

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

Form 4400-237 (R 10/21)

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Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name Beaster	First Karl	MI MI	Organization/ Business Name Enbridge Energy LP, LLC
Mailing Address 11 East Superior Street, Suite 125		City Duluth	State MN
		ZIP Code 55802	
Phone # (include area code) (715) 718-1040	Fax # (include area code)	Email karl.beaster@enbridge.com	

The requester listed above: (select all that apply)

- Is currently the owner
 Is considering selling the Property
 Is renting or leasing the Property
 Is considering acquiring the Property
 Is a lender with a mortgagee interest in the Property
 Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request)

Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name
Mailing Address		City	State
		ZIP Code	
Phone # (include area code)	Fax # (include area code)	Email	

Environmental Consultant (if applicable)

Contact Last Name Linnemanstons	First Leo	MI	Organization/ Business Name AECOM
Mailing Address 1650 Deming Way, Suite 100		City Middleton	State WI
		ZIP Code 53562	
Phone # (include area code) (608) 828-8208	Fax # (include area code)	Email leo.linnemanstons@aecom.com	

Section 2. Property Information

Property Name Enbridge Energy Superior Terminal	FID No. (if known) 816010580
BRRTS No. (if known) 02-16-589282	Parcel Identification Number
Street Address 2800 East 21st Street	City Superior
	State WI
	ZIP Code 54880
County Douglas	Municipality where the Property is located <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Superior
	Property is composed of: <input type="radio"/> Single tax parcel <input checked="" type="radio"/> Multiple tax parcels
	Property Size Acres 560

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1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

- No Yes

Date requested by: _____

Reason:

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

- No. **Include the fee that is required for your request in Section 3, 4 or 5.**
 Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:

Section 3. Technical Assistance or Post-Closure Modifications;

Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [Numbers in brackets are for WI DNR Use]

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - Include a fee of \$350. Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of \$1050, and:**
- Include a fee of \$300 for sites with residual soil contamination; and
- Include a fee of \$350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

Section 4. Request for Liability Clarification

Select the type of liability clarification requested. Use the available space given or attach information, explanations, or specific questions that you need answered in DNR's reply. Complete Sections 6 and 7 of this form. [Numbers in brackets are for DNR Use]

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"Lender" liability exemption clarification - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the real Property, and/or the personal Property and fixtures;
- (2) an environmental assessment, in accordance with s. 292.21, Wis. Stats.;
- (3) the date the environmental assessment was conducted by the lender;
- (4) the date of the Property acquisition; for foreclosure actions, include a copy of the signed and dated court order confirming the sheriff's sale.
- (5) documentation showing how the Property was acquired and the steps followed under the appropriate state statutes.
- (6) a copy of the Property deed with the correct legal description; and,
- (7) the Lender Liability Exemption Environmental Assessment Tracking Form (Form 4400-196).
- (8) If no sampling was done, please provide reasoning as to why it was **not** conducted. Include this either in the accompanying environmental assessment or as an attachment to this form, and cite language in s. 292. 21(1)(c)2.,h.-i., Wis. Stats.:
 - h. The collection and analysis of representative samples of soil or other materials in the ground that are suspected of being contaminated based on observations made during a visual inspection of the real Property or based on aerial photographs, or other information available to the lender, including stained or discolored soil or other materials in the ground and including soil or materials in the ground in areas with dead or distressed vegetation. The collection and analysis shall identify contaminants in the soil or other materials in the ground and shall quantify concentrations.
 - i. The collection and analysis of representative samples of unknown wastes or potentially hazardous substances found on the real Property and the determination of concentrations of hazardous waste and hazardous substances found in tanks, drums or other containers or in piles or lagoons on the real Property.

"Representative" liability exemption clarification (e.g. trustees, receivers, etc.) - s. 292.21, Wis. Stats. [686]

❖ **Include a fee of \$700.**

Provide the following documentation:

- (1) ownership status of the Property;
- (2) the date of Property acquisition by the representative;
- (3) the means by which the Property was acquired;
- (4) documentation that the representative has no beneficial interest in any entity that owns, possesses, or controls the Property;
- (5) documentation that the representative has not caused any discharge of a hazardous substance on the Property; and
- (6) a copy of the Property deed with the correct legal description.

Clarification of local governmental unit (LGU) liability exemption at sites with: (select all that apply)

- hazardous substances spills - s. 292.11(9)(e), Wis. Stats. [649];
- Perceived environmental contamination - [649];
- hazardous waste - s. 292.24 (2), Wis. Stats. [649]; and/or
- solid waste - s. 292.23 (2), Wis. Stats. [649].

❖ **Include a fee of \$700, a summary of the environmental liability clarification being requested, and the following:**

- (1) clear supporting documentation showing the acquisition method used, and the steps followed under the appropriate state statute(s).
- (2) current and proposed ownership status of the Property;
- (3) date and means by which the Property was acquired by the LGU, where applicable;
- (4) a map and the ¼, ¼ section location of the Property;
- (5) summary of current uses of the Property;
- (6) intended or potential use(s) of the Property;
- (7) descriptions of other investigations that have taken place on the Property; and
- (8) (for solid waste clarifications) a summary of the license history of the facility.

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Lease liability clarification - s. 292.55, Wis. Stats. [646]

❖ **Include a fee of \$700 for a single Property, or \$1400 for multiple Properties and the information listed below:**

- (1) a copy of the proposed lease;
- (2) the name of the current owner of the Property and the person who will lease the Property;
- (3) a description of the lease holder's association with any persons who have possession, control, or caused a discharge of a hazardous substance on the Property;
- (4) map(s) showing the Property location and any suspected or known sources of contamination detected on the Property;
- (5) a description of the intended use of the Property by the lease holder, with reference to the maps to indicate which areas will be used. Explain how the use will not interfere with any future investigation or cleanup at the Property; and
- (6) all reports or investigations (e.g. Phase I and Phase II Environmental Assessments and/or Site Investigation Reports conducted under s. NR 716, Wis. Adm. Code) that identify areas of the Property where a discharge has occurred.

General or other environmental liability clarification - s. 292.55, Wis. Stats. [682] - Explain your request below.

❖ **Include a fee of \$700 and an adequate summary of relevant environmental work to date.**

No Action Required (NAR) - NR 716.05, [682]

❖ **Include a fee of \$700.**

Use where an environmental discharge has or has not occurred, and applicant wants a DNR determination that no further assessment or clean-up work is required. Usually this is requested after a Phase I and Phase II environmental assessment has been conducted; the assessment reports should be submitted with this form. This is not a closure letter.

Clarify the liability associated with a "closed" Property - s. 292.55, Wis. Stats. [682]

❖ **Include a fee of \$700.**

- Include a copy of any closure documents if a state agency other than DNR approved the closure.

Use this space or attach additional sheets to provide necessary information, explanations or specific questions to be answered by the DNR.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/Igu.html#tabx4.

Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]

❖ **Include a fee of \$700, and the information listed below:**

- (1) Phase I and II Environmental Site Assessment Reports,
- (2) a copy of the Property deed with the correct legal description.

Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]

❖ **Include a fee of \$700, and the information listed below:**

- (1) Phase I and II Environmental Site Assessment Reports,
- (2) a copy of the Property deed with the correct legal description.

Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]

❖ **Include a fee of \$1400, and the information listed below:**

- (1) a draft schedule for remediation; and,
- (2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

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Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

- Phase I Environmental Site Assessment Report - Date: _____
- Phase II Environmental Site Assessment Report - Date: _____
- Legal Description of Property (required for all liability requests and specialized agreements)
- Map of the Property (required for all liability requests and specialized agreements)

Analytical results of the following sampled media: Select all that apply and include date of collection.

- Groundwater
- Soil
- Sediment
- Other medium - Describe: _____

Date of Collection: _____

- A copy of the closure letter and submittal materials
- Draft tax cancellation agreement
- Draft agreement for assignment of tax foreclosure judgment
- Other report(s) or information - Describe: _____

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

- Yes - Date (if known): _____
- No

Note: The Notification for Hazardous Substance Discharge Form - Non-Emergency Only (Form 4400-225) is accessible through the RR Program Submittal Portal application. Directions for using the form and the Submittal Portal application are available on the [Submittal Portal web page](#).

Section 7. Certification by the Person who completed this form

- I am the person submitting this request (requester)
- I prepared this request for: Karl Beaster
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

Leo B. Linnemanston
Signature

11-2-2022
Date Signed

Senior Project Hydrogeologist
Title

(608) 828-8208
Telephone Number (include area code)

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Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a [DNR regional brownfields specialist](#) with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/r/RR690.pdf>.

DNR NORTHERN REGION

Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION

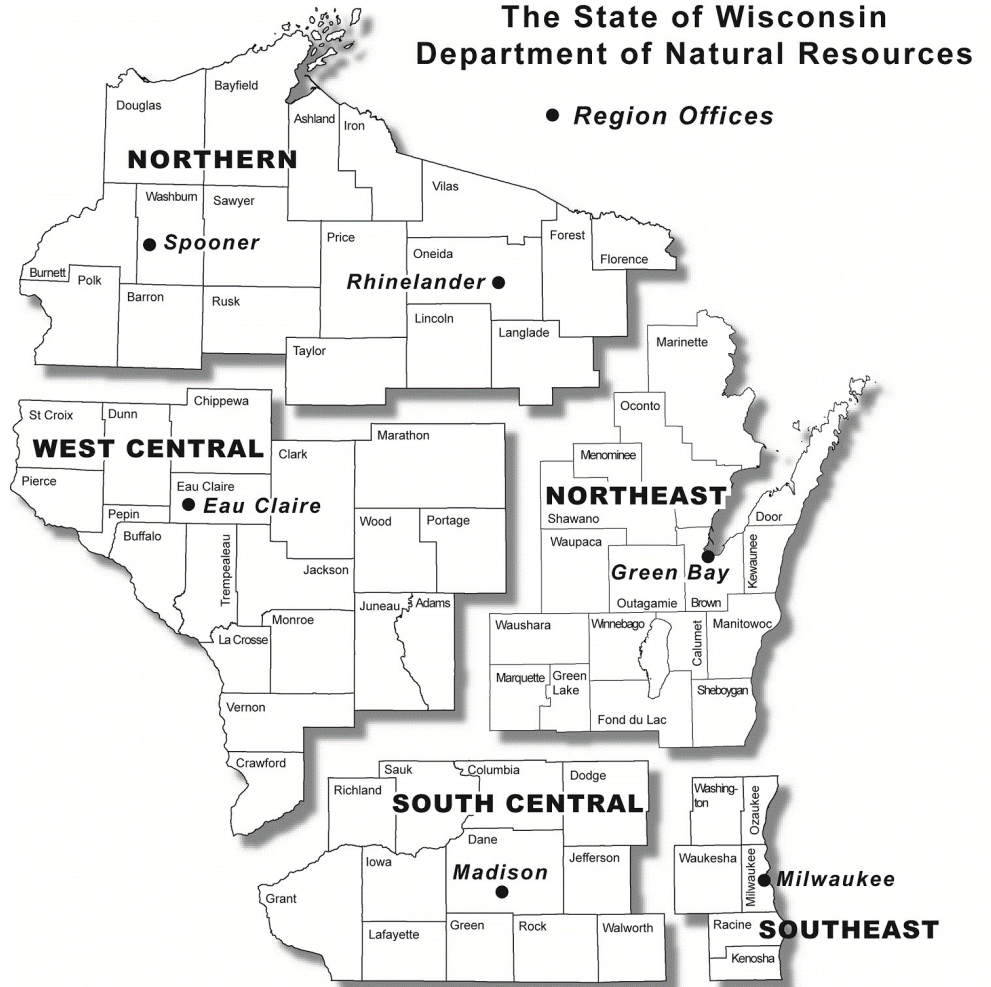
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION

Attn: RR Program Assistant
Milwaukee DNR Office
1027 West St. Paul Ave
Milwaukee WI 53233

DNR WEST CENTRAL REGION

Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer		Comments	
Fee Enclosed? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

Surface Soil Investigation Report

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

November 2, 2022



AECOM
1350 Deming Way
Middleton, WI 53562
aecom.com

November 2, 2022

AECOM Project No.
60683192

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

**Surface Soil PFAS Investigation Report
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 *Surface Soil Investigation Report* for the Superior Terminal (site) located at 2800 East 21st Street in Superior, Wisconsin. This report describes the results of the site investigation following the activities presented in the *Surface Soil PFAS Investigation Work Plan*, submitted on April 28, 2022 and approved by the Wisconsin Department of Natural Resources (WDNR) on June 2, 2022.

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

Sincerely,

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

enclosures: As Noted

Cc: Karl Beaster, Senior Environmental Advisor, Enbridge
Bryan Stiemsma, Technical Manager, Enbridge
Nick Larabel, Environmental Advisor, Enbridge

Surface Soil Investigation Report

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

Prepared for:

Enbridge Energy, Limited Partnership

Prepared by:

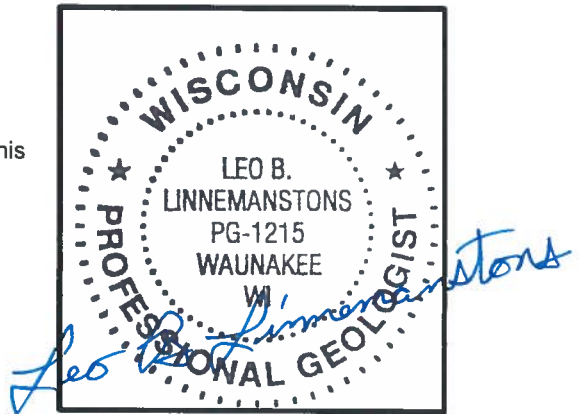
I, Leo B. Linnemanstons, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to 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, P.G.
Senior Project Hydrogeologist

AECOM
1350 Deming Way, Suite 100
Middleton, Wisconsin 53562

T: +1-608-836-9800
aecom.com



Quality information

Prepared by

Courtney Kulinski

Checked by

Dave Henderson, PE

Verified by

John Cuthbertson, PG

Approved by

Leo Linnemanstons, PG

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name
	Yes	Enbridge Energy
	Yes	Wisconsin Department of Natural Resources

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Appendices

- Appendix A Soil Sampling Photograph Log
- Appendix B Soil Boring Log and Abandonment Form
- Appendix C Laboratory Results (Surface Soil and Soil Boring)
- Appendix D Data Validation Reports

Executive Summary

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

The purpose of this 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 two mobilizations during June 28 to July 7, 2022 and on August 3, 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 (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.

Based on previous site investigations and the results of the surface soil investigation activities, the following conclusions were made:

- PFAS were detected in all surface soil samples at the site, but concentrations were less than NR720 generic residual contaminant levels (RCLs).
- In surface soil samples, PFAS was generally detected at low concentrations that have patterns and/or correlations that suggest historic releases in containment areas that may have been the result of different training practices and/or AFFF products. The following general observations were made:
 - PFOA was detected in 30 of 31 samples, but only low-level concentrations <1 ug/kg.
 - PFOS was detected in 28 of 31 samples, but with only three isolated tank locations (TK11, TK24, and TK25) having concentrations >10 ug/kg and six tank locations (TK02, TK13, TK15, TK20, TK23, and TK26) having concentrations >1 ug/kg.
 - 6:2 FTS was detected in 14 of 31 samples, but with only three tank locations (TK11, TK15, and TK25) having concentrations >1 ug/kg and five tank locations (TK02, TK13, TK19, TK20 and TK26) having concentrations >0.1 ug/kg.
- No PFAS was detected in the soil probe samples collected from the 2012 AFFF deployment excavation suggesting that remedial excavation had successfully removed impacted materials, and none had migrated vertically into the underlying red clay layer.
- Surface soil conditions in the containment areas at the site generally consist of a red, lean clay. Based on previous soil borings at the site the red clay layer extends to a depth of approximately 100 to 140 feet with bedrock encountered at depths greater than 260 ft below ground surface. The red clay layer has a very low permeability (1×10^{-8} centimeters per second), which limits infiltration of surface water and migration of surface impacts into the subsurface and to groundwater.
- Because the Terminal no longer uses AFFF that contain PFAS, a continuing source of PFAS impacts to soil is not present.

1. Introduction

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
Karl.beaster@enbridge.com
(715) 718-1040

1.2 Consultant and Subcontractor Identification

Environmental Consultant

AECOM Technical Services, Inc. (AECOM)
Leo Linnemanstons, PG, Senior Project Manager
1350 Deming Way, Suite 100
Middleton, Wisconsin 53562
leo.linnemanstons@aecom.com
(608) 828-8208

Drilling Subcontractor

Dakota Technologies, Inc
5001 Boone Avenue North
New Hope, Minnesota 55428
(763) 424-4803

Hydroexcavating

Stack Brothers Mechanical Contractors, Inc
3119 Hill Avenue
Superior, Wisconsin 54880
(715) 398-2964

Buried Utilities Clearance Subcontractor

Northwestern Surveying & Engineering
603 Chestnut Street
Cloquet, Minnesota 55720
(218) 444-9394

Laboratory Subcontractor

PACE Analytical Laboratory
1700 Elm Street SE
Minneapolis, Minnesota 55414
(612) 607-1700
WDNR Certification: 999407970

1.3 Site Description and Location

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 layout 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). 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.

1.4 Site History

Enbridge (formerly known as Lakehead Pipeline Company) built an oil pipeline system from Canada to their existing Superior Terminal property in 1950. The Terminal has been the site of previous petroleum (predominantly crude oil) releases in its nearly 70-year history. Following the establishment of regulatory reporting requirements in 1978, new spills and releases were reported to the Wisconsin Department of Natural Resources (WDNR) in accordance with Wisconsin Statutes Chapter 292.11 the Wisconsin Spill Law. Enbridge has worked closely with the WDNR to develop a facility-wide Site Investigation and Response Action Plan (SI/RAP) for the Terminal. This SI/RAP document was submitted to the WDNR on July 17, 2014, with an Addendum published on August 15, 2017. Enbridge continues to operate under the agreed upon SI/RAP and provides the required annual reporting obligations to the WDNR.

On October 7, 2020, the WDNR sent a letter to companies that had an open contamination site on the DNR's Bureau for Remediation and Redevelopment Tracking System (BRRTS). The purpose of this letter was to encourage those companies to proactively assess emerging contaminants, such as per- and polyfluoroalkyl substances (PFAS), and their potential impacts.

On January 21, 2022, Enbridge provided a summary document (in the form of a notification) to the WDNR describing that aqueous film-forming foam (AFFF) containing PFAS was historically stored at the Terminal and had been discharged through annual fire suppression training at Tanks numbered 1 to 29 in the central portion of the Terminal and a small fire incident in 2012 (See Figure 2).

Additional ASTs, identified as Tanks 30 to 45, are located in a separate area to the east of the main Terminal (referred to as Area 4) and do not have a history of fire training where AFFF would have been discharged. Therefore, these AST locations were not included as part of this investigation.

As a result of that notification to the WDNR, Enbridge received a letter dated February 28, 2022. The letter notified Enbridge of their responsibilities and outlined the required steps to investigate and address potential contamination under the WAC Chapter NR700 rule series. In April 2022, Enbridge retained AECOM to assist with the investigation activities and regulatory reporting.

On behalf of Enbridge, AECOM prepared the Site Investigation Work Plan that was submitted to the WDNR on April 28, 2022. The WDNR provided approval of the Work Plan on June 2, 2022. AECOM implemented the Work Plan as described in this report.

2. Physical and Geological Setting

2.1 Topography, Surficial Soils and Geology

The geologic information provided below was summarized from the *Enbridge Superior Terminal SI/RAP* (Barr, 2014).

The topography of the site and the general area around the site is relatively flat. The Nemadji River is present on the south and southeast side of the property in a broad incised valley. On the south side of the property, a small tributary stream and ephemeral gullies are present that discharge to the Nemadji River. The Nemadji River flows toward the east/northeast in the vicinity of the site, and discharges to Superior Bay of the St Louis River within the Superior Harbor. The St. Louis River discharges to Lake Superior.

Surficial geology in the region consists of Pleistocene-age glacial deposits of the Miller Creek Formation (Clayton, 1984). The Miller Creek Formation is composed of clayey glacial till, wave modified till, and glacial-lacustrine deposits. The glacial-lacustrine deposits are the uppermost surficial deposits in the region and were deposited in a water-logged state during high stages of Glacial Lake Duluth with subsequent isolated erosion and proglacial stream deposition associated with what is now incised Nemadji River channel (Clayton, 1984) located approximately ¾-mile southeast of the Terminal. The Miller Creek Formation overlies the Copper Falls Formation which is also a glacial till that is Pleistocene in age. The Copper Falls Formation contains sandy glacial till interbedded with sand and gravel deposited by melt-water streams (Clayton, 1984).

The regional bedrock geology consists of sandstone of the Precambrian-age Bayfield Formation. Depth to bedrock in the Terminal area is greater than 150 feet (Young and Skinner, 1974).

Locations of regional geologic cross sections prepared from the well drillers logs and deep geotechnical borings advanced at the Terminal are shown on Figure 3. Cross Section A-A' (Figure 4) trends northwest to southeast across the Terminal and crosses the Nemadji River. Cross Section B-B' (Figure 5) trends southwest to northeast across the Terminal roughly parallel to the flow of the Nemadji River and extends to the Superior Harbor. These sections show that the surficial clay layer is present across the entire region at a thickness generally exceeding 130 feet, decreasing to 50 feet within the Lake Superior basin. River valleys, ravines, or other topographic lows do not extend below the bottom of the clay layer.

Locations of local geologic cross sections prepared from the monitoring well installations and deep geotechnical borings advanced at the Terminal are shown on Figure 6. Cross Section C-C' (Figure 7) trends northwest to southeast across the Terminal and crosses the Nemadji River. Cross Section D-D' (Figure 8) trends southwest to northeast across the Terminal roughly parallel to the flow of the Nemadji River. The local cross sections depict the surface expression of the secondary containment dikes and other major surface features at the Terminal. The cross sections indicate the thickness of the clay layer in the site vicinity is 100 to greater than 140 feet thick. Depth to bedrock is greater than 260 feet below ground surface (bgs) based on the depth of water supply well VE 161.

Based on observations from numerous maintenance excavations and during the installation of soil borings and monitoring wells at the Terminal, much of the shallow soil encountered at the site consists of the glacial-lacustrine, red-brown clay, except where fill material has been imported. Fill soils are typically granular backfill material around some limited piping runs and localized around specific structures. Granular fill is not present along most piping, is not present beneath all structures, and is not laterally extensive across the site.

2.2 Drainage and Hydrogeology

The topography of the site and the general area around the site is relatively flat. The Nemadji River is present on the south and southeast side of the property in a broad incised valley (Figures 1 and 2). On the south side of the property, a small tributary stream and ephemeral gullies are present that discharge to the Nemadji River. The Nemadji River flows toward the east/northeast in the vicinity of the site, and discharges to Superior Bay of the St Louis River within the Superior Harbor. The St. Louis River discharges to Lake Superior. Stormwater and surface water discharges at the Terminal are regulated via existing permits.

Depth to groundwater is generally less than 10 feet below grade. The local groundwater flow varies across the Terminal based on location and proximity to the Nemadji River and the small tributary stream and ephemeral gullies present on the south side of the Terminal. The dominant local flow direction is to the east, toward Lake Superior and generally along the Nemadji River which borders the Terminal on the south and southeast. The incised stream located on the southwest portion of the property influences local flow toward the southwest.

2.3 Receptors

Below are potential receptors and descriptions as how they relate to the Enbridge site.

Soil Direct Contact: The potential contaminant migration pathway for soil is based on the direct contact (0 to 4 feet bgs) for Site workers. Soil quality data are compared to the Chapter NR720, Wisconsin Administrative Code, generic direct contact (DC) residual contaminant limits (RCLs).

Groundwater: The potential contaminant migration pathway for groundwater is incomplete because groundwater users are served by municipal water or deeper wells placed through a significant layer of clay overlying the bedrock aquifer as shown by private well logs.

Surface Water: The potential contaminant migration pathway for surface water is through storm water conveyances that discharge into the retention pond on the northern portion of the property. The site has three Wisconsin Pollution Discharge Elimination System (WPDES) permitted stormwater outfalls that discharge to the Nemadji River.

Sediment: The potential contaminant migration pathway for sediment is transport with surface water run-off through storm water conveyances that discharge into the retention pond on the northern portion of the facility.

3. Field Methodology Activities

Site Investigation activities at Terminal occurred in two mobilizations during June 28 to July 7, 2022 and on August 3, 2022. To evaluate the presence of PFAS in soil related to the use of AFFF at the Terminal, the initial site investigation included the following components:

- Surface Soil Samples (31 locations): one surface soil sample was collected from within the secondary containments of ASTs 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. These sample locations focused on the areas or paths that AFFF equipment would likely travel into and out of those storage areas.
- 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 bgs.

Soil investigation locations are shown on Figure 2.

Pre-Field Planning

A site-specific Health and Safety Plan (HASP) was prepared for the 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.

Public utility locate calls were made and utility locate tickets were obtained from Digger's Hotline prior to ground disturbance. Because the Terminal is an active crude oil facility with significant buried infrastructure, Enbridge Ground Disturbance Standards guidance was followed. Utility contractor, Northwestern Surveying & Engineering (NWSE), conducted 4-way sweeps (a type of utility clearance) around surface soil and soil boring locations. Where necessary, sampling locations were located away from marked infrastructure in areas that have been swept for subsurface utilities. Activities related to utility location will be further discussed in this report.

General PFAS Sampling Considerations

There are potential cross contamination issues associated with PFAS sampling due to the presence of these compounds in many commercial products. Therefore, AECOM PFAS-certified sampling teams conducted the PFAS monitoring 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.

AECOM required that the drilling subcontractor follow PFAS-free drilling protocols and used PFAS-free materials for the project.

3.1 Pre-Sampling Activities

On June 28 and 29th, AECOM was onsite for site reconnaissance and to identify sampling locations. Surface soil sample locations within the secondary containments were selected visually within areas of the lowest elevation. Surface soil samples located near Building A and B were selected based on potential flow patterns if a release was to occur in or near the building. The locations were identified in the field with a stake surrounded by an approximate 5-foot by 5-foot exclusion zone marked by stakes and colored ribbon. The exclusion area was to mark where the 4-way sweep should begin with a general 20-foot radius beyond the 5-foot exclusion area for identification and clearance of buried utilities.

During these activities, AECOM observed that the lowest areas of approximately half the tank containments had standing water that was up to 1.5 feet deep. Because the standing water impacts the accuracy of the utility equipment

locating signal along with presenting safety concerns for personnel, sampling locations were adjusted to areas with generally less than 2 inches of water that also allowed for 4-way sweeps in the 20-foot radius or to a secondary low elevation area that still had a drain structure present.

The soil probe boring location in the former AFFF excavation area was congested with buried infrastructure. Therefore, NWSE completed the 4-way sweep with a 100-foot radius around the soil boring location. Based on the 4-way sweep findings, the original soil bore sample location was relocated approximately 40 feet to the southeast to avoid buried utilities and remain within the limits of the former excavation area (based on information provided by Enbridge Terminal Operations). Terminal Operations provided a verification of the NWSE sweep map before a facility permit was issued for ground disturbance.

Between June 29th and July 6th, NWSE conducted the 4-way sweeps at all sample locations. The 4-way sweep maps were prepared by NWSE and provided to AECOM for reference during the performance of soil sampling.

Per facility ground disturbance requirements, hydro-vacuum potholing was required for the soil boring sample located within the former AFFF excavation area to visually confirm utilities buried within 16 feet of the soil boring location and the soil boring location itself, which was required to be completed to a minimum depth of 2 feet below the deepest buried utility identified. On August 3rd, Stack Brothers completed potholing at two utility locations with the deepest begin to a depth of 11.5 feet below grade. A third pothole at the sample location extended to a depth of the required 13.5 feet. No utilities or other obstructions were observed in the pilot hole. Upon completion of the utility clearance activities, Terminal Operations approved the drilling of the soil boring with mechanical methods for the collection of soil samples as discussed below.

3.2 Surface Soil Sampling

On July 5 and 6, 2022, surface soil samples were collected by AECOM and Dakota Technologies (Dakota). The surface soil sample locations are illustrated on Figure 2. A photographic log showing the soil sample locations are included in Appendix A.

At each location, a decontaminated shovel or hand trowel was used to clear surface stone or gravel, if present, to expose underlying fine-grained soils. The shovel was then be used to dig a plug of soil to a depth of approximately 6 inches below ground surface, such that the total depth of excavation is less than 12 inches. AECOM classified the surface soil sampled from each location according to the Unified Soil Classification System (USCS), and all of the surface soil samples in the tank containment areas consisted of brownish red, lean clay. The soil sample locations were photographed, and their geographic location recorded using a hand-held GPS unit. A grab soil sample was collected from the body of the soil plug for laboratory analysis of PFAS. Following collection of the soil sample, the soil plug was placed back into its hole and the surface restored.

3.3 Hydraulic Probe Boring

On August 3, 2022, soil probe samples were collected by AECOM and Dakota. A truck mounted hydraulic probe rig was used to conduct one soil boring (SB01) in the former 2012 excavation where AFFF is reported to have been deployed. The hydraulic probe boring location is illustrated on Figure 2. A photographic log showing the sample location is included in Appendix A.

Prior to the start of the boring, this location was cleared for buried utilities as earlier described. Once the borehole location was cleared, hydraulic push probe methods were used to collect continuous soil cores from approximately 13.5 to 20.0 feet below grade using macro-core sample tubes. A soil boring log is presented in Appendix B.

AECOM classified soil from the boring according to the Unified Soil Classification System (USCS). Recovered soil from approximately 13.5 to 14 feet below grade were classified as sandy clay with gravel and identified as either excavation fill material or slough. Soils from approximately 14 to 20 feet below grade were identified as native clays and were considered for laboratory sampling. AECOM collected grab soil samples from the 14 to 15 foot interval (below the sandy clay) and 17 to 17.5 foot interval (two feet deeper) for laboratory analysis of PFAS.

Once soil sampling was completed, the soil boring was abandoned by backfilling with bentonite (3/8" Holeplug) in accordance with Chapter NR141, WAC from about 13.5 to 20 feet bgs. Stack Brothers then backfilled the pilot hole and both utility potholes with Enbridge approved material (sand) and restored the surface to pre-existing conditions. A borehole abandonment form is included in Appendix B.

3.4 Laboratory Analyses

Soil samples for laboratory analysis were transferred, with a decontaminated stainless-steel spoon or nitrile gloves, to appropriate laboratory-supplied containers, labeled, and maintained on ice in insulated coolers. Samples were shipped overnight in the cooler, on ice, under chain-of-custody protocol to Pace Analytical in Minneapolis, Minnesota (WDNR certified PFAS laboratory) for analyses.

Soil samples were analyzed for the Wisconsin list of 33 PFAS using EPA modified Method 537.1 isotope dilution. The samples were analyzed on a standard (15-day) turn-around-time (TAT).

The laboratory reports are presented in Appendix C.

3.5 Quality Assurance

Standard sampling protocols for PFAS compounds include 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 for the project:

Field Blank: Field blanks were obtained by pouring laboratory certified PFAS free water into a laboratory provided bottle.

Decon (Source Water) Blank: The source water used by the driller for decontamination was collected and tested as a decon/source water blank. The sample was collected to characterize the wash water used during the decontamination process.

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.

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 triple rinse with PFAS-free water using a spray bottle. Decontamination of the drilling rig and down-hole equipment included steam cleaning before and after conducting the direct push soil probe boring.

3.7 Investigation Derived Waste

Soil cuttings and purged wash water generated during the Site Investigation activities were containerized in Department of Transportation-compliant a 55-gallon metal drum staged on-site. Offsite disposal will be arranged pending characterization at an appropriately licensed disposal facility. Other investigation-derived waste (e.g., probe sampling sleeves, used sampling gloves, etc.) were disposed of as nonhazardous solid waste. Hydrovac spoils generated during potholing were placed in the Terminal's soil management area.

4. Investigation Results

4.1 Quality Control

A total of 33 soil samples were collected and placed into two data groups based on dates of collection. Quality control samples were collected for each data group including field, decon/source water, and equipment blanks. The following table summarizes the data groups and quality control samples:

Data Group	Sample Dates	# of Samples	# of Field Blanks	# of Decon/Source Water Blanks	# of Equipment Blanks
Surface Soil	7/5 - 7/6/2022	31	1	1	2
Soil Boring	8/3/2022	2	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, most of the results are usable for decision making. Because of low laboratory recoveries outside of data requirements, results for the following compounds were generally rejected: NMeFOSA, NEtFOSA, 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 sample collection. No PFAS was detected in the equipment blank samples. No analytes were detected in the equipment blanks because final decontamination rinses were performed using commercial PFAS-free water.

However, analytes were detected in one decon/source water blank (PR-DECON-01), but the results were not qualified as the soil sample concentrations were greater than five times the trace level blank concentrations. The detections in the decon/source water blank (PR-DECON-01) are believed to be related to an impacted municipal water source that was brought to the site by the subcontracted driller for decontamination purposes.

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

4.2 Soil Evaluation Criteria

Soil sample results are compared to the generic Residual Contaminant Levels (RCLs) per Wisconsin Administrative Code (WAC) Chapter NR 720. There are no Wisconsin Background Threshold Values (BTVs) established for PFAS. Generic RCLs were those calculated by WDNR (December 2018) using the USEPA Regional Screening Level Web Calculator in accordance with WDNR Draft PUB-RR-890. At this time, WDNR has only established direct contact RCLs and only for these compounds: PFOA, PFOS, and PFBS.

Surface soil results are presented in Table 1, and the corresponding quality control sample results are presented on Table 2. Soil boring results are presented in Table 3, and the corresponding quality control sample results are presented on Table 4.

