79780-39-5	
PFHpS	**0.67J**	ng/L	1.9	0.63	1	10/19/24 10:30	10/22/24 18:24	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 18:24	67905-19-5	
PFNS	**<0.47**	ng/L	1.9	0.47	1	10/19/24 10:30	10/22/24 18:24	68259-12-1	
PFODA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 18:24	16517-11-6	L2
PFOSA	**<0.40**	ng/L	2.0	0.40	1	10/19/24 10:30	10/22/24 18:24	754-91-6	
PFPeA	**163**	ng/L	2.0	0.18	1	10/19/24 10:30	10/22/24 18:24	2706-90-3	
PFPeS	**2.6**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 18:24	2706-91-4	
PFDoA	**<0.43**	ng/L	2.0	0.43	1	10/19/24 10:30	10/22/24 18:24	307-55-1	
PFHpA	**27.5**	ng/L	2.0	0.23	1	10/19/24 10:30	10/22/24 18:24	375-85-9	
PFHxS	**28.0**	ng/L	1.8	0.23	1	10/19/24 10:30	10/22/24 18:24	355-46-4	
PFNA	**7.8**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 18:24	375-95-1	
PFOS	**42.8**	ng/L	1.8	0.51	1	10/19/24 10:30	10/22/24 18:24	1763-23-1	
PFOA	**23.4**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 18:24	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/19/24 10:30	10/22/24 18:24	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 18:24	72629-94-8	
PFUnA	**5.2**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 18:24	2058-94-8	
Surrogates									
13C4-PFBA (S)	59	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C5-PFPeA (S)	57	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C3-PFBS (S)	76	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C24:2FTS (S)	137	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C3HFPO-DA (S)	68	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C4-PFHpA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C3-PFHxS (S)	91	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C26:2FTS (S)	189	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD02-SW01 **Lab ID: 10709704005** Collected: 09/26/24 08:40 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C8-PFOS (S)	99	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C9-PFNA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C6-PFDA (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C28:2FTS (S)	211	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		S0
d3-MeFOSAA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C7-PFUdA (S)	94	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C8-PFOSA (S)	17	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		S0
d5-EtFOSAA (S)	116	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
13C2-PFDoA (S)	73	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
d3-NMeFOSA (S)	1	%.	10-150		1	10/19/24 10:30	10/22/24 18:24		S0
d7-NMeFOSE (S)	3	%.	10-150		1	10/19/24 10:30	10/22/24 18:24		S0
13C2-PFTA (S)	31	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		
d9-NEtFOSE (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 18:24		S0
d5-NEtFOSA (S)	0	%.	10-150		1	10/19/24 10:30	10/22/24 18:24		S0
13C2PFHxDA (S)	11	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		S0
13C5-PFHxA (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 18:24		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD04-SW01 **Lab ID: 10709704006** Collected: 09/26/24 08:55 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.90**	ng/L	2.0	0.90	1	10/19/24 10:30	10/22/24 18:32	120226-60-0	
11Cl-PF3OUdS	**<0.42**	ng/L	1.9	0.42	1	10/19/24 10:30	10/22/24 18:32	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 18:32	757124-72-4	
6:2 FTS	**1.9J**	ng/L	2.0	0.59	1	10/19/24 10:30	10/22/24 18:32	27619-97-2	B
8:2 FTS	**<0.81**	ng/L	2.0	0.81	1	10/19/24 10:30	10/22/24 18:32	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 18:32	756426-58-1	
ADONA	**<0.33**	ng/L	1.9	0.33	1	10/19/24 10:30	10/22/24 18:32	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.1	0.26	1	10/19/24 10:30	10/22/24 18:32	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.1	0.58	1	10/19/24 10:30	10/22/24 18:32	2991-50-6	
NEtFOSA	**<0.47**	ng/L	2.1	0.47	1	10/19/24 10:30	10/22/24 18:32	4151-50-2	
NEtFOSE	**<0.62**	ng/L	2.1	0.62	1	10/19/24 10:30	10/22/24 18:32	1691-99-2	
NMeFOSAA	**<0.80**	ng/L	2.1	0.80	1	10/19/24 10:30	10/22/24 18:32	2355-31-9	
NMeFOSA	**<0.64**	ng/L	2.1	0.64	1	10/19/24 10:30	10/22/24 18:32	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.1	0.49	1	10/19/24 10:30	10/22/24 18:32	24448-09-7	
PFBS	**1.3J**	ng/L	1.8	0.21	1	10/19/24 10:30	10/22/24 18:32	375-73-5	
PFDA	**2.4**	ng/L	2.1	0.26	1	10/19/24 10:30	10/22/24 18:32	335-76-2	
PFHxA	**70.1**	ng/L	2.1	0.39	1	10/19/24 10:30	10/22/24 18:32	307-24-4	
PFBA	**46.0**	ng/L	2.1	0.29	1	10/19/24 10:30	10/22/24 18:32	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 18:32	335-77-3	
PFDoS	**<0.55**	ng/L	2.0	0.55	1	10/19/24 10:30	10/22/24 18:32	79780-39-5	
PFHpS	**<0.65**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 18:32	375-92-8	
PFHxDA	**<0.33**	ng/L	2.1	0.33	1	10/19/24 10:30	10/22/24 18:32	67905-19-5	
PFNS	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 18:32	68259-12-1	
PFODA	**<0.65**	ng/L	2.1	0.65	1	10/19/24 10:30	10/22/24 18:32	16517-11-6	L2
PFOSA	**<0.41**	ng/L	2.1	0.41	1	10/19/24 10:30	10/22/24 18:32	754-91-6	
PFPeA	**161**	ng/L	2.1	0.19	1	10/19/24 10:30	10/22/24 18:32	2706-90-3	
PFPeS	**0.87J**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 18:32	2706-91-4	
PFDoA	**<0.44**	ng/L	2.1	0.44	1	10/19/24 10:30	10/22/24 18:32	307-55-1	
PFHpA	**28.1**	ng/L	2.1	0.24	1	10/19/24 10:30	10/22/24 18:32	375-85-9	
PFHxS	**11.5**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 18:32	355-46-4	
PFNA	**7.6**	ng/L	2.1	0.21	1	10/19/24 10:30	10/22/24 18:32	375-95-1	
PFOS	**17.4**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 18:32	1763-23-1	
PFOA	**23.4**	ng/L	2.1	0.27	1	10/19/24 10:30	10/22/24 18:32	335-67-1	
PFTeDA	**<0.37**	ng/L	2.1	0.37	1	10/19/24 10:30	10/22/24 18:32	376-06-7	
PFTrDA	**<0.29**	ng/L	2.1	0.29	1	10/19/24 10:30	10/22/24 18:32	72629-94-8	
PFUnA	**1.4J**	ng/L	2.1	0.66	1	10/19/24 10:30	10/22/24 18:32	2058-94-8	
Surrogates									
13C4-PFBA (S)	48	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C5-PFPeA (S)	51	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C3-PFBS (S)	73	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C24:2FTS (S)	180	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0
13C3HFPO-DA (S)	58	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C4-PFHpA (S)	87	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C3-PFHxS (S)	84	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C26:2FTS (S)	234	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD04-SW01 **Lab ID: 10709704006** Collected: 09/26/24 08:55 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C8-PFOS (S)	91	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C9-PFNA (S)	91	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C6-PFDA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C28:2FTS (S)	252	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0
d3-MeFOSAA (S)	118	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C7-PFUdA (S)	87	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C8-PFOSA (S)	23	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0
d5-EtFOSAA (S)	120	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
13C2-PFDoA (S)	63	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		
d3-NMeFOSA (S)	1	%.	10-150		1	10/19/24 10:30	10/22/24 18:32		S0
d7-NMeFOSE (S)	5	%.	10-150		1	10/19/24 10:30	10/22/24 18:32		S0
13C2-PFTA (S)	24	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0
d9-NEtFOSE (S)	3	%.	10-150		1	10/19/24 10:30	10/22/24 18:32		S0
d5-NEtFOSA (S)	1	%.	10-150		1	10/19/24 10:30	10/22/24 18:32		S0
13C2PFHxDA (S)	5	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		S0
13C5-PFHxA (S)	84	%.	25-150		1	10/19/24 10:30	10/22/24 18:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PDSF-SW01 **Lab ID: 10709704007** Collected: 09/26/24 09:20 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.89**	ng/L	2.0	0.89	1	10/19/24 10:30	10/22/24 11:32	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 11:32	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 11:32	757124-72-4	
6:2 FTS	**<0.58**	ng/L	1.9	0.58	1	10/19/24 10:30	10/22/24 11:32	27619-97-2	
8:2 FTS	**<0.80**	ng/L	2.0	0.80	1	10/19/24 10:30	10/22/24 11:32	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:32	756426-58-1	
ADONA	**<0.33**	ng/L	1.9	0.33	1	10/19/24 10:30	10/22/24 11:32	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.0	0.26	1	10/19/24 10:30	10/22/24 11:32	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:32	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/19/24 10:30	10/22/24 11:32	4151-50-2	
NEtFOSE	**<0.61**	ng/L	2.0	0.61	1	10/19/24 10:30	10/22/24 11:32	1691-99-2	
NMeFOSAA	**<0.79**	ng/L	2.0	0.79	1	10/19/24 10:30	10/22/24 11:32	2355-31-9	
NMeFOSA	**<0.64**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 11:32	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 11:32	24448-09-7	
PFBS	**0.29J**	ng/L	1.8	0.21	1	10/19/24 10:30	10/22/24 11:32	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:32	335-76-2	
PFHxA	**2.4**	ng/L	2.0	0.39	1	10/19/24 10:30	10/22/24 11:32	307-24-4	
PFBA	**6.1**	ng/L	2.0	0.29	1	10/19/24 10:30	10/22/24 11:32	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:32	335-77-3	
PFDoS	**<0.54**	ng/L	2.0	0.54	1	10/19/24 10:30	10/22/24 11:32	79780-39-5	
PFHpS	**<0.64**	ng/L	1.9	0.64	1	10/19/24 10:30	10/22/24 11:32	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 11:32	67905-19-5	
PFNS	**<0.48**	ng/L	2.0	0.48	1	10/19/24 10:30	10/22/24 11:32	68259-12-1	
PFODA	**<0.65**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:32	16517-11-6	L2
PFOSA	**<0.41**	ng/L	2.0	0.41	1	10/19/24 10:30	10/22/24 11:32	754-91-6	
PFPeA	**6.8**	ng/L	2.0	0.19	1	10/19/24 10:30	10/22/24 11:32	2706-90-3	
PFPeS	**<0.26**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:32	2706-91-4	
PFDoA	**<0.44**	ng/L	2.0	0.44	1	10/19/24 10:30	10/22/24 11:32	307-55-1	
PFHpA	**3.5**	ng/L	2.0	0.24	1	10/19/24 10:30	10/22/24 11:32	375-85-9	
PFHxS	**1.5J**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 11:32	355-46-4	
PFNA	**1.4J**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 11:32	375-95-1	
PFOS	**1.9J**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 11:32	1763-23-1	B
PFOA	**1.7J**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 11:32	335-67-1	
PFTeDA	**<0.37**	ng/L	2.0	0.37	1	10/19/24 10:30	10/22/24 11:32	376-06-7	
PFTrDA	**<0.29**	ng/L	2.0	0.29	1	10/19/24 10:30	10/22/24 11:32	72629-94-8	
PFUnA	**1.1J**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:32	2058-94-8	
Surrogates									
13C4-PFBA (S)	60	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C5-PFPeA (S)	58	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C3-PFBS (S)	79	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C24:2FTS (S)	160	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		S0
13C3HFPO-DA (S)	66	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C4-PFHpA (S)	92	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C3-PFHxS (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C26:2FTS (S)	194	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PDSF-SW01 **Lab ID: 10709704007** Collected: 09/26/24 09:20 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	94	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C8-PFOS (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C9-PFNA (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C6-PFDA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C28:2FTS (S)	264	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		S0
d3-MeFOSAA (S)	116	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C7-PFUdA (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C8-PFOSA (S)	62	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
d5-EtFOSAA (S)	120	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C2-PFDoA (S)	92	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
d3-NMeFOSA (S)	6	%.	10-150		1	10/19/24 10:30	10/22/24 11:32		S0
d7-NMeFOSE (S)	28	%.	10-150		1	10/19/24 10:30	10/22/24 11:32		
13C2-PFTA (S)	76	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
d9-NEtFOSE (S)	22	%.	10-150		1	10/19/24 10:30	10/22/24 11:32		
d5-NEtFOSA (S)	4	%.	10-150		1	10/19/24 10:30	10/22/24 11:32		S0
13C2PFHxDA (S)	44	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		
13C5-PFHxA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 11:32		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD05-SW01 **Lab ID: 10709704008** Collected: 09/26/24 09:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.89**	ng/L	2.0	0.89	1	10/19/24 10:30	10/22/24 11:40	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 11:40	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 11:40	757124-72-4	
6:2 FTS	**16.9**	ng/L	1.9	0.58	1	10/19/24 10:30	10/22/24 11:40	27619-97-2	
8:2 FTS	**<0.81**	ng/L	2.0	0.81	1	10/19/24 10:30	10/22/24 11:40	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:40	756426-58-1	
ADONA	**<0.33**	ng/L	1.9	0.33	1	10/19/24 10:30	10/22/24 11:40	919005-14-4	
HFPO-DA	**<0.26**	ng/L	2.0	0.26	1	10/19/24 10:30	10/22/24 11:40	13252-13-6	
NEtFOSAA	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:40	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/19/24 10:30	10/22/24 11:40	4151-50-2	
NEtFOSE	**<0.61**	ng/L	2.0	0.61	1	10/19/24 10:30	10/22/24 11:40	1691-99-2	
NMeFOSAA	**<0.80**	ng/L	2.0	0.80	1	10/19/24 10:30	10/22/24 11:40	2355-31-9	
NMeFOSA	**<0.64**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 11:40	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 11:40	24448-09-7	
PFBS	**13.0**	ng/L	1.8	0.21	1	10/19/24 10:30	10/22/24 11:40	375-73-5	
PFDA	**3.3**	ng/L	2.0	0.26	1	10/19/24 10:30	10/22/24 11:40	335-76-2	
PFHxA	**62.8**	ng/L	2.0	0.39	1	10/19/24 10:30	10/22/24 11:40	307-24-4	
PFBA	**42.4**	ng/L	2.0	0.29	1	10/19/24 10:30	10/22/24 11:40	375-22-4	
PFDS	**<0.58**	ng/L	2.0	0.58	1	10/19/24 10:30	10/22/24 11:40	335-77-3	
PFDoS	**<0.54**	ng/L	2.0	0.54	1	10/19/24 10:30	10/22/24 11:40	79780-39-5	
PFHpS	**2.8**	ng/L	1.9	0.64	1	10/19/24 10:30	10/22/24 11:40	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 11:40	67905-19-5	
PFNS	**<0.48**	ng/L	2.0	0.48	1	10/19/24 10:30	10/22/24 11:40	68259-12-1	
PFODA	**<0.65**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:40	16517-11-6	L2
PFOSA	**1.5J**	ng/L	2.0	0.41	1	10/19/24 10:30	10/22/24 11:40	754-91-6	
PFPeA	**102**	ng/L	2.0	0.19	1	10/19/24 10:30	10/22/24 11:40	2706-90-3	
PFPeS	**7.7**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:40	2706-91-4	
PFDoA	**<0.44**	ng/L	2.0	0.44	1	10/19/24 10:30	10/22/24 11:40	307-55-1	
PFHpA	**22.7**	ng/L	2.0	0.24	1	10/19/24 10:30	10/22/24 11:40	375-85-9	
PFHxS	**87.8**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 11:40	355-46-4	
PFNA	**8.1**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 11:40	375-95-1	
PFOS	**167**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 11:40	1763-23-1	
PFOA	**23.7**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 11:40	335-67-1	
PFTeDA	**<0.37**	ng/L	2.0	0.37	1	10/19/24 10:30	10/22/24 11:40	376-06-7	
PFTrDA	**<0.29**	ng/L	2.0	0.29	1	10/19/24 10:30	10/22/24 11:40	72629-94-8	
PFUnA	**6.2**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:40	2058-94-8	
Surrogates									
13C4-PFBA (S)	54	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C5-PFPeA (S)	55	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C3-PFBS (S)	77	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C24:2FTS (S)	162	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		S0
13C3HFPO-DA (S)	63	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C4-PFHpA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C3-PFHxS (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C26:2FTS (S)	217	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD05-SW01 **Lab ID: 10709704008** Collected: 09/26/24 09:35 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C8-PFOS (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C9-PFNA (S)	87	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C6-PFDA (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C28:2FTS (S)	253	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		S0
d3-MeFOSAA (S)	113	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C7-PFUdA (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C8-PFOSA (S)	33	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
d5-EtFOSAA (S)	122	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
13C2-PFDoA (S)	83	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
d3-NMeFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:40		S0
d7-NMeFOSE (S)	10	%.	10-150		1	10/19/24 10:30	10/22/24 11:40		
13C2-PFTA (S)	39	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		
d9-NEtFOSE (S)	9	%.	10-150		1	10/19/24 10:30	10/22/24 11:40		S0
d5-NEtFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:40		S0
13C2PFHxDA (S)	10	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		S0
13C5-PFHxA (S)	89	%.	25-150		1	10/19/24 10:30	10/22/24 11:40		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD03-SW01 **Lab ID: 10709704009** Collected: 09/26/24 09:45 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.88**	ng/L	1.9	0.88	1	10/19/24 10:30	10/22/24 11:47	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 11:47	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:47	757124-72-4	
6:2 FTS	**29.6**	ng/L	1.9	0.57	1	10/19/24 10:30	10/22/24 11:47	27619-97-2	
8:2 FTS	**1.7J**	ng/L	1.9	0.79	1	10/19/24 10:30	10/22/24 11:47	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.9	0.35	1	10/19/24 10:30	10/22/24 11:47	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/19/24 10:30	10/22/24 11:47	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:47	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/19/24 10:30	10/22/24 11:47	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/19/24 10:30	10/22/24 11:47	4151-50-2	
NEtFOSE	**<0.60**	ng/L	2.0	0.60	1	10/19/24 10:30	10/22/24 11:47	1691-99-2	
NMeFOSAA	**<0.78**	ng/L	2.0	0.78	1	10/19/24 10:30	10/22/24 11:47	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 11:47	31506-32-8	
NMeFOSE	**<0.48**	ng/L	2.0	0.48	1	10/19/24 10:30	10/22/24 11:47	24448-09-7	
PFBS	**15.2**	ng/L	1.8	0.20	1	10/19/24 10:30	10/22/24 11:47	375-73-5	
PFDA	**3.9**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:47	335-76-2	
PFHxA	**82.7**	ng/L	2.0	0.38	1	10/19/24 10:30	10/22/24 11:47	307-24-4	
PFBA	**43.5**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 11:47	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/19/24 10:30	10/22/24 11:47	335-77-3	
PFDoS	**<0.53**	ng/L	1.9	0.53	1	10/19/24 10:30	10/22/24 11:47	79780-39-5	
PFHpS	**3.7**	ng/L	1.9	0.63	1	10/19/24 10:30	10/22/24 11:47	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 11:47	67905-19-5	
PFNS	**<0.48**	ng/L	1.9	0.48	1	10/19/24 10:30	10/22/24 11:47	68259-12-1	
PFODA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 11:47	16517-11-6	L2
PFOSA	**1.6J**	ng/L	2.0	0.40	1	10/19/24 10:30	10/22/24 11:47	754-91-6	
PFPeA	**132**	ng/L	2.0	0.18	1	10/19/24 10:30	10/22/24 11:47	2706-90-3	
PFPeS	**11.6**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:47	2706-91-4	
PFDoA	**<0.43**	ng/L	2.0	0.43	1	10/19/24 10:30	10/22/24 11:47	307-55-1	
PFHpA	**30.7**	ng/L	2.0	0.24	1	10/19/24 10:30	10/22/24 11:47	375-85-9	
PFHxS	**125**	ng/L	1.8	0.23	1	10/19/24 10:30	10/22/24 11:47	355-46-4	
PFNA	**9.5**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 11:47	375-95-1	
PFOS	**212**	ng/L	9.3	2.6	5	10/19/24 10:30	10/22/24 18:17	1763-23-1	
PFOA	**29.5**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 11:47	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/19/24 10:30	10/22/24 11:47	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 11:47	72629-94-8	
PFUnA	**5.8**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 11:47	2058-94-8	
Surrogates									
13C4-PFBA (S)	58	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C5-PFPeA (S)	55	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C3-PFBS (S)	77	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C24:2FTS (S)	150	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C3HFPO-DA (S)	62	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C4-PFHpA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C3-PFHxS (S)	92	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C26:2FTS (S)	198	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD03-SW01 **Lab ID: 10709704009** Collected: 09/26/24 09:45 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	94	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C8-PFOS (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C9-PFNA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C6-PFDA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C28:2FTS (S)	255	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		S0
d3-MeFOSAA (S)	112	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C7-PFUdA (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C8-PFOSA (S)	44	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
d5-EtFOSAA (S)	126	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C2-PFDoA (S)	97	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
d3-NMeFOSA (S)	3	%.	10-150		1	10/19/24 10:30	10/22/24 11:47		S0
d7-NMeFOSE (S)	14	%.	10-150		1	10/19/24 10:30	10/22/24 11:47		
13C2-PFTA (S)	85	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
d9-NEtFOSE (S)	14	%.	10-150		1	10/19/24 10:30	10/22/24 11:47		
d5-NEtFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:47		S0
13C2PFHxDA (S)	54	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		
13C5-PFHxA (S)	89	%.	25-150		1	10/19/24 10:30	10/22/24 11:47		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD06-SW01 **Lab ID: 10709704010** Collected: 09/26/24 10:05 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.88**	ng/L	1.9	0.88	1	10/19/24 10:30	10/22/24 11:54	120226-60-0	
11Cl-PF3OUdS	**<0.41**	ng/L	1.9	0.41	1	10/19/24 10:30	10/22/24 11:54	763051-92-9	
4:2 FTS	**<0.37**	ng/L	1.9	0.37	1	10/19/24 10:30	10/22/24 11:54	757124-72-4	
6:2 FTS	**7.0**	ng/L	1.9	0.58	1	10/19/24 10:30	10/22/24 11:54	27619-97-2	
8:2 FTS	**1.2J**	ng/L	1.9	0.80	1	10/19/24 10:30	10/22/24 11:54	39108-34-4	
9Cl-PF3ONS	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 11:54	756426-58-1	
ADONA	**<0.32**	ng/L	1.9	0.32	1	10/19/24 10:30	10/22/24 11:54	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:54	13252-13-6	
NEtFOSAA	**<0.57**	ng/L	2.0	0.57	1	10/19/24 10:30	10/22/24 11:54	2991-50-6	
NEtFOSA	**<0.46**	ng/L	2.0	0.46	1	10/19/24 10:30	10/22/24 11:54	4151-50-2	
NEtFOSE	**<0.61**	ng/L	2.0	0.61	1	10/19/24 10:30	10/22/24 11:54	1691-99-2	
NMeFOSAA	**<0.79**	ng/L	2.0	0.79	1	10/19/24 10:30	10/22/24 11:54	2355-31-9	