4.3 Surface Soil Results

A total of 31 surface soil samples were collected, one from within each of the secondary containments of Tanks numbered 1 through 29 and one from the vicinity of the two buildings in which AFFF and associated AFFF dispersal equipment were stored. The detected PFAS analytes in the soil samples ranged from 0.024 micrograms per kilogram (ug/kg) to 45 ug/kg with an average value of 0.756 ug/kg. For reference, the non-industrial direct contact RCL for PFOA and PFOS is set at 1,260 ug/kg and at 1,260,000 ug/kg for PFBS.

Because each of the surface soil sample locations is characterized as a single sample within individual containment areas, the PFAS results may only be representative of each isolated containment area. Because the surface soil PFAS results are generally low and are significantly lower than the current NR720 Direct Contact (DC) Residual

Contaminant Levels (RCLs), only the following contaminants of concern were posted on the referenced figures to show their distribution across the Terminal:

- Figure 9 – PFOA Results Map:
- Figure 10 – PFOS Results Map:
- Figure 11 – 6:2 FTS Map:

In addition, specific observations regarding the three regulated PFAS (PFOA, PFOS, and PFBS) and 6:2 FTS are as follows:

Perfluorooctanoic acid (PFOA)

PFOA was detected at 30 of 31 sample locations at concentrations less than the non-industrial direct contact limit of 1,260 ug/kg. PFOA concentrations ranged from 0.007 ug/kg to 0.87 ug/kg.

Perfluorooctanesulfonic acid (PFOS)

PFOS was detected at 28 of 31 sample locations at concentrations less than the non-industrial direct contact limit of 1,260 ug/kg. PFOS concentrations ranged from 0.03 ug/kg to 45 ug/kg. Three isolated tank locations (#11, 24, and 25) had detections >10 ug/kg and six tank locations (#2, 13, 15, 20, 23, and 26) had concentrations >1 ug/kg.

Perfluorobutanesulfonic acid (PFBS)

PFBS was only detected in three tank locations (#13, 25, and 29) and at concentrations below the non-industrial direct contact limit of 1,260,000 ug/kg. PFBS concentrations ranged from 0.024 ug/kg to 0.077 ug/kg. These three detections of PFBS were qualified as an estimated concentration by the laboratory between the RL and LOD.

6:2 Fluorotelomer sulfonic acid (6:2 FTS)

6:2 FTS was detected at 14 of 31 sample locations but has no established non-industrial direct contact RCL. 6:2 FTS concentrations ranged from 0.043 ug/kg to 9.2 ug/kg.

4.4 Soil Boring Results

Two soil samples were collected, both from a single boring beneath the fill of the 2012 AFFF deployment excavation. One sample was collected at a 14 to 15 foot interval and one at a 17 to 17.5 foot interval. No PFAS were detected above laboratory method detection limits (MDL).

Based on these results, no residual PFAS contamination from the 2012 AFFF deployment is present at the bottom of the excavation and indicates that the previous remedial excavation was successful in removing impacted materials.

5. Conclusions and Recommendations

Site investigation activities were performed between June 28 and August 3, 2022. Based on previous site investigations and the results of the surface soil investigation activities, AECOM concludes the following:

- PFAS were detected in all surface soil samples at the Terminal, but concentrations were less than NR720 RCLs.
- Concentrations of detected PFAS in the surface soil samples ranged from 0.024 to 45 ug/kg with an average value of 0.756 ug/kg. In surface soil samples, PFAS was generally detected at low concentrations that have patterns and/or correlations that suggest historic releases in containment areas that may have been the result of different training practices and/or AFFF products. The following general observations were made:
 - PFOA was detected in 30 of 31 samples, but only low-level concentrations <1 ug/kg.
 - PFOS was detected in 28 of 31 samples, but with only three isolated tank locations (TK11, TK24, and TK25) having concentrations >10 ug/kg and six tank locations (TK02, TK13, TK15, TK20, TK23, and TK26) having concentrations >1 ug/kg.
 - 6:2 FTS was detected 14 of 31 samples, but with only three tank locations (TK11, TK15, and TK25) having concentrations >1 ug/kg and five tank locations (TK02, TK13, TK19, TK20 and TK26) having concentrations >0.1 ug/kg.
- No PFAS was detected in the soil probe samples collected from the 2012 AFFF deployment excavation suggesting that remedial excavation had successfully removed impacted materials, and none had migrated vertically into the underlying red clay layer.
- Surface soil conditions in the containment areas at the site generally consist of a red, lean clay. Based on previous soil borings at the site the red clay layer extends to a depth of approximately 100 to 140 feet with bedrock encountered at depths greater than 260 ft bgs. The red clay layer has a very low permeability (1×10^{-8} centimeters per second), which limits infiltration of surface water and migration of surface impacts into the subsurface and to groundwater.
- Because the facility no longer uses AFFF that contain PFAS, a continuing source of PFAS impacts to soil is not present.

5.1 Recommendations

Based on these conclusions, AECOM recommends that Enbridge request that the WDNR provide review and comment on the site investigation results regarding the low-level PFAS detections that are significantly less than the Chapter NR 720 RCLs. Therefore, this Site Investigation Report will be submitted to the WDNR with the required review fee and Technical Assistance Form 4400-237.

Figures

Figure 1 – Site Location Map

Figure 2 – Site Features

Figure 3 – Regional Geologic Cross-Section Map

Figure 4 – Regional Cross-Section A-A'

Figure 5 – Regional Cross-Section B-B'

Figure 6 – Local Geologic Cross-Section Map

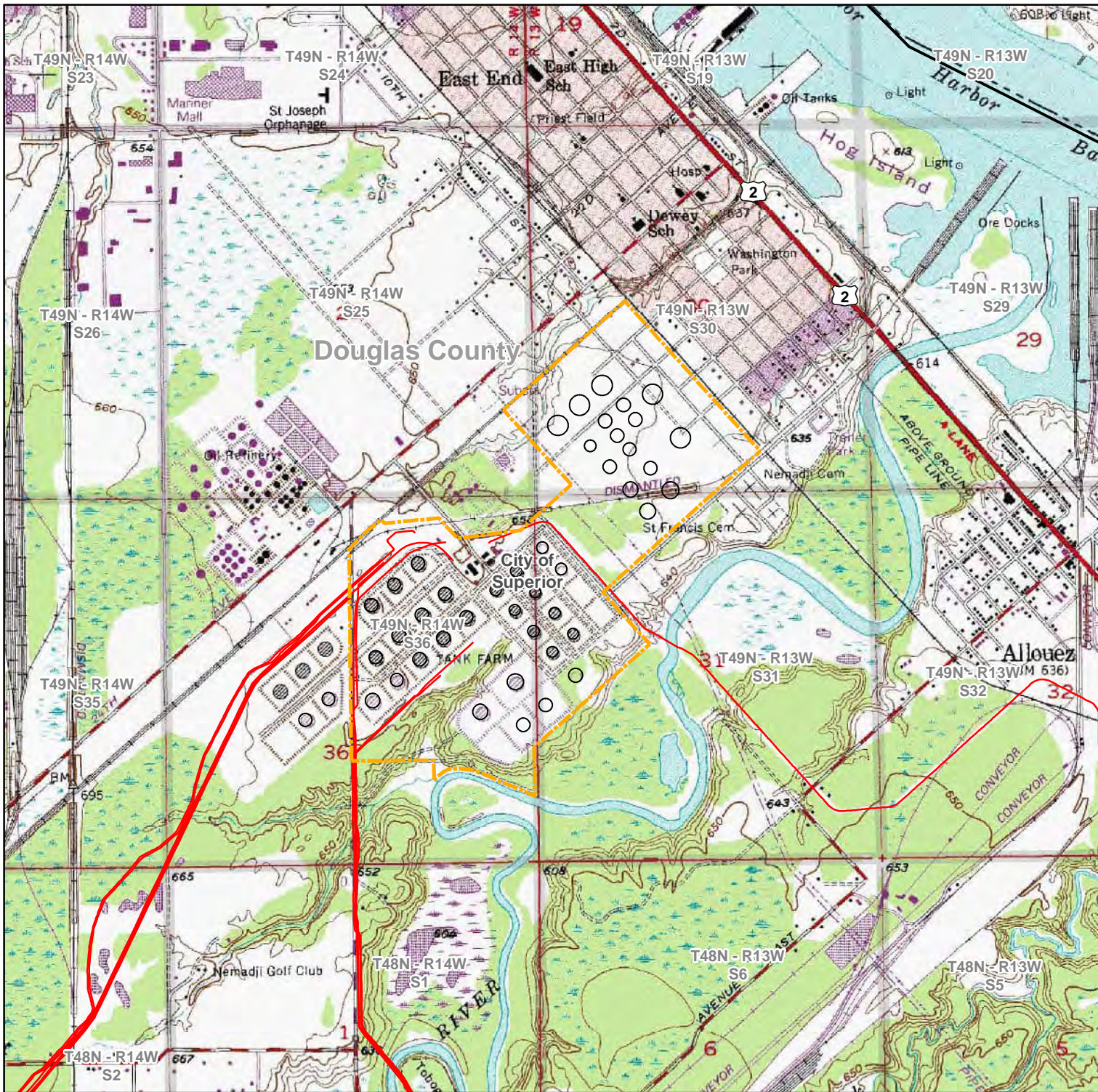
Figure 7 – Local Cross-Section C-C'

Figure 8 – Local Cross-Section D-D'

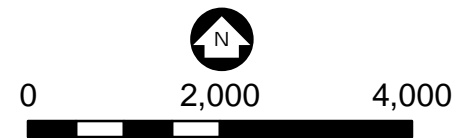
Figure 9 – PFOA Results Map

Figure 10 – PFOS Results Map

Figure 11 – 6.2 FTS Results Map

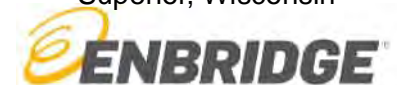


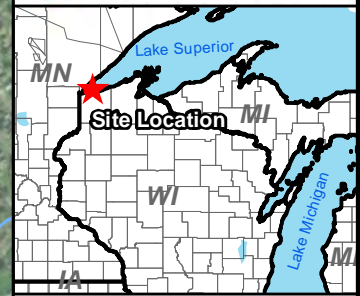
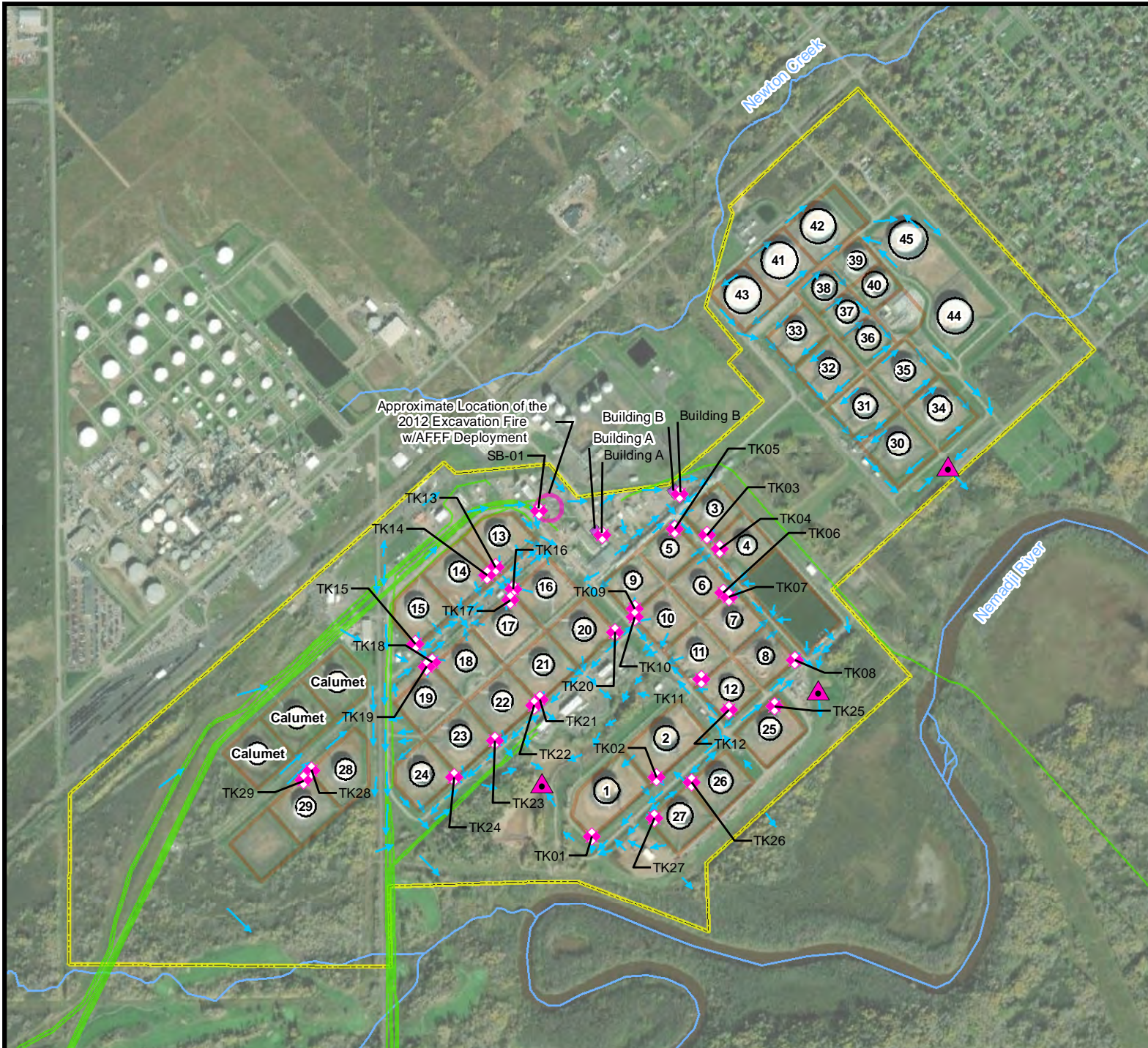
- ★ Site Location
- Enbridge Pipelines
- - - Terminal Property Boundary



Feet
 1 Inch = 2,000 Feet
 Figure 1

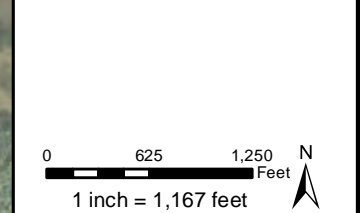
SITE LOCATION
 Superior Terminal
 Enbridge Energy, L.P.
 Superior, Wisconsin





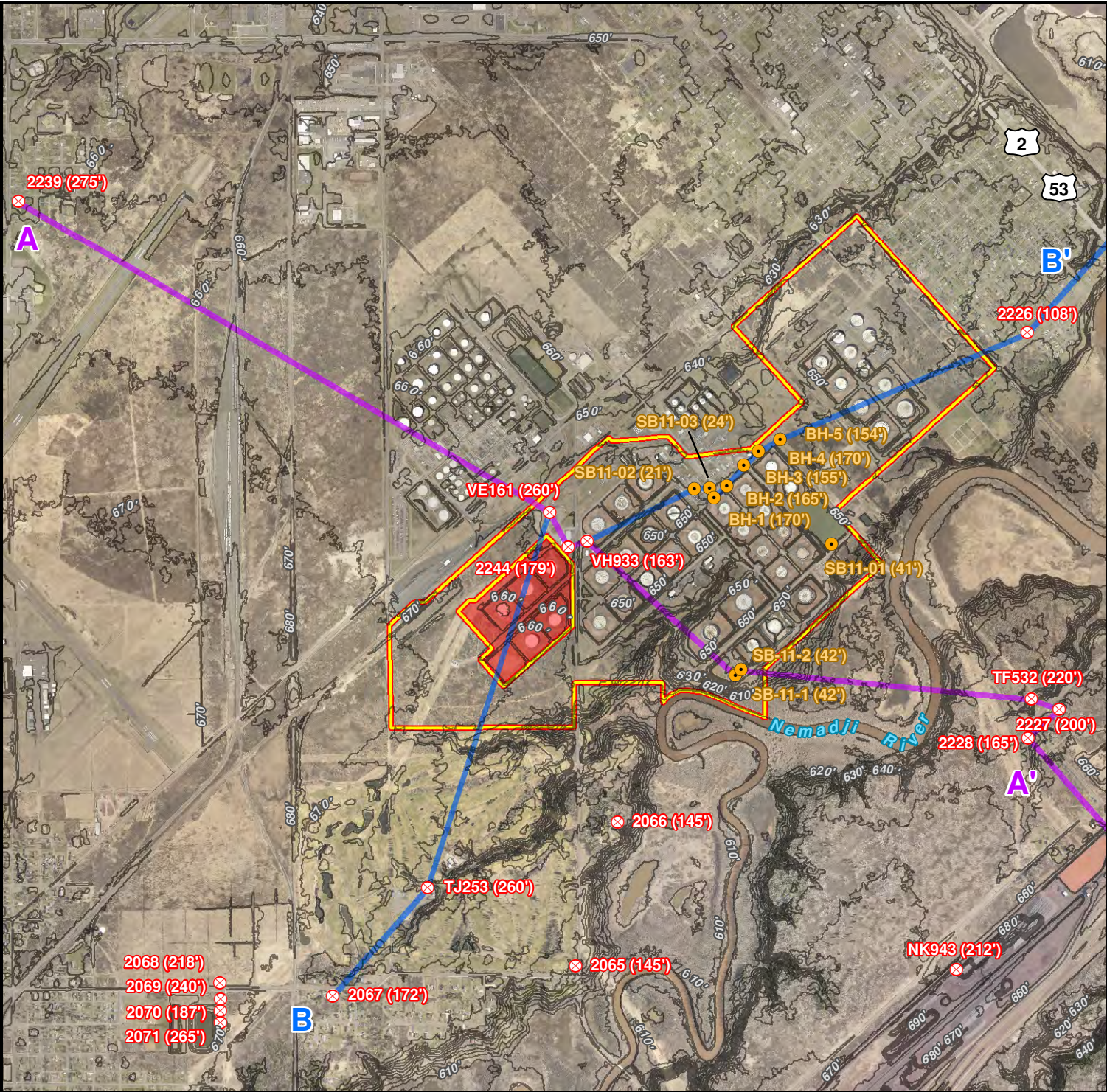
Surface Soil PFAS Investigation
Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin
Figure 2: Site Features Map

- Legend**
- ◆ Sample location
 - ▲ WPDES Outfalls
 - Containment Berm
 - Surface Flow Direction
 - Storage Tank
 - Enbridge Pipelines
 - Terminal Property Boundary
 - Rivers/Streams



Prepared by:
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Drawn:	AA	10/28/2022
Approved:	CS	10/28/2022
Scale:		1:14,000
Project No:		60683192
Figure No:		2




Legend

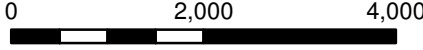
- Subject Property Boundary
- Non-Enbridge Owned Property
- ⊗ Area Water Supply Wells
- Geotechnical Borings
- ~ 5-Foot Contours

Cross Sections

- A - A'
- B - B'

SB-11-1 & SB-11-2 (EPC) 06/29/11
SB11-01 & SB11-02 (AET) 07/25/11





Feet
1 Inch = 2,000 Feet
Douglas County Imagery Circa May, 2013
City of Superior LIDAR Data Circa 2008
Figure 3

**REGIONAL
CROSS SECTION LOCATIONS
A - A' and B - B'
SUPERIOR TERMINAL
Enbridge Energy, L.P.
Superior, Wisconsin**



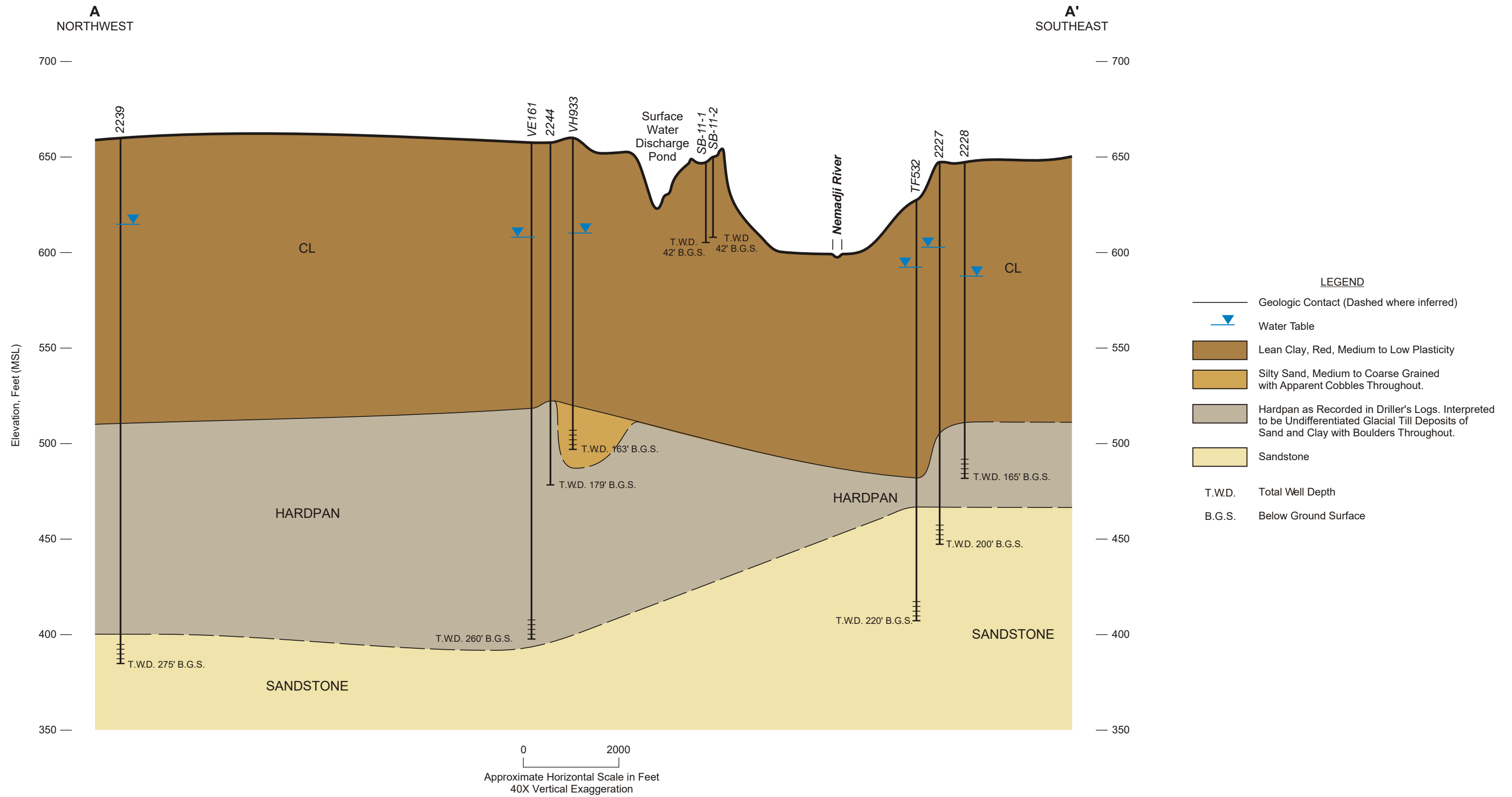


Figure 4
REGIONAL CROSS SECTION A-A'
Enbridge Energy, L.P.
Superior, Wisconsin



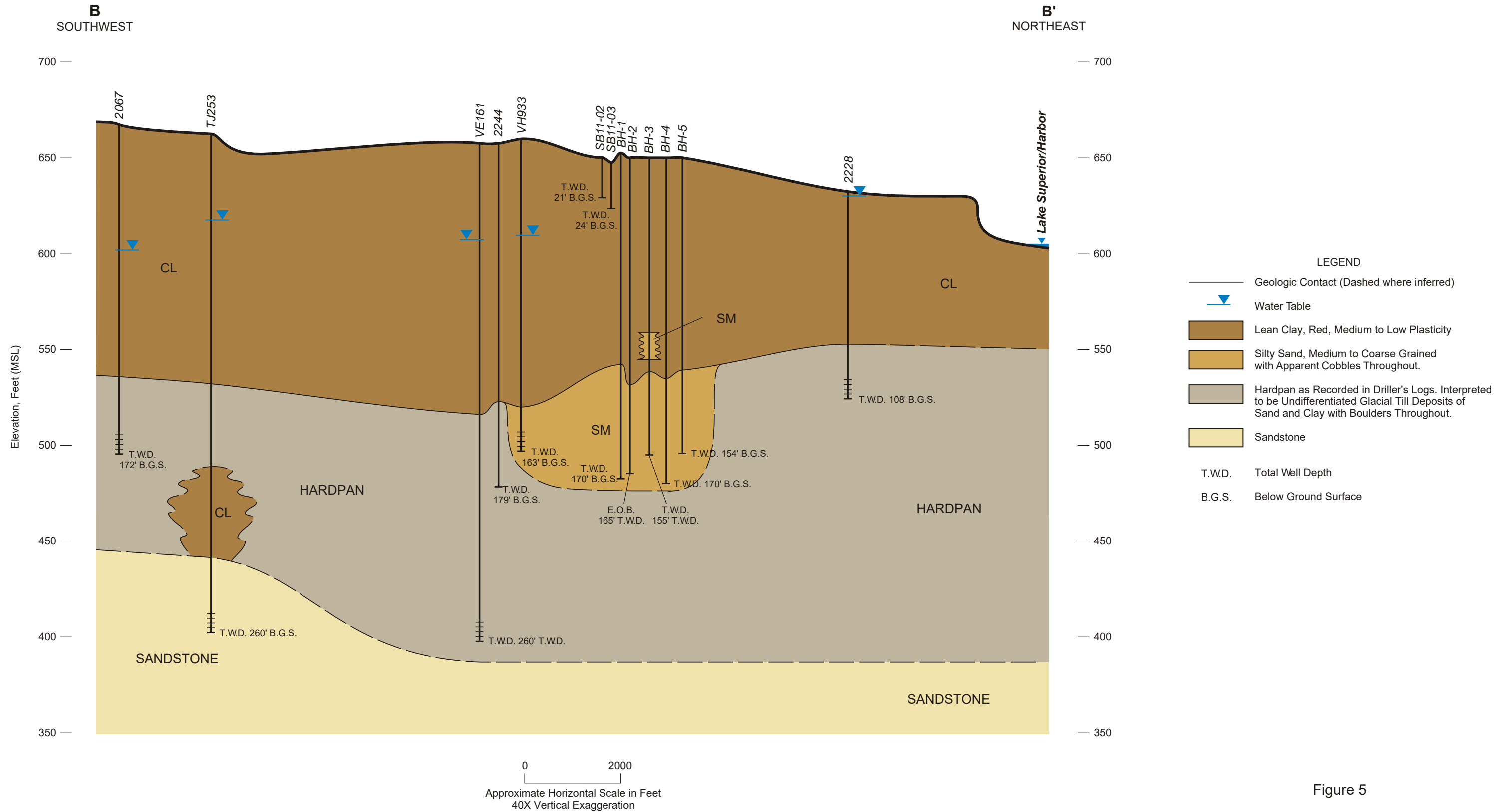
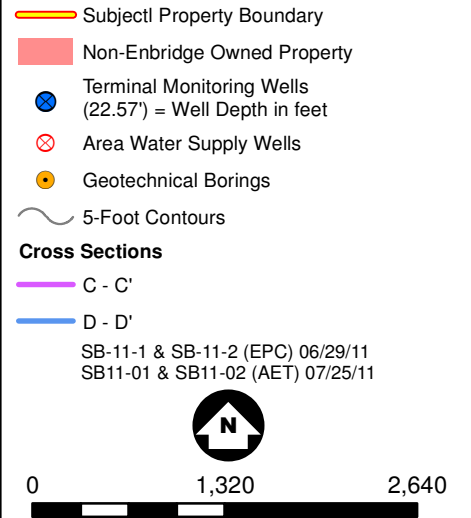
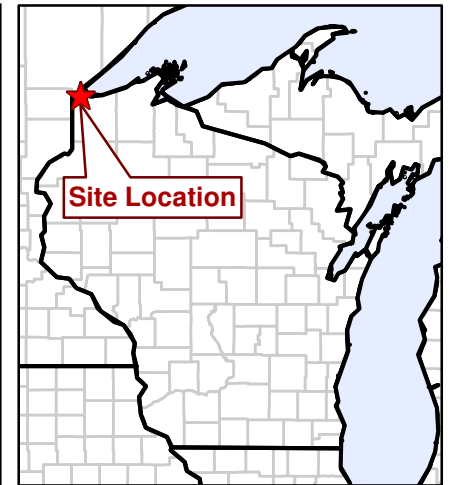
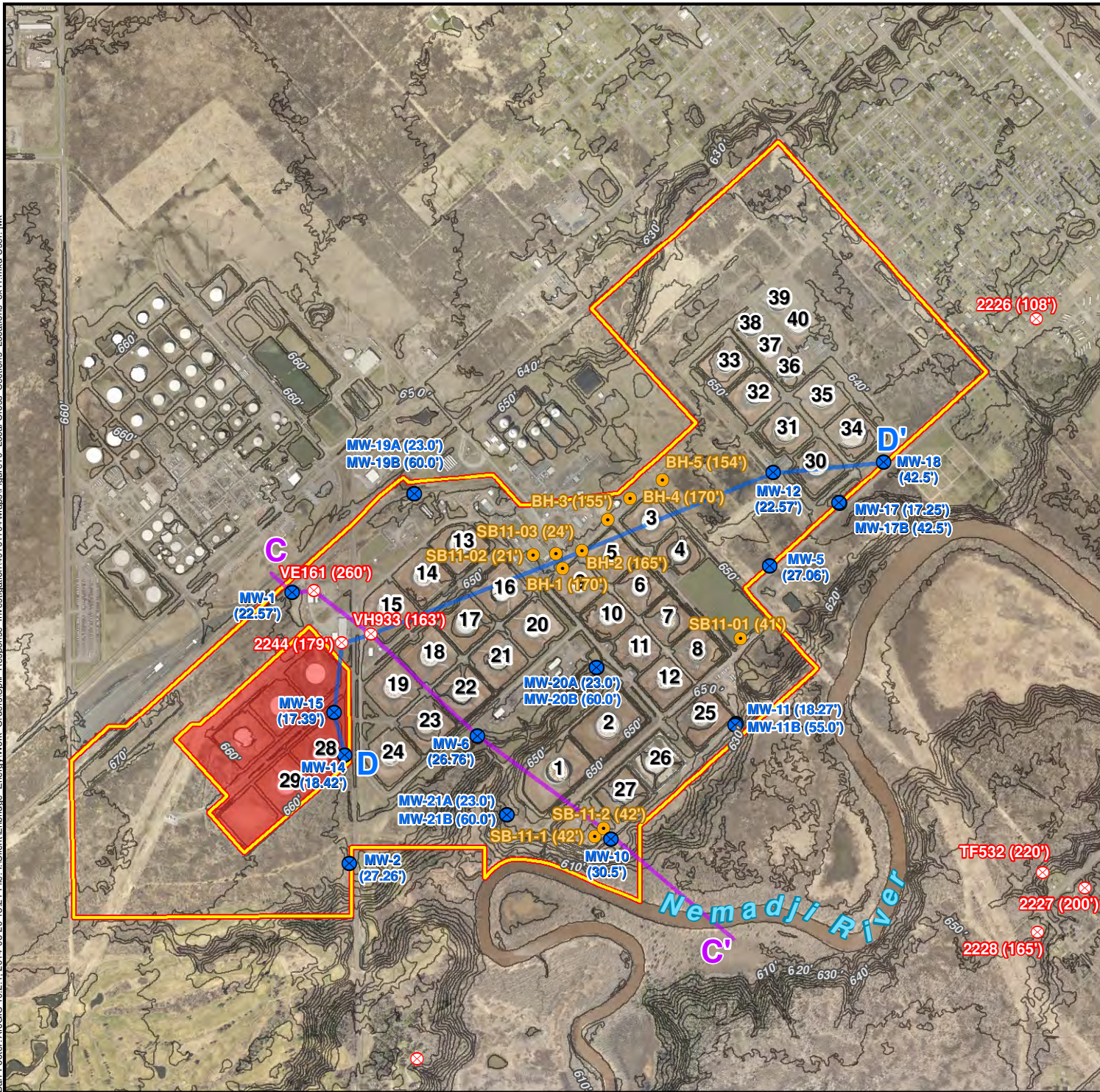


Figure 5
REGIONAL CROSS SECTION B-B'
Enbridge Energy, L.P.
Superior, Wisconsin





Feet
 1 Inch = 1,320 Feet
 Douglas County Imagery Circa May, 2013
 City of Superior LIDAR Data Circa 2008
Figure 6