NMeFOSA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 11:54	31506-32-8	
NMeFOSE	**<0.49**	ng/L	2.0	0.49	1	10/19/24 10:30	10/22/24 11:54	24448-09-7	
PFBS	**2.4**	ng/L	1.8	0.20	1	10/19/24 10:30	10/22/24 11:54	375-73-5	
PFDA	**2.5**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 11:54	335-76-2	
PFHxA	**49.7**	ng/L	2.0	0.38	1	10/19/24 10:30	10/22/24 11:54	307-24-4	
PFBA	**34.6**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 11:54	375-22-4	
PFDS	**<0.57**	ng/L	1.9	0.57	1	10/19/24 10:30	10/22/24 11:54	335-77-3	
PFDoS	**<0.54**	ng/L	2.0	0.54	1	10/19/24 10:30	10/22/24 11:54	79780-39-5	
PFHpS	**0.75J**	ng/L	1.9	0.64	1	10/19/24 10:30	10/22/24 11:54	375-92-8	
PFHxDA	**<0.32**	ng/L	2.0	0.32	1	10/19/24 10:30	10/22/24 11:54	67905-19-5	
PFNS	**<0.48**	ng/L	1.9	0.48	1	10/19/24 10:30	10/22/24 11:54	68259-12-1	
PFODA	**<0.64**	ng/L	2.0	0.64	1	10/19/24 10:30	10/22/24 11:54	16517-11-6	L2
PFOSA	**0.43J**	ng/L	2.0	0.40	1	10/19/24 10:30	10/22/24 11:54	754-91-6	
PFPeA	**112**	ng/L	2.0	0.18	1	10/19/24 10:30	10/22/24 11:54	2706-90-3	
PFPeS	**2.1**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 11:54	2706-91-4	
PFDoA	**<0.44**	ng/L	2.0	0.44	1	10/19/24 10:30	10/22/24 11:54	307-55-1	
PFHpA	**18.3**	ng/L	2.0	0.24	1	10/19/24 10:30	10/22/24 11:54	375-85-9	
PFHxS	**22.1**	ng/L	1.8	0.24	1	10/19/24 10:30	10/22/24 11:54	355-46-4	
PFNA	**6.7**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 11:54	375-95-1	
PFOS	**49.0**	ng/L	1.9	0.51	1	10/19/24 10:30	10/22/24 11:54	1763-23-1	
PFOA	**36.4**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 11:54	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/19/24 10:30	10/22/24 11:54	376-06-7	
PFTrDA	**0.47J**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 11:54	72629-94-8	
PFUnA	**9.1**	ng/L	2.0	0.65	1	10/19/24 10:30	10/22/24 11:54	2058-94-8	
Surrogates									
13C4-PFBA (S)	60	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C5-PFPeA (S)	57	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C3-PFBS (S)	81	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C24:2FTS (S)	151	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		S0
13C3HFPO-DA (S)	66	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C4-PFHpA (S)	92	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C3-PFHxS (S)	92	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C26:2FTS (S)	224	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD06-SW01 **Lab ID: 10709704010** Collected: 09/26/24 10:05 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C8-PFOS (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C9-PFNA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C6-PFDA (S)	112	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C28:2FTS (S)	293	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		S0
d3-MeFOSAA (S)	126	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C7-PFUdA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C8-PFOSA (S)	36	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
d5-EtFOSAA (S)	130	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C2-PFDoA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
d3-NMeFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:54		S0
d7-NMeFOSE (S)	10	%.	10-150		1	10/19/24 10:30	10/22/24 11:54		
13C2-PFTA (S)	79	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
d9-NEtFOSE (S)	8	%.	10-150		1	10/19/24 10:30	10/22/24 11:54		S0
d5-NEtFOSA (S)	2	%.	10-150		1	10/19/24 10:30	10/22/24 11:54		S0
13C2PFHxDA (S)	39	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		
13C5-PFHxA (S)	91	%.	25-150		1	10/19/24 10:30	10/22/24 11:54		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD09-SW01 **Lab ID: 10709704011** Collected: 09/26/24 10:30 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<1.7**	ng/L	3.7	1.7	1	10/19/24 10:30	10/22/24 12:01	120226-60-0	
11Cl-PF3OUdS	**<0.77**	ng/L	3.6	0.77	1	10/19/24 10:30	10/22/24 12:01	763051-92-9	
4:2 FTS	**<0.69**	ng/L	3.5	0.69	1	10/19/24 10:30	10/22/24 12:01	757124-72-4	
6:2 FTS	**1.4J**	ng/L	3.6	1.1	1	10/19/24 10:30	10/22/24 12:01	27619-97-2	
8:2 FTS	**<1.5**	ng/L	3.7	1.5	1	10/19/24 10:30	10/22/24 12:01	39108-34-4	
9Cl-PF3ONS	**<0.67**	ng/L	3.5	0.67	1	10/19/24 10:30	10/22/24 12:01	756426-58-1	
ADONA	**<0.61**	ng/L	3.6	0.61	1	10/19/24 10:30	10/22/24 12:01	919005-14-4	
HFPO-DA	**<0.48**	ng/L	3.8	0.48	1	10/19/24 10:30	10/22/24 12:01	13252-13-6	
NEtFOSAA	**<1.1**	ng/L	3.8	1.1	1	10/19/24 10:30	10/22/24 12:01	2991-50-6	
NEtFOSA	**<0.86**	ng/L	3.8	0.86	1	10/19/24 10:30	10/22/24 12:01	4151-50-2	
NEtFOSE	**<1.1**	ng/L	3.8	1.1	1	10/19/24 10:30	10/22/24 12:01	1691-99-2	
NMeFOSAA	**<1.5**	ng/L	3.8	1.5	1	10/19/24 10:30	10/22/24 12:01	2355-31-9	
NMeFOSA	**<1.2**	ng/L	3.8	1.2	1	10/19/24 10:30	10/22/24 12:01	31506-32-8	
NMeFOSE	**<0.91**	ng/L	3.8	0.91	1	10/19/24 10:30	10/22/24 12:01	24448-09-7	
PFBS	**4.4**	ng/L	3.4	0.39	1	10/19/24 10:30	10/22/24 12:01	375-73-5	
PFDA	**<0.47**	ng/L	3.8	0.47	1	10/19/24 10:30	10/22/24 12:01	335-76-2	
PFHxA	**3.7J**	ng/L	3.8	0.72	1	10/19/24 10:30	10/22/24 12:01	307-24-4	
PFBA	**16.1**	ng/L	3.8	0.53	1	10/19/24 10:30	10/22/24 12:01	375-22-4	
PFDS	**<1.1**	ng/L	3.7	1.1	1	10/19/24 10:30	10/22/24 12:01	335-77-3	
PFDoS	**<1.0**	ng/L	3.7	1.0	1	10/19/24 10:30	10/22/24 12:01	79780-39-5	
PFHpS	**<1.2**	ng/L	3.6	1.2	1	10/19/24 10:30	10/22/24 12:01	375-92-8	
PFHxDA	**<0.60**	ng/L	3.8	0.60	1	10/19/24 10:30	10/22/24 12:01	67905-19-5	
PFNS	**<0.90**	ng/L	3.6	0.90	1	10/19/24 10:30	10/22/24 12:01	68259-12-1	
PFODA	**<1.2**	ng/L	3.8	1.2	1	10/19/24 10:30	10/22/24 12:01	16517-11-6	L2
PFOSA	**<0.76**	ng/L	3.8	0.76	1	10/19/24 10:30	10/22/24 12:01	754-91-6	
PFPeA	**7.8**	ng/L	3.8	0.35	1	10/19/24 10:30	10/22/24 12:01	2706-90-3	
PFPeS	**<0.49**	ng/L	3.6	0.49	1	10/19/24 10:30	10/22/24 12:01	2706-91-4	
PFDoA	**<0.82**	ng/L	3.8	0.82	1	10/19/24 10:30	10/22/24 12:01	307-55-1	
PFHpA	**4.0**	ng/L	3.8	0.45	1	10/19/24 10:30	10/22/24 12:01	375-85-9	
PFHxS	**2.5J**	ng/L	3.5	0.44	1	10/19/24 10:30	10/22/24 12:01	355-46-4	
PFNA	**<0.40**	ng/L	3.8	0.40	1	10/19/24 10:30	10/22/24 12:01	375-95-1	
PFOS	**4.3**	ng/L	3.5	0.97	1	10/19/24 10:30	10/22/24 12:01	1763-23-1	B
PFOA	**17.4**	ng/L	3.8	0.51	1	10/19/24 10:30	10/22/24 12:01	335-67-1	
PFTeDA	**<0.69**	ng/L	3.8	0.69	1	10/19/24 10:30	10/22/24 12:01	376-06-7	
PFTrDA	**<0.54**	ng/L	3.8	0.54	1	10/19/24 10:30	10/22/24 12:01	72629-94-8	
PFUnA	**2.9J**	ng/L	3.8	1.2	1	10/19/24 10:30	10/22/24 12:01	2058-94-8	
Surrogates									
13C4-PFBA (S)	46	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C5-PFPeA (S)	50	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C3-PFBS (S)	72	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C24:2FTS (S)	184	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		S0
13C3HFPO-DA (S)	53	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C4-PFHpA (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C3-PFHxS (S)	85	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C26:2FTS (S)	247	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		S0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-PD09-SW01 **Lab ID: 10709704011** Collected: 09/26/24 10:30 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C8-PFOS (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C9-PFNA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C6-PFDA (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C28:2FTS (S)	228	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		S0
d3-MeFOSAA (S)	128	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C7-PFUdA (S)	113	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C8-PFOSA (S)	79	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
d5-EtFOSAA (S)	130	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C2-PFDoA (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
d3-NMeFOSA (S)	12	%.	10-150		1	10/19/24 10:30	10/22/24 12:01		
d7-NMeFOSE (S)	48	%.	10-150		1	10/19/24 10:30	10/22/24 12:01		
13C2-PFTA (S)	94	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
d9-NEtFOSE (S)	44	%.	10-150		1	10/19/24 10:30	10/22/24 12:01		
d5-NEtFOSA (S)	10	%.	10-150		1	10/19/24 10:30	10/22/24 12:01		
13C2PFHxDA (S)	67	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		
13C5-PFHxA (S)	85	%.	25-150		1	10/19/24 10:30	10/22/24 12:01		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-FB-01 **Lab ID: 10709704012** Collected: 09/26/24 10:50 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.86**	ng/L	1.9	0.86	1	10/19/24 10:30	10/22/24 12:23	120226-60-0	
11Cl-PF3OUdS	**<0.40**	ng/L	1.8	0.40	1	10/19/24 10:30	10/22/24 12:23	763051-92-9	
4:2 FTS	**<0.36**	ng/L	1.8	0.36	1	10/19/24 10:30	10/22/24 12:23	757124-72-4	
6:2 FTS	**0.66J**	ng/L	1.9	0.56	1	10/19/24 10:30	10/22/24 12:23	27619-97-2	B
8:2 FTS	**<0.78**	ng/L	1.9	0.78	1	10/19/24 10:30	10/22/24 12:23	39108-34-4	
9Cl-PF3ONS	**<0.35**	ng/L	1.8	0.35	1	10/19/24 10:30	10/22/24 12:23	756426-58-1	
ADONA	**<0.31**	ng/L	1.9	0.31	1	10/19/24 10:30	10/22/24 12:23	919005-14-4	
HFPO-DA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 12:23	13252-13-6	
NEtFOSAA	**<0.56**	ng/L	2.0	0.56	1	10/19/24 10:30	10/22/24 12:23	2991-50-6	
NEtFOSA	**<0.45**	ng/L	2.0	0.45	1	10/19/24 10:30	10/22/24 12:23	4151-50-2	
NEtFOSE	**<0.59**	ng/L	2.0	0.59	1	10/19/24 10:30	10/22/24 12:23	1691-99-2	
NMeFOSAA	**<0.77**	ng/L	2.0	0.77	1	10/19/24 10:30	10/22/24 12:23	2355-31-9	
NMeFOSA	**<0.61**	ng/L	2.0	0.61	1	10/19/24 10:30	10/22/24 12:23	31506-32-8	
NMeFOSE	**<0.47**	ng/L	2.0	0.47	1	10/19/24 10:30	10/22/24 12:23	24448-09-7	
PFBS	**<0.20**	ng/L	1.7	0.20	1	10/19/24 10:30	10/22/24 12:23	375-73-5	
PFDA	**<0.25**	ng/L	2.0	0.25	1	10/19/24 10:30	10/22/24 12:23	335-76-2	
PFHxA	**<0.37**	ng/L	2.0	0.37	1	10/19/24 10:30	10/22/24 12:23	307-24-4	
PFBA	**<0.28**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 12:23	375-22-4	
PFDS	**<0.56**	ng/L	1.9	0.56	1	10/19/24 10:30	10/22/24 12:23	335-77-3	
PFDoS	**<0.52**	ng/L	1.9	0.52	1	10/19/24 10:30	10/22/24 12:23	79780-39-5	
PFHpS	**<0.62**	ng/L	1.9	0.62	1	10/19/24 10:30	10/22/24 12:23	375-92-8	
PFHxDA	**<0.31**	ng/L	2.0	0.31	1	10/19/24 10:30	10/22/24 12:23	67905-19-5	
PFNS	**<0.47**	ng/L	1.9	0.47	1	10/19/24 10:30	10/22/24 12:23	68259-12-1	
PFODA	**<0.62**	ng/L	2.0	0.62	1	10/19/24 10:30	10/22/24 12:23	16517-11-6	L2
PFOSA	**<0.39**	ng/L	2.0	0.39	1	10/19/24 10:30	10/22/24 12:23	754-91-6	
PFPeA	**<0.18**	ng/L	2.0	0.18	1	10/19/24 10:30	10/22/24 12:23	2706-90-3	
PFPeS	**<0.25**	ng/L	1.8	0.25	1	10/19/24 10:30	10/22/24 12:23	2706-91-4	
PFDoA	**<0.42**	ng/L	2.0	0.42	1	10/19/24 10:30	10/22/24 12:23	307-55-1	
PFHpA	**<0.23**	ng/L	2.0	0.23	1	10/19/24 10:30	10/22/24 12:23	375-85-9	
PFHxS	**<0.23**	ng/L	1.8	0.23	1	10/19/24 10:30	10/22/24 12:23	355-46-4	
PFNA	**<0.21**	ng/L	2.0	0.21	1	10/19/24 10:30	10/22/24 12:23	375-95-1	
PFOS	**1.2J**	ng/L	1.8	0.50	1	10/19/24 10:30	10/22/24 12:23	1763-23-1	B
PFOA	**<0.26**	ng/L	2.0	0.26	1	10/19/24 10:30	10/22/24 12:23	335-67-1	
PFTeDA	**<0.36**	ng/L	2.0	0.36	1	10/19/24 10:30	10/22/24 12:23	376-06-7	
PFTrDA	**<0.28**	ng/L	2.0	0.28	1	10/19/24 10:30	10/22/24 12:23	72629-94-8	
PFUnA	**<0.63**	ng/L	2.0	0.63	1	10/19/24 10:30	10/22/24 12:23	2058-94-8	
Surrogates									
13C4-PFBA (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C5-PFPeA (S)	96	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C3-PFBS (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C24:2FTS (S)	120	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C3HFPO-DA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C4-PFHpA (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C3-PFHxS (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C26:2FTS (S)	118	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-FB-01 **Lab ID: 10709704012** Collected: 09/26/24 10:50 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C8-PFOS (S)	100	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C9-PFNA (S)	111	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C6-PFDA (S)	118	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C28:2FTS (S)	357	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		S3
d3-MeFOSAA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C7-PFUdA (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C8-PFOSA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
d5-EtFOSAA (S)	111	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C2-PFDoA (S)	109	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
d3-NMeFOSA (S)	25	%.	10-150		1	10/19/24 10:30	10/22/24 12:23		
d7-NMeFOSE (S)	73	%.	10-150		1	10/19/24 10:30	10/22/24 12:23		
13C2-PFTA (S)	98	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
d9-NEtFOSE (S)	73	%.	10-150		1	10/19/24 10:30	10/22/24 12:23		
d5-NEtFOSA (S)	22	%.	10-150		1	10/19/24 10:30	10/22/24 12:23		
13C2PFHxDA (S)	67	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		
13C5-PFHxA (S)	102	%.	25-150		1	10/19/24 10:30	10/22/24 12:23		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-RW-01 **Lab ID: 10709704013** Collected: 09/26/24 10:55 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.92**	ng/L	2.0	0.92	1	10/19/24 10:30	10/22/24 12:30	120226-60-0	
11Cl-PF3OUdS	**<0.43**	ng/L	2.0	0.43	1	10/19/24 10:30	10/22/24 12:30	763051-92-9	
4:2 FTS	**<0.38**	ng/L	2.0	0.38	1	10/19/24 10:30	10/22/24 12:30	757124-72-4	
6:2 FTS	**<0.60**	ng/L	2.0	0.60	1	10/19/24 10:30	10/22/24 12:30	27619-97-2	
8:2 FTS	**<0.83**	ng/L	2.0	0.83	1	10/19/24 10:30	10/22/24 12:30	39108-34-4	
9Cl-PF3ONS	**<0.37**	ng/L	2.0	0.37	1	10/19/24 10:30	10/22/24 12:30	756426-58-1	
ADONA	**<0.34**	ng/L	2.0	0.34	1	10/19/24 10:30	10/22/24 12:30	919005-14-4	
HFPO-DA	**<0.27**	ng/L	2.1	0.27	1	10/19/24 10:30	10/22/24 12:30	13252-13-6	
NEtFOSAA	**<0.60**	ng/L	2.1	0.60	1	10/19/24 10:30	10/22/24 12:30	2991-50-6	
NEtFOSA	**<0.48**	ng/L	2.1	0.48	1	10/19/24 10:30	10/22/24 12:30	4151-50-2	
NEtFOSE	**<0.63**	ng/L	2.1	0.63	1	10/19/24 10:30	10/22/24 12:30	1691-99-2	
NMeFOSAA	**<0.82**	ng/L	2.1	0.82	1	10/19/24 10:30	10/22/24 12:30	2355-31-9	
NMeFOSA	**<0.66**	ng/L	2.1	0.66	1	10/19/24 10:30	10/22/24 12:30	31506-32-8	
NMeFOSE	**<0.51**	ng/L	2.1	0.51	1	10/19/24 10:30	10/22/24 12:30	24448-09-7	
PFBS	**<0.21**	ng/L	1.9	0.21	1	10/19/24 10:30	10/22/24 12:30	375-73-5	
PFDA	**<0.26**	ng/L	2.1	0.26	1	10/19/24 10:30	10/22/24 12:30	335-76-2	
PFHxA	**<0.40**	ng/L	2.1	0.40	1	10/19/24 10:30	10/22/24 12:30	307-24-4	
PFBA	**<0.29**	ng/L	2.1	0.29	1	10/19/24 10:30	10/22/24 12:30	375-22-4	
PFDS	**<0.60**	ng/L	2.0	0.60	1	10/19/24 10:30	10/22/24 12:30	335-77-3	
PFDoS	**<0.56**	ng/L	2.0	0.56	1	10/19/24 10:30	10/22/24 12:30	79780-39-5	
PFHpS	**<0.66**	ng/L	2.0	0.66	1	10/19/24 10:30	10/22/24 12:30	375-92-8	
PFHxDA	**<0.33**	ng/L	2.1	0.33	1	10/19/24 10:30	10/22/24 12:30	67905-19-5	
PFNS	**<0.50**	ng/L	2.0	0.50	1	10/19/24 10:30	10/22/24 12:30	68259-12-1	
PFODA	**<0.67**	ng/L	2.1	0.67	1	10/19/24 10:30	10/22/24 12:30	16517-11-6	L2
PFOSA	**<0.42**	ng/L	2.1	0.42	1	10/19/24 10:30	10/22/24 12:30	754-91-6	
PFPeA	**<0.19**	ng/L	2.1	0.19	1	10/19/24 10:30	10/22/24 12:30	2706-90-3	
PFPeS	**<0.27**	ng/L	2.0	0.27	1	10/19/24 10:30	10/22/24 12:30	2706-91-4	
PFDoA	**<0.45**	ng/L	2.1	0.45	1	10/19/24 10:30	10/22/24 12:30	307-55-1	
PFHpA	**<0.25**	ng/L	2.1	0.25	1	10/19/24 10:30	10/22/24 12:30	375-85-9	
PFHxS	**<0.25**	ng/L	1.9	0.25	1	10/19/24 10:30	10/22/24 12:30	355-46-4	
PFNA	**<0.22**	ng/L	2.1	0.22	1	10/19/24 10:30	10/22/24 12:30	375-95-1	
PFOS	**0.54J**	ng/L	1.9	0.54	1	10/19/24 10:30	10/22/24 12:30	1763-23-1	B
PFOA	**<0.28**	ng/L	2.1	0.28	1	10/19/24 10:30	10/22/24 12:30	335-67-1	
PFTeDA	**<0.38**	ng/L	2.1	0.38	1	10/19/24 10:30	10/22/24 12:30	376-06-7	
PFTrDA	**<0.30**	ng/L	2.1	0.30	1	10/19/24 10:30	10/22/24 12:30	72629-94-8	
PFUnA	**<0.67**	ng/L	2.1	0.67	1	10/19/24 10:30	10/22/24 12:30	2058-94-8	
Surrogates									
13C4-PFBA (S)	97	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C5-PFPeA (S)	99	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C3-PFBS (S)	110	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C24:2FTS (S)	130	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C3HFPO-DA (S)	90	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C4-PFHpA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C3-PFHxS (S)	110	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C26:2FTS (S)	125	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-RW-01 **Lab ID: 10709704013** Collected: 09/26/24 10:55 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C8-PFOS (S)	102	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C9-PFNA (S)	111	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C6-PFDA (S)	121	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C28:2FTS (S)	377	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		S3
d3-MeFOSAA (S)	113	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C7-PFUdA (S)	110	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C8-PFOSA (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
d5-EtFOSAA (S)	115	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C2-PFDoA (S)	106	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
d3-NMeFOSA (S)	15	%.	10-150		1	10/19/24 10:30	10/22/24 12:30		
d7-NMeFOSE (S)	63	%.	10-150		1	10/19/24 10:30	10/22/24 12:30		
13C2-PFTA (S)	99	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
d9-NEtFOSE (S)	59	%.	10-150		1	10/19/24 10:30	10/22/24 12:30		
d5-NEtFOSA (S)	10	%.	10-150		1	10/19/24 10:30	10/22/24 12:30		
13C2PFHxDA (S)	64	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		
13C5-PFHxA (S)	105	%.	25-150		1	10/19/24 10:30	10/22/24 12:30		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-ERB-01 **Lab ID: 10709704014** Collected: 09/26/24 11:00 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178								
	Pace Analytical Services - Minneapolis								
10:2 FTS	**<0.84**	ng/L	1.9	0.84	1	10/19/24 10:30	10/22/24 12:37	120226-60-0	
11Cl-PF3OUdS	**<0.39**	ng/L	1.8	0.39	1	10/19/24 10:30	10/22/24 12:37	763051-92-9	
4:2 FTS	**<0.35**	ng/L	1.8	0.35	1	10/19/24 10:30	10/22/24 12:37	757124-72-4	
6:2 FTS	**<0.55**	ng/L	1.8	0.55	1	10/19/24 10:30	10/22/24 12:37	27619-97-2	
8:2 FTS	**<0.76**	ng/L	1.9	0.76	1	10/19/24 10:30	10/22/24 12:37	39108-34-4	
9Cl-PF3ONS	**<0.34**	ng/L	1.8	0.34	1	10/19/24 10:30	10/22/24 12:37	756426-58-1	
ADONA	**<0.31**	ng/L	1.8	0.31	1	10/19/24 10:30	10/22/24 12:37	919005-14-4	
HFPO-DA	**<0.24**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 12:37	13252-13-6	
NEtFOSAA	**<0.55**	ng/L	1.9	0.55	1	10/19/24 10:30	10/22/24 12:37	2991-50-6	
NEtFOSA	**<0.44**	ng/L	1.9	0.44	1	10/19/24 10:30	10/22/24 12:37	4151-50-2	
NEtFOSE	**<0.58**	ng/L	1.9	0.58	1	10/19/24 10:30	10/22/24 12:37	1691-99-2	
NMeFOSAA	**<0.75**	ng/L	1.9	0.75	1	10/19/24 10:30	10/22/24 12:37	2355-31-9	
NMeFOSA	**<0.60**	ng/L	1.9	0.60	1	10/19/24 10:30	10/22/24 12:37	31506-32-8	
NMeFOSE	**<0.46**	ng/L	1.9	0.46	1	10/19/24 10:30	10/22/24 12:37	24448-09-7	
PFBS	**<0.20**	ng/L	1.7	0.20	1	10/19/24 10:30	10/22/24 12:37	375-73-5	
PFDA	**<0.24**	ng/L	1.9	0.24	1	10/19/24 10:30	10/22/24 12:37	335-76-2	
PFHxA	**<0.36**	ng/L	1.9	0.36	1	10/19/24 10:30	10/22/24 12:37	307-24-4	
PFBA	**<0.27**	ng/L	1.9	0.27	1	10/19/24 10:30	10/22/24 12:37	375-22-4	
PFDS	**<0.55**	ng/L	1.9	0.55	1	10/19/24 10:30	10/22/24 12:37	335-77-3	
PFDoS	**<0.51**	ng/L	1.9	0.51	1	10/19/24 10:30	10/22/24 12:37	79780-39-5	
PFHpS	**<0.61**	ng/L	1.8	0.61	1	10/19/24 10:30	10/22/24 12:37	375-92-8	
PFHxDA	**<0.31**	ng/L	1.9	0.31	1	10/19/24 10:30	10/22/24 12:37	67905-19-5	
PFNS	**<0.46**	ng/L	1.9	0.46	1	10/19/24 10:30	10/22/24 12:37	68259-12-1	
PFODA	**<0.61**	ng/L	1.9	0.61	1	10/19/24 10:30	10/22/24 12:37	16517-11-6	L2
PFOSA	**<0.38**	ng/L	1.9	0.38	1	10/19/24 10:30	10/22/24 12:37	754-91-6	
PFPeA	**<0.18**	ng/L	1.9	0.18	1	10/19/24 10:30	10/22/24 12:37	2706-90-3	
PFPeS	**<0.25**	ng/L	1.8	0.25	1	10/19/24 10:30	10/22/24 12:37	2706-91-4	
PFDoA	**<0.42**	ng/L	1.9	0.42	1	10/19/24 10:30	10/22/24 12:37	307-55-1	
PFHpA	**<0.23**	ng/L	1.9	0.23	1	10/19/24 10:30	10/22/24 12:37	375-85-9	
PFHxS	**<0.23**	ng/L	1.8	0.23	1	10/19/24 10:30	10/22/24 12:37	355-46-4	
PFNA	**<0.20**	ng/L	1.9	0.20	1	10/19/24 10:30	10/22/24 12:37	375-95-1	
PFOS	**0.98J**	ng/L	1.8	0.49	1	10/19/24 10:30	10/22/24 12:37	1763-23-1	B
PFOA	**<0.26**	ng/L	1.9	0.26	1	10/19/24 10:30	10/22/24 12:37	335-67-1	
PFTeDA	**<0.35**	ng/L	1.9	0.35	1	10/19/24 10:30	10/22/24 12:37	376-06-7	
PFTrDA	**<0.27**	ng/L	1.9	0.27	1	10/19/24 10:30	10/22/24 12:37	72629-94-8	
PFUnA	**<0.62**	ng/L	1.9	0.62	1	10/19/24 10:30	10/22/24 12:37	2058-94-8	
Surrogates									
13C4-PFBA (S)	93	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C5-PFPeA (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C3-PFBS (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C24:2FTS (S)	127	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C3HFPO-DA (S)	88	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C4-PFHpA (S)	103	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C3-PFHxS (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C26:2FTS (S)	138	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
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ANALYTICAL RESULTS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Sample: PR-ERB-01 **Lab ID: 10709704014** Collected: 09/26/24 11:00 Received: 09/27/24 18:45 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WI ID NPW	Analytical Method: ENV-SOP-MIN4-0178 Preparation Method: ENV-SOP-MIN4-0178 Pace Analytical Services - Minneapolis								
Surrogates									
13C8-PFOA (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C8-PFOS (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C9-PFNA (S)	110	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C6-PFDA (S)	120	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C28:2FTS (S)	304	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		S3
d3-MeFOSAA (S)	110	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C7-PFUdA (S)	108	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C8-PFOSA (S)	95	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
d5-EtFOSAA (S)	107	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C2-PFDoA (S)	104	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
d3-NMeFOSA (S)	46	%.	10-150		1	10/19/24 10:30	10/22/24 12:37		
d7-NMeFOSE (S)	80	%.	10-150		1	10/19/24 10:30	10/22/24 12:37		
13C2-PFTA (S)	113	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
d9-NEtFOSE (S)	89	%.	10-150		1	10/19/24 10:30	10/22/24 12:37		
d5-NEtFOSA (S)	39	%.	10-150		1	10/19/24 10:30	10/22/24 12:37		
13C2PFHxDA (S)	82	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		
13C5-PFHxA (S)	100	%.	25-150		1	10/19/24 10:30	10/22/24 12:37		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