**LOCAL
 CROSS SECTION LOCATIONS
 C - C' and D - D'
 SUPERIOR TERMINAL
 Enbridge Energy, L.P.
 Superior, Wisconsin**



C
NORTHWEST

C'
SOUTHEAST

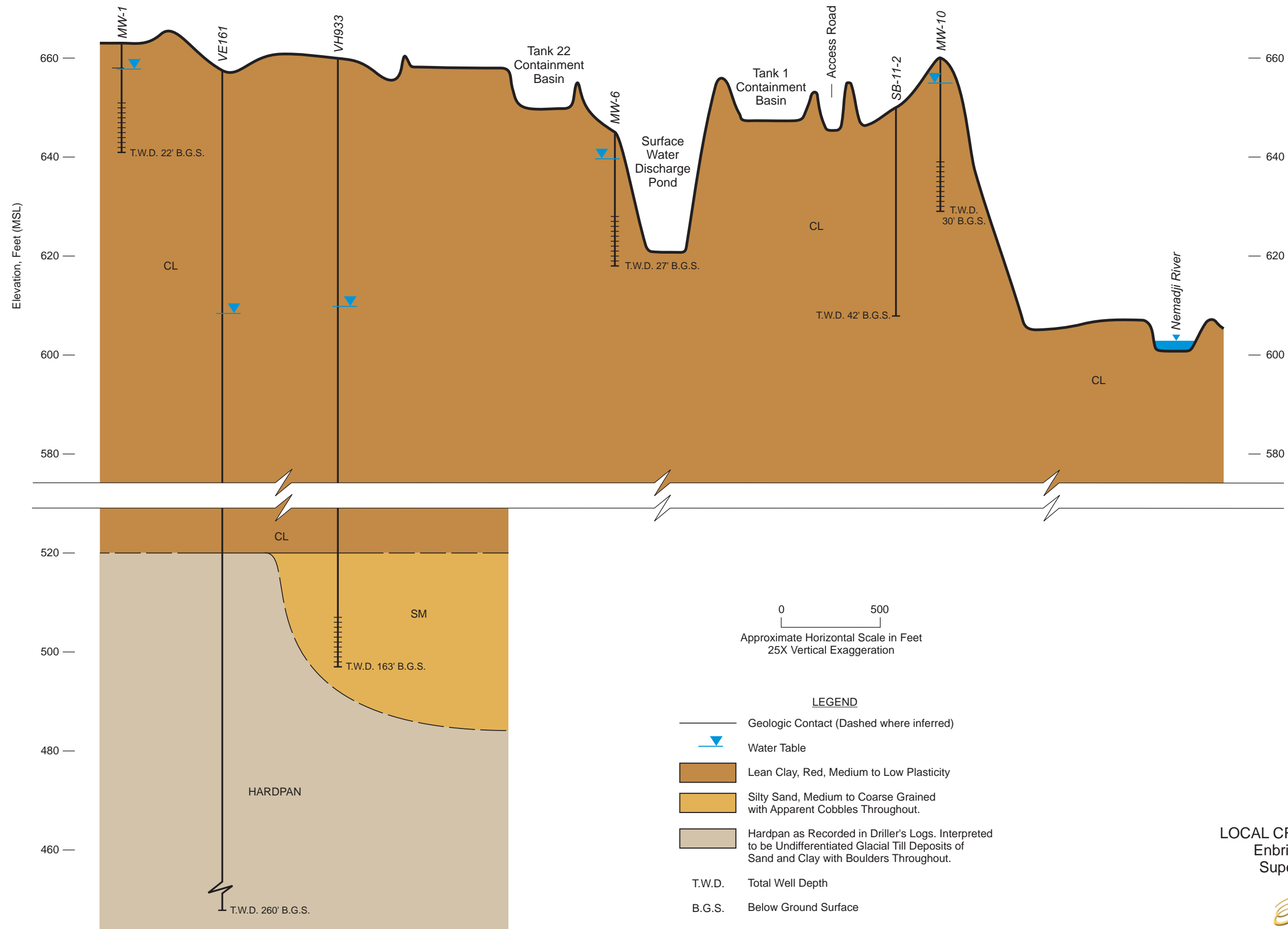
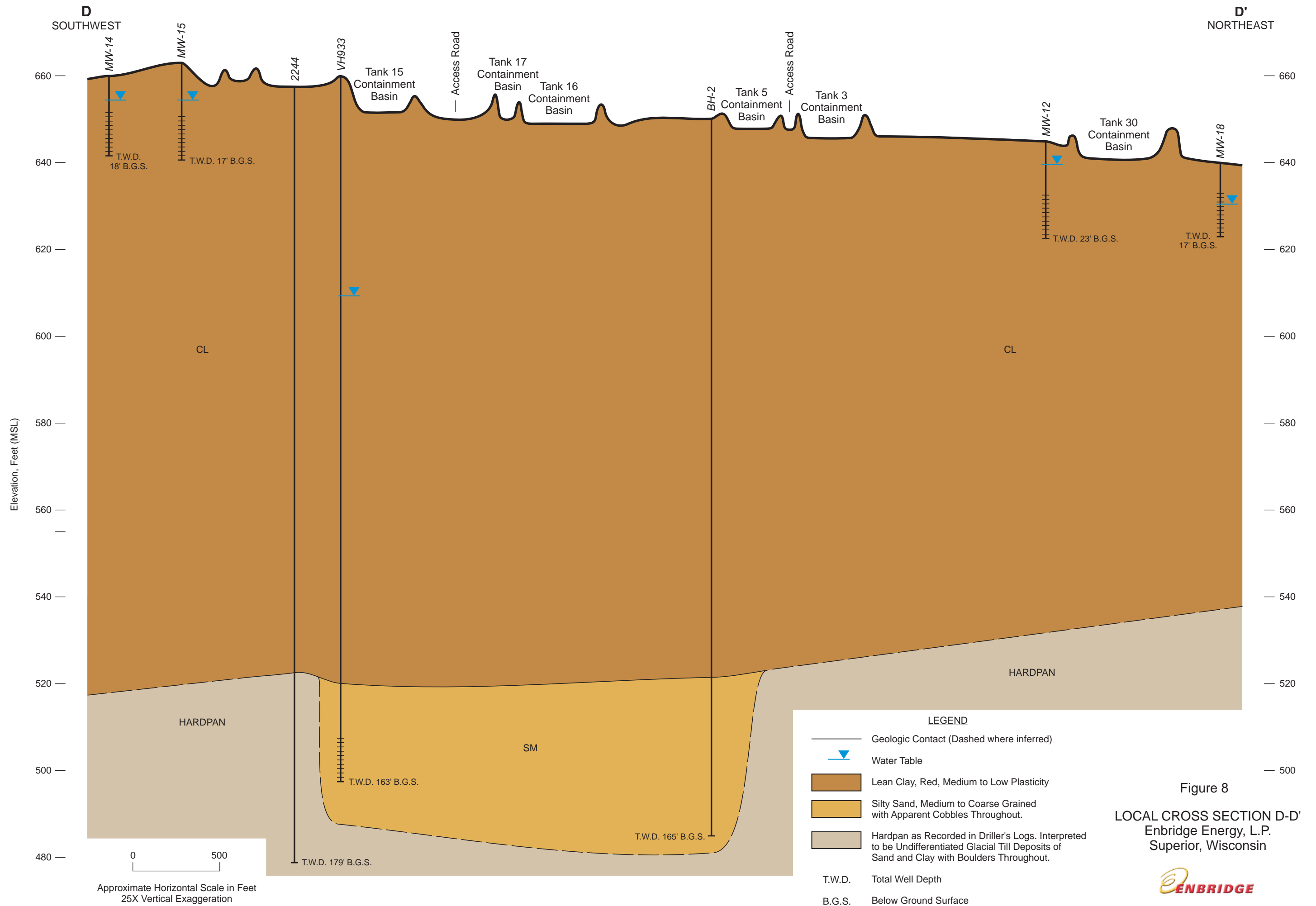
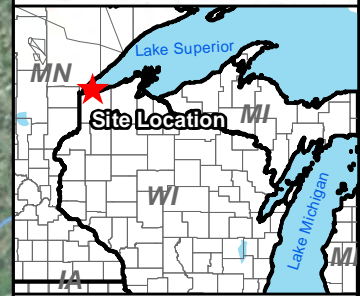
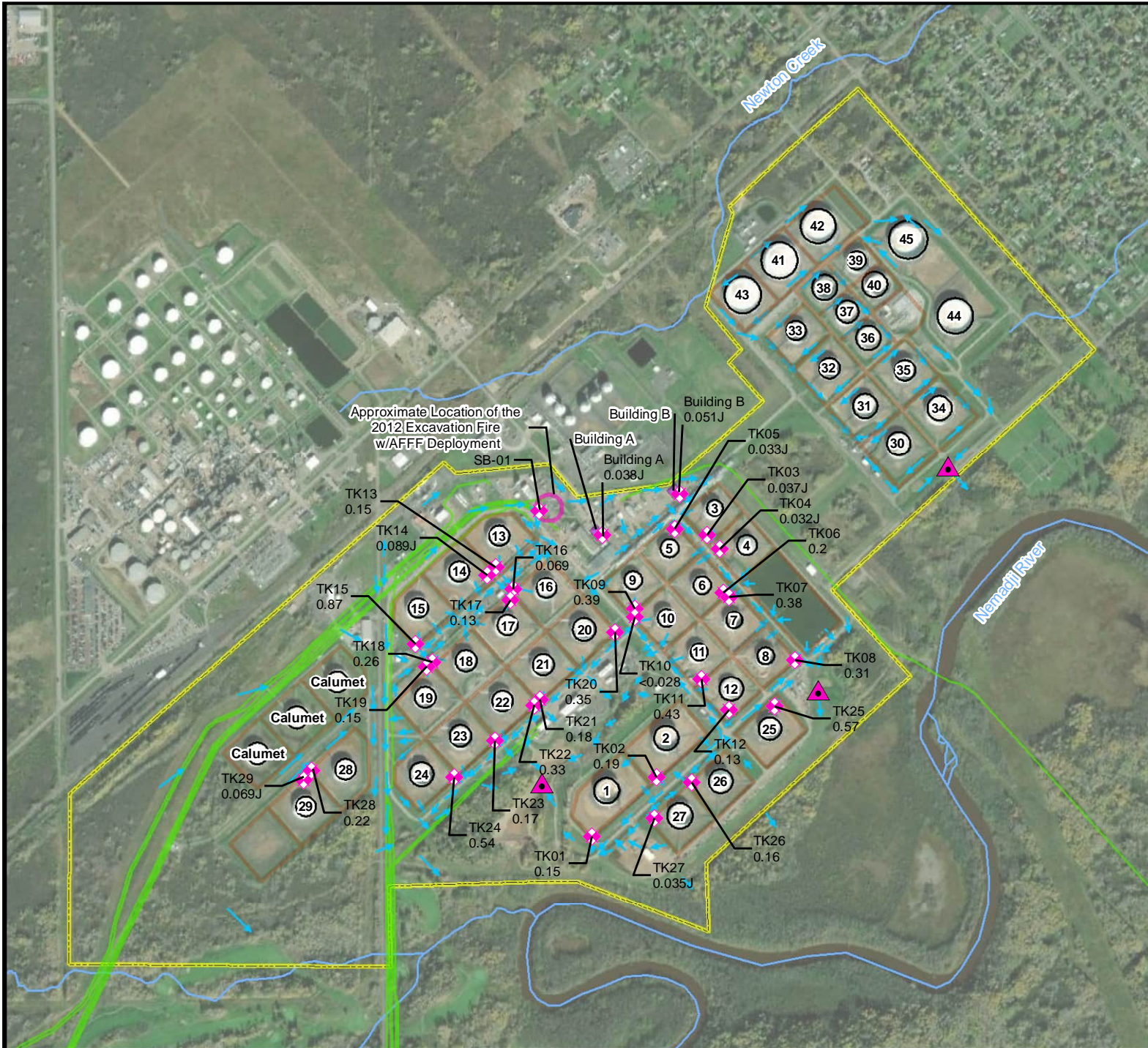


Figure 7
LOCAL CROSS SECTION C-C'
Enbridge Energy, L.P.
Superior, Wisconsin



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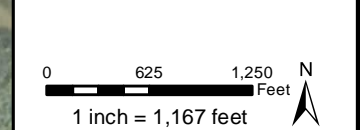


Surface Soil PFAS Investigation
Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Figure 9: PFOA Results Map
Legend

- ◆ Sample location
- ▲ WPDES Outfalls
- Containment Berm
- Surface Flow Direction
- Storage Tank
- Enbridge Pipelines
- Terminal Property Boundary
- Rivers/Streams

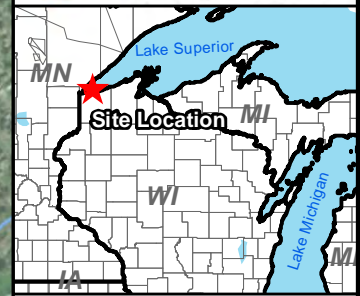
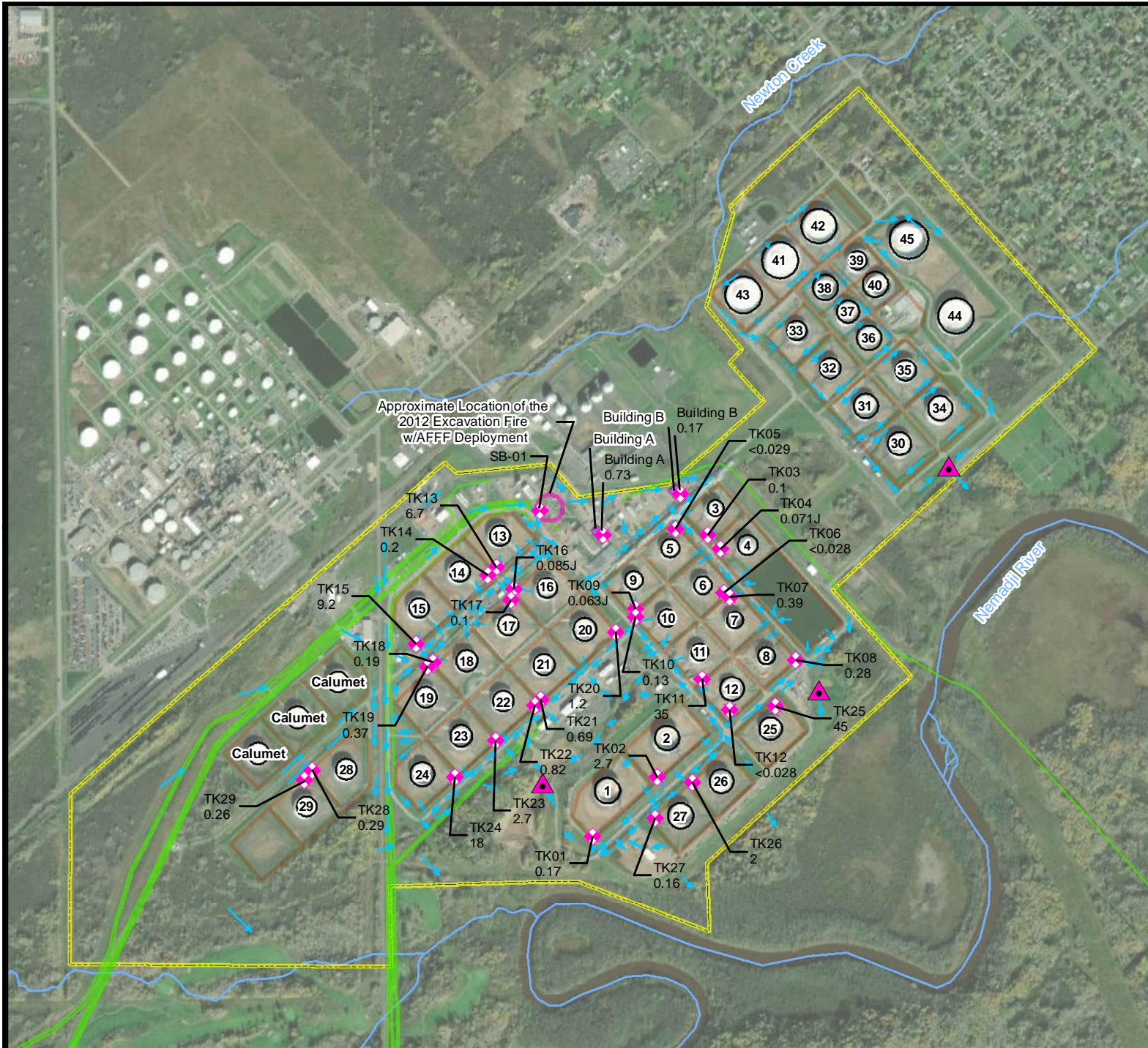
Note:
 Soil concentrations, in micrograms per kilogram (ug/kg).



Prepared by:



Drawn:	AA	11/2/2022
Approved:	CS	11/2/2022
Scale:		1:14,000
Project No:		60683192
Figure No:		9

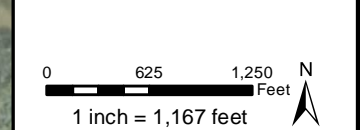


Surface Soil PFAS Investigation
Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin

Figure 10: PFOS Results Map
Legend

- ◆ Sample location
- ▲ WPDES Outfalls
- Containment Berm
- Surface Flow Direction
- Storage Tank
- Enbridge Pipelines
- Terminal Property Boundary
- Rivers/Streams

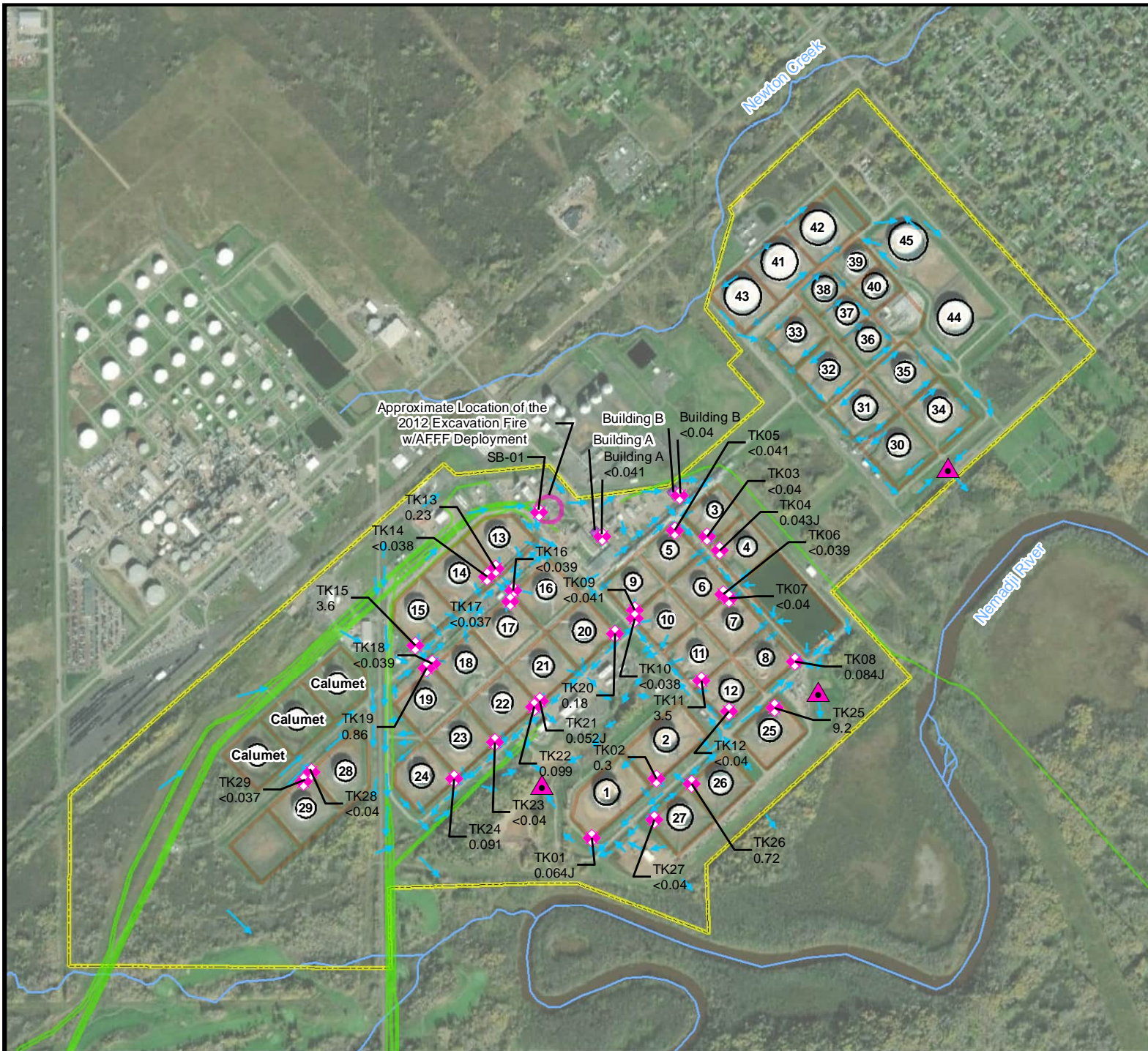
Note:
 Soil concentrations, in micrograms per kilogram (ug/kg).





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Scale:		1:14,000
Project No:		60683192
Figure No:		10








Surface Soil PFAS Investigation
Enbridge Energy Superior Terminal
2800 East 21st Street
Superior, Wisconsin
Figure 11: 6.2 FTS Results Map


Legend

- ◆ Sample location
- ▲ WPDES Outfalls
- Containment Berm
- Surface Flow Direction
- Storage Tank
- Enbridge Pipelines
- Terminal Property Boundary
- Rivers/Streams


Note:
 Soil concentrations, in micrograms per kilogram (ug/kg).



1 inch = 1,167 feet



Prepared by:



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Drawn:	AA	11/2/2022
Approved:	CS	11/2/2022
Scale:	1:14,000	
Project No:	60683192	
Figure No:	11	

Tables

Table 1 – PFAS Surface Soil Results

Table 2 – PFAS Surface Soil QC Blank Results

Table 3 – PFAS Soil Boring Results

Table 4 – PFAS Soil Boring QC Blank Results

Table 1

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

				Field ID:	PR-Building A-HA01(0-6)	PR-Building B-HA01(0-6)	PR-TK01- HA01(0-6)	PR-TK02- HA01(0-6)	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)
				Sample Date:	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
Abbr	Analyte	Cas Number	Units										
Carboxylic Acids:													
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	< 0.028	< 0.028	0.082 J	0.15	< 0.028	< 0.028	< 0.028	0.11	0.17	
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	0.076 J	0.065 J	0.26	0.62	< 0.028	0.038 J	0.056 J	0.35	0.44	
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	0.057 J	0.056 J	0.14	0.25	< 0.027	0.03 J	< 0.027	0.16	0.24	
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	< 0.034	0.05 J	0.15	0.19	< 0.034	< 0.034	< 0.034	0.25	0.24	
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	0.038 J	0.051 J	0.15	0.19	0.037 J	0.032 J	0.033 J	0.2	0.38	
PFNA	Perfluorononanoic acid	375-95-1	ug/kg	< 0.03	0.041 J	0.18	0.28	0.043 J	< 0.031	< 0.031	0.072 J	0.2	
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	0.32	0.049 J	0.38	0.51	0.052 J	< 0.022	< 0.023	0.13	0.24	
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	0.049 J	< 0.029	0.06 J	0.41	0.057 J	< 0.03	< 0.03	0.038 J	0.1	
PFDaA	Perfluorododecanoic acid	307-55-1	ug/kg	0.069 J	< 0.032	0.039 J	0.37	< 0.032	< 0.032	< 0.033	0.035 J	0.06 J	
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	< 0.031	< 0.031	< 0.03	0.093 J	< 0.031	< 0.031	< 0.032	< 0.03	< 0.031	
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	< 0.034	< 0.033	< 0.033	0.099	< 0.033	< 0.034	< 0.034	< 0.032	< 0.033	
Sulfonic Acids:													
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	< 0.026	< 0.026	< 0.025	< 0.025	< 0.026	< 0.026	< 0.026	< 0.025	< 0.025	
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	< 0.024	< 0.023	< 0.023	< 0.023	< 0.023	< 0.024	< 0.024	< 0.023	< 0.023	
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ug/kg	0.029 J	< 0.021	< 0.021	0.068 J	< 0.021	< 0.022	< 0.022	< 0.021	0.039 J	
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	< 0.027	< 0.027	< 0.026	< 0.026	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	0.73	0.17	0.17	2.7	0.1	0.071 J	< 0.029	< 0.028	0.39	
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	< 0.034	< 0.034	< 0.033	< 0.033	< 0.034	< 0.034	< 0.034	< 0.033	< 0.034	
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	0.039 J	< 0.028	< 0.027	< 0.027	< 0.028	< 0.028	< 0.028	< 0.027	< 0.027	
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	< 0.026	< 0.025	< 0.025	< 0.025	< 0.025	< 0.026	< 0.026	< 0.025	< 0.025	
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	< 0.023	< 0.023	< 0.022	< 0.022	< 0.023	< 0.023	< 0.023	< 0.022	< 0.022	
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	< 0.041	< 0.04	0.064 J	0.3	< 0.04	0.043 J	< 0.041	< 0.039	< 0.04	
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	< 0.043	1.3	< 0.042	0.89	< 0.043	< 0.043	< 0.043	0.21	< 0.042	
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:													
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	< 0.029	< 0.029	< 0.028	0.032 J	< 0.029	< 0.029	< 0.029	< 0.028	< 0.028	
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	< 0.027 UR	< 0.027 UR	< 0.026 UR	< 0.026 UR	< 0.027 UR	< 0.027 UR	< 0.027 UR	< 0.026 UR	< 0.026 UR	
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	< 0.025 UR	< 0.025 UR	< 0.024 UR	< 0.024 UR	< 0.025 UR	< 0.025 UR	< 0.025 UR	< 0.024 UR	< 0.025 UR	
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	< 0.028	< 0.027	< 0.027	< 0.027	< 0.027	< 0.028	< 0.028	< 0.027	< 0.027	
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	0.074 J	< 0.039	< 0.038	< 0.038	< 0.039	< 0.04	< 0.04	< 0.038	< 0.039	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	< 0.03	< 0.03	< 0.029 UR	< 0.029 UR	< 0.03 UR	< 0.03 UR	< 0.03 UR	< 0.029 UR	< 0.029 UR	
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	< 0.032	< 0.031	< 0.031 UR	< 0.031 UR	< 0.031 UR	< 0.032 UR	< 0.032 UR	< 0.03 UR	< 0.031 UR	
Replacement Chemicals:													
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	< 0.027	< 0.027	< 0.026	< 0.026	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	< 0.036	< 0.035	< 0.035	< 0.034	< 0.035	< 0.036	< 0.036	< 0.034	< 0.035	
9CI-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	< 0.025	< 0.025	< 0.024	< 0.024	< 0.024	< 0.025	< 0.025	< 0.024	< 0.024	
11CI-PF3OUdS	11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	< 0.025	< 0.025	< 0.024	< 0.024	< 0.025	< 0.025	< 0.025	< 0.024	< 0.024	

Note:
 ug/kg - micrograms per kilogram.
 J - Estimated concentration (+/- indicate the direction of bias).
 R - Rejected due to serious deficiencies in meeting QC criteria.
 Non-detects reported as < MDL.

Table 1

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

				Field ID:	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)	PR-TK14- HA01(0-6)	PR-TK15- HA01(0-6)	PR-TK16- HA01(0-6)
				Sample Date:	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/6/2022	7/5/2022	7/5/2022	7/5/2022	7/5/2022
Abbr	Analyte	Cas Number	Units										
Carboxylic Acids:													
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	0.11	0.097 J	< 0.026	0.62	0.07 J	0.23	0.028 J	0.78	0.04 J	
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	0.49	0.3	< 0.026	3	0.31	1.1	0.11	3.8	0.12	
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	0.24	0.19	< 0.025	1.2	0.19	0.43	0.064 J	1.7	0.079 J	
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	0.24	0.19	< 0.032	0.62	0.13	0.17	0.046 J	0.58	0.073 J	
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	0.31	0.39	< 0.028	0.43	0.13	0.15	0.089 J	0.87	0.069 J	
PFNA	Perfluorononanoic acid	375-95-1	ug/kg	0.48	0.22	< 0.028	0.28	< 0.03	0.11	0.065 J	0.61	0.049 J	
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	0.71	0.19	0.058 J	0.87	< 0.022	0.11	0.027 J	1.9	0.09 J	
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	0.31	0.058 J	0.045 J	1.2	< 0.029	< 0.029	< 0.028	1.1	0.073 J	
PFDaA	Perfluorododecanoic acid	307-55-1	ug/kg	0.2	0.054 J	< 0.03	1.3	< 0.032	< 0.031	< 0.03	0.53	0.049 J	
PFTDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	0.043 J	< 0.032	< 0.029	0.29	0.47 J	< 0.031	< 0.029	0.096	< 0.03	
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	< 0.032	< 0.034	< 0.031	0.36	< 0.033	< 0.033	< 0.032	0.074 J	< 0.032	
Sulfonic Acids:													
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	0.065 J	< 0.024	< 0.025	< 0.025	
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	< 0.023	< 0.024	< 0.022	0.051 J	< 0.023	0.094	< 0.022	< 0.023	< 0.022	
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ug/kg	< 0.021	< 0.022	< 0.02	1.1	< 0.021	1	0.064 J	0.2	< 0.02	
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	< 0.026	< 0.028	< 0.025	0.11	< 0.027	0.051 J	< 0.026	< 0.026	< 0.026	
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	0.28	0.063 J	0.13	35	< 0.028	6.7	0.2	9.2	0.085 J	
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	< 0.033	< 0.035	< 0.032	0.43	< 0.033	< 0.033	< 0.032	0.077 J	< 0.032	
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	< 0.027	< 0.028	< 0.026	0.9	< 0.027	< 0.027	< 0.026	0.04 J	< 0.026	
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	< 0.025	< 0.026	< 0.024	0.17	< 0.025	< 0.025	< 0.024	< 0.025	< 0.024	
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	< 0.022	< 0.023	< 0.021	< 0.022	< 0.022	< 0.022	< 0.021	< 0.022	< 0.022	
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	0.084 J	< 0.041	< 0.038	3.5	< 0.04	0.23	< 0.038	3.6	< 0.039	
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	0.23	0.12	< 0.04	6.2	< 0.042	0.054 J	< 0.04	3.5	0.086 J	
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:													
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	< 0.028	< 0.029	< 0.027	1.4	< 0.028	0.034 J	< 0.027	0.075 J	< 0.027	
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	< 0.026 UR	< 0.027 UR	< 0.025 UR	< 0.026 UR	< 0.026 UR	< 0.026 UR	< 0.025 UR	< 0.026 UR	< 0.025 UR	
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	< 0.024 UR	< 0.026 UR	< 0.023 UR	< 0.024 UR	< 0.025 UR	< 0.025 UR	< 0.024 UR	< 0.024 UR	< 0.024 UR	
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	< 0.027	< 0.028	< 0.026	0.14	< 0.027	< 0.027	< 0.026	< 0.027	< 0.026	
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	< 0.038	< 0.04	< 0.037	0.073 J	< 0.039	< 0.038	< 0.037	< 0.038	< 0.038	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	< 0.029 UR	< 0.03 UR	< 0.028 UR	< 0.029	< 0.029 UR	< 0.029	< 0.028 UR	< 0.029	< 0.028 UR	
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	< 0.03 UR	< 0.032 UR	< 0.029 UR	< 0.031	< 0.031 UR	< 0.031 UR	< 0.03 UR	< 0.03 UR	< 0.03 UR	
Replacement Chemicals:													
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	< 0.026	< 0.028	< 0.025	< 0.027	< 0.027	< 0.027	< 0.026	< 0.026	< 0.026	
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	< 0.034	< 0.036	< 0.033	< 0.035	< 0.035	< 0.035	< 0.033	< 0.034	< 0.034	
9CI-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.024	< 0.023	< 0.024	< 0.023	
11CI-PF3OUdS	11-chloroeicosafuoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.024	< 0.023	< 0.024	< 0.024	

Note:
 ug/kg - micrograms per kilogram.
 J - Estimated concentration (+/- indicate the direction of bias).
 R - Rejected due to serious deficiencies in meeting QC criteria.
 Non-detects reported as < MDL.

Table 1

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

				Field ID:	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)	PR-TK25- HA01(0-6)
				Sample Date:	7/5/2022	7/5/2022	7/5/2022	7/5/2022	7/6/2022	7/5/2022	7/5/2022	7/5/2022	7/6/2022
Abbr	Analyte	Cas Number	Units										
Carboxylic Acids:													
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	0.15	0.12	0.19	0.27	0.093	0.24	0.049 J	0.32	0.41	
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	0.3	0.41	0.9	1.5	0.24	0.49	0.17	1.2	1.7	
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	0.19	0.21	0.25	0.5	0.13	0.27	0.11	0.49	1.1	
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	0.11	0.3	0.14	0.21	0.13	0.3	0.13	0.43	0.34	
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	0.13	0.26	0.15	0.35	0.18	0.33	0.17	0.54	0.57	
PFNA	Perfluorononanoic acid	375-95-1	ug/kg	0.075 J	0.29	0.13	0.18	0.19	0.26	0.17	0.38	0.36	
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	0.043 J	1	0.11	0.23	0.62	0.74	0.5	0.81	1.4	
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	0.03 J	0.32	< 0.029	0.081 J	0.48	0.52	0.32 J-	0.28	1	
PFDaA	Perfluorododecanoic acid	307-55-1	ug/kg	< 0.029	0.16	< 0.031	< 0.032	0.22	0.24	0.14	0.19	1.5	
PFTTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	< 0.028	< 0.03	< 0.03	< 0.031	0.041 J	0.059 J	0.057 J	0.059 J	0.33	
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	< 0.03	< 0.033	< 0.033	< 0.034	0.042 J	< 0.032	< 0.033	0.044 J	0.72	
Sulfonic Acids:													
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	< 0.023	< 0.025	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	< 0.024	0.077 J	
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	< 0.021	< 0.023	< 0.023	< 0.024	< 0.022	< 0.023	< 0.023	< 0.022	0.16	
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ug/kg	< 0.019	< 0.021	< 0.021	0.089 J	0.035 J	< 0.021	0.13	0.28	1.9	
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	< 0.025	< 0.026	< 0.026	< 0.027	< 0.026	< 0.026	< 0.027	0.044 J	0.32	
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	0.1	0.19	0.37	1.2	0.69	0.82	2.7	18	45	
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	< 0.031	< 0.033	< 0.033	< 0.034	< 0.032	< 0.033	< 0.033	0.15	0.4	
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	< 0.025	< 0.027	< 0.027	< 0.028	< 0.026	< 0.027	< 0.027	0.06 J	0.64	
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	< 0.023	< 0.025	< 0.025	< 0.026	< 0.024	< 0.025	< 0.025	< 0.024	0.055 J	
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	< 0.021	< 0.022	< 0.022	< 0.023	< 0.021	< 0.022	< 0.022	< 0.021	< 0.02	
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	< 0.037	< 0.039	0.86	0.18	0.052 J	0.099	< 0.04	0.091	9.2	
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	< 0.039	0.32	0.65	0.13	0.28	1.3	0.35 J-	1.9	12	
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:													
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	< 0.026	< 0.028	< 0.028	< 0.029	< 0.027	< 0.028	< 0.028	0.33	1.4	
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	< 0.024 UR	< 0.026 UR	< 0.026 UR	< 0.027 UR	< 0.025 UR	< 0.026 UR	< 0.026	< 0.025 UR	< 0.024 UR	
NEFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	< 0.023 UR	< 0.024 UR	< 0.024 UR	< 0.025 UR	< 0.024 UR	< 0.024 UR	< 0.025	< 0.023 UR	< 0.023 UR	
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	< 0.025	< 0.027	< 0.027	< 0.028	< 0.026	< 0.026	< 0.027	< 0.025	0.1	
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	< 0.036	< 0.038	< 0.038	< 0.039	< 0.037	< 0.038	< 0.039	< 0.036	0.12	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	< 0.027 UR	< 0.029 UR	< 0.029 UR	< 0.03 UR	< 0.028	< 0.029	< 0.029	< 0.027	< 0.027	
NEFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	< 0.029 UR	< 0.031 UR	< 0.031 UR	< 0.032 UR	< 0.03	< 0.03	< 0.031	< 0.029	0.069 J	
Replacement Chemicals:													
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	< 0.025	< 0.026	< 0.026	< 0.027	< 0.026	< 0.026	< 0.027	< 0.025	< 0.025	
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	< 0.032	< 0.034	< 0.034	< 0.036	< 0.033	< 0.034	< 0.035	< 0.033	< 0.032	
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	< 0.022	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.023	< 0.022	
11Cl-PF3OUs	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	< 0.022	< 0.024	< 0.024	< 0.025	< 0.023	< 0.024	< 0.024	< 0.023	< 0.022	

Note:
 ug/kg - micrograms per kilogram.
 J - Estimated concentration (+/- indicate the direction of bias).
 R - Rejected due to serious deficiencies in meeting QC criteria.
 Non-detects reported as < MDL.