QC Batch: 972825
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID NPW
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709704001, 10709704002

METHOD BLANK: 5083866 Matrix: Water
Associated Lab Samples: 10709704001, 10709704002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	<0.88	2.0	10/15/24 17:14	
11Cl-PF3OUdS	ng/L	<0.41	1.9	10/15/24 17:14	
4:2 FTS	ng/L	<0.37	1.9	10/15/24 17:14	
6:2 FTS	ng/L	0.64J	1.9	10/15/24 17:14	
8:2 FTS	ng/L	<0.80	2.0	10/15/24 17:14	
9Cl-PF3ONS	ng/L	<0.36	1.9	10/15/24 17:14	
ADONA	ng/L	<0.32	1.9	10/15/24 17:14	
HFPO-DA	ng/L	<0.25	2.0	10/15/24 17:14	
NEtFOSA	ng/L	<0.46	2.0	10/15/24 17:14	
NEtFOSAA	ng/L	<0.57	2.0	10/15/24 17:14	
NEtFOSE	ng/L	<0.61	2.0	10/15/24 17:14	
NMeFOSA	ng/L	<0.63	2.0	10/15/24 17:14	
NMeFOSAA	ng/L	<0.79	2.0	10/15/24 17:14	
NMeFOSE	ng/L	<0.49	2.0	10/15/24 17:14	
PFBA	ng/L	<0.28	2.0	10/15/24 17:14	
PFBS	ng/L	<0.21	1.8	10/15/24 17:14	
PFDA	ng/L	<0.25	2.0	10/15/24 17:14	
PFDoA	ng/L	<0.44	2.0	10/15/24 17:14	
PFDoS	ng/L	<0.54	2.0	10/15/24 17:14	
PFDS	ng/L	<0.57	2.0	10/15/24 17:14	
PFHpA	ng/L	<0.24	2.0	10/15/24 17:14	
PFHpS	ng/L	<0.64	1.9	10/15/24 17:14	
PFHxA	ng/L	<0.38	2.0	10/15/24 17:14	
PFHxDA	ng/L	<0.32	2.0	10/15/24 17:14	
PFHxS	ng/L	<0.24	1.8	10/15/24 17:14	
PFNA	ng/L	<0.21	2.0	10/15/24 17:14	
PFNS	ng/L	<0.48	1.9	10/15/24 17:14	
PFOA	ng/L	<0.27	2.0	10/15/24 17:14	
PFODA	ng/L	<0.64	2.0	10/15/24 17:14	
PFOS	ng/L	<0.52	1.9	10/15/24 17:14	
PFOSA	ng/L	<0.40	2.0	10/15/24 17:14	
PFPeA	ng/L	<0.18	2.0	10/15/24 17:14	
PFPeS	ng/L	<0.26	1.9	10/15/24 17:14	
PFTeDA	ng/L	<0.36	2.0	10/15/24 17:14	
PFTrDA	ng/L	<0.29	2.0	10/15/24 17:14	
PFUnA	ng/L	<0.65	2.0	10/15/24 17:14	
13C2-PFDoA (S)	%.	120	25-150	10/15/24 17:14	
13C2-PFTA (S)	%.	113	25-150	10/15/24 17:14	
13C24:2FTS (S)	%.	126	25-150	10/15/24 17:14	
13C26:2FTS (S)	%.	126	25-150	10/15/24 17:14	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

METHOD BLANK: 5083866 Matrix: Water
Associated Lab Samples: 10709704001, 10709704002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C28:2FTS (S)	%.	272	25-150	10/15/24 17:14	S3
13C2PFHxDA (S)	%.	88	25-150	10/15/24 17:14	
13C3-PFBS (S)	%.	129	25-150	10/15/24 17:14	
13C3-PFHxS (S)	%.	123	25-150	10/15/24 17:14	
13C3HFPO-DA (S)	%.	107	25-150	10/15/24 17:14	
13C4-PFBA (S)	%.	123	25-150	10/15/24 17:14	
13C4-PFHpA (S)	%.	122	25-150	10/15/24 17:14	
13C5-PFHxA (S)	%.	121	25-150	10/15/24 17:14	
13C5-PFPeA (S)	%.	125	25-150	10/15/24 17:14	
13C6-PFDA (S)	%.	135	25-150	10/15/24 17:14	
13C7-PFUdA (S)	%.	123	25-150	10/15/24 17:14	
13C8-PFOA (S)	%.	124	25-150	10/15/24 17:14	
13C8-PFOS (S)	%.	121	25-150	10/15/24 17:14	
13C8-PFOSA (S)	%.	116	25-150	10/15/24 17:14	
13C9-PFNA (S)	%.	120	25-150	10/15/24 17:14	
d3-MeFOSAA (S)	%.	110	25-150	10/15/24 17:14	
d3-NMeFOSA (S)	%.	91	20-150	10/15/24 17:14	
d5-EtFOSAA (S)	%.	112	25-150	10/15/24 17:14	
d5-NEtFOSA (S)	%.	94	20-150	10/15/24 17:14	
d7-NMeFOSE (S)	%.	104	20-150	10/15/24 17:14	
d9-NEtFOSE (S)	%.	102	20-150	10/15/24 17:14	