Table 1

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

Abbr	Analyte	Cas Number	Units	Field ID:	PR-TK26- HA01(0-6)	PR-TK27- HA01(0-6)	PR-TK28- HA01(0-6)	PR-TK29- HA01(0-6)	NR 720 Residual Contaminant Levels		
				Sample Date:	7/6/2022	7/6/2022	7/6/2022	7/6/2022	Non-Industrial Direct Contact	Industrial Direct Contact	Soil to Groundwater Pathway
Carboxylic Acids:											
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	0.11	< 0.027	0.13	0.11	--	--	--	
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	0.42	0.09 J	0.041 J	0.03 J	--	--	--	
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	0.2	0.045 J	0.046 J	0.029 J	--	--	--	
PFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	0.098	< 0.033	0.073 J	0.047 J	--	--	--	
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	0.16	0.035 J	0.22	0.069 J	1,260	16,400	--	
PFNA	Perfluorononanoic acid	375-95-1	ug/kg	0.13	0.053 J	0.1	0.074 J	--	--	--	
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	0.52	0.077 J	0.054 J	0.06 J	--	--	--	
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	0.098	< 0.029	0.063 J	0.062 J	--	--	--	
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	0.037 J	< 0.032	< 0.032	< 0.03	--	--	--	
PFTriDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	< 0.03	< 0.031	< 0.031	< 0.029	--	--	--	
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	< 0.032	< 0.033	< 0.033	< 0.031	--	--	--	
Sulfonic Acids:											
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	< 0.025	< 0.025	< 0.025	0.024 J	1,260,000	16,400,000	--	
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	0.033 J	< 0.023	< 0.023	< 0.022	--	--	--	
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ug/kg	0.33	< 0.021	< 0.021	< 0.02	--	--	--	
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	< 0.026	< 0.027	< 0.027	< 0.025	--	--	--	
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	2	0.16	0.29	0.26	1,260	16,400	--	
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	< 0.033	< 0.033	< 0.033	< 0.031	--	--	--	
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	< 0.027	< 0.027	< 0.027	< 0.025	--	--	--	
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	< 0.025	< 0.025	< 0.025	< 0.023	--	--	--	
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	< 0.022	< 0.022	< 0.022	< 0.021	--	--	--	
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	0.72	< 0.04	< 0.04	< 0.037	--	--	--	
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	0.12	< 0.042	< 0.042	< 0.04	--	--	--	
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:											
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	< 0.028	< 0.028	< 0.028	< 0.026	--	--	--	
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	< 0.026 UR	< 0.026 UR	< 0.026 UR	< 0.024 UR	--	--	--	
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	< 0.024 UR	< 0.025 UR	< 0.025 UR	0.3 R	--	--	--	
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	< 0.027	< 0.027	< 0.027	< 0.025	--	--	--	
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	< 0.038	< 0.038	< 0.039	< 0.036	--	--	--	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	< 0.029 UR	< 0.029	< 0.029 UR	< 0.027 UR	--	--	--	
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	< 0.03 UR	< 0.031	< 0.031 UR	< 0.029 UR	--	--	--	
Replacement Chemicals:											
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	< 0.026	< 0.027	< 0.027	< 0.025	--	--	--	
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	< 0.034	< 0.035	< 0.035	< 0.033	--	--	--	
9CI-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	< 0.024	< 0.024	< 0.024	< 0.023	--	--	--	
11CI-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	< 0.024	< 0.024	< 0.024	< 0.023	--	--	--	

Note:
 ug/kg - micrograms per kilogram.
 J - Estimated concentration (+/- indicate the direction of bias).
 R - Rejected due to serious deficiencies in meeting QC criteria.
 Non-detects reported as < MDL.

Table 2

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

				Field ID:	PR-FB-01	PR-Decon-01	PR-ERB-01	PR-ERB-02
				Sample Date:	7/6/2022	7/6/2022	7/6/2022	7/7/2022
Abbr	Analyte	Cas Number	Units					
Carboxylic Acids:								
PFBA	Perfluorobutanoic acid	375-22-4	ng/L	< 0.43	9.2	< 0.43	< 0.42	< 0.42
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L	< 0.43	1.3 J	< 0.42	< 0.42	< 0.42
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L	< 0.43	1.4 J	< 0.42	< 0.42	< 0.42
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L	< 0.54	0.97 J	< 0.53	< 0.53	< 0.53
PFOA	Perfluorooctanoic acid	335-67-1	ng/L	< 0.57	1.2 J	< 0.56	< 0.56	< 0.56
PFNA	Perfluorononoic acid	375-95-1	ng/L	< 0.72	< 0.72	< 0.71	< 0.71	< 0.71
PFDA	Perfluorodecanoic acid	335-76-2	ng/L	< 0.55	< 0.55	< 0.54	< 0.54	< 0.54
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L	< 0.53	< 0.52	< 0.52	< 0.52	< 0.52
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L	< 0.47	< 0.47	< 0.47	< 0.46	< 0.46
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L	< 0.61	< 0.6	< 0.6	< 0.59	< 0.59
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L	< 0.46	< 0.46	< 0.46	< 0.45	< 0.45
Sulfonic Acids:								
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L	< 0.46	0.98 J	< 0.46	< 0.45	< 0.45
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L	< 0.46	< 0.46	< 0.46	< 0.45	< 0.45
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ng/L	< 0.5	< 0.49	< 0.49	< 0.49	< 0.49
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L	< 0.4	< 0.4	< 0.4	< 0.39	< 0.39
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L	< 0.53	< 0.53	< 0.53	< 0.52	< 0.52
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L	< 0.44	< 0.43	< 0.43	< 0.43	< 0.43
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L	< 0.44	< 0.43	< 0.43	< 0.43	< 0.43
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L	< 0.45	< 0.44	< 0.44	< 0.44	< 0.44
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L	< 0.54	< 0.54	< 0.54	< 0.53	< 0.53
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L	< 0.63	< 0.62	< 0.62	< 0.62	< 0.62
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L	< 0.64	< 0.63	< 0.63	< 0.62	< 0.62
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:								
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L	< 0.8	< 0.79	< 0.79	< 0.78	< 0.78
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L	< 0.5 UR	< 0.49 UR	< 0.49	< 0.49	< 0.49
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L	< 0.59 UR	< 0.59 UR	< 0.59	< 0.58	< 0.58
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L	< 0.42	< 0.42	< 0.42	< 0.41	< 0.41
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L	< 0.54	< 0.54	< 0.53	< 0.53	< 0.53
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L	< 0.32	< 0.32	< 0.32	< 0.31	< 0.31
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L	< 0.48	< 0.48	< 0.48	< 0.47	< 0.47
Replacement Chemicals:								
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L	< 0.52	< 0.51	< 0.51	< 0.51	< 0.51
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L	< 0.5	< 0.5	< 0.5	< 0.49	< 0.49
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L	< 0.3	< 0.29	< 0.29	< 0.29	< 0.29
11Cl-PF3OUs	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L	< 0.43	< 0.42	< 0.42	< 0.42	< 0.42

Note:
 ug/L - micrograms per liter.
 J - Estimated concentration (+/- indicate the direction of bias).
 Non-detects reported as < MDL.

Table 3

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

				Field ID:	PR- AFFExcavation- SB01(14-15)	PR- AFFExcavation- SB01(17-17.5)	NR 720 Residual Contaminant Levels		
				Sample Date:	8/3/2022	8/3/2022	Non-Industrial Direct Contact	Industrial Direct Contact	Soil to Groundwater Pathway
Abbr	Analyte	Cas Number	Units						
Carboxylic Acids:									
PFBA	Perfluorobutanoic acid	375-22-4	ug/kg	< 0.043	< 0.041	--	--	--	--
PFPeA	Perfluoropentanoic acid	2706-90-3	ug/kg	< 0.044	< 0.041	--	--	--	--
PFHxA	Perfluorohexanoic acid	307-24-4	ug/kg	< 0.042	< 0.04	--	--	--	--
PFFHpA	Perfluoroheptanoic acid	375-85-9	ug/kg	< 0.053	< 0.05	--	--	--	--
PFOA	Perfluorooctanoic acid	335-67-1	ug/kg	< 0.047	< 0.045	1,260	16,400	--	--
PFNA	Perfluorononanoic acid	375-95-1	ug/kg	< 0.047	< 0.045	--	--	--	--
PFDA	Perfluorodecanoic acid	335-76-2	ug/kg	< 0.035	< 0.033	--	--	--	--
PFUnA	Perfluoroundecanoic acid	2058-94-8	ug/kg	< 0.046	< 0.044	--	--	--	--
PFDoA	Perfluorododecanoic acid	307-55-1	ug/kg	< 0.05	< 0.048	--	--	--	--
PFTrDA	Perfluorotridecanoic acid	72629-94-8	ug/kg	< 0.049	< 0.046	--	--	--	--
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ug/kg	< 0.052	< 0.05	--	--	--	--
Sulfonic Acids:									
PFBS	Perfluorobutanesulfonic acid	375-73-5	ug/kg	< 0.04	< 0.038	1,260,000	16,400,000	--	--
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ug/kg	< 0.037	< 0.035	--	--	--	--
PFFHxS	Perfluorohexanesulfonic acid	355-46-4	ug/kg	< 0.033	< 0.032	--	--	--	--
PFFHpS	Perfluoroheptanesulfonic acid	375-92-8	ug/kg	< 0.042	< 0.04	--	--	--	--
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ug/kg	< 0.045	< 0.043	1,260	16,400	--	--
PFNS	Perfluorononanesulfonic acid	68259-12-1	ug/kg	< 0.053	< 0.05	--	--	--	--
PFDS	Perfluorodecanesulfonic acid	335-77-3	ug/kg	< 0.043	< 0.041	--	--	--	--
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ug/kg	< 0.04	< 0.038	--	--	--	--
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ug/kg	< 0.035	< 0.033	--	--	--	--
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ug/kg	< 0.063	< 0.06	--	--	--	--
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ug/kg	< 0.067	< 0.063	--	--	--	--
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:									
PFOSA	Perfluorooctane sulfonamide	754-91-6	ug/kg	< 0.045	< 0.043	--	--	--	--
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ug/kg	< 0.042 UR	< 0.039 UR	--	--	--	--
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ug/kg	< 0.039 UR	< 0.037 UR	--	--	--	--
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ug/kg	< 0.043	< 0.041	--	--	--	--
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ug/kg	< 0.061	< 0.058	--	--	--	--
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ug/kg	< 0.046 UR	< 0.044 UR	--	--	--	--
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ug/kg	< 0.049 UR	< 0.047 UR	--	--	--	--
Replacement Chemicals:									
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ug/kg	< 0.042	< 0.04	--	--	--	--
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ug/kg	< 0.055	< 0.053	--	--	--	--
9Cl-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ug/kg	< 0.038	< 0.036	--	--	--	--
11Cl-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ug/kg	< 0.039	< 0.037	--	--	--	--

Note:

ug/kg - micrograms per kilogram.

J - Estimated concentration (+/- indicate the direction of bias).

R - Rejected due to serious deficiencies in meeting QC criteria.

Non-detects reported as < MDL.

Table 4

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

				Field ID:	PR-FB-02	PR-DECON-02	PR-ERB-03
				Sample Date:	8/3/2022	8/3/2022	8/3/2022
Abbr	Analyte	Cas Number	Units				
Carboxylic Acids:							
PFBA	Perfluorobutanoic acid	375-22-4	ng/L	< 0.42	< 0.44	< 0.43	
PFPeA	Perfluoropentanoic acid	2706-90-3	ng/L	< 0.42	< 0.44	< 0.42	
PFHxA	Perfluorohexanoic acid	307-24-4	ng/L	< 0.42	< 0.44	< 0.42	
PFHpA	Perfluoroheptanoic acid	375-85-9	ng/L	< 0.52	< 0.55	< 0.53	
PFOA	Perfluorooctanoic acid	335-67-1	ng/L	< 0.56	< 0.58	< 0.56	
PFNA	Perfluorononanoic acid	375-95-1	ng/L	< 0.71	< 0.74	< 0.71	
PFDA	Perfluorodecanoic acid	335-76-2	ng/L	< 0.54	< 0.56	< 0.54	
PFUnA	Perfluoroundecanoic acid	2058-94-8	ng/L	< 0.51	< 0.54	< 0.52	
PFDoA	Perfluorododecanoic acid	307-55-1	ng/L	< 0.46	< 0.48	< 0.47	
PFTTrDA	Perfluorotridecanoic acid	72629-94-8	ng/L	< 0.59	< 0.62	< 0.60	
PFTeDA	Perfluorotetradecanoic acid	376-06-7	ng/L	< 0.45	< 0.47	< 0.46	
Sulfonic Acids:							
PFBS	Perfluorobutanesulfonic acid	375-73-5	ng/L	< 0.45	< 0.47	< 0.46	
PFPeS	Perfluoropentane Sulfonic Acid	2706-91-4	ng/L	< 0.45	< 0.47	< 0.46	
PFHxS	Perfluorohexanesulfonic acid	355-46-4	ng/L	< 0.48	< 0.51	< 0.49	
PFHpS	Perfluoroheptanesulfonic acid	375-92-8	ng/L	< 0.39	< 0.41	< 0.40	
PFOS	Perfluorooctanesulfonic acid	1763-23-1	ng/L	< 0.52	< 0.55	< 0.53	
PFNS	Perfluorononanesulfonic acid	68259-12-1	ng/L	< 0.43	< 0.44	< 0.43	
PFDS	Perfluorodecanesulfonic acid	335-77-3	ng/L	< 0.43	< 0.45	< 0.43	
PFDoS	Perfluorododecanesulfonic acid	79780-39-5	ng/L	< 0.44	< 0.46	< 0.44	
4:2 FTS	4:2 Fluorotelomer Sulfonic Acid	757124-72-4	ng/L	< 0.53	< 0.56	< 0.54	
6:2 FTS	6:2 Fluorotelomer sulfonic acid	27619-97-2	ng/L	< 0.62	< 0.64	< 0.62	
8:2 FTS	8:2 Fluorotelomer sulfonic acid	39108-34-4	ng/L	< 0.62	< 0.65	< 0.63	
Sulfonamides, Sulfonamidoacetic acids, Sulfonamidoethanols:							
PFOSA	Perfluorooctane sulfonamide	754-91-6	ng/L	< 0.78	< 0.81	< 0.79	
NMeFOSA	N-Methyl perfluorooctane sulfonamide	31506-32-8	ng/L	< 0.49	< 0.51 UR	< 0.49	
NEtFOSA	N-Ethyl perfluorooctane sulfonamide	4151-50-2	ng/L	< 0.58	< 0.60 UR	< 0.59	
MeFOSAA	N-Methylperfluorooctanesulfonamidoacetic acid	2355-31-9	ng/L	< 0.41	< 0.43	< 0.42	
EtFOSAA	N-Ethylperfluorooctanesulfonamidoacetic acid	2991-50-6	ng/L	< 0.53	< 0.55	< 0.54	
NMeFOSE	N-Methyl perfluorooctane sulfonamidoethanol	24448-09-7	ng/L	< 0.31	< 0.33 UR	< 0.32	
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol	1691-99-2	ng/L	< 0.47	< 0.49 UR	< 0.48	
Replacement Chemicals:							
HFPO-DA	Hexafluoropropylene oxide dimer acid	13252-13-6	ng/L	< 0.50	< 0.53	< 0.51	
DONA	4,8-dioxa-3H-perfluorononanoic acid	919005-14-4	ng/L	< 0.49	< 0.51	< 0.50	
9CI-PF3ONS	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	ng/L	< 0.29	< 0.30	< 0.29	
11CI-PF3OUdS	11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	ng/L	< 0.42	< 0.43	< 0.42	

Note:
 ug/L - micrograms per liter.
 R - Rejected due to serious deficiencies in meeting QC criteria.
 Non-detects reported as < MDL.

Appendix A

Soil Sampling Photograph Log

Site Name:
Enbridge Superior Terminal

Site Location:
TK01-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
Southwest

Description:
View of sample location looking away from tank 1 at enclosure embankment.



Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
North

Description:
View of exclusion area of tank 1 with tank.



Site Name:
Enbridge Superior Terminal

Site Location:
TK02-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
South

Description:
View of sample location looking away from tank 2 at enclosure embankment.



Enbridge Superior
Terminal PFAS

PR-TK02-HA01

2022-06-29
14:47:03-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
North

Description:
View of exclusion area of tank 2 with tank and surface water.



Enbridge Superior
Terminal PFAS

PR-TK02-HA01

2022-06-29
14:55:35-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK03-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
South

Description:
View of sample location looking away from tank 3 at enclosure embankment with tank 6 in background.



Enbridge Superior
Terminal PFAS

PR-TK03-HA01

2022-06-30
10:54:56-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
North

Description:
View of exclusion area of tank 3 with tank and pipeline.



Enbridge Superior
Terminal PFAS

PR-TK03-HA01

2022-06-30
10:55:31-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK04-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
Southwest

Description:
View of sample location looking away from tank 4 at enclosure embankment with pipeline.



Enbridge Superior Terminal PFAS

PR-TK04-HA01

2022-06-30 11:10:05-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
East

Description:
View of exclusion area of tank 4 with tank and pipeline.



Enbridge Superior Terminal PFAS

PR-TK04-HA01

2022-06-30 11:10:29-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK05-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
North

Description:
View of sample location looking away from tank 5 at enclosure embankment.



Enbridge Superior Terminal PFAS

PR-TK05-HA01

2022-06-30 10:36:06-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
South

Description:
View of exclusion area of tank 5 with tank and pipeline.



Enbridge Superior Terminal PFAS

PR-TK05-HA01

2022-06-30 10:43:18-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK06-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
East

Description:
View of sample location looking away from tank 6 at enclosure embankment.



Enbridge Superior
Terminal PFAS

PR-TK06-HA01

2022-06-30
11:59:55-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
East

Description:
View of exclusion area of tank 6 with tank.



Enbridge Superior
Terminal PFAS

PR-TK06-HA01

2022-06-30
11:59:20-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK07-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
North

Description:
View of sample location looking away from tank 7 at enclosure embankment.



Enbridge Superior
Terminal PFAS

PR-TK07-HA01

2022-06-30
12:01:53-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
South

Description:
View of exclusion area of tank 7 with tank. tank 11 in background left



Enbridge Superior
Terminal PFAS

PR-TK07-HA01

2022-06-30
12:06:17-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK08-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
East

Description:
View of sample location looking away from tank 8 at enclosure embankment.



Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
West

Description:
View of exclusion area of tank 7 with tank. tank 12 in background right



Site Name:
Enbridge Superior Terminal

Site Location:
TK09-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
South

Description:
View of sample location looking away from tank 9 at enclosure embankment with collection tarp in background.



Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
North

Description:
View of exclusion area of tank 9 with tank and pipeline.



Site Name:
Enbridge Superior Terminal

Site Location:
TK10-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
West

Description:
View of sample location looking away from tank 10 at enclosure embankment with collection tarp in background.



Enbridge Superior
Terminal PFAS

PR-TK10-HA01

2022-06-30
13:26:33-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
East

Description:
View of exclusion area of tank 10 with tank and pipeline.



Enbridge Superior
Terminal PFAS

PR-TK10-HA01

2022-06-30
13:55:09-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK11-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
South

Description:
View of sample location looking away from tank 11 at enclosure embankment.



Enbridge Superior
Terminal PFAS

PR-TK11-HA01

2022-06-30
12:43:29-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
North

Description:
View of exclusion area of tank 11 with tank and pipeline with tank 7 in background.



Enbridge Superior
Terminal PFAS

PR-TK11-HA01

2022-06-30
12:43:52-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK12-HA01

Project No.
60683192

Photo No.
1

Date:
6/30/2022

Direction Photo Taken:
West

Description:
View of sample location looking away from tank 12 at enclosure embankment and soil collection tarp.



Enbridge Superior
Terminal PFAS

PR-TK12-HA01

2022-06-30
12:30:45-05:00

Photo No.
2

Date:
6/30/2022

Direction Photo Taken:
Southeast

Description:
View of exclusion area of tank 12 with tank.



Enbridge Superior
Terminal PFAS

PR-TK12-HA01

2022-06-30
12:36:12-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK13-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:

southeast

Description:

View of exclusion area of tank 13 and connecting pipeline with surface water



Enbridge Superior
Terminal PFAS

PR-TK13-HA01

2022-06-29
11:07:27-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:

Northeast

Description:

View of exclusion area with tank 13 in background and pipeline



Enbridge Superior
Terminal PFAS

PR-TK13-HA01

2022-06-29
11:01:23-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK14-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:

southwest

Description:

View of exclusion area of tank 14 and connecting pipeline tank 15 in background



Enbridge Superior
Terminal PFAS

PR-TK14-HA01

2022-06-29
11:15:00-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:

Southeast

Description:

View of exclusion area of tank 14 with pipeline and surface water



Enbridge Superior
Terminal PFAS

PR-TK14-HA01

2022-06-29
11:15:17-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK15-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
South

Description:

View of sample location looking away from tank 15 at enclosure



Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
North

Description:

View of exclusion area of tank 15 with pipeline.



Site Name:
Enbridge Superior Terminal

Site Location:
TK16-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
North

Description:

View of exclusion area of tank 16 and connecting pipeline



Enbridge Superior
Terminal PFAS

PR-TK16-HA01

2022-06-29
11:32:24-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:

West

Description:

View of exclusion area of tank 16 and embankment



Enbridge Superior
Terminal PFAS

PR-TK16-HA01

2022-06-29
11:32:42-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK17-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
South

Description:

View of exclusion area of tank 17 with tank 17 in background with pipeline.



Enbridge Superior
Terminal PFAS

PR-TK17-HA01

2022-06-29
11:44:40-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:

Northwest

Description:

View of exclusion area of tank 17 with pipeline and embankment.



Enbridge Superior
Terminal PFAS

PR-TK17-HA01

2022-06-29
11:44:15-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK18-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
West

Description:

View of sample location looking away from tank 18 at enclosure embankment



Enbridge Superior
Terminal PFAS

PR-TK18-HA01

2022-06-29
12:00:03-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
East

Description:

View of exclusion area of tank 18 with tank and pipeline.



Enbridge Superior
Terminal PFAS

PR-TK18-HA01

2022-06-29
12:06:23-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK19-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
North

Description:

View of sample location looking away from tank 19 at enclosure embankment



Enbridge Superior Terminal PFAS

PR-TK19-HA01

2022-06-29 12:08:03-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
South

Description:

View of exclusion area of tank 19 with tank and pipeline.



Enbridge Superior Terminal PFAS

PR-TK19-HA01

2022-06-29 12:13:28-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK20-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
Southeast

Description:
View of sample location looking away from tank 20 at enclosure embankment with tank 10 in background.



Enbridge Superior
Terminal PFAS

PR-TK20-HA01

2022-06-29
14:05:40-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
West

Description:
View of exclusion area of tank 20 with tank. Tank 16 in background



Enbridge Superior
Terminal PFAS

PR-TK20-HA01

2022-06-29
14:11:47-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK21-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
South

Description:

View of sample location looking away from tank 21 at enclosure embankment



Enbridge Superior Terminal PFAS

PR-TK21-HA01

2022-06-29 12:58:39-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
North

Description:

View of exclusion area of tank 21 with tank.



Enbridge Superior Terminal PFAS

PR-TK21-HA01

2022-06-29 13:04:45-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK22-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
East

Description:
View of sample location looking away from tank 22 at enclosure embankment



Enbridge Superior Terminal PFAS

PR-TK22-HA01

2022-06-29 13:51:08-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
West

Description:
View of exclusion area of tank 22 with tank.



Enbridge Superior Terminal PFAS

PR-TK22-HA01

2022-06-29 13:57:05-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK23-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
East

Description:

View of sample location looking away from tank 23 at enclosure embankment



Enbridge Superior
Terminal PFAS

PR-TK23-HA01

2022-06-29
12:36:50-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
West

Description:

View of exclusion area of tank 23 with tank.



Enbridge Superior
Terminal PFAS

PR-TK23-HA01

2022-06-29
12:42:53-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK24-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
East

Description:

View of sample location looking away from tank 24 at enclosure embankment



Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
West

Description:

View of exclusion area of tank 24 with tank.



Site Name:
Enbridge Superior Terminal

Site Location:
TK25-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
North

Description:
View of sample location looking away from tank 25 at enclosure embankment.



Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
South

Description:
View of exclusion area of tank 25 with tank.



Site Name:
Enbridge Superior Terminal

Site Location:
TK26-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
Northwest

Description:
View of sample location looking away from tank 26 at enclosure embankment.



Enbridge Superior
Terminal PFAS

PR-TK26-HA01

2022-06-29
15:12:45-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
East

Description:
View of exclusion area of tank 26 with tank.



Enbridge Superior
Terminal PFAS

PR-TK26-HA01

2022-06-29
15:18:44-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK27-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
West

Description:
View of sample location looking away from tank 27 at enclosure embankment. Tank 1 in background



Enbridge Superior
Terminal PFAS

PR-TK27-HA01

2022-06-29
15:00:59-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
East

Description:
View of exclusion area of tank 27 with tank and surface water.



Enbridge Superior
Terminal PFAS

PR-TK27-HA01

2022-06-29
15:08:00-05:00

Site Name:
Enbridge Superior Terminal

Site Location:
TK28-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
South

Description:
View of tank 29 and exclusion area with some surface water



Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
East

Description:
View of exclusion area with tank in background and surface water.



Site Name:
Enbridge Superior Terminal

Site Location:
TK29-HA01

Project No.
60683192

Photo No.
1

Date:
6/29/2022

Direction Photo Taken:
East

Description:
View of tank 29 and exclusion area with some surface water



Enbridge Superior
Terminal PFAS

PR-TK29-HA01

2022-06-29
09:49:31-05:00

Photo No.
2

Date:
6/29/2022

Direction Photo Taken:
south

Description:
View of exclusion area with tank in background and surface water.



Enbridge Superior
Terminal PFAS

PR-TK29-HA01

2022-06-29
09:49:01-05:00

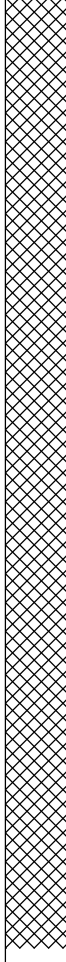
Appendix B

Soil Boring Log and Abandonment Form

Route To: Watershed/Wastewater Waste Management
Remediation/Redevelopment Other

Facility/Project Name Enbridge Superior Terminal			License/Permit/Monitoring Number		Boring Number SB01	
Boring Drilled By: Name of crew chief (first, last) and Firm Cody Engstad Dakota Technologies			Date Drilling Started 8/3/2022	Date Drilling Completed 8/3/2022	Drilling Method geoprobe	
WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level 2.08 Feet MSL		Surface Elevation 654.3 Feet MSL	Borehole Diameter 2.25
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/>) or Boring Location <input type="checkbox"/> State Plane 145293.49 N, 562011.15 E S/C/N			Lat _____ ° _____ ' _____ "		Local Grid Location <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
1/4 of NE 1/4 of Section 36 , T 49 N, R 14 W			Long _____ ° _____ ' _____ "		Feet <input type="checkbox"/> S <input type="checkbox"/> W	

Facility ID	County Douglas	County Code 16	Civil Town/City/ or Village Superior
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Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			1 2 3 4 5 6 7 8 9 10 11 12	Hydrovac clearance per Enbridge requirements. No sample recovery, spoils appeared to be sandy clay with trace gravel as observed when looking down pilot hole. <u>QC Samples</u> PR-ERB-03 collected at 11:55 from drill shoe (Equipment Rinsate Blank) PR-FB-02 collected at 12:30 (Field Blank) PR-DECON-02 collected at 12:35 (Decontamination Water)	Fill									

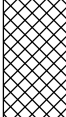








I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm AECOM	Tel: Fax:
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Boring Number **SB01**

Use only as an attachment to Form 4400-122.

Page **2** of **2**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			13	Hydrovac clearance per Enbridge requirements. No sample recovery, spoils appeared to be sandy clay with trace gravel as observed when looking down pilot hole. <i>(continued)</i>	Fill									
DP	18 6		14	Clay, red-brown, cohesive, low plasticity, medium stiff, few fine sand and gravel	CL									
			15	Clay, red-brown, cohesive, medium to low plasticity, medium stiff, wet	CL								PR-AFFFExcavat (14-15') collected at 12:05	
DP	60 57		15	Clay, red-brown, cohesive, medium plasticity, stiff, wet to moist, trace gravel										
			16											
			17	Few very fine sand bewtween 16.7 and 16.8 feet bgs	CL								PR-AFFFExcavat (17-17.5') collected at 12:20	
			18											
			19											
			20	End of boring at 20 feet below ground surface (bgs)										

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between \$10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

<input checked="" type="checkbox"/> Verification Only of Fill and Seal	Route to:		
	<input type="checkbox"/> Drinking Water	<input type="checkbox"/> Watershed/Wastewater	<input checked="" type="checkbox"/> Remediation/Redevelopment
SB01	<input type="checkbox"/> Waste Management	<input type="checkbox"/> Other: _____	

1. Well Location Information				2. Facility / Owner Information			
County Douglas		WI Unique Well # of Removed Well		Hicap #		Facility Name Enbridge Energy Superior Terminal	
Latitude / Longitude (Degrees and Minutes)		Method Code (see instructions)		Facility ID (FID or PWS)		License/Permit/Monitoring #	
1/4 / 1/4 NE		Section 36		Township 49 N		Range 14 <input type="checkbox"/> E <input checked="" type="checkbox"/> W	
Well Street Address 2800 East 21st Street				Original Well Owner Enbridge Energy			
Well City, Village or Town Superior				Present Well Owner Enbridge Energy			
Subdivision Name				Mailing Address of Present Owner 11 East Superior Street, Suite 125			
Reason For Removal From Service No Longer Needed		WI Unique Well # of Replacement Well		City of Present Owner Duluth		State MN	
				ZIP Code 55802			

3. Well / Drillhole / Borehole Information				4. Pump, Liner, Screen, Casing & Sealing Material					
<input type="checkbox"/> Monitoring Well		Original Construction Date (mm/dd/yyyy) 08/03/2022		Pump and piping removed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
<input type="checkbox"/> Water Well		If a Well Construction Report is available, please attach.		Liner(s) removed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
<input checked="" type="checkbox"/> Borehole / Drillhole				Screen removed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A			
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug				Casing left in place?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock				Was casing cut off below surface?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Total Well Depth From Ground Surface (ft.) 20.0		Casing Diameter (in.) N/a		Did sealing material rise to surface?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A			
Lower Drillhole Diameter (in.) 2.25		Casing Depth (ft.) N/a		Did material settle after 24 hours?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A			
Was well annular space grouted? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown				If yes, was hole retopped?				<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
If yes, to what depth (feet)?				Depth to Water (feet)				If bentonite chips were used, were they hydrated with water from a known safe source?	
								<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
				Required Method of Placing Sealing Material					
				<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped					
				<input checked="" type="checkbox"/> Screened & Poured (Bentonite Chips) <input type="checkbox"/> Other (Explain): _____					
				Sealing Materials					
				<input type="checkbox"/> Neat Cement Grout <input type="checkbox"/> Clay-Sand Slurry (11 lb./gal. wt.)					
				<input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Bentonite-Sand Slurry " "					
				<input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Bentonite Chips					
				For Monitoring Wells and Monitoring Well Boreholes Only:					
				<input type="checkbox"/> Bentonite Chips <input type="checkbox"/> Bentonite - Cement Grout					
				<input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Bentonite - Sand Slurry					

5. Material Used To Fill Well / Drillhole	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
	Surface	13.5		
Hydrated Bentonite Chips	13.5	20.0		

6. Comments

7. Supervision of Work				DNR Use Only	
Name of Person or Firm Doing Filling & Sealing AECOM		License #	Date of Filling & Sealing (mm/dd/yyyy) 08/03/2022	Date Received	Noted By
Street or Route 1555 RiverCenter Dr.			Telephone Number (414) 944-6080		Comments
City Milwaukee		State WI	ZIP Code 53212	Signature of Person Doing Work	
				Date Signed	

Appendix C

Laboratory Results (Surface Soil and Soil Boring)

Report Prepared for:

Leo Linnemanstons
AECOM
1555 N. RiverCenter Drive
Milwaukee WI 53212

**REPORT OF
LABORATORY
ANALYSIS
FOR PFAAs**

Report Prepared Date:

August 19, 2022

Report Information:

Pace Project #: 10616212
Sample Receipt Date: 07/08/2022
Client Project #: Superior Terminal PFAS-60683
Client Sub PO #: 145286
State Cert #: 999407970

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PFAA Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kirsten Hogberg, your Pace Project Manager.