LABORATORY CONTROL SAMPLE & LCSD: 5083867 5083868

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.9	2.0	1.3J	50	35	50-150		30	L2
11Cl-PF3OUdS	ng/L	3.8	3.1	3.2	81	85	50-150	3	30	
4:2 FTS	ng/L	3.8	3.5	3.3	92	88	50-150	7	30	
6:2 FTS	ng/L	3.9	3.4	3.5	89	94	50-150	3	30	
8:2 FTS	ng/L	3.9	3.4	3.3	88	88	50-150	2	30	
9Cl-PF3ONS	ng/L	3.8	3.3	3.3	87	90	50-150	1	30	
ADONA	ng/L	3.8	3.4	3.2	88	85	50-150	6	30	
HFPO-DA	ng/L	4.1	3.6	3.3	89	83	50-150	9	30	
NEtFOSA	ng/L	4.1	3.6	3.5	90	88	50-150	4	30	
NEtFOSAA	ng/L	4.1	3.5	3.6	86	91	50-150	3	30	
NEtFOSE	ng/L	4.1	3.5	3.8	85	95	50-150	9	30	
NMeFOSA	ng/L	4.1	3.5	3.6	85	91	50-150	4	30	
NMeFOSAA	ng/L	4.1	4.2	3.6	103	91	50-150	15	30	
NMeFOSE	ng/L	4.1	3.6	3.6	90	90	50-150	2	30	
PFBA	ng/L	4.1	3.7	3.5	91	89	50-150	5	30	
PFBS	ng/L	3.6	3.4	3.1	94	89	50-150	8	30	
PFDA	ng/L	4.1	3.7	3.5	90	88	50-150	5	30	
PFDoA	ng/L	4.1	3.7	3.7	90	93	50-150	1	30	
PFDoS	ng/L	3.9	2.8	2.8	71	74	50-150	1	30	

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REPORT OF LABORATORY ANALYSIS

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Minneapolis, MN 55414
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QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

LABORATORY CONTROL SAMPLE & LCSD: 5083867 5083868

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PFDS	ng/L	3.9	3.1	3.3	78	86	50-150	8	30	
PFHpA	ng/L	4.1	3.6	3.5	88	87	50-150	3	30	
PFHpS	ng/L	3.9	3.8	3.6	97	96	50-150	3	30	
PFHxA	ng/L	4.1	3.7	3.5	92	89	50-150	6	30	
PFHxDA	ng/L	4.1	3.8	3.4	93	85	50-150	11	30	
PFHxS	ng/L	3.7	3.3	3.3	90	91	50-150	2	30	
PFNA	ng/L	4.1	3.7	3.6	91	92	50-150	1	30	
PFNS	ng/L	3.9	3.5	3.4	90	91	50-150	2	30	
PFOA	ng/L	4.1	3.7	3.5	91	88	50-150	6	30	
PFODA	ng/L	4.1	1.0J	1.6J	26	39	50-150		30	L2
PFOS	ng/L	3.8	3.4	3.5	90	94	50-150	2	30	
PFOSA	ng/L	4.1	3.9	3.4	96	85	50-150	14	30	
PFPeA	ng/L	4.1	3.6	3.5	89	88	50-150	4	30	
PFPeS	ng/L	3.8	3.4	3.3	88	89	50-150	2	30	
PFTeDA	ng/L	4.1	3.5	3.5	87	89	50-150	0	30	
PFTrDA	ng/L	4.1	3.5	3.3	87	84	50-150	6	30	
PFUnA	ng/L	4.1	3.8	3.3	93	84	50-150	13	30	
13C2-PFDoA (S)	%.				113	123	25-150			
13C2-PFTA (S)	%.				114	107	25-150			
13C24:2FTS (S)	%.				117	130	25-150			
13C26:2FTS (S)	%.				132	129	25-150			
13C28:2FTS (S)	%.				200	235	25-150			S0
13C2PFHxDA (S)	%.				76	71	25-150			
13C3-PFBS (S)	%.				124	132	25-150			
13C3-PFHxS (S)	%.				123	124	25-150			
13C3HFPO-DA (S)	%.				105	118	25-150			
13C4-PFBA (S)	%.				117	122	25-150			
13C4-PFHpA (S)	%.				118	125	25-150			
13C5-PFHxA (S)	%.				117	124	25-150			
13C5-PFPeA (S)	%.				121	124	25-150			
13C6-PFDA (S)	%.				129	140	25-150			
13C7-PFUdA (S)	%.				119	129	25-150			
13C8-PFOA (S)	%.				121	129	25-150			
13C8-PFOS (S)	%.				120	121	25-150			
13C8-PFOSA (S)	%.				111	118	25-150			
13C9-PFNA (S)	%.				122	128	25-150			
d3-MeFOSAA (S)	%.				109	116	25-150			
d3-NMeFOSA (S)	%.				65	76	20-150			
d5-EtFOSAA (S)	%.				121	120	25-150			
d5-NEtFOSA (S)	%.				66	73	20-150			
d7-NMeFOSE (S)	%.				91	102	20-150			
d9-NEtFOSE (S)	%.				93	101	20-150			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

QC Batch: 974259
QC Batch Method: ENV-SOP-MIN4-0178
Analysis Method: ENV-SOP-MIN4-0178
Analysis Description: WI ID NPW
Laboratory: Pace Analytical Services - Minneapolis
Associated Lab Samples: 10709704003, 10709704004, 10709704005, 10709704006, 10709704007, 10709704008, 10709704009, 10709704010, 10709704011, 10709704012, 10709704013, 10709704014

METHOD BLANK: 5092262
Matrix: Water
Associated Lab Samples: 10709704003, 10709704004, 10709704005, 10709704006, 10709704007, 10709704008, 10709704009, 10709704010, 10709704011, 10709704012, 10709704013, 10709704014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
10:2 FTS	ng/L	<0.89	2.0	10/22/24 10:42	
11Cl-PF3OUdS	ng/L	<0.41	1.9	10/22/24 10:42	
4:2 FTS	ng/L	<0.37	1.9	10/22/24 10:42	
6:2 FTS	ng/L	0.67J	1.9	10/22/24 10:42	
8:2 FTS	ng/L	<0.80	2.0	10/22/24 10:42	
9Cl-PF3ONS	ng/L	<0.36	1.9	10/22/24 10:42	
ADONA	ng/L	<0.33	1.9	10/22/24 10:42	
HFPO-DA	ng/L	<0.26	2.0	10/22/24 10:42	
NEtFOSA	ng/L	<0.46	2.0	10/22/24 10:42	
NEtFOSAA	ng/L	<0.58	2.0	10/22/24 10:42	
NEtFOSE	ng/L	<0.61	2.0	10/22/24 10:42	
NMeFOSA	ng/L	<0.64	2.0	10/22/24 10:42	
NMeFOSAA	ng/L	<0.79	2.0	10/22/24 10:42	
NMeFOSE	ng/L	<0.49	2.0	10/22/24 10:42	
PFBA	ng/L	<0.28	2.0	10/22/24 10:42	
PFBS	ng/L	<0.21	1.8	10/22/24 10:42	
PFDA	ng/L	<0.25	2.0	10/22/24 10:42	
PFDoA	ng/L	<0.44	2.0	10/22/24 10:42	
PFDoS	ng/L	<0.54	2.0	10/22/24 10:42	
PFDS	ng/L	<0.58	2.0	10/22/24 10:42	
PFHpA	ng/L	<0.24	2.0	10/22/24 10:42	
PFHpS	ng/L	<0.64	1.9	10/22/24 10:42	
PFHxA	ng/L	<0.38	2.0	10/22/24 10:42	
PFHxDA	ng/L	<0.32	2.0	10/22/24 10:42	
PFHxS	ng/L	<0.24	1.9	10/22/24 10:42	
PFNA	ng/L	<0.21	2.0	10/22/24 10:42	
PFNS	ng/L	<0.48	2.0	10/22/24 10:42	
PFOA	ng/L	<0.27	2.0	10/22/24 10:42	
PFODA	ng/L	<0.64	2.0	10/22/24 10:42	
PFOS	ng/L	1.3J	1.9	10/22/24 10:42	
PFOSA	ng/L	<0.41	2.0	10/22/24 10:42	
PFPeA	ng/L	<0.19	2.0	10/22/24 10:42	
PFPeS	ng/L	<0.26	1.9	10/22/24 10:42	
PFTeDA	ng/L	<0.37	2.0	10/22/24 10:42	
PFTrDA	ng/L	<0.29	2.0	10/22/24 10:42	
PFUnA	ng/L	<0.65	2.0	10/22/24 10:42	
13C2-PFDoA (S)	%.	111	25-150	10/22/24 10:42	
13C2-PFTA (S)	%.	109	25-150	10/22/24 10:42	
13C24:2FTS (S)	%.	148	25-150	10/22/24 10:42	

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
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

METHOD BLANK: 5092262 Matrix: Water

Associated Lab Samples: 10709704003, 10709704004, 10709704005, 10709704006, 10709704007, 10709704008, 10709704009, 10709704010, 10709704011, 10709704012, 10709704013, 10709704014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
13C26:2FTS (S)	%.	154	25-150	10/22/24 10:42	S3
13C28:2FTS (S)	%.	183	25-150	10/22/24 10:42	S3
13C2PFHxDA (S)	%.	70	25-150	10/22/24 10:42	
13C3-PFBS (S)	%.	108	25-150	10/22/24 10:42	
13C3-PFHxS (S)	%.	108	25-150	10/22/24 10:42	
13C3HFPO-DA (S)	%.	92	25-150	10/22/24 10:42	
13C4-PFBA (S)	%.	103	25-150	10/22/24 10:42	
13C4-PFHpA (S)	%.	108	25-150	10/22/24 10:42	
13C5-PFHxA (S)	%.	104	25-150	10/22/24 10:42	
13C5-PFPeA (S)	%.	103	25-150	10/22/24 10:42	
13C6-PFDA (S)	%.	115	25-150	10/22/24 10:42	
13C7-PFUdA (S)	%.	113	25-150	10/22/24 10:42	
13C8-PFOA (S)	%.	110	25-150	10/22/24 10:42	
13C8-PFOS (S)	%.	103	25-150	10/22/24 10:42	
13C8-PFOSA (S)	%.	94	25-150	10/22/24 10:42	
13C9-PFNA (S)	%.	114	25-150	10/22/24 10:42	
d3-MeFOSAA (S)	%.	106	25-150	10/22/24 10:42	
d3-NMeFOSA (S)	%.	45	20-150	10/22/24 10:42	
d5-EtFOSAA (S)	%.	114	25-150	10/22/24 10:42	
d5-NEtFOSA (S)	%.	45	20-150	10/22/24 10:42	
d7-NMeFOSE (S)	%.	81	20-150	10/22/24 10:42	
d9-NEtFOSE (S)	%.	78	20-150	10/22/24 10:42	