This report has been reviewed by:



August 22, 2022

Kirsten Hogberg, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
kirsten.hogberg@pacelabs.com



Report of Laboratory Analysis

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

The results relate only to the samples included in this report.

DISCUSSION

This report presents the results from the analyses performed on thirty-five samples submitted by a representative of AECOM. The samples were analyzed for thirty-three perfluorinated compounds using Wisconsin DNR guidance for PFAS. Reporting limits were set to MDL levels. Report was revised to correct data for "PR-Building B-HA01(0-6)". This report was revised August 19, 2022 to update the unit format.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank was free of the target perfluorinated compounds at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the analyte content determined for the sample material.

Laboratory spike samples and matrix spike samples were also prepared with the sample batch using clean reference matrix or sample material that had been fortified with native standards. The recovery results were within the method limits. The RPDs (relative percent differences) between one designated spike and its duplicate were within the method limits. These spikes indicate that extraction performed as expected.

Diminished extracted internal standard (EIS) recovery ("R" flagged) were present in samples, however, the use of the isotope dilution method generally precludes any adverse impact on those individual native compounds that have a directly associated standard.

Several samples have recoveries less than 1% for selected EIS. The results for these native compounds should be considered estimated.

The four injection internal standards (13C4 PFOA, 13C4 PFOS, 13C2_PFDA, and 13C2_PFHxA) pass for each analysis in the batch verifying that the instrument detector is working as expected.

Results for selected analytes were taken from secondary dilutions of the sample extracts in order to bring the results within the calibration range. The affected values were flagged "D" on the results tables.

Results for t that were below the calibration range were flagged "J". Values were flagged "I" where incorrect isotope ratios were obtained.

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Missouri	10100
Alaska-DW	MN00064	Montana	CERT0092
Alaska-UST	17-009	Nebraska	NE-OS-18-06
Arizona	AZ0014	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
Arkansas-DW	MN00064	New Jersey	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina-	27700
Connecticut	PH-0256	North Carolina-	530
Florida	E87605	North Dakota	R-036
Georgia	959	Ohio-DW	41244
Hawaii	MN00064	Ohio-VAP (170	CL101
Idaho	MN00064	Ohio-VAP (180	CL110
Illinois	200011	Oklahoma	9507
Indiana	C-MN-01	Oregon- rimary	MN300001
Iowa	368	Oregon-Second	MN200001
Kansas	E-10167	Pennsylvania	68-00563
Kentucky-DW	90062	Puerto Rico	MN00064
Kentucky-WW	90062	South Carolina	74003
Louisiana-DEQ	AI-84596	Tennessee	TN02818
Louisiana-DW	MN00064	Texas	T104704192
Maine	MN00064	Utah	MN00064
Maryland	322	Vermont	VT-027053137
Michigan	9909	Virginia	460163
Minnesota	027-053-137	Washington	C486
Minnesota-Ag	via MN 027-053	West Virginia-D	382
Minnesota-Petr	1240	West Virginia-D	9952C
		Wisconsin	999407970
		Wyoming-UST	via A2LA 2926.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444
www.pacelabs.com

Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

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Sample ID Cross Reference

<u>Client Sample ID</u>	<u>Pace Sample ID</u>	<u>Date Received</u>	<u>Sample Type</u>
PR-TK01-HA01(0-6)	10616212001	07/08/2022	Solid
PR-TK02-HA01(0-6)	10616212002	07/08/2022	Solid
PR-TK03-HA01(0-6)	10616212003	07/08/2022	Solid
PR-TK04-HA01(0-6)	10616212004	07/08/2022	Solid
PR-TK05-HA01(0-6)	10616212005	07/08/2022	Solid
PR-TK06-HA01(0-6)	10616212006	07/08/2022	Solid
PR-TK07-HA01(0-6)	10616212007	07/08/2022	Solid
PR-TK08-HA01(0-6)	10616212008	07/08/2022	Solid
PR-TK09-HA01(0-6)	10616212009	07/08/2022	Solid
PR-TK10-HA01(0-6)	10616212010	07/08/2022	Solid
PR-TK11-HA01(0-6)	10616212011	07/08/2022	Solid
PR-TK12-HA01(0-6)	10616212012	07/08/2022	Solid
PR-TK13-HA01(0-6)	10616212013	07/08/2022	Solid
PR-TK14-HA01(0-6)	10616212014	07/08/2022	Solid
PR-TK15-HA01(0-6)	10616212015	07/08/2022	Solid
PR-TK16-HA01(0-6)	10616212016	07/08/2022	Solid
PR-TK17-HA01(0-6)	10616212017	07/08/2022	Solid
PR-TK18-HA01(0-6)	10616212018	07/08/2022	Solid
PR-TK19-HA01(0-6)	10616212019	07/08/2022	Solid
PR-TK20-HA01(0-6)	10616212020	07/08/2022	Solid
PR-TK21-HA01(0-6)	10616212021	07/08/2022	Solid
PR-TK22-HA01(0-6)	10616212022	07/08/2022	Solid
PR-TK23-HA01(0-6)	10616212023	07/08/2022	Solid
PR-TK24-HA01(0-6)	10616212024	07/08/2022	Solid
PR-TK25-HA01(0-6)	10616212025	07/08/2022	Solid
PR-TK26-HA01(0-6)	10616212026	07/08/2022	Solid
PR-TK27-HA01(0-6)	10616212027	07/08/2022	Solid
PR-TK28-HA01(0-6)	10616212028	07/08/2022	Solid
PR-TK29-HA01(0-6)	10616212029	07/08/2022	Solid
PR-Building A-HA01(0-6)	10616212030	07/08/2022	Solid
PR-Building B-HA01(0-6)	10616212031	07/08/2022	Solid
PR-ERB-01	10616212032	07/08/2022	Water
PR-Decon-01	10616212033	07/08/2022	Water
PR-FB-01	10616212034	07/08/2022	Water
PR-ERB-02	10616212035	07/08/2022	Water

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CHAIN-OF-CUSTODY Analytical Request Document

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

Company: **AECOM**

Billing Information: **Bill to AECOM**

Address: **230 W. Superior St. STE 411, Duluth, MN 55802**

Report To: **leo.linnemanstons@aecom.com**

Email To:

Copy To: **darin.albrecht@aecom.com**

Site Collection Info/Address: **Enbridge Superior Terminal**

Customer Project Name/Number: **Superior Terminal PFAS/606BS192**

State: **WI** County/City: **Superior** Time Zone Collected: **[] PT [] MT [X] CT [] ET**

Phone: **608-828-8268**

Site/Facility ID #: **Enbridge Superior Terminal**

Compliance Monitoring? **[] Yes [] No**

Collected By (print): **Will Montz**

Purchase Order #: **145296**

DW PWS ID #:
 DW Location Code:

Collected By (signature): **Will Montz**

Turnaround Date Required: **Standard**

Immediately Packed on Ice: **[X] Yes [] No**

Sample Disposal: **[X] Dispose as appropriate [] Return [] Archive: [] Hold:**

Rush: **[] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)**

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 (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
PR-TK01-HA01(0-6)	SL	G	7/6/22	0735				1 X
PR-TK02-HA01(0-6)	SL	G	7/6/22	0805				1 X
PR-TK03-HA01(0-6)	SL	G	7/6/22	1405				1 X
PR-TK04-HA01(0-6)	SL	G	7/6/22	1415				1 X
PR-TK05-HA01(0-6)	SL	G	7/6/22	1040				1 X
PR-TK06-HA01(0-6)	SL	G	7/6/22	1110				1 X
PR-TK07-HA01(0-6)	SL	G	7/6/22	1125				1 X
PR-TK08-HA01(0-6)	SL	G	7/6/22	1250				1 X
PR-TK09-HA01(0-6)	SL	G	7/6/22	1350				1 X
PR-TK10-HA01(0-6)	SL	G	7/6/22	1340				1 X

WIS 1D36 (PFAS)

LAB USE ONLY- Affix Workorder/

WO#: 10616212



ALL SHADED

Container Preservative Type **

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

Analyses

Lab Profile/Line: **44709**

Lab Sample Receipt Checklist:

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

LAB USE ONLY: Lab Sample # / Comments:

001
002
003
004
005
006
007
008
009
010

Customer Remarks / Special Conditions / Possible Hazards: **1 cooler**

Type of Ice Used: **Wet Blue Dry None**

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

Packing Material Used:

Lab Tracking #: **2798067**

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

Samples received via: **FEDEX UPS Client Courier Pace Courier**

Lab Sample Temperature Info:
Temp Blank Received: **Y N NA**
Therm ID#:
Cooler 1 Temp Upon Receipt: **4.3** oC
Cooler 1 Therm Corr. Factor: **1.2** oC
Cooler 1 Corrected Temp: **4.4** oC
Comments:

Relinquished by/Company: (Signature) **Will Montz AECOM**

Date/Time: **7/7/22 1615**

Received by/Company: (Signature) **[Signature]**

Date/Time: **7/7/22 1615**

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

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature) **[Signature]**

Date/Time: **18-45**

PM:
PB:

Trip Blank Received: **Y N NA**
HCL MeOH TSP Other

Non Conformance(s): **1**
YES / NO of: **4**

Report No: 10616212_1D36_KT_DJK

REVISION:

Date of Collection:



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 or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: **AECOM**

Billing Information: **Bill to AECOM**

Address: **230W Superior St. Suite 411 Duluth MN 55802**

Report To: **Leo Linnemanstons**

Email To: **Leo.linnemanstons@aecom.com**

Copy To: **Dann.albrecht@aecom.com**

Site Collection Info/Address: **Enbridge Superior Terminal**

Customer Project Name/Number: **Superior Terminal PFAS / 401633192**

State: **WI** County/City: **Superior** Time Zone Collected: **[] PT [] MT [X] CT [] ET**

Phone: **408828 8208**

Site/Facility ID #:

Compliance Monitoring? **[] Yes [] No**

Email: **leo.linnemanstons@aecom.com**

Purchase Order #: **145286**

DW PWS ID #:
 DW Location Code:

Collected By (print): **Will Montz**

Quote #:

Immediately Packed on Ice: **[X] Yes [] No**

Collected By (signature): **Will Montz**

Turnaround Date Required: **standard**

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

Sample Disposal: **[X] Dispose as appropriate [] Return**

Rush: **[] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)**

Analysis:

[] Archive:
 [] Hold:

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
PR-TK11-HA01(O-6)	SL	G	-	-	7-6-22	1330		1
PR-TK12-HA01(O-6)	SL	G	-	-	7-6-22	1320		1
PR-TK13-HA01(O-6)	SL	G	-	-	7-5-22	1320		1
PR-TK14-HA01(O-6)	SL	G	-	-	7-5-22	1340		1
PR-TK15-HA01(O-6)	SL	G	-	-	7-5-22	1355		1
PR-TK16-HA01(O-6)	SL	G	-	-	7-5-22	1455		1
PR-TK17-HA01(O-6)	SL	G	-	-	7-5-22	1440		1
PR-TK18-HA01(O-6)	SL	G	-	-	7-5-22	1425		1
PR-TK19-HA01(O-6)	SL	G	-	-	7-5-22	1410		1
PR-TK20-HA01(O-6)	SL	G	-	-	7-5-22	1515		1

Container Preservative Type **

Lab Project Manager:

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

Analyses

Lab Profile/Line: **44709**

WIS ID30 (PFAS)

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA

Custody Signatures Present Y N NA

Collector Signature Present Y N NA

Bottles Intact Y N NA

Correct Bottles Y N NA

Sufficient Volume Y N NA

Samples Received on Ice Y N NA

VOA - Headspace Acceptable Y N NA

USDA Regulated Soils Y N NA

Samples in Holding Time Y N NA

Residual Chlorine Present Y N NA

Cl Strips: _____

Sample pH Acceptable Y N NA

pH Strips: _____

Sulfide Present Y N NA

Lead Acetate Strips: _____

LAB USE ONLY:
 Lab Sample # / Comments:

011
012
013
014
015
016
017
018
019
020

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

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

Lab Sample Temperature Info:

Packing Material Used:

Lab Tracking #: **2798066**

Temp Blank Received: Y N/A

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

Samples received via: FEDEX UPS Client Courier Pace Courier

Therm ID#: **17**

Relinquished by/Company: (Signature) **Will Montz AECOM**

Date/Time: **7/7/22 1615**

Received by/Company: (Signature) **[Signature]**

Date/Time: **7/7/22 1615**

MTJL LAB USE ONLY

Cooler 1 Temp Upon Receipt: **4.3** oC

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature) **[Signature]**

Date/Time: **18:45**

Table #:

Cooler 1 Therm Corr. Factor: **10-1** oC

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

Acctnum:

Cooler 1 Corrected Temp: **4.4** oC

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

Template:

Trip Blank Received: Y N NA

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

Prelogin:

HCL MeOH TSP Other

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature)

Date/Time:

PM:

Non Conformance(s): YES / NO

Page: **2**
of: **4**

Report No: 10616212_ID30_KT_DJR

REVISION 1

Page 7 of 194

CHAIN-OF-CUSTODY Analytical Request Document

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

Company: **AECOM** Billing Information: **Bill to AECOM**

Address: **230 W Superior St. STE 411 Duluth, MN 55802**

Report To: **leo.linnemanstans@aecom.com** Email To: **← same**

Copy To: **carin.albrecht@aecom.com** Site Collection Info/Address: **Superior Terminal**

Customer Project Name/Number: **Superior Terminal PFAS/60683192** State: **WI** County/City: **Superior** Time Zone Collected: **[] PT [] MT [X] CT [] ET**

Phone: **608-929-9208** Site/Facility ID #: **Enbridge Superior Terminal** Compliance Monitoring? **[] Yes [] No**

Email: **see above** Purchase Order #: **145286** DW PWS ID #: DW Location Code:

Collected By (print): **Will Monte** Turnaround Date Required: **Standard** Immediately Packed on Ice: **[X] Yes [] No**

Collected By (signature): **Will Monte** Rush: **[] Same Day [] Next Day** Field Filtered (if applicable): **[] Yes [X] No**

Sample Disposal: **[X] Dispose as appropriate [] Return** [] Archive: [] Hold: Analysis:

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
PR-TK21-HA01 (0-6)	SL	G	7/6/22	0915				1 X
PR-TK22-HA01 (0-6)	SL	G	7/5/22	1540				1 X
PR-TK23-HA01 (0-6)	SL	G	7/5/22	1600				1 X
PR-TK24-HA01 (0-6)	SL	G	7/5/22	1615				1 X
PR-TK25-HA01 (0-6)	SL	G	7/6/22	1305				1 X
PR-TK26-HA01 (0-6)	SL	G	7/6/22	0850				1 X
PR-TK27-HA01 (0-6)	SL	G	7/6/22	0830				1 X
PR-TK28-HA01 (0-6)	SL	G	7/6/22	1505				1 X
PR-TK29-HA01 (0-6)	SL	G	7/6/22	1515				1 X
PR-Building A-HA01 (0-6)	SL	G	7/6/22	1450				1 X

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

ALL SHADED AREAS are for LAB USE ONLY

Container Preservative Type ** **U** Lab Project Manager:

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

Analyses	Lab Profile/Line: 41709	Lab Sample Receipt Checklist:
		Custody Seals Present/Intact Y N NA
		Custody Signatures Present Y N NA
		Collector Signature Present Y N NA
		Bottles Intact Y N NA
		Correct Bottles Y N NA
		Sufficient Volume Y N NA
		Samples Received on Ice Y N NA
		VOA - Headspace Acceptable Y N NA
		USDA Regulated Soils Y N NA
		Samples in Holding Time Y N NA
		Residual Chlorine Present Y N NA
		Cl Strips:
		Sample pH Acceptable Y N NA
		pH Strips:
		Sulfide Present Y N NA
		Lead Acetate Strips:
		LAB USE ONLY:
		Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards: Type of Ice Used: **Wet Blue Dry None** SHORT HOLDS PRESENT (<72 hours): **Y N N/A**

Packing Material Used: Lab Tracking #: **2798064**

Radchem sample(s) screened (<500 cpm): **Y N NA** Samples received via: **FEDEX UPS Client Courier Pace Courier**

Lab Sample Temperature Info:

Temp Blank Received: **Y (N) NA**

Therm ID#: **17**

Cooler 1 Temp Upon Receipt: **4.3** oC

Cooler 1 Therm Corr. Factor: **to 1** oC

Cooler 1 Corrected Temp: **4.4** oC

Comments:

Trip Blank Received: **Y N NA**

HCL MeOH TSP Other

Non Conformance(s): Page: **3**

YES / NO of: **4**

Relinquished by/Company: (Signature) **Will Monte AECOM** Date/Time: **7/7/22 1615** Received by/Company: (Signature) **[Signature]** Date/Time: **7/7/22 1615**

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) **[Signature]** Date/Time: **18:46**

Relinquished by/Company: (Signature) Date/Time: Received by/Company: (Signature) Date/Time:

Revision: 1.0001Z-1300-K-1-DK



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 or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: **AECOM** Billing Information: **Bill to AECOM**

Address: **230 W Superior St Suite 411 Duluth MN 55802**

Report To: **Leo Linnemanstons** Email To: **leo.linnemanstons@aecom.com**

Copy To: **Dann Albrecht@aecom.com** Site Collection Info/Address: **Bridge Superior Terminal**

Customer Project Name/Number: **Superior Terminal PFAS 12/18/2012** State: **WI / Superior** County/City: **WI / Superior** Time Zone Collected: **[] PT [] MT [X] CT [] ET**

Phone: **6088298208** Site/Facility ID #: **145286** Compliance Monitoring? **[] Yes [] No**

Email: **leo.linnemanstons@aecom.com**

Collected By (print): **Will Montz** Purchase Order #: **145286** DW PWS ID #: **145286**

Collected By (signature): **Will Montz** Quote #: **145286** DW Location Code: **145286**

Sample Disposal: **[X] Dispose as appropriate [] Return** Turnaround Date Required: **Standard** Immediately Packed on Ice: **[X] Yes [] No**

[] Archive: [] 2 Day [] 3 Day [] 4 Day [] 5 Day Field Filtered (if applicable): **[] Yes [X] No**

[] Hold: (Expedite Charges Apply) Analysis: **PFAS**

Container Preservative Type ** **U** Lab Project Manager: **U**

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

Analyses **WIS 1D30 (PFAS)** Lab Profile/Line: **44709**

Lab Sample Receipt Checklist:

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

LAB USE ONLY:
Lab Sample # / Comments: **031**

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

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
PR-BuildingB-HAD10-W	SL	G	-	-	7-6-22	1435		1
PR-ERB-01	WT	G	-	-	7-6-22	0840		1
PR-Decan-01	WT	G	-	-	7-6-22	0955		1
PR-FB-01	WT	G	-	-	7-6-22	1000		1
PR-ERB-02	WT	G	-	-	7-7-22	1530		1

Customer Remarks / Special Conditions / Possible Hazards: **Wet Blue Dry None**

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

Packing Material Used: **Lab Tracking #: 2798063**

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

Samples received via: **FEDEX UPS Client Courier Pace Courier**

Lab Sample Temperature Info:

Temp Blank Received: **Y** **(N)** **NA**

Therm ID#: **11**

Cooler 1 Temp Upon Receipt: **4.3** °C

Cooler 1 Therm Corr. Factor: **10.1** °C

Cooler 1 Corrected Temp: **4.4** °C

Comments:

Trip Blank Received: **Y** **N** **NA**

HCL MeOH TSP Other

Relinquished by/Company: (Signature) **Will Montz AECOM** Date/Time: **1615 7/7/22** Received by/Company: (Signature) **[Signature]** Date/Time: **7/7/22 1615**

Relinquished by/Company: (Signature) **[Signature]** Date/Time: **[Signature]** Received by/Company: (Signature) **[Signature]** Date/Time: **12-45**

Relinquished by/Company: (Signature) **[Signature]** Date/Time: **[Signature]** Received by/Company: (Signature) **[Signature]** Date/Time: **[Signature]**

MTJL LAB USE ONLY

Table #: **4**

Acctnum: **4**

Template: **4**

Prelogin: **4**

PM: **4**

PB: **4**

Non Conformance(s): **4** of **4**

Page: **4** of **4**



DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name:

Project #:

AECOM

WO#: 10616212

Courier:

- Fed Ex, UPS, USPS, Client, Pace, SpeeDee, Commercial

PM: KNH Due Date: 08/09/22 CLIENT: AECOM

Tracking Number:

See Exceptions 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 Wrap, Bubble Bags, None, Other Temp Blank? Yes No

Thermometer: T1(0461) T2(1336) T3(0459) T4(0254) T5(0489) T6(0235) T7(0042) 01339252/1710 122639816 140792808 Type of Ice: Wet Blue None Dry Melted

Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? Yes No N/A

Temp should be above freezing to 6°C Cooler Temp Read w/temp blank: °C Average Corrected Temp (no temp blank only): 5.6 °C See Exceptions ENV-FRM-MIN4-0142 1 Container Correction Factor: true Cooler Temp Corrected w/temp blank: °C

USDA Regulated Soil: N/A, water sample/Other: Date/Initials of Person Examining Contents: 7/9/22 AC Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. Did samples originate from a foreign source (internationally, including MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No Hawaii and Puerto Rico)? Yes No

Table with 2 columns: Location (check one) and COMMENTS. Rows include Chain of Custody Present and Filled Out?, Chain of Custody Relinquished?, Sampler Name and/or Signature on COC?, Samples Arrived within Hold Time?, Short Hold Time Analysis (<72 hr)?, Rush Turn Around Time Requested?, Sufficient Volume?, Correct Containers Used?, Containers Intact?, Field Filtered Volume Received for Dissolved Tests?, Is sufficient information available to reconcile the samples to the COC?, All containers needing acid/base preservation have been checked?, Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS, Headspace in Methyl Mercury Container?, Extra labels present on soil VOA or WIDRO containers?, Trip Blank Present?

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: Date/Time: Field Data Required? Yes No Comments/Resolution:

Project Manager Review: Kirsten Hojberg Date: 7/11/2022

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

Labeled by: [Signature]



DC#_ Title: ENV-FRM-MIN4-0142 v01_Sample Condition Upon Receipt (SCUR) Exception Form

Effective Date: 02/25/2022

SCUR Exceptions:

Workorder #: 10616212

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? Yes No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? Yes No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
5.1	true	5.6
5.5		
6.3		
6.5		

Tracking Number/Temperature

Issue Type:	Container Type	# of Containers
Sample ID	Type	

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserve	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	
								<input type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10616212001	PR-TK01-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212002	PR-TK02-HA01(0-6)	SW3535	33503	PFAS-36	B220802A_03
10616212003	PR-TK03-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212004	PR-TK04-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212005	PR-TK05-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212006	PR-TK06-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212007	PR-TK07-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212008	PR-TK08-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212009	PR-TK09-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212010	PR-TK10-HA01(0-6)	SW3535	33503	PFAS-36	B220729B_04
10616212011	PR-TK11-HA01(0-6)	SW3535	33503	PFAS-36	B220802A_03
10616212011	PR-TK11-HA01(0-6)	SW3535	33503	PFAS-36	B220802A_06
10616212012	PR-TK12-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212013	PR-TK13-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_00
10616212014	PR-TK14-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212015	PR-TK15-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_00
10616212015	PR-TK15-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212016	PR-TK16-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_00
10616212017	PR-TK17-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212018	PR-TK18-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212019	PR-TK19-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212020	PR-TK20-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212021	PR-TK21-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212022	PR-TK22-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212023	PR-TK23-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212024	PR-TK24-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212024	PR-TK24-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212025	PR-TK25-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212025	PR-TK25-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212026	PR-TK26-HA01(0-6)	SW3535	33504	PFAS-36	B220805B_00
10616212027	PR-TK27-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212028	PR-TK28-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_01
10616212029	PR-TK29-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_02
10616212030	PR-Building A-HA01(0-6)	SW3535	33504	PFAS-36	B220804B_02
10616212031	PR-Building B-HA01(0-6)	SW3535	33575	PFAS-36	B220811A_00
10616212032	PR-ERB-01	SW3535	33593	PFAS-36	B220806A_00
10616212033	PR-Decon-01	SW3535	33593	PFAS-36	B220806A_00
10616212034	PR-FB-01	SW3535	33593	PFAS-36	B220806A_00
10616212035	PR-ERB-02	SW3535	33593	PFAS-36	B220806A_00



Reporting Flags

- A = Reporting Limit based on signal to noise (EDL)
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Isotope ratio out of specification
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- * = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
1700 Elm Street, Suite 200
Minneapolis, MN 55414
Phone: 612.607.1700
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www.pacelabs.com

Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK01-HA01(0-6)
 Lab Sample ID 10616212001
 Lab File ID B220729B_041
 Matrix Soil
 Collected 07/06/2022 07:35
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.26g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.082 J	0.095	0.027	0.027	1	375-22-4		07/29/2022 22:51
PFPeA	0.26	0.095	0.027	0.027	1	2706-90-3		07/29/2022 22:51
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		07/29/2022 22:51
PFBS	ND	0.084	0.025	0.025	1	375-73-5		07/29/2022 22:51
PFHxA	0.14	0.095	0.026	0.026	1	307-24-4		07/29/2022 22:51
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		07/29/2022 22:51
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		07/29/2022 22:51
PFHpA	0.15	0.095	0.033	0.033	1	375-85-9		07/29/2022 22:51
DONA	ND	0.090	0.035	0.035	1	919005-14-4		07/29/2022 22:51
PFHxS	ND	0.087	0.021	0.021	1	355-46-4		07/29/2022 22:51
PFOA	0.15	0.095	0.030	0.030	1	335-67-1		07/29/2022 22:51
6:2 FTS	0.064 J	0.090	0.039	0.039	1	27619-97-2		07/29/2022 22:51
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		07/29/2022 22:51
PFNA	0.18	0.095	0.030	0.030	1	375-95-1		07/29/2022 22:51
PFOSAm	ND	0.095	0.028	0.028	1	754-91-6		07/29/2022 22:51
PFOS	0.17	0.088	0.028	0.028	1	1763-23-1		07/29/2022 22:51
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		07/29/2022 22:51
PFDA	0.38	0.095	0.022	0.022	1	335-76-2		07/29/2022 22:51
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		07/29/2022 22:51
8:2 FTS	ND	0.091	0.042	0.042	1	39108-34-4		07/29/2022 22:51
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		07/29/2022 22:51
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		07/29/2022 22:51
PFUnDA	0.060 J	0.095	0.029	0.029	1	2058-94-8		07/29/2022 22:51
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		07/29/2022 22:51
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		07/29/2022 22:51
PFDS	ND	0.092	0.027	0.027	1	335-77-3		07/29/2022 22:51
PFDOA	0.039 J	0.095	0.031	0.031	1	307-55-1		07/29/2022 22:51
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		07/29/2022 22:51
EtFOSE	ND	0.095	0.031	0.031	1	1691-99-2		07/29/2022 22:51
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		07/29/2022 22:51
PFTTrDA	ND	0.095	0.030	0.030	1	72629-94-8		07/29/2022 22:51
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		07/29/2022 22:51
PFTDA	ND	0.095	0.033	0.033	1	376-06-7		07/29/2022 22:51

REPORT OF LABORATORY ANALYSIS

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 Lab Sample ID 10616212001
 Lab File ID B220729B_041
 Matrix Soil
 Collected 07/06/2022 07:35
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.26g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	1.0	107	50-150		07/29/2022 22:51
13C4 PFOA	0.95	1.1	111	50-150		07/29/2022 22:51
13C2 PFDA	0.95	1.1	120	50-150		07/29/2022 22:51
13C4 PFOS	0.91	1.00	109	50-150		07/29/2022 22:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.82	86	25-150		07/29/2022 22:51
13C5 PFPeA	0.95	0.76	80	25-150		07/29/2022 22:51
13C3 PFBS	0.88	0.80	90	25-150		07/29/2022 22:51
13C2 4:2FTS	0.89	0.74	83	25-150		07/29/2022 22:51
13C5 PFHxA	0.95	0.90	95	25-150		07/29/2022 22:51
13C4 PFHpA	0.95	0.77	81	25-150		07/29/2022 22:51
13C3 PFHxS	0.90	0.82	91	25-150		07/29/2022 22:51
13C2 6:2FTS	0.90	0.73	81	25-150		07/29/2022 22:51
13C8 PFOA	0.95	0.88	93	25-150		07/29/2022 22:51
13C9 PFNA	0.95	0.87	91	25-150		07/29/2022 22:51
13C8 PFOS	0.91	0.89	98	25-150		07/29/2022 22:51
13C2 8:2FTS	0.91	0.94	103	25-150		07/29/2022 22:51
13C6 PFDA	0.95	0.82	86	25-150		07/29/2022 22:51
d3-MeFOSAA	0.95	0.86	90	25-150		07/29/2022 22:51
13C8 PFOSA	0.95	0.36	38	25-150		07/29/2022 22:51
d5-EtFOSAA	0.95	0.90	94	25-150		07/29/2022 22:51
13C7 PFUdA	0.95	0.88	93	25-150		07/29/2022 22:51
13C2 PFDoA	0.95	0.93	98	25-150		07/29/2022 22:51
13C2 PFTeDA	0.95	0.85	90	25-150		07/29/2022 22:51
13C3 HFPO-DA	0.95	0.77	81	25-150		07/29/2022 22:51
d7-N-MeFOSE	0.95	0.012	1	10-150	R	07/29/2022 22:51
d9-N-EtFOSE	0.95	0.015	2	10-150	R	07/29/2022 22:51
d3-N-MeFOSA	0.95	0.0029	0	10-150	R	07/29/2022 22:51
d5-N-EtFOSA	0.95	0.0031	0	10-150	R	07/29/2022 22:51