LABORATORY CONTROL SAMPLE & LCSD: 5092263 5092264

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
10:2 FTS	ng/L	3.8	2.1	2.6	56	67	50-150	20	30	
11Cl-PF3OUdS	ng/L	3.8	3.3	3.4	89	89	50-150	3	30	
4:2 FTS	ng/L	3.7	3.4	3.5	90	91	50-150	3	30	
6:2 FTS	ng/L	3.8	3.7	3.8	98	100	50-150	4	30	
8:2 FTS	ng/L	3.8	3.4	3.6	89	92	50-150	5	30	
9Cl-PF3ONS	ng/L	3.7	3.6	3.6	98	95	50-150	1	30	
ADONA	ng/L	3.8	3.1	3.3	83	87	50-150	6	30	
HFPO-DA	ng/L	4	3.8	3.9	94	95	50-150	3	30	
NEtFOSA	ng/L	4	3.2	3.5	80	87	50-150	10	30	
NEtFOSAA	ng/L	4	3.3	3.6	83	89	50-150	8	30	
NEtFOSE	ng/L	4	3.8	3.7	94	92	50-150	1	30	
NMeFOSA	ng/L	4	3.9	3.3	99	80	50-150	19	30	
NMeFOSAA	ng/L	4	3.5	3.7	88	92	50-150	6	30	
NMeFOSE	ng/L	4	3.8	4.0	96	98	50-150	3	30	
PFBA	ng/L	4	3.7	3.8	92	94	50-150	4	30	
PFBS	ng/L	3.5	3.2	3.4	91	94	50-150	6	30	
PFDA	ng/L	4	3.5	3.9	88	96	50-150	10	30	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

LABORATORY CONTROL SAMPLE & LCSD: 5092263 5092264

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
PFDoA	ng/L	4	3.5	3.6	87	89	50-150	5	30	
PFDoS	ng/L	3.9	2.9	3.7	74	95	50-150	26	30	
PFDS	ng/L	3.8	3.5	3.7	90	95	50-150	6	30	
PFHpA	ng/L	4	3.6	3.7	90	90	50-150	2	30	
PFHpS	ng/L	3.8	3.9	4.0	102	102	50-150	2	30	
PFHxA	ng/L	4	3.7	3.8	92	93	50-150	3	30	
PFHxDA	ng/L	4	3.7	4.0	92	99	50-150	9	30	
PFHxS	ng/L	3.7	3.4	3.5	93	94	50-150	3	30	
PFNA	ng/L	4	3.7	3.7	92	91	50-150	0	30	
PFNS	ng/L	3.8	3.1	3.8	80	98	50-150	21	30	
PFOA	ng/L	4	3.5	3.8	89	94	50-150	8	30	
PFODA	ng/L	4	1.1J	2.0J	28	48	50-150		30	L2,R1
PFOS	ng/L	3.7	4.2	4.5	112	119	50-150	7	30	
PFOSA	ng/L	4	3.8	3.9	95	97	50-150	4	30	
PFPeA	ng/L	4	3.6	3.8	91	94	50-150	4	30	
PFPeS	ng/L	3.7	3.2	3.5	86	92	50-150	9	30	
PFTeDA	ng/L	4	3.7	3.6	92	88	50-150	3	30	
PFTrDA	ng/L	4	3.6	3.6	89	90	50-150	2	30	
PFUnA	ng/L	4	3.6	3.8	90	95	50-150	6	30	
13C2-PFDoA (S)	%.				110	112	25-150			
13C2-PFTA (S)	%.				105	118	25-150			
13C24:2FTS (S)	%.				142	145	25-150			
13C26:2FTS (S)	%.				150	162	25-150			S0
13C28:2FTS (S)	%.				183	177	25-150			S0
13C2PFHxDA (S)	%.				72	94	25-150			
13C3-PFBS (S)	%.				105	111	25-150			
13C3-PFHxS (S)	%.				106	109	25-150			
13C3HFPO-DA (S)	%.				94	97	25-150			
13C4-PFBA (S)	%.				100	101	25-150			
13C4-PFHpA (S)	%.				106	110	25-150			
13C5-PFHxA (S)	%.				101	105	25-150			
13C5-PFPeA (S)	%.				101	103	25-150			
13C6-PFDA (S)	%.				115	114	25-150			
13C7-PFUdA (S)	%.				109	114	25-150			
13C8-PFOA (S)	%.				111	115	25-150			
13C8-PFOS (S)	%.				97	102	25-150			
13C8-PFOSA (S)	%.				95	102	25-150			
13C9-PFNA (S)	%.				112	115	25-150			
d3-MeFOSAA (S)	%.				107	111	25-150			
d3-NMeFOSA (S)	%.				45	77	20-150			
d5-EtFOSAA (S)	%.				115	113	25-150			
d5-NEtFOSA (S)	%.				47	76	20-150			
d7-NMeFOSE (S)	%.				82	92	20-150			
d9-NEtFOSE (S)	%.				81	92	20-150			

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
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

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 - The reported result is an estimated value.

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

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

DL - Adjusted Method Detection Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Analyte was not detected and is reported as less than the LOD or as defined by the customer.

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

B	Analyte was detected in the associated method blank.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 60731241 Enbridge Superior Ter
Pace Project No.: 10709704

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10709704001	**PR-PDNF-SW01**	ENV-SOP-MIN4-0178	972825	ENV-SOP-MIN4-0178	974062
10709704002	**PR-Dup1-SW01**	ENV-SOP-MIN4-0178	972825	ENV-SOP-MIN4-0178	974062
10709704003	**PR-PD07-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704004	**PR-PD01-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704005	**PR-PD02-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704006	**PR-PD04-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704007	**PR-PDSF-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704008	**PR-PD05-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704009	**PR-PD03-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704010	**PR-PD06-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704011	**PR-PD09-SW01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704012	**PR-FB-01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704013	**PR-RW-01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162
10709704014	**PR-ERB-01**	ENV-SOP-MIN4-0178	974259	ENV-SOP-MIN4-0178	975162

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

WO# : 10709704

10709704

Company Name: AECOM	Contact/Report To: Leo Linnemanstons
Street Address: 11 E Superior St, Suite 548 Duluth, MN 55802	Phone #: 608-828-8808
	E-Mail: Leo.Linnemanstons@aecom.com
	Cc E-Mail:
Customer Project #: 60731241	
Project Name: Enbridge Superior Terminal	Invoice To: Leo Linnemanstons
	Invoice E-Mail: Leo.Linnemanstons@aecom.com
Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal	Purchase Order # (if applicable):
	Quote #:
Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET	County / State origin of sample(s): Douglas County, Wisconsin
Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other	Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No
	Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____
	DW PWSID # or WW Permit # as applicable:
	Date Results Requested:
	Field Filtered (if applicable): [ ] Yes [X] No
	Analysis:

Specify Container Size **: 3

Identify Container Preservative Type***: 1

Analysis Requested: WIS 1D36 (PFAS)

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: / AcctNum / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

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

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Sample Comment
PR-PDNF-SW01	SW	G			9/26/24	0735	2			001
PR-DUP1-SW01	SW	G			9/26/24	0735	2			002
PR-PD07-SW01	SW	G			9/26/24	0805	2			003
PR-PD01-SW01	SW	G			9/26/24	0820	2			004
PR-PD02-SW01	SW	G			9/26/24	0840	2			005
PR-PD04-SW01	SW	G			9/26/24	0855	2			006
PR-PDSF-SW01	SW	G			9/26/24	0920	2			007
PR-PD05-SW01	SW	G			9/26/24	0935	2			008
PR-PD03-SW01	SW	G			9/26/24	0945	2			009
PR-PD06-SW01	SW	G			9/26/24	1005	2			010

Additional Instructions from Pace®:

Collected By: (Printed Name) Charlie Bills

Signature: Charlie

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
1	T3	-.1	1.6	1.5	Y

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
AECOM	9/26/24 1150		9/26/24 11:50
	9/26/24 12:47		9/27/24 1845

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

1.2 T3

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

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

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name: AECOM	Contact/Report To: Leo Linnemanstons
Street Address: 11 E Superior St, Suite 548 Duluth, MN 55802	Phone #: 608-828-8208
	E-Mail: Leo.Linnemanstons@aecom.com
Customer Project #: 60731241	Cc E-Mail:
Project Name: Enbridge Superior Terminal	Invoice To: Leo.Linnemanstons
Site Collection Info/Facility ID (as applicable): Enbridge Superior Terminal	Invoice E-Mail: Leo.Linnemanstons@aecom.com
	Purchase Order # (if applicable):
	Quote #:
Time Zone Collected: [ ] AK [ ] PT [ ] MT [X] CT [ ] ET	County / State origin of sample(s): Douglas County, Wisconsin
Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other	Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No
	Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____
	DW PWSID # or WW Permit # as applicable:
	Date Results Requested:
	Field Filtered (if applicable): [ ] Yes [X] No
	Analysis:

Specify Container Size **: 3

Identify Container Preservative Type***: 1

Analysis Requested: WIS 1036 (PFAS)

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

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

Lab Use Only: Proj. Mgr: | AcctNum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

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

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Sample Comment
PR-PD09-SW01	SW	G			9/26/24	1030	2			011
PR-FB-01	W	G			9/26/24	1050	2			012
PR-RW-01	W	G			9/26/24	1055	2			013
PR-ERB-01	W	G			9/26/24	1100	2			014

Additional Instructions from Pace®:

Collected By: (Printed Name) Charlie Bills

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
	T3	-.1	1.6	1.5	X

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Elaine O'Malley AECOM	9/26/24 1150		9/26/24 11:50	
	9/26/24 12:47		9/27/24 1845	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 2 of 2

1.2 (3)

ENV-FRM-MIN4-0150 v17_Sample Condition Upon Receipt

CLIENT NAME: AECOM **PROJECT #:** **WO#: 10709704**

COURIER: ☐ Client ☐ Commercial ☐ FedEx ☑ Pace ☐ SpeeDee ☐ UPS ☐ USPS

PM: TS1 **Due Date: 10/29/24**

CLIENT: AECOM

TRACKING NUMBER: ☐ See Exceptions form ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present: ☐ YES ☑ NO **Seals Intact:** ☐ YES ☑ NO **Biological Tissue Frozen:** ☐ YES ☐ NO ☑ N/A

Packing Material: ☐ Bubble Bags ☐ Bubble Wrap ☑ None ☐ Other **Temp Blank:** ☑ YES ☐ NO **Type of Ice:** ☐ Blue ☐ Dry ☑ Wet ☐ Melted ☐ None

Thermometer: ☐ T1 (0461) ☐ T2 (0436) ☑ T3 (0459) ☐ T4 (0402) ☐ T5 (0178) ☐ T6 (0235) ☐ T7 (0042) ☐ T8 (0775) ☐ T9 (0727) ☐ 01339252 (1710)

Did Samples Originate in West Virginia: ☐ YES ☑ NO	**Were All Container Temps taken:** ☐ YES ☐ NO ☑ N/A
Correction Factor: -.1 **Cooler Temp Read w/Temp Blank:** 1.6 °C **Cooler Temp Corrected w/Temp Blank:** 1.5 °C	**Average Corrected Temp (no Temp Blank Only):** _____ °C
NOTE: *Temp should be above freezing to 6°C.*	☐ See Exceptions Form ENV-FRM-MIN4-0142 ☐ 1 Container
USDA Regulated Soil: ☑ N/A – Water Sample/Other (describe): _____	**Initials & Date of Person Examining Contents:** SMC 9/28/24
Did Samples originate from one of the following states (check maps) – AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA: ☐ YES ☐ NO	Did samples originate from a foreign source (international, including Hawaii and Puerto Rico): ☐ YES ☐ NO
NOTE: If YES to either question, fill out a Regulated Soil Checklist (ENV-FRM-MIN4-0154) and include with SCUR/COC paperwork.	

LOCATION (check one): ☐ DULUTH ☑ MINNEAPOLIS ☐ VIRGINIA	YES	NO	N/A	COMMENT(S)
Chain of Custody Present and Filled Out?	☑	☐		1.
Chain of Custody Relinquished?	☑	☐		2.
Sampler Name and/or Signature on COC?	☑	☐	☐	3.
Samples Arrived within Hold Time?	☑	☐		4. If Fecal: ☐ <8 hrs ☐ >8 hr, <24 hr ☐ No
Short Hold Time Analysis (<72 hr)?	☐	☑		5. ☐ BOD / cBOD ☐ Fecal coliform ☐ Hex Chrom ☐ HPC ☐ Nitrate ☐ Nitrite ☐ Ortho Phos ☐ Total coliform/*E. coli* ☐ Other: _____
Rush Turn Around Time Requested?	☐	☑		6.
Sufficient Sample Volume?	☑	☐		7. 1-14: 2 NT3u
Correct Containers Used?	☑	☐	☐	8.
– Pace Containers Used?	☐	☑		
Containers Intact?	☑	☐		9.
Field Filtered Volume Received for Dissolved Tests?	☐	☐	☑	10. Is sediment visible in the dissolved container: ☐ YES ☐ NO
Is sufficient information available to reconcile the samples to the COC? **NOTE:** If ID/Date/Time don't match fill out section 11. Matrix: ☐ Oil ☐ Soil ☑ Water ☐ Other	☑	☐		11. **If NO, write ID/Date/Time of container below:** sample 4 has strong ID on container, Date + time match ☐ See Exceptions form ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐	☐	☑	12. Sample #:
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, < 2 pH, NaOH > 9 Sulfide, NaOH > 10 Cyanide)	☐	☐	☑	☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC, Oil & Grease, DRO/8015 (water) and Dioxins/PFAS	☐	☐	☑	Positive for Residual Chlorine: ☐ YES ☐ NO
NOTE: If adding preservation to the container, **verify with the PM first.** Clients may require adding preservative to the field and equipment blanks when this occurs.				**pH Paper Lot #** (Residual Chlorine / 0-6 Roll / 0-6 Strip / 0-14 Strip) ☐ See Exceptions form ENV-FRM-MIN4-0142
Headspace in Methyl Mercury Container?	☐	☐	☑	13.
Extra labels present on soil VOA or WIDRO containers?	☐	☐	☑	14.
Headspace in VOA Vials (greater than 6mm)?	☐	☐	☑	☐ See Exceptions form ENV-FRM-MIN4-0140
Trip Blanks Present?	☐	☐	☑	15.
Trip Blank Custody Seals Present?	☐	☐	☑	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION / RESOLUTION **FIELD DATA REQUIRED:** ☐ YES ☐ NO

Person Contacted: _____ Date & Time: _____

Comments / Resolution: _____

Project Manager Review: Jina Soltani **Date:** 10/2/24

NOTE: *When there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEQ Certification Office (i.e., out of hold, incorrect preservative, out of temp, incorrect containers).*

Labeled By: SMC **Line:** 3

Appendix D

Data Validation Reports (Soil and Surface Water)

AECOM
1555 N. RiverCenter Drive, Suite 214
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Data Validation Report

Project:	Enbridge Superior Terminal – Soil Samples
Laboratory:	Pace Analytical
Work Order (WO):	10709546
Analyses/Method:	Per- and Polyfluorinated Alkyl Substances (PFAS) / PFAS Isotope Dilution Method
Validation Level:	Level 2A
Prepared by:	Lisa Smith (CEAC) Completed on: 11/11/2024

Soil samples listed below, and the associated field QC blanks, were collected by AECOM on September 24 and 27, 2024.