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 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.85	5.71	21		07/29/2022 22:51
13C4 PFOA	N/A	N/A	7.13	6.96	23		07/29/2022 22:51
13C2 PFDA	N/A	N/A	8.44	8.27	19		07/29/2022 22:51
13C4 PFOS	N/A	N/A	8.90	8.75	14		07/29/2022 22:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	27		07/29/2022 22:51
13C5 PFPeA	N/A	N/A	5.18	5.13	24		07/29/2022 22:51
13C3 PFBS	N/A	N/A	6.08	5.96	22		07/29/2022 22:51
13C2 4:2FTS	N/A	N/A	5.58	5.48	56		07/29/2022 22:51
13C5 PFHxA	N/A	N/A	5.85	5.73	21		07/29/2022 22:51
13C4 PFHpA	N/A	N/A	6.50	6.32	17		07/29/2022 22:51
13C3 PFHxS	N/A	N/A	7.52	7.52	17		07/29/2022 22:51
13C2 6:2FTS	N/A	N/A	6.81	6.67	89		07/29/2022 22:51
13C8 PFOA	N/A	N/A	7.13	6.94	22		07/29/2022 22:51
13C9 PFNA	N/A	N/A	7.78	7.76	22		07/29/2022 22:51
13C8 PFOS	N/A	N/A	8.90	8.80	15		07/29/2022 22:51
13C2 8:2FTS	N/A	N/A	8.07	7.94	16		07/29/2022 22:51
13C6 PFDA	N/A	N/A	8.44	8.32	14		07/29/2022 22:51
d3-MeFOSAA	N/A	N/A	8.31	8.19	16		07/29/2022 22:51
13C8 PFOSA	N/A	N/A	10.63	10.61	13		07/29/2022 22:51
d5-EtFOSAA	N/A	N/A	8.60	8.49	13		07/29/2022 22:51
13C7 PFUdA	N/A	N/A	9.11	9.00	27		07/29/2022 22:51
13C2 PFDoA	N/A	N/A	9.79	9.67	12		07/29/2022 22:51
13C2 PFTeDA	N/A	N/A	11.11	11.00	91		07/29/2022 22:51
13C3 HFPO-DA	N/A	N/A	6.12	5.97	15		07/29/2022 22:51
d7-N-MeFOSE	N/A	N/A	12.48	12.38	42	R	07/29/2022 22:51
d9-N-EtFOSE	N/A	N/A	12.95	12.96	97	R	07/29/2022 22:51
d3-N-MeFOSA	N/A	N/A	12.69	12.64	75	R	07/29/2022 22:51
d5-N-EtFOSA	N/A	N/A	13.11	13.11	65	R	07/29/2022 22:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK01-HA01(0-6)
 Lab Sample ID 10616212001
 Lab File ID B220729B_041
 Matrix Soil
 Collected 07/06/2022 07:35
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.26g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.32	4.31	99	J	07/29/2022 22:51
PFPeA	N/A	N/A	5.18	5.12	23		07/29/2022 22:51
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/29/2022 22:51
PFBS	0.35	0.41	6.08	6.05	ND		07/29/2022 22:51
PFHxA	0.09	0.08	5.86	5.88	14		07/29/2022 22:51
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/29/2022 22:51
PFPeS	0.00	0.46	0.00	6.73	ND		07/29/2022 22:51
PFHpA	0.29	0.32	6.50	6.39	23		07/29/2022 22:51
DONA	0.00	0.56	0.00	6.62	ND		07/29/2022 22:51
PFHxS	0.36	0.41	7.54	7.43	ND		07/29/2022 22:51
PFOA	0.39	0.40	7.14	7.03	19		07/29/2022 22:51
6:2 FTS	0.82	0.81	6.81	6.72	21	J	07/29/2022 22:51
PFHpS	0.00	0.38	0.00	8.13	ND		07/29/2022 22:51
PFNA	0.13	0.13	7.79	7.80	46		07/29/2022 22:51
PFOSAm	N/A	N/A	10.65	10.55	ND		07/29/2022 22:51
PFOS	0.42	0.41	8.91	8.81	66		07/29/2022 22:51
MeFOSA	0.00	0.59	0.00	12.73	ND		07/29/2022 22:51
PFDA	0.18	0.14	8.45	8.45	48		07/29/2022 22:51
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/29/2022 22:51
8:2 FTS	0.92	1.00	8.08	7.95	ND		07/29/2022 22:51
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/29/2022 22:51
PFNS	0.00	0.54	0.00	9.52	ND		07/29/2022 22:51
PFUnDA	0.14	0.14	9.12	9.12	92	J	07/29/2022 22:51
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/29/2022 22:51
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/29/2022 22:51
PFDS	0.00	0.37	0.00	10.16	ND		07/29/2022 22:51
PFDOA	0.21	0.17	9.79	9.79	13	J	07/29/2022 22:51
MeFOSE	N/A	N/A	0.00	12.41	ND		07/29/2022 22:51
EtFOSE	0.00	0.00	0.00	12.89	ND		07/29/2022 22:51
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/29/2022 22:51
PFTTrDA	0.17	0.17	10.46	10.46	ND		07/29/2022 22:51
PFDoS	0.00	0.53	0.00	11.39	ND		07/29/2022 22:51
PFTDA	0.23	0.29	11.12	11.00	ND		07/29/2022 22:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK02-HA01(0-6)
 Lab Sample ID 10616212002
 Lab File ID B220802A_036
 Matrix Soil
 Collected 07/06/2022 08:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.27g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.15	0.095	0.027	0.027	1	375-22-4		08/02/2022 20:10
PFPeA	0.62	0.095	0.027	0.027	1	2706-90-3		08/02/2022 20:10
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		08/02/2022 20:10
PFBS	ND	0.084	0.025	0.025	1	375-73-5		08/02/2022 20:10
PFHxA	0.25	0.095	0.026	0.026	1	307-24-4		08/02/2022 20:10
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		08/02/2022 20:10
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		08/02/2022 20:10
PFHpA	0.19	0.095	0.033	0.033	1	375-85-9		08/02/2022 20:10
DONA	ND	0.090	0.034	0.034	1	919005-14-4		08/02/2022 20:10
PFHxS	0.068 J	0.086	0.021	0.021	1	355-46-4		08/02/2022 20:10
PFOA	0.19	0.095	0.030	0.030	1	335-67-1		08/02/2022 20:10
6:2 FTS	0.30	0.090	0.039	0.039	1	27619-97-2		08/02/2022 20:10
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/02/2022 20:10
PFNA	0.28	0.095	0.030	0.030	1	375-95-1		08/02/2022 20:10
PFOSAm	0.032 J	0.095	0.028	0.028	1	754-91-6		08/02/2022 20:10
PFOS	2.7	0.088	0.028	0.028	1	1763-23-1		08/02/2022 20:10
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		08/02/2022 20:10
PFDA	0.51	0.095	0.022	0.022	1	335-76-2		08/02/2022 20:10
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		08/02/2022 20:10
8:2 FTS	0.89	0.091	0.042	0.042	1	39108-34-4		08/02/2022 20:10
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		08/02/2022 20:10
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		08/02/2022 20:10
PFUnDA	0.41	0.095	0.029	0.029	1	2058-94-8		08/02/2022 20:10
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		08/02/2022 20:10
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		08/02/2022 20:10
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/02/2022 20:10
PFDOA	0.37	0.095	0.031	0.031	1	307-55-1		08/02/2022 20:10
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		08/02/2022 20:10
EtFOSE	ND	0.095	0.031	0.031	1	1691-99-2		08/02/2022 20:10
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		08/02/2022 20:10
PFTTrDA	0.093 J	0.095	0.030	0.030	1	72629-94-8		08/02/2022 20:10
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		08/02/2022 20:10
PFTDA	0.099	0.095	0.033	0.033	1	376-06-7		08/02/2022 20:10

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK02-HA01(0-6)
 Lab Sample ID 10616212002
 Lab File ID B220802A_036
 Matrix Soil
 Collected 07/06/2022 08:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.27g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	0.92	97	50-150		08/02/2022 20:10
13C4 PFOA	0.95	1.2	126	50-150		08/02/2022 20:10
13C2 PFDA	0.95	1.0	108	50-150		08/02/2022 20:10
13C4 PFOS	0.91	1.1	116	50-150		08/02/2022 20:10

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.85	89	50-150		08/02/2022 20:10
13C5 PFPeA	0.95	0.87	92	50-150		08/02/2022 20:10
13C3 PFBS	0.88	0.81	92	50-150		08/02/2022 20:10
13C2 4:2FTS	0.89	0.81	92	50-150		08/02/2022 20:10
13C5 PFHxA	0.95	0.91	96	50-150		08/02/2022 20:10
13C4 PFHpA	0.95	0.97	102	50-150		08/02/2022 20:10
13C3 PFHxS	0.90	0.84	93	50-150		08/02/2022 20:10
13C2 6:2FTS	0.90	0.75	83	50-150		08/02/2022 20:10
13C8 PFOA	0.95	1.1	114	50-150		08/02/2022 20:10
13C9 PFNA	0.95	0.82	86	50-150		08/02/2022 20:10
13C8 PFOS	0.91	0.84	92	50-150		08/02/2022 20:10
13C2 8:2FTS	0.91	0.91	100	50-150		08/02/2022 20:10
13C6 PFDA	0.95	0.87	92	50-150		08/02/2022 20:10
d3-MeFOSAA	0.95	0.90	95	50-150		08/02/2022 20:10
13C8 PFOSA	0.95	0.57	60	50-150		08/02/2022 20:10
d5-EtFOSAA	0.95	0.87	91	50-150		08/02/2022 20:10
13C7 PFUdA	0.95	0.94	99	50-150		08/02/2022 20:10
13C2 PFDoA	0.95	1.0	108	50-150		08/02/2022 20:10
13C2 PFTeDA	0.95	0.83	88	50-150		08/02/2022 20:10
13C3 HFPO-DA	0.95	0.86	91	50-150		08/02/2022 20:10
d7-N-MeFOSE	0.95	0.087	9	10-150	R	08/02/2022 20:10
d9-N-EtFOSE	0.95	0.042	4	10-150	R	08/02/2022 20:10
d3-N-MeFOSA	0.95	0.0034	0	10-150	R	08/02/2022 20:10
d5-N-EtFOSA	0.95	0.0053	1	10-150	R	08/02/2022 20:10

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK02-HA01(0-6)
 Lab Sample ID 10616212002
 Lab File ID B220802A_036
 Matrix Soil
 Collected 07/06/2022 08:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.27g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.71	18		08/02/2022 20:10
13C4 PFOA	N/A	N/A	7.07	6.96	22		08/02/2022 20:10
13C2 PFDA	N/A	N/A	8.38	8.27	14		08/02/2022 20:10
13C4 PFOS	N/A	N/A	8.85	8.75	12		08/02/2022 20:10

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.38	23		08/02/2022 20:10
13C5 PFPeA	N/A	N/A	5.14	5.13	20		08/02/2022 20:10
13C3 PFBS	N/A	N/A	6.03	5.96	15		08/02/2022 20:10
13C2 4:2FTS	N/A	N/A	5.53	5.48	67		08/02/2022 20:10
13C5 PFHxA	N/A	N/A	5.79	5.73	17		08/02/2022 20:10
13C4 PFHpA	N/A	N/A	6.43	6.32	21		08/02/2022 20:10
13C3 PFHxS	N/A	N/A	7.47	7.47	19		08/02/2022 20:10
13C2 6:2FTS	N/A	N/A	6.73	6.73	84		08/02/2022 20:10
13C8 PFOA	N/A	N/A	7.07	6.94	20		08/02/2022 20:10
13C9 PFNA	N/A	N/A	7.72	7.61	18		08/02/2022 20:10
13C8 PFOS	N/A	N/A	8.85	8.80	14		08/02/2022 20:10
13C2 8:2FTS	N/A	N/A	8.00	7.94	14		08/02/2022 20:10
13C6 PFDA	N/A	N/A	8.38	8.32	18		08/02/2022 20:10
d3-MeFOSAA	N/A	N/A	8.25	8.19	10		08/02/2022 20:10
13C8 PFOSA	N/A	N/A	10.56	10.61	13		08/02/2022 20:10
d5-EtFOSAA	N/A	N/A	8.54	8.49	16		08/02/2022 20:10
13C7 PFUdA	N/A	N/A	9.05	9.00	18		08/02/2022 20:10
13C2 PFDoA	N/A	N/A	9.72	9.67	12		08/02/2022 20:10
13C2 PFTeDA	N/A	N/A	11.02	11.00	15		08/02/2022 20:10
13C3 HFPO-DA	N/A	N/A	6.05	5.97	14		08/02/2022 20:10
d7-N-MeFOSE	N/A	N/A	12.40	12.38	49	R	08/02/2022 20:10
d9-N-EtFOSE	N/A	N/A	12.87	12.85	12	R	08/02/2022 20:10
d3-N-MeFOSA	N/A	N/A	12.62	12.64	46	R	08/02/2022 20:10
d5-N-EtFOSA	N/A	N/A	13.02	13.01	88	R	08/02/2022 20:10

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK02-HA01(0-6)
 Lab Sample ID 10616212002
 Lab File ID B220802A_036
 Matrix Soil
 Collected 07/06/2022 08:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.27g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	13		08/02/2022 20:10
PFPeA	N/A	N/A	5.14	5.12	47		08/02/2022 20:10
HFPO-DA	0.00	0.25	0.00	6.02	ND		08/02/2022 20:10
PFBS	0.47	0.43	6.03	5.99	ND		08/02/2022 20:10
PFHxA	0.08	0.08	5.80	5.75	18		08/02/2022 20:10
4:2 FTS	0.00	0.85	0.00	5.49	ND		08/02/2022 20:10
PFPeS	0.42	0.40	6.77	6.73	ND		08/02/2022 20:10
PFHpA	0.30	0.28	6.43	6.39	21		08/02/2022 20:10
DONA	0.00	0.60	0.00	6.62	ND		08/02/2022 20:10
PFHxS	0.36	0.38	7.48	7.43	38	J	08/02/2022 20:10
PFOA	0.39	0.42	7.07	7.03	19		08/02/2022 20:10
6:2 FTS	0.92	0.89	6.74	6.72	56		08/02/2022 20:10
PFHpS	0.42	0.33	8.18	8.13	ND		08/02/2022 20:10
PFNA	0.14	0.13	7.72	7.67	52		08/02/2022 20:10
PFOSAm	N/A	N/A	10.56	10.55	19	J	08/02/2022 20:10
PFOS	0.41	0.34	8.87	8.81	73		08/02/2022 20:10
MeFOSA	0.00	0.57	0.00	12.61	ND		08/02/2022 20:10
PFDA	0.18	0.18	8.39	8.34	50		08/02/2022 20:10
EtFOSAm	0.00	0.54	0.00	13.03	ND		08/02/2022 20:10
8:2 FTS	0.91	0.85	8.01	7.95	14		08/02/2022 20:10
9-CI-PF3ON	0.00	0.06	0.00	9.31	ND		08/02/2022 20:10
PFNS	0.47	0.54	9.54	9.52	ND		08/02/2022 20:10
PFUnDA	0.12	0.11	9.06	9.01	54		08/02/2022 20:10
NMeFOSAA	1.00	0.86	8.26	8.19	ND		08/02/2022 20:10
NEtFOSAA	0.00	0.60	0.00	8.51	ND		08/02/2022 20:10
PFDS	0.33	0.34	10.20	10.16	ND		08/02/2022 20:10
PFDOA	0.19	0.19	9.73	9.69	43		08/02/2022 20:10
MeFOSE	N/A	N/A	0.00	12.41	ND		08/02/2022 20:10
EtFOSE	0.00	0.00	0.00	12.89	ND		08/02/2022 20:10
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		08/02/2022 20:10
PFTTrDA	0.16	0.17	10.39	10.36	10	J	08/02/2022 20:10
PFDoS	0.34	0.54	11.43	11.39	ND		08/02/2022 20:10
PFTDA	0.27	0.28	11.03	11.00	18		08/02/2022 20:10

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK03-HA01(0-6)
 Lab Sample ID 10616212003
 Lab File ID B220729B_043
 Matrix Soil
 Collected 07/06/2022 14:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.13g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.098	0.028	0.028	1	375-22-4		07/29/2022 23:31
PFPeA	ND	0.098	0.028	0.028	1	2706-90-3		07/29/2022 23:31
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		07/29/2022 23:31
PFBS	ND	0.086	0.026	0.026	1	375-73-5		07/29/2022 23:31
PFHxA	ND	0.098	0.027	0.027	1	307-24-4		07/29/2022 23:31
4:2 FTS	ND	0.091	0.023	0.023	1	757124-72-4		07/29/2022 23:31
PFPeS	ND	0.092	0.023	0.023	1	2706-91-4		07/29/2022 23:31
PFHpA	ND	0.098	0.034	0.034	1	375-85-9		07/29/2022 23:31
DONA	ND	0.092	0.035	0.035	1	919005-14-4		07/29/2022 23:31
PFHxS	ND	0.089	0.021	0.021	1	355-46-4		07/29/2022 23:31
PFOA	0.037 J	0.098	0.030	0.030	1	335-67-1		07/29/2022 23:31
6:2 FTS	ND	0.093	0.040	0.040	1	27619-97-2		07/29/2022 23:31
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		07/29/2022 23:31
PFNA	0.043 J	0.098	0.030	0.030	1	375-95-1		07/29/2022 23:31
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		07/29/2022 23:31
PFOS	0.10	0.090	0.029	0.029	1	1763-23-1		07/29/2022 23:31
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		07/29/2022 23:31
PFDA	0.052 J	0.098	0.022	0.022	1	335-76-2		07/29/2022 23:31
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		07/29/2022 23:31
8:2 FTS	ND	0.094	0.043	0.043	1	39108-34-4		07/29/2022 23:31
9-CI-PF3ON	ND	0.091	0.024	0.024	1	756426-58-1		07/29/2022 23:31
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		07/29/2022 23:31
PFUnDA	0.057 J	0.098	0.029	0.029	1	2058-94-8		07/29/2022 23:31
NMeFOSAA	ND	0.098	0.027	0.027	1	2355-31-9		07/29/2022 23:31
NEtFOSAA	ND	0.098	0.039	0.039	1	2991-50-6		07/29/2022 23:31
PFDS	ND	0.094	0.028	0.028	1	335-77-3		07/29/2022 23:31
PFDOA	ND	0.098	0.032	0.032	1	307-55-1		07/29/2022 23:31
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		07/29/2022 23:31
EtFOSE	ND	0.098	0.031	0.031	1	1691-99-2		07/29/2022 23:31
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		07/29/2022 23:31
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		07/29/2022 23:31
PFDoS	ND	0.094	0.025	0.025	1	79780-39-5		07/29/2022 23:31
PFTDA	ND	0.098	0.033	0.033	1	376-06-7		07/29/2022 23:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK03-HA01(0-6)
 Lab Sample ID 10616212003
 Lab File ID B220729B_043
 Matrix Soil
 Collected 07/06/2022 14:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.13g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	1.0	106	50-150		07/29/2022 23:31
13C4 PFOA	0.98	1.1	108	50-150		07/29/2022 23:31
13C2 PFDA	0.98	1.1	114	50-150		07/29/2022 23:31
13C4 PFOS	0.93	1.1	115	50-150		07/29/2022 23:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.81	83	25-150		07/29/2022 23:31
13C5 PFPeA	0.98	0.78	80	25-150		07/29/2022 23:31
13C3 PFBS	0.91	0.79	87	25-150		07/29/2022 23:31
13C2 4:2FTS	0.91	0.75	82	25-150		07/29/2022 23:31
13C5 PFHxA	0.98	0.90	93	25-150		07/29/2022 23:31
13C4 PFHpA	0.98	0.78	80	25-150		07/29/2022 23:31
13C3 PFHxS	0.92	0.80	86	25-150		07/29/2022 23:31
13C2 6:2FTS	0.93	0.72	78	25-150		07/29/2022 23:31
13C8 PFOA	0.98	0.89	91	25-150		07/29/2022 23:31
13C9 PFNA	0.98	0.84	86	25-150		07/29/2022 23:31
13C8 PFOS	0.93	0.88	94	25-150		07/29/2022 23:31
13C2 8:2FTS	0.93	0.90	97	25-150		07/29/2022 23:31
13C6 PFDA	0.98	0.89	91	25-150		07/29/2022 23:31
d3-MeFOSAA	0.98	0.87	89	25-150		07/29/2022 23:31
13C8 PFOSA	0.98	0.48	50	25-150		07/29/2022 23:31
d5-EtFOSAA	0.98	0.92	94	25-150		07/29/2022 23:31
13C7 PFUdA	0.98	0.89	91	25-150		07/29/2022 23:31
13C2 PFDoA	0.98	0.87	89	25-150		07/29/2022 23:31
13C2 PFTeDA	0.98	1.1	108	25-150		07/29/2022 23:31
13C3 HFPO-DA	0.98	0.74	76	25-150		07/29/2022 23:31
d7-N-MeFOSE	0.98	0.015	2	10-150	R	07/29/2022 23:31
d9-N-EtFOSE	0.98	0.021	2	10-150	R	07/29/2022 23:31
d3-N-MeFOSA	0.98	0.0017	0	10-150	R	07/29/2022 23:31
d5-N-EtFOSA	0.98	0.0024	0	10-150	R	07/29/2022 23:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK03-HA01(0-6)
 Lab Sample ID 10616212003
 Lab File ID B220729B_043
 Matrix Soil
 Collected 07/06/2022 14:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.13g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.86	5.71	21		07/29/2022 23:31
13C4 PFOA	N/A	N/A	7.14	6.96	17		07/29/2022 23:31
13C2 PFDA	N/A	N/A	8.47	8.27	26		07/29/2022 23:31
13C4 PFOS	N/A	N/A	8.94	8.75	15		07/29/2022 23:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.34	4.26	26		07/29/2022 23:31
13C5 PFPeA	N/A	N/A	5.20	5.13	25		07/29/2022 23:31
13C3 PFBS	N/A	N/A	6.09	5.96	18		07/29/2022 23:31
13C2 4:2FTS	N/A	N/A	5.60	5.48	57		07/29/2022 23:31
13C5 PFHxA	N/A	N/A	5.86	5.73	30		07/29/2022 23:31
13C4 PFHpA	N/A	N/A	6.50	6.32	22		07/29/2022 23:31
13C3 PFHxS	N/A	N/A	7.54	7.52	15		07/29/2022 23:31
13C2 6:2FTS	N/A	N/A	6.81	6.67	10		07/29/2022 23:31
13C8 PFOA	N/A	N/A	7.14	6.94	21		07/29/2022 23:31
13C9 PFNA	N/A	N/A	7.80	7.76	22		07/29/2022 23:31
13C8 PFOS	N/A	N/A	8.94	8.80	18		07/29/2022 23:31
13C2 8:2FTS	N/A	N/A	8.10	7.94	17		07/29/2022 23:31
13C6 PFDA	N/A	N/A	8.47	8.32	16		07/29/2022 23:31
d3-MeFOSAA	N/A	N/A	8.34	8.19	10		07/29/2022 23:31
13C8 PFOSA	N/A	N/A	10.67	10.61	16		07/29/2022 23:31
d5-EtFOSAA	N/A	N/A	8.64	8.49	83		07/29/2022 23:31
13C7 PFUdA	N/A	N/A	9.15	9.00	31		07/29/2022 23:31
13C2 PFDoA	N/A	N/A	9.83	9.67	11		07/29/2022 23:31
13C2 PFTeDA	N/A	N/A	11.15	11.00	14		07/29/2022 23:31
13C3 HFPO-DA	N/A	N/A	6.13	5.97	17		07/29/2022 23:31
d7-N-MeFOSE	N/A	N/A	12.52	12.38	37	R	07/29/2022 23:31
d9-N-EtFOSE	N/A	N/A	12.99	12.96	11	R	07/29/2022 23:31
d3-N-MeFOSA	N/A	N/A	12.73	12.64	37	R	07/29/2022 23:31
d5-N-EtFOSA	N/A	N/A	13.15	13.11	51	R	07/29/2022 23:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK03-HA01(0-6)
 Lab Sample ID 10616212003
 Lab File ID B220729B_043
 Matrix Soil
 Collected 07/06/2022 14:05
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.13g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.34	4.31	ND		07/29/2022 23:31
PFPeA	N/A	N/A	5.20	5.20	ND		07/29/2022 23:31
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/29/2022 23:31
PFBS	0.35	0.41	6.08	6.05	ND		07/29/2022 23:31
PFHxA	0.08	0.08	5.87	5.88	ND		07/29/2022 23:31
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/29/2022 23:31
PFPeS	0.00	0.46	0.00	6.73	ND		07/29/2022 23:31
PFHpA	0.32	0.32	6.51	6.39	ND		07/29/2022 23:31
DONA	0.00	0.56	0.00	6.62	ND		07/29/2022 23:31
PFHxS	0.54	0.41	7.55	7.43	ND		07/29/2022 23:31
PFOA	0.39	0.40	7.15	7.03	77	J	07/29/2022 23:31
6:2 FTS	0.95	0.81	6.81	6.72	ND		07/29/2022 23:31
PFHpS	0.00	0.38	0.00	8.13	ND		07/29/2022 23:31
PFNA	0.13	0.13	7.81	7.80	12	J	07/29/2022 23:31
PFOSAm	N/A	N/A	10.68	10.55	ND		07/29/2022 23:31
PFOS	0.43	0.41	8.95	8.81	38		07/29/2022 23:31
MeFOSA	0.00	0.59	0.00	12.73	ND		07/29/2022 23:31
PFDA	0.18	0.14	8.48	8.48	14	J	07/29/2022 23:31
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/29/2022 23:31
8:2 FTS	1.40	1.00	8.10	8.10	ND		07/29/2022 23:31
9-CI-PF3ON	0.00	0.06	0.00	9.31	ND		07/29/2022 23:31
PFNS	0.00	0.54	0.00	9.52	ND		07/29/2022 23:31
PFUnDA	0.15	0.14	9.16	9.16	72	J	07/29/2022 23:31
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/29/2022 23:31
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/29/2022 23:31
PFDS	0.41	0.37	10.31	10.31	ND		07/29/2022 23:31
PFDOA	0.21	0.17	9.84	9.84	ND		07/29/2022 23:31
MeFOSE	N/A	N/A	0.00	12.41	ND		07/29/2022 23:31
EtFOSE	0.00	0.00	0.00	12.89	ND		07/29/2022 23:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/29/2022 23:31
PFTTrDA	0.23	0.17	10.51	10.51	ND		07/29/2022 23:31
PFDoS	0.00	0.53	0.00	11.39	ND		07/29/2022 23:31
PFTDA	0.29	0.29	11.16	11.16	ND		07/29/2022 23:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK04-HA01(0-6)
 Lab Sample ID 10616212004
 Lab File ID B220729B_044
 Matrix Soil
 Collected 07/06/2022 14:15
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.07g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.099	0.028	0.028	1	375-22-4		07/29/2022 23:51
PFPeA	0.038 J	0.099	0.028	0.028	1	2706-90-3		07/29/2022 23:51
HFPO-DA	ND	0.099	0.027	0.027	1	13252-13-6		07/29/2022 23:51
PFBS	ND	0.087	0.026	0.026	1	375-73-5		07/29/2022 23:51
PFHxA	0.030 J	0.099	0.027	0.027	1	307-24-4		07/29/2022 23:51
4:2 FTS	ND	0.092	0.023	0.023	1	757124-72-4		07/29/2022 23:51
PFPeS	ND	0.093	0.024	0.024	1	2706-91-4		07/29/2022 23:51
PFHpA	ND	0.099	0.034	0.034	1	375-85-9		07/29/2022 23:51
DONA	ND	0.093	0.036	0.036	1	919005-14-4		07/29/2022 23:51
PFHxS	ND	0.090	0.022	0.022	1	355-46-4		07/29/2022 23:51
PFOA	0.032 J	0.099	0.031	0.031	1	335-67-1		07/29/2022 23:51
6:2 FTS	0.043 J	0.094	0.041	0.041	1	27619-97-2		07/29/2022 23:51
PFHpS	ND	0.094	0.027	0.027	1	375-92-8		07/29/2022 23:51
PFNA	ND	0.099	0.031	0.031	1	375-95-1		07/29/2022 23:51
PFOSAm	ND	0.099	0.029	0.029	1	754-91-6		07/29/2022 23:51
PFOS	0.071 J	0.091	0.029	0.029	1	1763-23-1		07/29/2022 23:51
MeFOSA	ND	0.099	0.027	0.027	1	31506-32-8		07/29/2022 23:51
PFDA	ND	0.099	0.022	0.022	1	335-76-2		07/29/2022 23:51
EtFOSAm	ND	0.099	0.025	0.025	1	4151-50-2		07/29/2022 23:51
8:2 FTS	ND	0.095	0.043	0.043	1	39108-34-4		07/29/2022 23:51
9-CI-PF3ON	ND	0.092	0.025	0.025	1	756426-58-1		07/29/2022 23:51
PFNS	ND	0.095	0.034	0.034	1	68259-12-1		07/29/2022 23:51
PFUnDA	ND	0.099	0.030	0.030	1	2058-94-8		07/29/2022 23:51
NMeFOSAA	ND	0.099	0.028	0.028	1	2355-31-9		07/29/2022 23:51
NEtFOSAA	ND	0.099	0.040	0.040	1	2991-50-6		07/29/2022 23:51
PFDS	ND	0.095	0.028	0.028	1	335-77-3		07/29/2022 23:51
PFDOA	ND	0.099	0.032	0.032	1	307-55-1		07/29/2022 23:51
MeFOSE	ND	0.099	0.030	0.030	1	24448-09-7		07/29/2022 23:51
EtFOSE	ND	0.099	0.032	0.032	1	1691-99-2		07/29/2022 23:51
11-CI-PF3OUdS	ND	0.093	0.025	0.025	1	763051-92-9		07/29/2022 23:51
PFTTrDA	ND	0.099	0.031	0.031	1	72629-94-8		07/29/2022 23:51
PFDoS	ND	0.095	0.026	0.026	1	79780-39-5		07/29/2022 23:51
PFTDA	ND	0.099	0.034	0.034	1	376-06-7		07/29/2022 23:51

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Sample Analysis Summary
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Client Sample ID PR-TK04-HA01(0-6)
 Lab Sample ID 10616212004
 Lab File ID B220729B_044
 Matrix Soil
 Collected 07/06/2022 14:15
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.07g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.99	1.1	110	50-150		07/29/2022 23:51
13C4 PFOA	0.99	1.0	105	50-150		07/29/2022 23:51
13C2 PFDA	0.99	1.0	106	50-150		07/29/2022 23:51
13C4 PFOS	0.94	1.1	114	50-150		07/29/2022 23:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.99	0.83	84	25-150		07/29/2022 23:51
13C5 PFPeA	0.99	0.81	82	25-150		07/29/2022 23:51
13C3 PFBS	0.92	0.81	88	25-150		07/29/2022 23:51
13C2 4:2FTS	0.92	0.77	84	25-150		07/29/2022 23:51
13C5 PFHxA	0.99	0.83	84	25-150		07/29/2022 23:51
13C4 PFHpA	0.99	0.87	88	25-150		07/29/2022 23:51
13C3 PFHxS	0.93	0.83	89	25-150		07/29/2022 23:51
13C2 6:2FTS	0.94	0.72	76	25-150		07/29/2022 23:51
13C8 PFOA	0.99	0.89	90	25-150		07/29/2022 23:51
13C9 PFNA	0.99	0.87	88	25-150		07/29/2022 23:51
13C8 PFOS	0.94	0.87	92	25-150		07/29/2022 23:51
13C2 8:2FTS	0.94	1.0	109	25-150		07/29/2022 23:51
13C6 PFDA	0.99	0.85	86	25-150		07/29/2022 23:51
d3-MeFOSAA	0.99	0.83	85	25-150		07/29/2022 23:51
13C8 PFOSA	0.99	0.62	63	25-150		07/29/2022 23:51
d5-EtFOSAA	0.99	0.92	93	25-150		07/29/2022 23:51
13C7 PFUdA	0.99	0.89	90	25-150		07/29/2022 23:51
13C2 PFDoA	0.99	0.94	96	25-150		07/29/2022 23:51
13C2 PFTeDA	0.99	1.1	111	25-150		07/29/2022 23:51
13C3 HFPO-DA	0.99	0.78	79	25-150		07/29/2022 23:51
d7-N-MeFOSE	0.99	0.055	6	10-150	R	07/29/2022 23:51
d9-N-EtFOSE	0.99	0.076	8	10-150	R	07/29/2022 23:51
d3-N-MeFOSA	0.99	0.0078	1	10-150	R	07/29/2022 23:51
d5-N-EtFOSA	0.99	0.015	2	10-150	R	07/29/2022 23:51