Sample ID	Quality Control	Sample Date	Laboratory ID
Soil Samples:			
PR-SS01		9/24/2024	10709546001
PR-SS02		9/24/2024	10709546002
PR-SS03		9/24/2024	10709546003
PR-SS04		9/24/2024	10709546004
PR-SS05		9/24/2024	10709546005
PR-SS06		9/24/2024	10709546006
PR-SS07		9/24/2024	10709546007
PR-SS08		9/24/2024	10709546008
PR-SS09		9/24/2024	10709546009
PR-SS10		9/24/2024	10709546010
PR-SS11		9/24/2024	10709546011
PR-SS12		9/24/2024	10709546012
PR-SS13		9/24/2024	10709546013
PR-SS14		9/24/2024	10709546014
PR-SS15		9/24/2024	10709546015
PR-SS16		9/24/2024	10709546016
PR-SS17		9/24/2024	10709546017
PR-SS18		9/24/2024	10709546018
PR-SS19		9/24/2024	10709546019
PR-SS20		9/24/2024	10709546020
PR-SS21		9/24/2024	10709546021
PR-SS22		9/27/2024	10709726001
Field QC Blanks:			
PR-FB-02	Field Blank	9/24/2024	10709546022
PR-ERB-02	Equipment Blank	9/24/2024	10709546023
PR-RW-02	Rinsate Water Source	9/24/2024	10709546024

Data validation activities were conducted with reference to:

- *Wisconsin DNR PFAS Updates,* March 1, 2021.
- *Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations*, EA-19-0001-C, 12/19/2019.
- *Data Validation Guidelines Module3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15,* Department of Defense, 5/1/2020.

In the absence of method-specific information, laboratory quality control (QC) limits, or project-specific requirements, AECOMs professional judgment was used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓	Data completeness (chain-of-custody (CoC)/sample integrity
✓	Holding times
✗	Laboratory blanks / field blanks
✗	Extracted Internal Standards (EIS)
✗	Laboratory control samples (LCSs)
NA	Field duplicates
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

SUMMARY

Based on the results of the validation, the data are valid as reported and may be used for decision making purposes, with the exception of 33 results that were rejected (R) due to severely low EIS recoveries. In addition, some of the data were qualified as nondetect (U) or estimated (UJ and J, with the appropriate bias flags) as discussed below and summarized in Table 1.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and met the following acceptance criteria for completeness:

- The CoCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the CoC requests.

Holding Times

Samples were extracted within the 28-day holding time, and analyzed within 30 days of extraction.

Laboratory Blanks

Laboratory method blanks are analyzed to assess contamination from laboratory procedures. Method blanks were analyzed at the correct frequency. Contaminants were not detected in the method blanks, with the exceptions listed below.

Batch	Analyte	Units	Result	Results Qualified
972825	6:2 Fluorotelomer sulfonic acid	ng/L	0.64 J	Associated results less than the LOQ were qualified as nondetect (U): PR-ERB-01 Results above the LOQ and within 5 times the blank concentration were qualified as estimated biased high (J+): PR-FB-02

Field Quality Control Blanks

One equipment blank, one field blank, and one rinsate water source sample were associated with this data set. Analytes were not detected in the rinsate water source sample. 6:2 FTS was detected in the field, equipment, and laboratory blank at a maximin concentration of 1.9 ng/L. Trace level (ppt) detects were found in the field and equipment blank as summarized in the table below. Soil results (reported in ppb) were nondetect, or were greater than 5 times the blank concentrations.

Field QC Sample	Analyte	Units	Result	Results Qualified U
PR-FB-02	6:2 Fluorotelomer sulfonic acid	ng/L	1.9	None. Results were nondetect, or greater than 5 times the blank concentration.
PR-ERB-01	6:2 Fluorotelomer sulfonic acid	ng/L	1.3 J	This detect was previously determined to be laboratory contamination.

Extracted Internal Standards

Extracted internal standards (EISs) are spiked into all field samples, field QC samples, and method QC samples and are used to quantitate the analytes. The EIS recoveries were within the WI limits of 10-150% for the FOSA, NMeFOSA, NEtFOSA, NMeFOSE, and NEtFOSE EISs, and were within the limits of 25-150% for other EISs, except as listed in the table below. 33 results were rejected (R) due to severely low labeled analog recoveries. Most of these results are NMeFOSA, NEtFOSA, NMeFOSE, and NEtFOSE which are poor performers, especially in the soil matrix.

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-SS01	10709546001	13C2-8:2-FTS	216	25-150	No Qualifier
PR-SS01	10709546001	D3-NMeFOSA	8	10-150	R

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-SS01	10709546001	D5-NEtFOSA	8	10-150	R
PR-SS02	10709546002	D3-NMeFOSA	8	10-150	R
PR-SS02	10709546002	D5-NEtFOSA	7	10-150	R
PR-SS03	10709546003	13C2-8:2-FTS	217	25-150	No Qualifier
PR-SS04	10709546004	D3-NMeFOSA	5	10-150	R
PR-SS04	10709546004	D5-NEtFOSA	3	10-150	R
PR-SS04	10709546004	D9-NEtFOSE	9	10-150	R
PR-SS05	10709546005	D3-NMeFOSA	4	10-150	R
PR-SS05	10709546005	D5-NEtFOSA	3	10-150	R
PR-SS06	10709546006	13C2-8:2-FTS	212	25-150	J-
PR-SS06	10709546006	13C2-PFHxDA	16	25-150	UJ
PR-SS06	10709546006	D3-NMeFOSA	6	10-150	R
PR-SS06	10709546006	D5-NEtFOSA	5	10-150	R
PR-SS08	10709546008	13C2-8:2-FTS	159	25-150	J-
PR-SS09	10709546009	13C2-8:2-FTS	170	25-150	J-
PR-SS09	10709546009	13C2-PFHxDA	10	25-150	UJ
PR-SS09	10709546009	13C8-PFOSA	9	25-150	R
PR-SS09	10709546009	D3-NMeFOSA	1	10-150	R
PR-SS09	10709546009	D5-NEtFOSA	1	10-150	R
PR-SS09	10709546009	D7-NMeFOSE	4	10-150	R
PR-SS09	10709546009	D9-NEtFOSE	2	10-150	R
PR-SS10	10709546010	13C2-8:2-FTS	176	25-150	No Qualifier
PR-SS10	10709546010	13C2-PFHxDA	18	25-150	UJ
PR-SS10	10709546010	D3-NMeFOSA	4	10-150	R
PR-SS10	10709546010	D5-NEtFOSA	3	10-150	R
PR-SS11	10709546011	13C2-8:2-FTS	155	25-150	No Qualifier
PR-SS12	10709546012	13C2-8:2-FTS	164	25-150	J-
PR-SS13	10709546013	13C2-PFHxDA	8	25-150	R
PR-SS13	10709546013	D3-NMeFOSA	3	10-150	R
PR-SS13	10709546013	D5-NEtFOSA	3	10-150	R
PR-SS14	10709546014	13C2-8:2-FTS	158	25-150	No Qualifier
PR-SS14	10709546014	13C2-PFHxDA	21	25-150	UJ
PR-SS14	10709546014	13C8-PFOSA	22	25-150	UJ
PR-SS14	10709546014	D3-NMeFOSA	1	10-150	R
PR-SS14	10709546014	D5-NEtFOSA	1	10-150	R
PR-SS14	10709546014	D7-NMeFOSE	4	10-150	R
PR-SS14	10709546014	D9-NEtFOSE	3	10-150	R
PR-SS15	10709546015	13C2-8:2-FTS	174	25-150	No Qualifier
PR-SS16	10709546016	13C2-8:2-FTS	176	25-150	No Qualifier
PR-SS17	10709546017	D3-NMeFOSA	5	10-150	R
PR-SS17	10709546017	D5-NEtFOSA	5	10-150	R
PR-SS18	10709546018	13C2-PFHxDA	22	25-150	UJ
PR-SS18	10709546018	D3-NMeFOSA	5	10-150	R
PR-SS18	10709546018	D5-NEtFOSA	4	10-150	R
PR-SS19	10709546019	13C2-8:2-FTS	181	25-150	No Qualifier
PR-SS19	10709546019	D3-NMeFOSA	5	10-150	R
PR-SS19	10709546019	D5-NEtFOSA	4	10-150	R
PR-SS21	10709546021	D3-NMeFOSA	7	10-150	R
PR-SS21	10709546021	D5-NEtFOSA	5	10-150	R

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-SS22	10709726001	13C2-8:2-FTS	181	25-150	J-
PR-ERB-02	10709546023	13C2-8:2-FTS	344	25-150	No Qualifier
PR-FB-02	10709546022	13C2-8:2-FTS	191	25-150	No Qualifier
PR-RW-02	10709546024	13C2-8:2-FTS	315	25-150	No Qualifier

LCS Results

LCSs are analyzed to monitor the accuracy of the analytical method independent of matrix effects, Recoveries (%Rs) were within the WI limits of 50% to 150% limit for low range LCSs. The recoveries and relative percent differences (RPDs) were within WI limits, except as listed in the table below.

Batch	Analyte	LCS/LCSD %Recovery	Recovery Limits	RPD	RPD Limit	Qualifiers
972825	10:2 FTS	50/**35**	50 - 150	nc	30	Associated results were nondetect and qualified as estimated (UJ): PR-FB-02 PR-ERB-02 PR-RW-02
	PFODA	**26/39**	50 - 150	nc	30	
974380	10:2 FTS	73/**44**	50 - 150	nc	30	Associated detects were qualified as estimated biased low (J-), and nondetects were qualified (UJ): PR-SS17 PR-SS18 PR-SS19 PR-SS20 PR-SS21 PR-SS22
	NMeFOSA	83/113	50 - 150	**31**	30	The associated results were nondetect and were acceptable without qualification.

Bold indicates an exceedance

nc – not calculated

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Field duplicates were not associated with the soil samples and precision could not be assessed.

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes, and no issues were found.

Qualified Analytical Results

Sample results qualified due to validation actions are summarized in Table 1. All actions are described above. Data validation qualifiers override any assigned laboratory data flags. Results reported below the LOQ were qualified as estimated (J) by the laboratory; qualifications of these results were accepted by the validator, but are not shown in Table 1.

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Analyte	Validation Qualifier (1)	Reason Code (2)
PR-ERB-02	6:2 FTS	U	mb
PR-FB-02	6:2 FTS	J+	mb
PR-FB-02 PR-ERB-02 PR-RW-02	10:2 FTS PFODA	UJ	l
PR-SS17 PR-SS18 PR-SS19 PR-SS20 PR-SS21 PR-SS22	10:2 FTS	Detects: J- Nondetects: UJ	l
PR-SS06 PR-SS08 PR-SS09 PR-SS12 PR-SS22	8:2-FTS	J-	eis
PR-SS01 PR-SS02 PR-SS04 PR-SS05 PR-SS06 PR-SS09 PR-SS10 PR-SS13 PR-SS14 PR-SS17 PR-SS18 PR-SS19 PR-SS21	NEtFOSA NMeFOSA	R	eis
PR-SS09 PR-SS14	NEtFOSE NMeFOSE	R	eis
PR-SS04	NEtFOSE	R	eis
PR-SS13	PFHxDA	R	eis
PR-SS06 PR-SS09 PR-SS10 PR-SS14 PR-SS18	PFHxDA	UJ	eis
PR-SS09	PFOSA	R	eis
PR-SS14	PFOSA	UJ	eis

(1): Data Validation Qualifiers:

J	The analyte was positively identified. The associated numerical value is estimated (+/- indicate the direction of bias).
R	Rejected due to serious deficiencies in meeting QC criteria.
UJ	The analyte was not detected above the detection limit. However, the associated value is approximate and may or may not represent the actual reporting limit necessary to accurately and precisely measure the analyte in the sample.
U	Result qualified nondetect due to contamination.

(2): Reason Codes:

mb	Method blank
eis	Extracted internal standard
l	Laboratory control sample

AECOM
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Data Validation Report

Project:	Enbridge Superior Terminal – Surface Water
Laboratory:	Pace Analytical
Work Order (WO):	10709704
Analyses/Method:	Per- and Polyfluorinated Alkyl Substances (PFAS) / PFAS Isotope Dilution Method
Validation Level:	Level 2A
Prepared by:	Lisa Smith (CEAC) Completed on: 11/8/2024

Surface water samples listed below, and the associated field QC blanks, were collected by AECOM on September 26, 2024.

Sample ID	Quality Control	Sample Date	Laboratory ID
Surface Water Samples:			
PR-PD01-SW01		9/26/2024	10709704004
PR-PD02-SW01		9/26/2024	10709704005
PR-PD03-SW01		9/26/2024	10709704009
PR-PD04-SW01		9/26/2024	10709704006
PR-PD05-SW01		9/26/2024	10709704008
PR-PD06-SW01		9/26/2024	10709704010
PR-PD07-SW01		9/26/2024	10709704003
PR-PD09-SW01		9/26/2024	10709704011
PR-PDNF-SW01		9/26/2024	10709704001
PR-Dup1-SW01	Field Duplicate of PR-PDNF-SW01	9/26/2024	10709704002
PR-PDSF-SW01		9/26/2024	10709704007
Field QC Blanks:			
PR-ERB-01	Equipment Blank	9/26/2024	10709704014
PR-FB-01	Field Blank	9/26/2024	10709704012
PR-RW-01	Rinsate Water Source	9/26/2024	10709704013

Data validation activities were conducted with reference to:

- *Wisconsin DNR PFAS Updates,* March 1, 2021.
- *Wisconsin PFAS Aqueous (Non-Potable Water) and Non-Aqueous Matrices Method Expectations*, EA-19-0001-C, 12/19/2019.
- *Data Validation Guidelines Module3: Data Validation Procedure for Per- and Polyfluoroalkyl Substances Analysis by QSM Table B-15,* Department of Defense, 5/1/2020.