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Total Amount Extracted 5.07g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.85	5.71	17		07/29/2022 23:51
13C4 PFOA	N/A	N/A	7.13	6.96	18		07/29/2022 23:51
13C2 PFDA	N/A	N/A	8.46	8.27	24		07/29/2022 23:51
13C4 PFOS	N/A	N/A	8.93	8.75	10		07/29/2022 23:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	24		07/29/2022 23:51
13C5 PFPeA	N/A	N/A	5.18	5.13	24		07/29/2022 23:51
13C3 PFBS	N/A	N/A	6.08	5.96	12		07/29/2022 23:51
13C2 4:2FTS	N/A	N/A	5.59	5.48	46		07/29/2022 23:51
13C5 PFHxA	N/A	N/A	5.86	5.73	13		07/29/2022 23:51
13C4 PFHpA	N/A	N/A	6.50	6.32	17		07/29/2022 23:51
13C3 PFHxS	N/A	N/A	7.53	7.52	11		07/29/2022 23:51
13C2 6:2FTS	N/A	N/A	6.81	6.67	71		07/29/2022 23:51
13C8 PFOA	N/A	N/A	7.13	6.94	23		07/29/2022 23:51
13C9 PFNA	N/A	N/A	7.79	7.76	26		07/29/2022 23:51
13C8 PFOS	N/A	N/A	8.93	8.80	10		07/29/2022 23:51
13C2 8:2FTS	N/A	N/A	8.08	7.94	95		07/29/2022 23:51
13C6 PFDA	N/A	N/A	8.47	8.32	13		07/29/2022 23:51
d3-MeFOSAA	N/A	N/A	8.33	8.19	16		07/29/2022 23:51
13C8 PFOSA	N/A	N/A	10.65	10.61	17		07/29/2022 23:51
d5-EtFOSAA	N/A	N/A	8.63	8.49	19		07/29/2022 23:51
13C7 PFUdA	N/A	N/A	9.14	9.00	23		07/29/2022 23:51
13C2 PFDoA	N/A	N/A	9.82	9.67	13		07/29/2022 23:51
13C2 PFTeDA	N/A	N/A	11.14	11.00	12		07/29/2022 23:51
13C3 HFPO-DA	N/A	N/A	6.12	5.97	17		07/29/2022 23:51
d7-N-MeFOSE	N/A	N/A	12.50	12.38	58	R	07/29/2022 23:51
d9-N-EtFOSE	N/A	N/A	12.97	12.96	21	R	07/29/2022 23:51
d3-N-MeFOSA	N/A	N/A	12.71	12.64	11	R	07/29/2022 23:51
d5-N-EtFOSA	N/A	N/A	13.13	13.11	19	R	07/29/2022 23:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK04-HA01(0-6)
 Lab Sample ID 10616212004
 Lab File ID B220729B_044
 Matrix Soil
 Collected 07/06/2022 14:15
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.07g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	ND		07/29/2022 23:51
PFPeA	N/A	N/A	5.19	5.19	12	J	07/29/2022 23:51
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/29/2022 23:51
PFBS	0.25	0.41	6.08	6.05	ND		07/29/2022 23:51
PFHxA	0.07	0.08	5.86	5.88	51	J	07/29/2022 23:51
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/29/2022 23:51
PFPeS	0.00	0.46	0.00	6.73	ND		07/29/2022 23:51
PFHpA	0.30	0.32	6.50	6.39	ND		07/29/2022 23:51
DONA	0.00	0.56	0.00	6.62	ND		07/29/2022 23:51
PFHxS	0.42	0.41	7.54	7.43	ND		07/29/2022 23:51
PFOA	0.43	0.40	7.14	7.03	94	J	07/29/2022 23:51
6:2 FTS	0.81	0.81	6.81	6.72	15	J	07/29/2022 23:51
PFHpS	0.00	0.38	0.00	8.13	ND		07/29/2022 23:51
PFNA	0.13	0.13	7.80	7.80	ND		07/29/2022 23:51
PFOSAm	N/A	N/A	10.65	10.55	ND		07/29/2022 23:51
PFOS	0.45	0.41	8.94	8.81	30	J	07/29/2022 23:51
MeFOSA	0.00	0.59	0.00	12.73	ND		07/29/2022 23:51
PFDA	0.18	0.14	8.47	8.47	ND		07/29/2022 23:51
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/29/2022 23:51
8:2 FTS	0.91	1.00	8.09	7.95	ND		07/29/2022 23:51
9-CI-PF3ON	0.00	0.06	0.00	9.31	ND		07/29/2022 23:51
PFNS	0.00	0.54	0.00	9.52	ND		07/29/2022 23:51
PFUnDA	0.15	0.14	9.15	9.15	ND		07/29/2022 23:51
NMeFOSAA	1.60	0.87	8.34	8.31	ND		07/29/2022 23:51
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/29/2022 23:51
PFDS	0.53	0.37	10.29	10.16	ND		07/29/2022 23:51
PFDOA	0.17	0.17	9.83	9.83	ND		07/29/2022 23:51
MeFOSE	N/A	N/A	0.00	12.41	ND		07/29/2022 23:51
EtFOSE	0.00	0.00	0.00	12.89	ND		07/29/2022 23:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/29/2022 23:51
PFTTrDA	0.16	0.17	10.49	10.49	ND		07/29/2022 23:51
PFDoS	0.00	0.53	0.00	11.39	ND		07/29/2022 23:51
PFTDA	0.21	0.29	11.15	11.15	ND		07/29/2022 23:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK05-HA01(0-6)
 Lab Sample ID 10616212005
 Lab File ID B220729B_045
 Matrix Soil
 Collected 07/06/2022 10:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.05g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.099	0.028	0.028	1	375-22-4		07/30/2022 00:11
PFPeA	0.056 J	0.099	0.028	0.028	1	2706-90-3		07/30/2022 00:11
HFPO-DA	ND	0.099	0.028	0.028	1	13252-13-6		07/30/2022 00:11
PFBS	ND	0.088	0.026	0.026	1	375-73-5		07/30/2022 00:11
PFHxA	ND	0.099	0.027	0.027	1	307-24-4		07/30/2022 00:11
4:2 FTS	ND	0.093	0.023	0.023	1	757124-72-4		07/30/2022 00:11
PFPeS	ND	0.093	0.024	0.024	1	2706-91-4		07/30/2022 00:11
PFHpA	ND	0.099	0.034	0.034	1	375-85-9		07/30/2022 00:11
DONA	ND	0.094	0.036	0.036	1	919005-14-4		07/30/2022 00:11
PFHxS	ND	0.090	0.022	0.022	1	355-46-4		07/30/2022 00:11
PFOA	0.033 J	0.099	0.031	0.031	1	335-67-1		07/30/2022 00:11
6:2 FTS	ND	0.094	0.041	0.041	1	27619-97-2		07/30/2022 00:11
PFHpS	ND	0.094	0.028	0.028	1	375-92-8		07/30/2022 00:11
PFNA	ND	0.099	0.031	0.031	1	375-95-1		07/30/2022 00:11
PFOSAm	ND	0.099	0.029	0.029	1	754-91-6		07/30/2022 00:11
PFOS	ND	0.092	0.029	0.029	1	1763-23-1		07/30/2022 00:11
MeFOSA	ND	0.099	0.027	0.027	1	31506-32-8		07/30/2022 00:11
PFDA	ND	0.099	0.023	0.023	1	335-76-2		07/30/2022 00:11
EtFOSAm	ND	0.099	0.025	0.025	1	4151-50-2		07/30/2022 00:11
8:2 FTS	ND	0.095	0.043	0.043	1	39108-34-4		07/30/2022 00:11
9-CI-PF3ON	ND	0.092	0.025	0.025	1	756426-58-1		07/30/2022 00:11
PFNS	ND	0.095	0.034	0.034	1	68259-12-1		07/30/2022 00:11
PFUnDA	ND	0.099	0.030	0.030	1	2058-94-8		07/30/2022 00:11
NMeFOSAA	ND	0.099	0.028	0.028	1	2355-31-9		07/30/2022 00:11
NEtFOSAA	ND	0.099	0.040	0.040	1	2991-50-6		07/30/2022 00:11
PFDS	ND	0.096	0.028	0.028	1	335-77-3		07/30/2022 00:11
PFDOA	ND	0.099	0.033	0.033	1	307-55-1		07/30/2022 00:11
MeFOSE	ND	0.099	0.030	0.030	1	24448-09-7		07/30/2022 00:11
EtFOSE	ND	0.099	0.032	0.032	1	1691-99-2		07/30/2022 00:11
11-CI-PF3OUdS	ND	0.093	0.025	0.025	1	763051-92-9		07/30/2022 00:11
PFTTrDA	ND	0.099	0.032	0.032	1	72629-94-8		07/30/2022 00:11
PFDoS	ND	0.096	0.026	0.026	1	79780-39-5		07/30/2022 00:11
PFTDA	ND	0.099	0.034	0.034	1	376-06-7		07/30/2022 00:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK05-HA01(0-6)
 Lab Sample ID 10616212005
 Lab File ID B220729B_045
 Matrix Soil
 Collected 07/06/2022 10:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.05g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.99	0.99	100	50-150		07/30/2022 00:11
13C4 PFOA	0.99	1.0	103	50-150		07/30/2022 00:11
13C2 PFDA	0.99	1.1	110	50-150		07/30/2022 00:11
13C4 PFOS	0.95	1.0	110	50-150		07/30/2022 00:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.99	0.81	82	25-150		07/30/2022 00:11
13C5 PFPeA	0.99	0.82	83	25-150		07/30/2022 00:11
13C3 PFBS	0.92	0.78	85	25-150		07/30/2022 00:11
13C2 4:2FTS	0.93	0.79	86	25-150		07/30/2022 00:11
13C5 PFHxA	0.99	0.88	89	25-150		07/30/2022 00:11
13C4 PFHpA	0.99	0.85	86	25-150		07/30/2022 00:11
13C3 PFHxS	0.94	0.88	94	25-150		07/30/2022 00:11
13C2 6:2FTS	0.94	0.81	86	25-150		07/30/2022 00:11
13C8 PFOA	0.99	0.88	89	25-150		07/30/2022 00:11
13C9 PFNA	0.99	0.95	96	25-150		07/30/2022 00:11
13C8 PFOS	0.95	0.89	94	25-150		07/30/2022 00:11
13C2 8:2FTS	0.95	1.00	105	25-150		07/30/2022 00:11
13C6 PFDA	0.99	0.84	85	25-150		07/30/2022 00:11
d3-MeFOSAA	0.99	0.84	85	25-150		07/30/2022 00:11
13C8 PFOSA	0.99	0.41	42	25-150		07/30/2022 00:11
d5-EtFOSAA	0.99	0.86	87	25-150		07/30/2022 00:11
13C7 PFUdA	0.99	0.85	86	25-150		07/30/2022 00:11
13C2 PFDoA	0.99	0.92	93	25-150		07/30/2022 00:11
13C2 PFTeDA	0.99	0.91	92	25-150		07/30/2022 00:11
13C3 HFPO-DA	0.99	0.81	82	25-150		07/30/2022 00:11
d7-N-MeFOSE	0.99	0.013	1	10-150	R	07/30/2022 00:11
d9-N-EtFOSE	0.99	0.013	1	10-150	R	07/30/2022 00:11
d3-N-MeFOSA	0.99	0.0017	0	10-150	R	07/30/2022 00:11
d5-N-EtFOSA	0.99	0.0019	0	10-150	R	07/30/2022 00:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK05-HA01(0-6)
 Lab Sample ID 10616212005
 Lab File ID B220729B_045
 Matrix Soil
 Collected 07/06/2022 10:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.05g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.85	5.71	21		07/30/2022 00:11
13C4 PFOA	N/A	N/A	7.13	6.96	18		07/30/2022 00:11
13C2 PFDA	N/A	N/A	8.45	8.27	14		07/30/2022 00:11
13C4 PFOS	N/A	N/A	8.91	8.75	16		07/30/2022 00:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	22		07/30/2022 00:11
13C5 PFPeA	N/A	N/A	5.18	5.13	25		07/30/2022 00:11
13C3 PFBS	N/A	N/A	6.08	5.96	20		07/30/2022 00:11
13C2 4:2FTS	N/A	N/A	5.59	5.48	70		07/30/2022 00:11
13C5 PFHxA	N/A	N/A	5.85	5.73	18		07/30/2022 00:11
13C4 PFHpA	N/A	N/A	6.49	6.32	14		07/30/2022 00:11
13C3 PFHxS	N/A	N/A	7.52	7.52	21		07/30/2022 00:11
13C2 6:2FTS	N/A	N/A	6.80	6.67	14		07/30/2022 00:11
13C8 PFOA	N/A	N/A	7.13	6.94	21		07/30/2022 00:11
13C9 PFNA	N/A	N/A	7.78	7.76	20		07/30/2022 00:11
13C8 PFOS	N/A	N/A	8.91	8.80	24		07/30/2022 00:11
13C2 8:2FTS	N/A	N/A	8.07	7.94	14		07/30/2022 00:11
13C6 PFDA	N/A	N/A	8.45	8.32	12		07/30/2022 00:11
d3-MeFOSAA	N/A	N/A	8.32	8.19	14		07/30/2022 00:11
13C8 PFOSA	N/A	N/A	10.64	10.61	20		07/30/2022 00:11
d5-EtFOSAA	N/A	N/A	8.61	8.49	12		07/30/2022 00:11
13C7 PFUdA	N/A	N/A	9.12	9.00	22		07/30/2022 00:11
13C2 PFDoA	N/A	N/A	9.80	9.67	13		07/30/2022 00:11
13C2 PFTeDA	N/A	N/A	11.13	11.00	11		07/30/2022 00:11
13C3 HFPO-DA	N/A	N/A	6.12	5.97	13		07/30/2022 00:11
d7-N-MeFOSE	N/A	N/A	12.50	12.38	41	R	07/30/2022 00:11
d9-N-EtFOSE	N/A	N/A	12.96	12.96	10	R	07/30/2022 00:11
d3-N-MeFOSA	N/A	N/A	12.70	12.70	15	R	07/30/2022 00:11
d5-N-EtFOSA	N/A	N/A	13.13	13.11	57	R	07/30/2022 00:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK05-HA01(0-6)
 Lab Sample ID 10616212005
 Lab File ID B220729B_045
 Matrix Soil
 Collected 07/06/2022 10:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.05g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.32	4.31	ND		07/30/2022 00:11
PFPeA	N/A	N/A	5.19	5.12	13	J	07/30/2022 00:11
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/30/2022 00:11
PFBS	0.66	0.41	6.09	6.05	ND		07/30/2022 00:11
PFHxA	0.10	0.08	5.86	5.88	ND		07/30/2022 00:11
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 00:11
PFPeS	0.00	0.46	0.00	6.73	ND		07/30/2022 00:11
PFHpA	0.27	0.32	6.50	6.50	ND		07/30/2022 00:11
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 00:11
PFHxS	0.69	0.41	7.53	7.43	ND		07/30/2022 00:11
PFOA	0.51	0.40	7.13	7.03	36	J	07/30/2022 00:11
6:2 FTS	0.85	0.81	6.80	6.72	ND		07/30/2022 00:11
PFHpS	0.00	0.38	0.00	8.13	ND		07/30/2022 00:11
PFNA	0.09	0.13	7.79	7.80	ND		07/30/2022 00:11
PFOSAm	N/A	N/A	10.65	10.55	ND		07/30/2022 00:11
PFOS	0.50	0.41	8.92	8.81	ND		07/30/2022 00:11
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 00:11
PFDA	0.24	0.14	8.46	8.46	ND		07/30/2022 00:11
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 00:11
8:2 FTS	0.00	1.00	0.00	7.95	ND		07/30/2022 00:11
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 00:11
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 00:11
PFUnDA	0.00	0.14	0.00	9.01	ND		07/30/2022 00:11
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/30/2022 00:11
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 00:11
PFDS	0.00	0.37	0.00	10.16	ND		07/30/2022 00:11
PFDOA	0.00	0.17	0.00	9.69	ND		07/30/2022 00:11
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 00:11
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 00:11
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 00:11
PFTTrDA	0.00	0.17	0.00	10.36	ND		07/30/2022 00:11
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 00:11
PFTDA	0.33	0.29	11.12	11.12	ND		07/30/2022 00:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK06-HA01(0-6)
 Lab Sample ID 10616212006
 Lab File ID B220729B_046
 Matrix Soil
 Collected 07/06/2022 11:10
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.11	0.094	0.027	0.027	1	375-22-4		07/30/2022 00:31
PFPeA	0.35	0.094	0.027	0.027	1	2706-90-3		07/30/2022 00:31
HFPO-DA	ND	0.094	0.026	0.026	1	13252-13-6		07/30/2022 00:31
PFBS	ND	0.084	0.025	0.025	1	375-73-5		07/30/2022 00:31
PFHxA	0.16	0.094	0.026	0.026	1	307-24-4		07/30/2022 00:31
4:2 FTS	ND	0.088	0.022	0.022	1	757124-72-4		07/30/2022 00:31
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		07/30/2022 00:31
PFHpA	0.25	0.094	0.033	0.033	1	375-85-9		07/30/2022 00:31
DONA	ND	0.089	0.034	0.034	1	919005-14-4		07/30/2022 00:31
PFHxS	ND	0.086	0.021	0.021	1	355-46-4		07/30/2022 00:31
PFOA	0.20	0.094	0.029	0.029	1	335-67-1		07/30/2022 00:31
6:2 FTS	ND	0.090	0.039	0.039	1	27619-97-2		07/30/2022 00:31
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		07/30/2022 00:31
PFNA	0.072 J	0.094	0.029	0.029	1	375-95-1		07/30/2022 00:31
PFOSAm	ND	0.094	0.028	0.028	1	754-91-6		07/30/2022 00:31
PFOS	ND	0.087	0.028	0.028	1	1763-23-1		07/30/2022 00:31
MeFOSA	ND	0.094	0.026	0.026	1	31506-32-8		07/30/2022 00:31
PFDA	0.13	0.094	0.022	0.022	1	335-76-2		07/30/2022 00:31
EtFOSAm	ND	0.094	0.024	0.024	1	4151-50-2		07/30/2022 00:31
8:2 FTS	0.21	0.091	0.041	0.041	1	39108-34-4		07/30/2022 00:31
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		07/30/2022 00:31
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		07/30/2022 00:31
PFUnDA	0.038 J	0.094	0.029	0.029	1	2058-94-8		07/30/2022 00:31
NMeFOSAA	ND	0.094	0.027	0.027	1	2355-31-9		07/30/2022 00:31
NEtFOSAA	ND	0.094	0.038	0.038	1	2991-50-6		07/30/2022 00:31
PFDS	ND	0.091	0.027	0.027	1	335-77-3		07/30/2022 00:31
PFDOA	0.035 J	0.094	0.031	0.031	1	307-55-1		07/30/2022 00:31
MeFOSE	ND	0.094	0.029	0.029	1	24448-09-7		07/30/2022 00:31
EtFOSE	ND	0.094	0.030	0.030	1	1691-99-2		07/30/2022 00:31
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		07/30/2022 00:31
PFTTrDA	ND	0.094	0.030	0.030	1	72629-94-8		07/30/2022 00:31
PFDoS	ND	0.091	0.025	0.025	1	79780-39-5		07/30/2022 00:31
PFTDA	ND	0.094	0.032	0.032	1	376-06-7		07/30/2022 00:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK06-HA01(0-6)
 Lab Sample ID 10616212006
 Lab File ID B220729B_046
 Matrix Soil
 Collected 07/06/2022 11:10
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.94	1.0	106	50-150		07/30/2022 00:31
13C4 PFOA	0.94	1.0	108	50-150		07/30/2022 00:31
13C2 PFDA	0.94	1.1	113	50-150		07/30/2022 00:31
13C4 PFOS	0.90	0.97	108	50-150		07/30/2022 00:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.94	0.84	89	25-150		07/30/2022 00:31
13C5 PFPeA	0.94	0.80	85	25-150		07/30/2022 00:31
13C3 PFBS	0.88	0.79	90	25-150		07/30/2022 00:31
13C2 4:2FTS	0.88	0.84	95	25-150		07/30/2022 00:31
13C5 PFHxA	0.94	0.91	96	25-150		07/30/2022 00:31
13C4 PFHpA	0.94	0.82	87	25-150		07/30/2022 00:31
13C3 PFHxS	0.89	0.82	91	25-150		07/30/2022 00:31
13C2 6:2FTS	0.90	0.81	90	25-150		07/30/2022 00:31
13C8 PFOA	0.94	0.87	93	25-150		07/30/2022 00:31
13C9 PFNA	0.94	0.88	93	25-150		07/30/2022 00:31
13C8 PFOS	0.90	0.84	93	25-150		07/30/2022 00:31
13C2 8:2FTS	0.90	1.0	114	25-150		07/30/2022 00:31
13C6 PFDA	0.94	0.85	90	25-150		07/30/2022 00:31
d3-MeFOSAA	0.94	0.88	93	25-150		07/30/2022 00:31
13C8 PFOSA	0.94	0.24	26	25-150		07/30/2022 00:31
d5-EtFOSAA	0.94	0.88	94	25-150		07/30/2022 00:31
13C7 PFUdA	0.94	0.84	89	25-150		07/30/2022 00:31
13C2 PFDoA	0.94	0.87	92	25-150		07/30/2022 00:31
13C2 PFTeDA	0.94	0.89	95	25-150		07/30/2022 00:31
13C3 HFPO-DA	0.94	0.85	90	25-150		07/30/2022 00:31
d7-N-MeFOSE	0.94	0.0059	1	10-150	R	07/30/2022 00:31
d9-N-EtFOSE	0.94	0.0084	1	10-150	R	07/30/2022 00:31
d3-N-MeFOSA	0.94	0.0011	0	10-150	R	07/30/2022 00:31
d5-N-EtFOSA	0.94	0.0013	0	10-150	R	07/30/2022 00:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK06-HA01(0-6)
 Lab Sample ID 10616212006
 Lab File ID B220729B_046
 Matrix Soil
 Collected 07/06/2022 11:10
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.85	5.71	20		07/30/2022 00:31
13C4 PFOA	N/A	N/A	7.13	6.96	20		07/30/2022 00:31
13C2 PFDA	N/A	N/A	8.43	8.27	18		07/30/2022 00:31
13C4 PFOS	N/A	N/A	8.90	8.75	14		07/30/2022 00:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	26		07/30/2022 00:31
13C5 PFPeA	N/A	N/A	5.17	5.13	24		07/30/2022 00:31
13C3 PFBS	N/A	N/A	6.08	5.96	15		07/30/2022 00:31
13C2 4:2FTS	N/A	N/A	5.58	5.48	71		07/30/2022 00:31
13C5 PFHxA	N/A	N/A	5.85	5.73	20		07/30/2022 00:31
13C4 PFHpA	N/A	N/A	6.49	6.32	16		07/30/2022 00:31
13C3 PFHxS	N/A	N/A	7.52	7.52	18		07/30/2022 00:31
13C2 6:2FTS	N/A	N/A	6.80	6.67	10		07/30/2022 00:31
13C8 PFOA	N/A	N/A	7.13	6.94	26		07/30/2022 00:31
13C9 PFNA	N/A	N/A	7.77	7.76	24		07/30/2022 00:31
13C8 PFOS	N/A	N/A	8.90	8.80	14		07/30/2022 00:31
13C2 8:2FTS	N/A	N/A	8.06	7.94	12		07/30/2022 00:31
13C6 PFDA	N/A	N/A	8.43	8.32	20		07/30/2022 00:31
d3-MeFOSAA	N/A	N/A	8.30	8.19	12		07/30/2022 00:31
13C8 PFOSA	N/A	N/A	10.64	10.61	15		07/30/2022 00:31
d5-EtFOSAA	N/A	N/A	8.59	8.49	10		07/30/2022 00:31
13C7 PFUdA	N/A	N/A	9.11	9.00	24		07/30/2022 00:31
13C2 PFDoA	N/A	N/A	9.79	9.67	13		07/30/2022 00:31
13C2 PFTeDA	N/A	N/A	11.12	11.00	10		07/30/2022 00:31
13C3 HFPO-DA	N/A	N/A	6.12	5.97	20		07/30/2022 00:31
d7-N-MeFOSE	N/A	N/A	12.48	12.38	25	R	07/30/2022 00:31
d9-N-EtFOSE	N/A	N/A	12.95	12.96	86	R	07/30/2022 00:31
d3-N-MeFOSA	N/A	N/A	12.67	12.64	21	R	07/30/2022 00:31
d5-N-EtFOSA	N/A	N/A	13.10	13.11	46	R	07/30/2022 00:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK06-HA01(0-6)
 Lab Sample ID 10616212006
 Lab File ID B220729B_046
 Matrix Soil
 Collected 07/06/2022 11:10
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	11		07/30/2022 00:31
PFPeA	N/A	N/A	5.18	5.12	39		07/30/2022 00:31
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/30/2022 00:31
PFBS	0.29	0.41	6.07	6.05	ND		07/30/2022 00:31
PFHxA	0.08	0.08	5.86	5.88	15		07/30/2022 00:31
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 00:31
PFPeS	0.00	0.46	0.00	6.73	ND		07/30/2022 00:31
PFHpA	0.31	0.32	6.50	6.39	21		07/30/2022 00:31
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 00:31
PFHxS	0.47	0.41	7.53	7.43	ND		07/30/2022 00:31
PFOA	0.36	0.40	7.14	7.03	19		07/30/2022 00:31
6:2 FTS	0.69	0.81	6.81	6.72	ND		07/30/2022 00:31
PFHpS	0.00	0.38	0.00	8.13	ND		07/30/2022 00:31
PFNA	0.14	0.13	7.78	7.80	27	J	07/30/2022 00:31
PFOSAm	N/A	N/A	10.64	10.55	ND		07/30/2022 00:31
PFOS	0.38	0.41	8.91	8.81	ND		07/30/2022 00:31
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 00:31
PFDA	0.15	0.14	8.44	8.34	34		07/30/2022 00:31
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 00:31
8:2 FTS	0.90	1.00	8.07	7.95	69		07/30/2022 00:31
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 00:31
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 00:31
PFUnDA	0.12	0.14	9.11	9.11	12	J	07/30/2022 00:31
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/30/2022 00:31
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 00:31
PFDS	0.00	0.37	0.00	10.16	ND		07/30/2022 00:31
PFDOA	0.20	0.17	9.79	9.69	18	J	07/30/2022 00:31
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 00:31
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 00:31
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 00:31
PFTTrDA	0.16	0.17	10.46	10.46	ND		07/30/2022 00:31
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 00:31
PFTDA	0.30	0.29	11.12	11.00	ND		07/30/2022 00:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK07-HA01(0-6)
 Lab Sample ID 10616212007
 Lab File ID B220729B_047
 Matrix Soil
 Collected 07/06/2022 11:25
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.17g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.17	0.097	0.027	0.027	1	375-22-4		07/30/2022 00:51
PFPeA	0.44	0.097	0.028	0.028	1	2706-90-3		07/30/2022 00:51
HFPO-DA	ND	0.097	0.027	0.027	1	13252-13-6		07/30/2022 00:51
PFBS	ND	0.086	0.025	0.025	1	375-73-5		07/30/2022 00:51
PFHxA	0.24	0.097	0.027	0.027	1	307-24-4		07/30/2022 00:51
4:2 FTS	ND	0.090	0.022	0.022	1	757124-72-4		07/30/2022 00:51
PFPeS	ND	0.091	0.023	0.023	1	2706-91-4		07/30/2022 00:51
PFHpA	0.24	0.097	0.034	0.034	1	375-85-9		07/30/2022 00:51
DONA	ND	0.091	0.035	0.035	1	919005-14-4		07/30/2022 00:51
PFHxS	0.039 J	0.088	0.021	0.021	1	355-46-4		07/30/2022 00:51
PFOA	0.38	0.097	0.030	0.030	1	335-67-1		07/30/2022 00:51
6:2 FTS	ND	0.092	0.040	0.040	1	27619-97-2		07/30/2022 00:51
PFHpS	ND	0.092	0.027	0.027	1	375-92-8		07/30/2022 00:51
PFNA	0.20	0.097	0.030	0.030	1	375-95-1		07/30/2022 00:51
PFOSAm	ND	0.097	0.028	0.028	1	754-91-6		07/30/2022 00:51
PFOS	0.39	0.089	0.029	0.029	1	1763-23-1		07/30/2022 00:51
MeFOSA	ND	0.097	0.026	0.026	1	31506-32-8		07/30/2022 00:51
PFDA	0.24	0.097	0.022	0.022	1	335-76-2		07/30/2022 00:51
EtFOSAm	ND	0.097	0.025	0.025	1	4151-50-2		07/30/2022 00:51
8:2 FTS	ND	0.093	0.042	0.042	1	39108-34-4		07/30/2022 00:51
9-CI-PF3ON	ND	0.090	0.024	0.024	1	756426-58-1		07/30/2022 00:51
PFNS	ND	0.093	0.034	0.034	1	68259-12-1		07/30/2022 00:51
PFUnDA	0.10	0.097	0.029	0.029	1	2058-94-8		07/30/2022 00:51
NMeFOSAA	ND	0.097	0.027	0.027	1	2355-31-9		07/30/2022 00:51
NEtFOSAA	ND	0.097	0.039	0.039	1	2991-50-6		07/30/2022 00:51
PFDS	ND	0.093	0.027	0.027	1	335-77-3		07/30/2022 00:51
PFDOA	0.060 J	0.097	0.032	0.032	1	307-55-1		07/30/2022 00:51
MeFOSE	ND	0.097	0.029	0.029	1	24448-09-7		07/30/2022 00:51
EtFOSE	ND	0.097	0.031	0.031	1	1691-99-2		07/30/2022 00:51
11-CI-PF3OUdS	ND	0.091	0.024	0.024	1	763051-92-9		07/30/2022 00:51
PFTTrDA	ND	0.097	0.031	0.031	1	72629-94-8		07/30/2022 00:51
PFDoS	ND	0.094	0.025	0.025	1	79780-39-5		07/30/2022 00:51
PFTDA	ND	0.097	0.033	0.033	1	376-06-7		07/30/2022 00:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK07-HA01(0-6)
 Lab Sample ID 10616212007
 Lab File ID B220729B_047
 Matrix Soil
 Collected 07/06/2022 11:25
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.17g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.97	1.2	120	50-150		07/30/2022 00:51
13C4 PFOA	0.97	1.1	112	50-150		07/30/2022 00:51
13C2 PFDA	0.97	1.2	125	50-150		07/30/2022 00:51
13C4 PFOS	0.93	1.1	119	50-150		07/30/2022 00:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.97	0.90	93	25-150		07/30/2022 00:51
13C5 PFPeA	0.97	0.84	87	25-150		07/30/2022 00:51
13C3 PFBS	0.90	0.87	97	25-150		07/30/2022 00:51
13C2 4:2FTS	0.90	0.84	93	25-150		07/30/2022 00:51
13C5 PFHxA	0.97	0.96	99	25-150		07/30/2022 00:51
13C4 PFHpA	0.97	0.91	94	25-150		07/30/2022 00:51
13C3 PFHxS	0.91	1.00	109	25-150		07/30/2022 00:51
13C2 6:2FTS	0.92	0.81	89	25-150		07/30/2022 00:51
13C8 PFOA	0.97	0.94	98	25-150		07/30/2022 00:51
13C9 PFNA	0.97	0.95	99	25-150		07/30/2022 00:51
13C8 PFOS	0.93	0.89	97	25-150		07/30/2022 00:51
13C2 8:2FTS	0.93	1.2	128	25-150		07/30/2022 00:51
13C6 PFDA	0.97	0.95	98	25-150		07/30/2022 00:51
d3-MeFOSAA	0.97	0.89	92	25-150		07/30/2022 00:51
13C8 PFOSA	0.97	0.47	48	25-150		07/30/2022 00:51
d5-EtFOSAA	0.97	1.1	110	25-150		07/30/2022 00:51
13C7 PFUdA	0.97	1.0	104	25-150		07/30/2022 00:51
13C2 PFDoA	0.97	1.0	107	25-150		07/30/2022 00:51
13C2 PFTeDA	0.97	1.1	113	25-150		07/30/2022 00:51
13C3 HFPO-DA	0.97	0.87	90	25-150		07/30/2022 00:51
d7-N-MeFOSE	0.97	0.016	2	10-150	R	07/30/2022 00:51
d9-N-EtFOSE	0.97	0.029	3	10-150	R	07/30/2022 00:51
d3-N-MeFOSA	0.97	0.0019	0	10-150	R	07/30/2022 00:51
d5-N-EtFOSA	0.97	0.0047	0	10-150	R	07/30/2022 00:51