In the absence of method-specific information, laboratory quality control (QC) limits, or project-specific requirements, AECOMs professional judgment was used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following parameters (where applicable to the method):

✓ Data completeness (chain-of-custody (CoC)/sample integrity
✓ Holding times
✗ Laboratory blanks / field blanks
✗ Extracted Internal Standards (EIS)
✗ Laboratory control samples (LCSs)
✓ Field duplicates
✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

SUMMARY

Based on the results of the validation, the data are valid as reported and may be used for decision making purposes, with the exception of twenty-six results that were rejected (R) due to severely low EIS recoveries. In addition, data were qualified as nondetect (U) or estimated (UJ and J, with the appropriate bias flags) as discussed below and summarized in Table 1.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and for the following acceptance criteria for completeness:

- The CoCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the CoC requests.

Items noted for informational purposes, are listed below:

- The laboratory indicated that the ID on the sample label did not match the CoC for sample PR-PD01-SW01 (10709704004). The sample was matched to the CoC using the sample collection time.

Holding Times

Samples were extracted within the 28-day holding time, and analyzed within 30 days of extraction.

Laboratory Blanks

Laboratory method blanks are analyzed to assess contamination from laboratory procedures. Method blanks were analyzed at the correct frequency. Contaminants were not detected in the method blanks, with the exceptions listed below.

Batch	Analyte	Units	Result	Results Qualified
974259	Perfluorooctanesulfonic acid	ng/L	1.3 J	Associated results less than the LOQ were qualified as nondetect (U): PR-PDSF-SW01 PR-ERB-01 PR-FB-01 PR-RW-01
	6:2 Fluorotelomer sulfonic acid	ng/L	0.67 J	Associated results less thab the LOQ were qualified as nondetect (U): PR-PD04-SW01 PR-PD09-SW01 PR-FB-01 Results above the LOQ and within 5 times the blank concentration were qualified as estimated biased high (J+): PR-PD07-SW01
972825	6:2 Fluorotelomer sulfonic acid	ng/L	0.64 J	Associated sample results were nondetect.

Field Quality Control Blanks

One equipment blank, one field blank, and one rinsate water source sample were associated with this data set. Analytes detected in the field QC blanks are listed below.

Blank ID	Analyte	Units	Result	Results Qualified
PR-FB-01	6:2 Fluorotelomer sulfonic acid	ng/L	0.66 J	These detections were previously determined to be laboratory contamination.
	Perfluorooctanesulfonic acid	ng/L	1.2 J	
PR-ERB-01	Perfluorooctanesulfonic acid	ng/L	0.98 J	

Extracted Internal Standards

Extracted internal standards (EISs) are spiked into all field samples, field QC samples, and method QC samples and are used to quantitate the analytes. The EIS recoveries were within the WI limits of 10-150% for the FOSA, NMeFOSA, NEtFOSA, NMeFOSE, and NEtFOSE EISs, and were within the limits of 25-150% for other EISs, except as listed in the table below. Detects associated with high recoveries were qualified as estimated biased low (J-), while results associated with low recoveries were qualified as J+/UJ, as an inverse relationship exists. In addition. results associated with recoveries below 10% were rejected (R) due to severely low labeled analog recoveries.

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-PD01-SW01	10709704004	13C2-6:2-FTS	191	25-150	J-
	10709704004	13C2-8:2-FTS	260	25-150	J-
	10709704004	D3-NMeFOSA	2	10-150	R
	10709704004	D5-NEtFOSA	1	10-150	R

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
	10709704004	D7-NMeFOSE	8	10-150	R
	10709704004	D9-NEtFOSE	7	10-150	R
PR-PD02-SW01	10709704005	13C2-6:2-FTS	189	25-150	J-
	10709704005	13C2-8:2-FTS	211	25-150	No Qualifier
	10709704005	13C2-PFHxDA	11	25-150	UJ
	10709704005	13C8-PFOSA	17	25-150	UJ
	10709704005	D3-NMeFOSA	1	10-150	R
	10709704005	D5-NEtFOSA	0	10-150	R
	10709704005	D7-NMeFOSE	3	10-150	R
	10709704005	D9-NEtFOSE	2	10-150	R
PR-PD03-SW01	10709704009	13C2-6:2-FTS	198	25-150	J-
	10709704009	13C2-8:2-FTS	255	25-150	J-
	10709704009	D3-NMeFOSA	3	10-150	R
	10709704009	D5-NEtFOSA	2	10-150	R
PR-PD04-SW01	10709704006	13C2-4:2 FTS	180	25-150	No Qualifier
	10709704006	13C2-6:2-FTS	234	25-150	No Qualifier
	10709704006	13C2-8:2-FTS	252	25-150	No Qualifier
	10709704006	13C2-PFHxDA	5	25-150	R
	10709704006	13C2-PFTeDA	24	25-150	UJ (PFTeDA, PFTrDA)
	10709704006	13C8-PFOSA	23	25-150	UJ
	10709704006	D3-NMeFOSA	1	10-150	R
	10709704006	D5-NEtFOSA	1	10-150	R
	10709704006	D7-NMeFOSE	5	10-150	R
	10709704006	D9-NEtFOSE	3	10-150	R
PR-PD05-SW01	10709704008	13C2-4:2 FTS	162	25-150	No Qualifier
	10709704008	13C2-6:2-FTS	217	25-150	J-
	10709704008	13C2-8:2-FTS	253	25-150	No Qualifier
	10709704008	13C2-PFHxDA	10	25-150	UJ
	10709704008	D3-NMeFOSA	2	10-150	R
	10709704008	D5-NEtFOSA	2	10-150	R
	10709704008	D9-NEtFOSE	9	10-150	R
PR-PD06-SW01	10709704010	13C2-4:2 FTS	151	25-150	No Qualifier
	10709704010	13C2-6:2-FTS	224	25-150	J-
	10709704010	13C2-8:2-FTS	293	25-150	J-
	10709704010	D3-NMeFOSA	2	10-150	R
	10709704010	D5-NEtFOSA	2	10-150	R
	10709704010	D9-NEtFOSE	8	10-150	R
PR-PD07-SW01	10709704003	13C2-4:2 FTS	190	25-150	No Qualifier
	10709704003	13C2-6:2-FTS	238	25-150	J-
	10709704003	13C2-8:2-FTS	268	25-150	No Qualifier
	10709704003	D3-NMeFOSA	3	10-150	R
	10709704003	D5-NEtFOSA	4	10-150	R
	10709704003	D9-NEtFOSE	9	10-150	R
PR-PD09-SW01	10709704011	13C2-4:2 FTS	184	25-150	No Qualifier
	10709704011	13C2-6:2-FTS	247	25-150	No Qualifier
	10709704011	13C2-8:2-FTS	228	25-150	No Qualifier
PR-PDNF-SW01	10709704001	13C2-6:2-FTS	166	25-150	No Qualifier
	10709704001	13C2-8:2-FTS	239	25-150	No Qualifier
	10709704001	13C2-PFHxDA	15	25-150	UJ

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-PDSF-SW01	10709704007	13C2-4:2 FTS	160	25-150	No Qualifier
	10709704007	13C2-6:2-FTS	194	25-150	No Qualifier
	10709704007	13C2-8:2-FTS	264	25-150	No Qualifier
	10709704007	D3-NMeFOSA	6	10-150	R
	10709704007	D5-NEtFOSA	4	10-150	R
PR-Dup1-SW01	10709704002	13C2-6:2-FTS	185	25-150	No Qualifier
	10709704002	13C2-8:2-FTS	258	25-150	No Qualifier
PR-ERB-01	10709704014	13C2-8:2-FTS	304	25-150	No Qualifier
PR-FB-01	10709704012	13C2-8:2-FTS	357	25-150	No Qualifier
PR-RW-01	10709704013	13C2-8:2-FTS	377	25-150	No Qualifier

LCS Results

LCSs are analyzed to monitor the accuracy of the analytical method independent of matrix effects, Recoveries (%Rs) were within the WI limits of 50% to 150% limit for low range LCSs, except as listed in the table below.

Batch	Compound	LCS/LCSD % Recovery	% Recovery Limits	Qualifications
972825	10:2 Fluorotelomer Sulfonic Acid	50/**35**	50-150	Associated results were nondetect and qualified as estimated (UJ): PR-PDNF-SW01 PR-Dup1-SW01
	Perfluorooctadecanoic acid	**26/39**	50-150	
974259	Perfluorooctadecanoic acid	**28/48**	50-150	Associated results were nondetect and qualified as estimated (UJ): PR-PD01-SW01 PR-PD02-SW01 PR-PD03-SW01 PR-PD04-SW01 PR-PD05-SW01 PR-PD06-SW01 PR-PD07-SW01 PR-PD09-SW01 PR-PDSF-SW01 PR-ERB-01 PR-FB-01 PR-RW-01

Bold indicates an exceedance.

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Samples PR-Dup1-SW01 was collected as a field duplicate of PR-PDNF-SW01. Field duplicate RPDs were less than the water criteria of 30%. A summary of the field duplicate results (detections only) and RPDs are as follows:

Sample & Compound(s)	Units	RL (max)	Sample Concentration	Field Duplicate Concentration	RPD (%)
PR-PDNF-SW01 / PR-Dup1-SW01:					
Perfluorobutanoic acid	ng/L	2.0	9;0	9.0	0
Perfluoropentanoic acid	ng/L	2.0	5.7	7.5	27.3
Perfluorohexanoic acid	ng/L	2.0	4;0	4.1	2.5
Perfluoroheptanoic acid	ng/L	2.0	3.8	3.9	2.6
Perfluorononaoic acid	ng/L	2.0	1.3 J	1.5 J	14.3
Perfluorooctanoic acid	ng/L	2.0	2.6	2.6	0
Perfluorobutanesulfonic acid	ng/L	1.8	0.63 J	0.64 J	1.6
Perfluoropentane Sulfonic Acid	ng/L	1.9	0.29 J	0.3 J	3.4
Perfluorohexanesulfonoic acid	ng/L	1.8	2.1	2.1	0
Perfluorooctanesulfonic acid	ng/L	1.9	1.3 J	1.3 J	0

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes, and no issues were found.

PFOSA for sample PR-PD03-SW01 was reported from 5 times dilution analysis due to a high sample concentration.

Qualified Analytical Results

Sample results qualified due to validation actions are summarized in Table 1. All actions are described above. Data validation qualifiers override any assigned laboratory data flags. Results reported below the LOQ were qualified as estimated (J) by the laboratory; qualifications of these results were accepted by the validator, but are not shown in Table 1. Results associated with both high and low bias were qualifiers as estimated (J) with no bias flag.

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Analyte	Validation Qualifier (1)	Reason Code (2)
PR-PD04-SW01 PR-PD09-SW01 PR-FB-01	6:2 FTS	U	mb
PR-PD07-SW01	6:2 FTS	J+	mb
PR-PDSF-SW01 PR-ERB-01 PR-FB-01 PR-RW-01	PFOS	U	mb
PR-PD01-SW01	6:2-FTS 8:2-FTS	J-	eis
	NMeFOSA NEtFOSA NMeFOSE NEtFOSE	R	eis
PR-PD02-SW01	6:2-FTS	J-	eis
	PFHxDA PFOSA	UJ	eis
	NMeFOSA NEtFOSA NMeFOSE NEtFOSE	R	eis

Sample ID	Analyte	Validation Qualifier (1)	Reason Code (2)
PR-PD03-SW01	6:2-FTS 8:2-FTS	J-	eis
	NMeFOSA NEtFOSA	R	eis
PR-PD04-SW01	PFTeDA PFTrDA PFOSA	UJ	eis
	PFHxDA NMeFOSA NEtFOSA NMeFOSE NEtFOSE	R	eis
PR-PD05-SW01	6:2-FTS	J-	eis
	PFHxDA	J+	eis
	NMeFOSA NEtFOSA NEtFOSE	R	eis
PR-PD06-SW01	6:2-FTS 8:2-FTS	J-	eis
	NMeFOSA NEtFOSA NEtFOSE	R	eis
PR-PD07-SW01	6:2-FTS	J-	eis
	NMeFOSA NEtFOSA NEtFOSE	R	eis
PR-PDNF-SW01	PFHxDA	UJ	eis
PR-PDSF-SW01	NMeFOSA NEtFOSA	R	eis
PR-PDNF-SW01 PR-Dup1-SW01	10:2 FTS	UJ	l
PR-PD01-SW01 PR-PD02-SW01 PR-PD03-SW01 PR-PD04-SW01 PR-PD05-SW01 PR-PD06-SW01 PR-PD07-SW01 PR-PD09-SW01 PR-PDSF-SW01 PR-PDNF-SW01 PR-Dup1-SW01 PR-ERB-01 PR-FB-01 PR-RW-01	PFODA	UJ	l

(1): Data Validation Qualifiers:

J	The analyte was positively identified. The associated numerical value is estimated (+/- indicate the direction of bias).
R	Rejected due to serious deficiencies in meeting QC criteria.
U	Result qualified nondetect due to contamination.
UJ	The analyte was not detected above the detection limit. However, the associated value is approximate and may or may not represent the actual reporting limit necessary to accurately and precisely measure the analyte in the sample.

(2): Reason Codes:

eis	Extracted internal standard
l	Laboratory control sample
mb	Method blank