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 PFAS by Isotope Dilution

Client Sample ID PR-TK07-HA01(0-6)
 Lab Sample ID 10616212007
 Lab File ID B220729B_047
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Total Amount Extracted 5.17g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.84	5.71	20		07/30/2022 00:51
13C4 PFOA	N/A	N/A	7.11	6.96	17		07/30/2022 00:51
13C2 PFDA	N/A	N/A	8.43	8.27	18		07/30/2022 00:51
13C4 PFOS	N/A	N/A	8.89	8.75	11		07/30/2022 00:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	22		07/30/2022 00:51
13C5 PFPeA	N/A	N/A	5.17	5.13	21		07/30/2022 00:51
13C3 PFBS	N/A	N/A	6.07	5.96	19		07/30/2022 00:51
13C2 4:2FTS	N/A	N/A	5.57	5.48	49		07/30/2022 00:51
13C5 PFHxA	N/A	N/A	5.84	5.73	20		07/30/2022 00:51
13C4 PFHpA	N/A	N/A	6.48	6.32	16		07/30/2022 00:51
13C3 PFHxS	N/A	N/A	7.51	7.52	17		07/30/2022 00:51
13C2 6:2FTS	N/A	N/A	6.79	6.67	12		07/30/2022 00:51
13C8 PFOA	N/A	N/A	7.11	6.94	21		07/30/2022 00:51
13C9 PFNA	N/A	N/A	7.76	7.76	25		07/30/2022 00:51
13C8 PFOS	N/A	N/A	8.89	8.80	14		07/30/2022 00:51
13C2 8:2FTS	N/A	N/A	8.06	7.94	14		07/30/2022 00:51
13C6 PFDA	N/A	N/A	8.43	8.32	16		07/30/2022 00:51
d3-MeFOSAA	N/A	N/A	8.30	8.19	16		07/30/2022 00:51
13C8 PFOSA	N/A	N/A	10.62	10.61	18		07/30/2022 00:51
d5-EtFOSAA	N/A	N/A	8.59	8.49	15		07/30/2022 00:51
13C7 PFUdA	N/A	N/A	9.10	9.00	30		07/30/2022 00:51
13C2 PFDoA	N/A	N/A	9.78	9.67	12		07/30/2022 00:51
13C2 PFTeDA	N/A	N/A	11.09	11.00	10		07/30/2022 00:51
13C3 HFPO-DA	N/A	N/A	6.10	5.97	18		07/30/2022 00:51
d7-N-MeFOSE	N/A	N/A	12.46	12.38	33	R	07/30/2022 00:51
d9-N-EtFOSE	N/A	N/A	12.93	12.96	15	R	07/30/2022 00:51
d3-N-MeFOSA	N/A	N/A	12.66	12.64	29	R	07/30/2022 00:51
d5-N-EtFOSA	N/A	N/A	13.09	13.11	10	R	07/30/2022 00:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK07-HA01(0-6)
 Lab Sample ID 10616212007
 Lab File ID B220729B_047
 Matrix Soil
 Collected 07/06/2022 11:25
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.17g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	15		07/30/2022 00:51
PFPeA	N/A	N/A	5.17	5.12	32		07/30/2022 00:51
HFPO-DA	1.70	0.32	6.11	6.02	ND		07/30/2022 00:51
PFBS	0.21	0.41	6.06	6.05	ND		07/30/2022 00:51
PFHxA	0.08	0.08	5.85	5.88	18		07/30/2022 00:51
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 00:51
PFPeS	0.64	0.46	6.81	6.73	ND		07/30/2022 00:51
PFHpA	0.30	0.32	6.49	6.39	23		07/30/2022 00:51
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 00:51
PFHxS	0.40	0.41	7.51	7.43	46	J	07/30/2022 00:51
PFOA	0.38	0.40	7.12	7.03	29		07/30/2022 00:51
6:2 FTS	0.59	0.81	6.79	6.72	ND		07/30/2022 00:51
PFHpS	0.51	0.38	8.22	8.13	ND		07/30/2022 00:51
PFNA	0.15	0.13	7.77	7.80	46		07/30/2022 00:51
PFOSAm	N/A	N/A	10.63	10.55	ND		07/30/2022 00:51
PFOS	0.42	0.41	8.90	8.81	57		07/30/2022 00:51
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 00:51
PFDA	0.16	0.14	8.44	8.44	31		07/30/2022 00:51
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 00:51
8:2 FTS	0.84	1.00	8.06	7.95	ND		07/30/2022 00:51
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 00:51
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 00:51
PFUnDA	0.14	0.14	9.11	9.11	86		07/30/2022 00:51
NMeFOSAA	1.20	0.87	8.30	8.31	ND		07/30/2022 00:51
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 00:51
PFDS	0.40	0.37	10.26	10.16	ND		07/30/2022 00:51
PFDOA	0.16	0.17	9.78	9.69	12	J	07/30/2022 00:51
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 00:51
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 00:51
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 00:51
PFTTrDA	0.20	0.17	10.45	10.36	ND		07/30/2022 00:51
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 00:51
PFTDA	0.22	0.29	11.10	11.10	ND		07/30/2022 00:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK08-HA01(0-6)
 Lab Sample ID 10616212008
 Lab File ID B220729B_048
 Matrix Soil
 Collected 07/06/2022 12:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.11	0.095	0.027	0.027	1	375-22-4		07/30/2022 01:11
PFPeA	0.49	0.095	0.027	0.027	1	2706-90-3		07/30/2022 01:11
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		07/30/2022 01:11
PFBS	ND	0.084	0.025	0.025	1	375-73-5		07/30/2022 01:11
PFHxA	0.24	0.095	0.026	0.026	1	307-24-4		07/30/2022 01:11
4:2 FTS	ND	0.088	0.022	0.022	1	757124-72-4		07/30/2022 01:11
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		07/30/2022 01:11
PFHpA	0.24	0.095	0.033	0.033	1	375-85-9		07/30/2022 01:11
DONA	ND	0.089	0.034	0.034	1	919005-14-4		07/30/2022 01:11
PFHxS	ND	0.086	0.021	0.021	1	355-46-4		07/30/2022 01:11
PFOA	0.31	0.095	0.029	0.029	1	335-67-1		07/30/2022 01:11
6:2 FTS	0.084 J	0.090	0.039	0.039	1	27619-97-2		07/30/2022 01:11
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		07/30/2022 01:11
PFNA	0.48	0.095	0.029	0.029	1	375-95-1		07/30/2022 01:11
PFOSAm	ND	0.095	0.028	0.028	1	754-91-6		07/30/2022 01:11
PFOS	0.28	0.087	0.028	0.028	1	1763-23-1		07/30/2022 01:11
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		07/30/2022 01:11
PFDA	0.71	0.095	0.022	0.022	1	335-76-2		07/30/2022 01:11
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		07/30/2022 01:11
8:2 FTS	0.23	0.091	0.042	0.042	1	39108-34-4		07/30/2022 01:11
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		07/30/2022 01:11
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		07/30/2022 01:11
PFUnDA	0.31	0.095	0.029	0.029	1	2058-94-8		07/30/2022 01:11
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		07/30/2022 01:11
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		07/30/2022 01:11
PFDS	ND	0.091	0.027	0.027	1	335-77-3		07/30/2022 01:11
PFDOA	0.20	0.095	0.031	0.031	1	307-55-1		07/30/2022 01:11
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		07/30/2022 01:11
EtFOSE	ND	0.095	0.030	0.030	1	1691-99-2		07/30/2022 01:11
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		07/30/2022 01:11
PFTTrDA	0.043 J	0.095	0.030	0.030	1	72629-94-8		07/30/2022 01:11
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		07/30/2022 01:11
PFTDA	ND	0.095	0.032	0.032	1	376-06-7		07/30/2022 01:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK08-HA01(0-6)
 Lab Sample ID 10616212008
 Lab File ID B220729B_048
 Matrix Soil
 Collected 07/06/2022 12:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	0.64	68	50-150		07/30/2022 01:11
13C4 PFOA	0.95	0.72	76	50-150		07/30/2022 01:11
13C2 PFDA	0.95	0.71	75	50-150		07/30/2022 01:11
13C4 PFOS	0.90	0.65	72	50-150		07/30/2022 01:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.56	59	25-150		07/30/2022 01:11
13C5 PFPeA	0.95	0.53	56	25-150		07/30/2022 01:11
13C3 PFBS	0.88	0.52	59	25-150		07/30/2022 01:11
13C2 4:2FTS	0.88	0.53	60	25-150		07/30/2022 01:11
13C5 PFHxA	0.95	0.56	60	25-150		07/30/2022 01:11
13C4 PFHpA	0.95	0.57	60	25-150		07/30/2022 01:11
13C3 PFHxS	0.89	0.54	61	25-150		07/30/2022 01:11
13C2 6:2FTS	0.90	0.53	59	25-150		07/30/2022 01:11
13C8 PFOA	0.95	0.59	63	25-150		07/30/2022 01:11
13C9 PFNA	0.95	0.57	60	25-150		07/30/2022 01:11
13C8 PFOS	0.90	0.55	60	25-150		07/30/2022 01:11
13C2 8:2FTS	0.91	0.65	72	25-150		07/30/2022 01:11
13C6 PFDA	0.95	0.57	60	25-150		07/30/2022 01:11
d3-MeFOSAA	0.95	0.60	63	25-150		07/30/2022 01:11
13C8 PFOSA	0.95	0.39	41	25-150		07/30/2022 01:11
d5-EtFOSAA	0.95	0.56	59	25-150		07/30/2022 01:11
13C7 PFUdA	0.95	0.56	60	25-150		07/30/2022 01:11
13C2 PFDoA	0.95	0.56	59	25-150		07/30/2022 01:11
13C2 PFTeDA	0.95	0.62	65	25-150		07/30/2022 01:11
13C3 HFPO-DA	0.95	0.54	57	25-150		07/30/2022 01:11
d7-N-MeFOSE	0.95	0.017	2	10-150	R	07/30/2022 01:11
d9-N-EtFOSE	0.95	0.027	3	10-150	R	07/30/2022 01:11
d3-N-MeFOSA	0.95	0.0024	0	10-150	R	07/30/2022 01:11
d5-N-EtFOSA	0.95	0.0043	0	10-150	R	07/30/2022 01:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK08-HA01(0-6)
 Lab Sample ID 10616212008
 Lab File ID B220729B_048
 Matrix Soil
 Collected 07/06/2022 12:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.85	5.71	13		07/30/2022 01:11
13C4 PFOA	N/A	N/A	7.13	6.96	22		07/30/2022 01:11
13C2 PFDA	N/A	N/A	8.43	8.27	17		07/30/2022 01:11
13C4 PFOS	N/A	N/A	8.89	8.75	12		07/30/2022 01:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	21		07/30/2022 01:11
13C5 PFPeA	N/A	N/A	5.17	5.13	18		07/30/2022 01:11
13C3 PFBS	N/A	N/A	6.08	5.96	12		07/30/2022 01:11
13C2 4:2FTS	N/A	N/A	5.58	5.48	44		07/30/2022 01:11
13C5 PFHxA	N/A	N/A	5.85	5.73	13		07/30/2022 01:11
13C4 PFHpA	N/A	N/A	6.49	6.32	11		07/30/2022 01:11
13C3 PFHxS	N/A	N/A	7.52	7.52	15		07/30/2022 01:11
13C2 6:2FTS	N/A	N/A	6.80	6.67	67		07/30/2022 01:11
13C8 PFOA	N/A	N/A	7.13	6.94	24		07/30/2022 01:11
13C9 PFNA	N/A	N/A	7.77	7.76	21		07/30/2022 01:11
13C8 PFOS	N/A	N/A	8.89	8.80	13		07/30/2022 01:11
13C2 8:2FTS	N/A	N/A	8.06	7.94	11		07/30/2022 01:11
13C6 PFDA	N/A	N/A	8.43	8.32	17		07/30/2022 01:11
d3-MeFOSAA	N/A	N/A	8.30	8.19	14		07/30/2022 01:11
13C8 PFOSA	N/A	N/A	10.63	10.61	13		07/30/2022 01:11
d5-EtFOSAA	N/A	N/A	8.59	8.49	14		07/30/2022 01:11
13C7 PFUdA	N/A	N/A	9.10	9.00	21		07/30/2022 01:11
13C2 PFDoA	N/A	N/A	9.78	9.67	12		07/30/2022 01:11
13C2 PFTeDA	N/A	N/A	11.11	11.00	98		07/30/2022 01:11
13C3 HFPO-DA	N/A	N/A	6.11	5.97	16		07/30/2022 01:11
d7-N-MeFOSE	N/A	N/A	12.47	12.38	40	R	07/30/2022 01:11
d9-N-EtFOSE	N/A	N/A	12.94	12.96	17	R	07/30/2022 01:11
d3-N-MeFOSA	N/A	N/A	12.68	12.64	52	R	07/30/2022 01:11
d5-N-EtFOSA	N/A	N/A	13.10	13.11	11	R	07/30/2022 01:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK08-HA01(0-6)
 Lab Sample ID 10616212008
 Lab File ID B220729B_048
 Matrix Soil
 Collected 07/06/2022 12:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.29g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.32	4.31	89		07/30/2022 01:11
PFPeA	N/A	N/A	5.18	5.12	27		07/30/2022 01:11
HFPO-DA	1.30	0.32	6.14	6.02	ND		07/30/2022 01:11
PFBS	0.00	0.41	0.00	6.05	ND		07/30/2022 01:11
PFHxA	0.09	0.08	5.86	5.88	14		07/30/2022 01:11
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 01:11
PFPeS	0.58	0.46	6.82	6.73	ND		07/30/2022 01:11
PFHpA	0.32	0.32	6.50	6.39	22		07/30/2022 01:11
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 01:11
PFHxS	0.40	0.41	7.53	7.43	ND		07/30/2022 01:11
PFOA	0.37	0.40	7.14	7.03	20		07/30/2022 01:11
6:2 FTS	0.75	0.81	6.81	6.72	22	J	07/30/2022 01:11
PFHpS	0.00	0.38	0.00	8.13	ND		07/30/2022 01:11
PFNA	0.13	0.13	7.78	7.80	64		07/30/2022 01:11
PFOSAm	N/A	N/A	10.63	10.55	ND		07/30/2022 01:11
PFOS	0.46	0.41	8.90	8.81	47		07/30/2022 01:11
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 01:11
PFDA	0.18	0.14	8.44	8.44	42		07/30/2022 01:11
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 01:11
8:2 FTS	1.10	1.00	8.07	7.95	64		07/30/2022 01:11
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 01:11
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 01:11
PFUnDA	0.14	0.14	9.11	9.11	16		07/30/2022 01:11
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/30/2022 01:11
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 01:11
PFDS	2.80	0.37	10.07	10.16	ND		07/30/2022 01:11
PFDOA	0.20	0.17	9.79	9.69	19		07/30/2022 01:11
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 01:11
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 01:11
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 01:11
PFTTrDA	0.17	0.17	10.46	10.46	30	J	07/30/2022 01:11
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 01:11
PFTDA	0.23	0.29	11.10	11.10	ND		07/30/2022 01:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK09-HA01(0-6)
 Lab Sample ID 10616212009
 Lab File ID B220729B_049
 Matrix Soil
 Collected 07/06/2022 13:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.01g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.097 J	0.100	0.028	0.028	1	375-22-4		07/30/2022 01:31
PFPeA	0.30	0.100	0.028	0.028	1	2706-90-3		07/30/2022 01:31
HFPO-DA	ND	0.100	0.028	0.028	1	13252-13-6		07/30/2022 01:31
PFBS	ND	0.088	0.026	0.026	1	375-73-5		07/30/2022 01:31
PFHxA	0.19	0.100	0.027	0.027	1	307-24-4		07/30/2022 01:31
4:2 FTS	ND	0.093	0.023	0.023	1	757124-72-4		07/30/2022 01:31
PFPeS	ND	0.094	0.024	0.024	1	2706-91-4		07/30/2022 01:31
PFHpA	0.19	0.100	0.035	0.035	1	375-85-9		07/30/2022 01:31
DONA	ND	0.094	0.036	0.036	1	919005-14-4		07/30/2022 01:31
PFHxS	ND	0.091	0.022	0.022	1	355-46-4		07/30/2022 01:31
PFOA	0.39	0.100	0.031	0.031	1	335-67-1		07/30/2022 01:31
6:2 FTS	ND	0.095	0.041	0.041	1	27619-97-2		07/30/2022 01:31
PFHpS	ND	0.095	0.028	0.028	1	375-92-8		07/30/2022 01:31
PFNA	0.22	0.100	0.031	0.031	1	375-95-1		07/30/2022 01:31
PFOSAm	ND	0.100	0.029	0.029	1	754-91-6		07/30/2022 01:31
PFOS	0.063 J	0.092	0.030	0.030	1	1763-23-1		07/30/2022 01:31
MeFOSA	ND	0.100	0.027	0.027	1	31506-32-8		07/30/2022 01:31
PFDA	0.19	0.100	0.023	0.023	1	335-76-2		07/30/2022 01:31
EtFOSAm	ND	0.100	0.026	0.026	1	4151-50-2		07/30/2022 01:31
8:2 FTS	0.12	0.096	0.044	0.044	1	39108-34-4		07/30/2022 01:31
9-CI-PF3ON	ND	0.093	0.025	0.025	1	756426-58-1		07/30/2022 01:31
PFNS	ND	0.096	0.035	0.035	1	68259-12-1		07/30/2022 01:31
PFUnDA	0.058 J	0.100	0.030	0.030	1	2058-94-8		07/30/2022 01:31
NMeFOSAA	ND	0.100	0.028	0.028	1	2355-31-9		07/30/2022 01:31
NEtFOSAA	ND	0.100	0.040	0.040	1	2991-50-6		07/30/2022 01:31
PFDS	ND	0.096	0.028	0.028	1	335-77-3		07/30/2022 01:31
PFDOA	0.054 J	0.100	0.033	0.033	1	307-55-1		07/30/2022 01:31
MeFOSE	ND	0.100	0.030	0.030	1	24448-09-7		07/30/2022 01:31
EtFOSE	ND	0.100	0.032	0.032	1	1691-99-2		07/30/2022 01:31
11-CI-PF3OUdS	ND	0.094	0.025	0.025	1	763051-92-9		07/30/2022 01:31
PFTTrDA	ND	0.100	0.032	0.032	1	72629-94-8		07/30/2022 01:31
PFDoS	ND	0.097	0.026	0.026	1	79780-39-5		07/30/2022 01:31
PFTDA	ND	0.100	0.034	0.034	1	376-06-7		07/30/2022 01:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK09-HA01(0-6)
 Lab Sample ID 10616212009
 Lab File ID B220729B_049
 Matrix Soil
 Collected 07/06/2022 13:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.01g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	1.00	1.1	114	50-150		07/30/2022 01:31
13C4 PFOA	1.00	1.0	101	50-150		07/30/2022 01:31
13C2 PFDA	1.00	1.0	104	50-150		07/30/2022 01:31
13C4 PFOS	0.96	1.1	112	50-150		07/30/2022 01:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	1.00	0.92	92	25-150		07/30/2022 01:31
13C5 PFPeA	1.00	0.85	86	25-150		07/30/2022 01:31
13C3 PFBS	0.93	0.86	92	25-150		07/30/2022 01:31
13C2 4:2FTS	0.93	1.1	113	25-150		07/30/2022 01:31
13C5 PFHxA	1.00	0.93	93	25-150		07/30/2022 01:31
13C4 PFHpA	1.00	0.87	87	25-150		07/30/2022 01:31
13C3 PFHxS	0.94	0.94	100	25-150		07/30/2022 01:31
13C2 6:2FTS	0.95	0.90	95	25-150		07/30/2022 01:31
13C8 PFOA	1.00	0.91	92	25-150		07/30/2022 01:31
13C9 PFNA	1.00	0.96	97	25-150		07/30/2022 01:31
13C8 PFOS	0.96	0.87	91	25-150		07/30/2022 01:31
13C2 8:2FTS	0.96	1.2	121	25-150		07/30/2022 01:31
13C6 PFDA	1.00	0.89	89	25-150		07/30/2022 01:31
d3-MeFOSAA	1.00	1.00	100	25-150		07/30/2022 01:31
13C8 PFOSA	1.00	0.59	59	25-150		07/30/2022 01:31
d5-EtFOSAA	1.00	1.0	105	25-150		07/30/2022 01:31
13C7 PFUdA	1.00	1.0	103	25-150		07/30/2022 01:31
13C2 PFDoA	1.00	1.0	103	25-150		07/30/2022 01:31
13C2 PFTeDA	1.00	1.1	107	25-150		07/30/2022 01:31
13C3 HFPO-DA	1.00	0.86	86	25-150		07/30/2022 01:31
d7-N-MeFOSE	1.00	0.011	1	10-150	R	07/30/2022 01:31
d9-N-EtFOSE	1.00	0.024	2	10-150	R	07/30/2022 01:31
d3-N-MeFOSA	1.00	0.0017	0	10-150	R	07/30/2022 01:31
d5-N-EtFOSA	1.00	0.0028	0	10-150	R	07/30/2022 01:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK09-HA01(0-6)
 Lab Sample ID 10616212009
 Lab File ID B220729B_049
 Matrix Soil
 Collected 07/06/2022 13:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.01g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.82	5.71	21		07/30/2022 01:31
13C4 PFOA	N/A	N/A	7.10	6.96	19		07/30/2022 01:31
13C2 PFDA	N/A	N/A	8.41	8.27	12		07/30/2022 01:31
13C4 PFOS	N/A	N/A	8.87	8.75	16		07/30/2022 01:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.26	21		07/30/2022 01:31
13C5 PFPeA	N/A	N/A	5.15	5.13	28		07/30/2022 01:31
13C3 PFBS	N/A	N/A	6.05	5.96	13		07/30/2022 01:31
13C2 4:2FTS	N/A	N/A	5.56	5.48	69		07/30/2022 01:31
13C5 PFHxA	N/A	N/A	5.82	5.73	20		07/30/2022 01:31
13C4 PFHpA	N/A	N/A	6.47	6.32	13		07/30/2022 01:31
13C3 PFHxS	N/A	N/A	7.49	7.52	16		07/30/2022 01:31
13C2 6:2FTS	N/A	N/A	6.78	6.67	12		07/30/2022 01:31
13C8 PFOA	N/A	N/A	7.11	6.94	23		07/30/2022 01:31
13C9 PFNA	N/A	N/A	7.75	7.76	22		07/30/2022 01:31
13C8 PFOS	N/A	N/A	8.87	8.80	19		07/30/2022 01:31
13C2 8:2FTS	N/A	N/A	8.04	7.94	22		07/30/2022 01:31
13C6 PFDA	N/A	N/A	8.41	8.32	14		07/30/2022 01:31
d3-MeFOSAA	N/A	N/A	8.28	8.19	16		07/30/2022 01:31
13C8 PFOSA	N/A	N/A	10.60	10.61	15		07/30/2022 01:31
d5-EtFOSAA	N/A	N/A	8.57	8.49	13		07/30/2022 01:31
13C7 PFUdA	N/A	N/A	9.08	9.00	22		07/30/2022 01:31
13C2 PFDoA	N/A	N/A	9.76	9.67	14		07/30/2022 01:31
13C2 PFTeDA	N/A	N/A	11.08	11.00	11		07/30/2022 01:31
13C3 HFPO-DA	N/A	N/A	6.09	5.97	14		07/30/2022 01:31
d7-N-MeFOSE	N/A	N/A	12.44	12.38	31	R	07/30/2022 01:31
d9-N-EtFOSE	N/A	N/A	12.91	12.96	11	R	07/30/2022 01:31
d3-N-MeFOSA	N/A	N/A	12.65	12.64	29	R	07/30/2022 01:31
d5-N-EtFOSA	N/A	N/A	13.07	13.11	51	R	07/30/2022 01:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK09-HA01(0-6)
 Lab Sample ID 10616212009
 Lab File ID B220729B_049
 Matrix Soil
 Collected 07/06/2022 13:50
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.01g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	11	J	07/30/2022 01:31
PFPeA	N/A	N/A	5.16	5.12	25		07/30/2022 01:31
HFPO-DA	1.50	0.32	6.10	6.02	ND		07/30/2022 01:31
PFBS	0.30	0.41	6.04	6.05	ND		07/30/2022 01:31
PFHxA	0.07	0.08	5.83	5.88	15		07/30/2022 01:31
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 01:31
PFPeS	1.00	0.46	6.80	6.73	ND		07/30/2022 01:31
PFHpA	0.28	0.32	6.47	6.39	23		07/30/2022 01:31
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 01:31
PFHxS	0.40	0.41	7.50	7.43	ND		07/30/2022 01:31
PFOA	0.37	0.40	7.11	7.03	22		07/30/2022 01:31
6:2 FTS	1.00	0.81	6.78	6.72	ND		07/30/2022 01:31
PFHpS	0.00	0.38	0.00	8.13	ND		07/30/2022 01:31
PFNA	0.15	0.13	7.76	7.80	45		07/30/2022 01:31
PFOSAm	N/A	N/A	10.62	10.55	ND		07/30/2022 01:31
PFOS	0.36	0.41	8.88	8.81	31	J	07/30/2022 01:31
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 01:31
PFDA	0.19	0.14	8.42	8.34	29		07/30/2022 01:31
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 01:31
8:2 FTS	0.90	1.00	8.05	7.95	41		07/30/2022 01:31
9-CI-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 01:31
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 01:31
PFUnDA	0.12	0.14	9.09	9.01	12	J	07/30/2022 01:31
NMeFOSAA	0.00	0.87	0.00	8.31	ND		07/30/2022 01:31
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 01:31
PFDS	0.00	0.37	10.23	10.16	ND		07/30/2022 01:31
PFDOA	0.18	0.17	9.76	9.69	18	J	07/30/2022 01:31
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 01:31
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 01:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 01:31
PFTTrDA	0.19	0.17	10.43	10.36	ND		07/30/2022 01:31
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 01:31
PFTDA	0.22	0.29	11.08	11.00	ND		07/30/2022 01:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK10-HA01(0-6)
 Lab Sample ID 10616212010
 Lab File ID B220729B_050
 Matrix Soil
 Collected 07/06/2022 13:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.46g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.092	0.026	0.026	1	375-22-4		07/30/2022 01:51
PFPeA	ND	0.092	0.026	0.026	1	2706-90-3		07/30/2022 01:51
HFPO-DA	ND	0.092	0.025	0.025	1	13252-13-6		07/30/2022 01:51
PFBS	ND	0.081	0.024	0.024	1	375-73-5		07/30/2022 01:51
PFHxA	ND	0.092	0.025	0.025	1	307-24-4		07/30/2022 01:51
4:2 FTS	ND	0.086	0.021	0.021	1	757124-72-4		07/30/2022 01:51
PFPeS	ND	0.086	0.022	0.022	1	2706-91-4		07/30/2022 01:51
PFHpA	ND	0.092	0.032	0.032	1	375-85-9		07/30/2022 01:51
DONA	ND	0.087	0.033	0.033	1	919005-14-4		07/30/2022 01:51
PFHxS	ND	0.083	0.020	0.020	1	355-46-4		07/30/2022 01:51
PFOA	ND	0.092	0.028	0.028	1	335-67-1		07/30/2022 01:51
6:2 FTS	ND	0.087	0.038	0.038	1	27619-97-2		07/30/2022 01:51
PFHpS	ND	0.087	0.025	0.025	1	375-92-8		07/30/2022 01:51
PFNA	ND	0.092	0.028	0.028	1	375-95-1		07/30/2022 01:51
PFOSAm	ND	0.092	0.027	0.027	1	754-91-6		07/30/2022 01:51
PFOS	0.13	0.085	0.027	0.027	1	1763-23-1		07/30/2022 01:51
MeFOSA	ND	0.092	0.025	0.025	1	31506-32-8		07/30/2022 01:51
PFDA	0.058 J	0.092	0.021	0.021	1	335-76-2		07/30/2022 01:51
EtFOSAm	ND	0.092	0.023	0.023	1	4151-50-2		07/30/2022 01:51
8:2 FTS	ND	0.088	0.040	0.040	1	39108-34-4		07/30/2022 01:51
9-CI-PF3ON	ND	0.085	0.023	0.023	1	756426-58-1		07/30/2022 01:51
PFNS	ND	0.088	0.032	0.032	1	68259-12-1		07/30/2022 01:51
PFUnDA	0.045 J	0.092	0.028	0.028	1	2058-94-8		07/30/2022 01:51
NMeFOSAA	ND	0.092	0.026	0.026	1	2355-31-9		07/30/2022 01:51
NEtFOSAA	ND	0.092	0.037	0.037	1	2991-50-6		07/30/2022 01:51
PFDS	ND	0.088	0.026	0.026	1	335-77-3		07/30/2022 01:51
PFDOA	ND	0.092	0.030	0.030	1	307-55-1		07/30/2022 01:51
MeFOSE	ND	0.092	0.028	0.028	1	24448-09-7		07/30/2022 01:51
EtFOSE	ND	0.092	0.029	0.029	1	1691-99-2		07/30/2022 01:51
11-CI-PF3OUdS	ND	0.086	0.023	0.023	1	763051-92-9		07/30/2022 01:51
PFTTrDA	ND	0.092	0.029	0.029	1	72629-94-8		07/30/2022 01:51
PFDoS	ND	0.089	0.024	0.024	1	79780-39-5		07/30/2022 01:51
PFTDA	ND	0.092	0.031	0.031	1	376-06-7		07/30/2022 01:51

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 PFAS by Isotope Dilution

Client Sample ID PR-TK10-HA01(0-6)
 Lab Sample ID 10616212010
 Lab File ID B220729B_050
 Matrix Soil
 Collected 07/06/2022 13:40
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 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.46g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.92	0.99	108	50-150		07/30/2022 01:51
13C4 PFOA	0.92	1.0	112	50-150		07/30/2022 01:51
13C2 PFDA	0.92	1.1	116	50-150		07/30/2022 01:51
13C4 PFOS	0.88	1.00	114	50-150		07/30/2022 01:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.92	0.74	81	25-150		07/30/2022 01:51
13C5 PFPeA	0.92	0.71	77	25-150		07/30/2022 01:51
13C3 PFBS	0.85	0.75	88	25-150		07/30/2022 01:51
13C2 4:2FTS	0.86	0.77	90	25-150		07/30/2022 01:51
13C5 PFHxA	0.92	0.75	82	25-150		07/30/2022 01:51
13C4 PFHpA	0.92	0.77	84	25-150		07/30/2022 01:51
13C3 PFHxS	0.87	0.81	93	25-150		07/30/2022 01:51
13C2 6:2FTS	0.87	0.77	89	25-150		07/30/2022 01:51
13C8 PFOA	0.92	0.81	89	25-150		07/30/2022 01:51
13C9 PFNA	0.92	0.86	93	25-150		07/30/2022 01:51
13C8 PFOS	0.88	0.79	90	25-150		07/30/2022 01:51
13C2 8:2FTS	0.88	0.94	107	25-150		07/30/2022 01:51
13C6 PFDA	0.92	0.87	95	25-150		07/30/2022 01:51
d3-MeFOSAA	0.92	0.75	82	25-150		07/30/2022 01:51
13C8 PFOSA	0.92	0.59	64	25-150		07/30/2022 01:51
d5-EtFOSAA	0.92	0.84	91	25-150		07/30/2022 01:51
13C7 PFUdA	0.92	0.88	96	25-150		07/30/2022 01:51
13C2 PFDoA	0.92	0.90	98	25-150		07/30/2022 01:51
13C2 PFTeDA	0.92	0.83	91	25-150		07/30/2022 01:51
13C3 HFPO-DA	0.92	0.74	81	25-150		07/30/2022 01:51
d7-N-MeFOSE	0.92	0.012	1	10-150	R	07/30/2022 01:51
d9-N-EtFOSE	0.92	0.020	2	10-150	R	07/30/2022 01:51
d3-N-MeFOSA	0.92	0.0011	0	10-150	R	07/30/2022 01:51
d5-N-EtFOSA	0.92	0.0037	0	10-150	R	07/30/2022 01:51

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Total Amount Extracted 5.46g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.84	5.71	20		07/30/2022 01:51
13C4 PFOA	N/A	N/A	7.12	6.96	23		07/30/2022 01:51
13C2 PFDA	N/A	N/A	8.43	8.27	18		07/30/2022 01:51
13C4 PFOS	N/A	N/A	8.89	8.75	12		07/30/2022 01:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.26	20		07/30/2022 01:51
13C5 PFPeA	N/A	N/A	5.17	5.13	30		07/30/2022 01:51
13C3 PFBS	N/A	N/A	6.07	5.96	19		07/30/2022 01:51
13C2 4:2FTS	N/A	N/A	5.57	5.48	58		07/30/2022 01:51
13C5 PFHxA	N/A	N/A	5.84	5.73	16		07/30/2022 01:51
13C4 PFHpA	N/A	N/A	6.48	6.32	16		07/30/2022 01:51
13C3 PFHxS	N/A	N/A	7.51	7.52	14		07/30/2022 01:51
13C2 6:2FTS	N/A	N/A	6.80	6.67	13		07/30/2022 01:51
13C8 PFOA	N/A	N/A	7.12	6.94	24		07/30/2022 01:51
13C9 PFNA	N/A	N/A	7.77	7.76	21		07/30/2022 01:51
13C8 PFOS	N/A	N/A	8.90	8.80	12		07/30/2022 01:51
13C2 8:2FTS	N/A	N/A	8.06	7.94	16		07/30/2022 01:51
13C6 PFDA	N/A	N/A	8.44	8.32	16		07/30/2022 01:51
d3-MeFOSAA	N/A	N/A	8.31	8.19	20		07/30/2022 01:51
13C8 PFOSA	N/A	N/A	10.62	10.61	19		07/30/2022 01:51
d5-EtFOSAA	N/A	N/A	8.59	8.49	12		07/30/2022 01:51
13C7 PFUdA	N/A	N/A	9.10	9.00	19		07/30/2022 01:51
13C2 PFDoA	N/A	N/A	9.78	9.67	15		07/30/2022 01:51
13C2 PFTeDA	N/A	N/A	11.09	11.00	12		07/30/2022 01:51
13C3 HFPO-DA	N/A	N/A	6.10	5.97	19		07/30/2022 01:51
d7-N-MeFOSE	N/A	N/A	12.46	12.38	40	R	07/30/2022 01:51
d9-N-EtFOSE	N/A	N/A	12.93	12.96	13	R	07/30/2022 01:51
d3-N-MeFOSA	N/A	N/A	12.68	12.64	27	R	07/30/2022 01:51
d5-N-EtFOSA	N/A	N/A	13.09	13.11	98	R	07/30/2022 01:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK10-HA01(0-6)
 Lab Sample ID 10616212010
 Lab File ID B220729B_050
 Matrix Soil
 Collected 07/06/2022 13:40
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.46g
 Ical ID 220728A02
 CCal File B220729B_040
 Ending CCal File B220729B_051
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.32	4.31	ND		07/30/2022 01:51
PFPeA	N/A	N/A	5.18	5.12	ND		07/30/2022 01:51
HFPO-DA	0.00	0.32	0.00	6.02	ND		07/30/2022 01:51
PFBS	0.00	0.41	0.00	6.05	ND		07/30/2022 01:51
PFHxA	0.09	0.08	5.85	5.88	ND		07/30/2022 01:51
4:2 FTS	0.00	0.83	0.00	5.49	ND		07/30/2022 01:51
PFPeS	0.00	0.46	0.00	6.73	ND		07/30/2022 01:51
PFHpA	0.30	0.32	6.49	6.39	ND		07/30/2022 01:51
DONA	0.00	0.56	0.00	6.62	ND		07/30/2022 01:51
PFHxS	0.43	0.41	7.52	7.43	ND		07/30/2022 01:51
PFOA	0.38	0.40	7.13	7.03	ND		07/30/2022 01:51
6:2 FTS	0.85	0.81	6.80	6.72	ND		07/30/2022 01:51
PFHpS	0.00	0.38	0.00	8.13	ND		07/30/2022 01:51
PFNA	0.14	0.13	7.78	7.80	ND		07/30/2022 01:51
PFOSAm	N/A	N/A	10.63	10.55	ND		07/30/2022 01:51
PFOS	0.43	0.41	8.91	8.81	46		07/30/2022 01:51
MeFOSA	0.00	0.59	0.00	12.73	ND		07/30/2022 01:51
PFDA	0.19	0.14	8.45	8.34	17	J	07/30/2022 01:51
EtFOSAm	0.00	0.60	0.00	13.03	ND		07/30/2022 01:51
8:2 FTS	0.80	1.00	8.07	7.95	ND		07/30/2022 01:51
9-Cl-PF3ON	0.00	0.06	0.00	9.31	ND		07/30/2022 01:51
PFNS	0.00	0.54	0.00	9.52	ND		07/30/2022 01:51
PFUnDA	0.14	0.14	9.11	9.11	92	J	07/30/2022 01:51
NMeFOSAA	0.79	0.87	8.33	8.31	ND		07/30/2022 01:51
NEtFOSAA	0.00	0.61	0.00	8.51	ND		07/30/2022 01:51
PFDS	0.37	0.37	10.26	10.16	ND		07/30/2022 01:51
PFDOA	0.17	0.17	9.78	9.69	ND		07/30/2022 01:51
MeFOSE	N/A	N/A	0.00	12.41	ND		07/30/2022 01:51
EtFOSE	0.00	0.00	0.00	12.89	ND		07/30/2022 01:51
11-Cl-PF3OUdS	0.00	0.02	0.00	10.64	ND		07/30/2022 01:51
PFTTrDA	0.16	0.17	10.45	10.36	ND		07/30/2022 01:51
PFDoS	0.00	0.53	0.00	11.39	ND		07/30/2022 01:51
PFTDA	0.29	0.29	11.09	11.00	ND		07/30/2022 01:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK11-HA01(0-6)
 Lab Sample ID 10616212011
 Lab File ID B220802A_037
 Matrix Soil
 Collected 07/06/2022 13:30
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.24g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.62	0.096	0.027	0.027	1	375-22-4		08/02/2022 20:30
PFPeA	3.0	0.096	0.027	0.027	1	2706-90-3		08/02/2022 20:30
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/02/2022 20:30
PFBS	ND	0.085	0.025	0.025	1	375-73-5		08/02/2022 20:30
PFHxA	1.2	0.096	0.026	0.026	1	307-24-4		08/02/2022 20:30
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		08/02/2022 20:30
PFPeS	0.051 J	0.090	0.023	0.023	1	2706-91-4		08/02/2022 20:30
PFHpA	0.62	0.096	0.033	0.033	1	375-85-9		08/02/2022 20:30
DONA	ND	0.090	0.035	0.035	1	919005-14-4		08/02/2022 20:30
PFHxS	1.1	0.087	0.021	0.021	1	355-46-4		08/02/2022 20:30
PFOA	0.43	0.096	0.030	0.030	1	335-67-1		08/02/2022 20:30
6:2 FTS	3.5	0.091	0.040	0.040	1	27619-97-2		08/02/2022 20:30
PFHpS	0.11	0.091	0.027	0.027	1	375-92-8		08/02/2022 20:30
PFNA	0.28	0.096	0.030	0.030	1	375-95-1		08/02/2022 20:30
PFOSAm	1.4	0.096	0.028	0.028	1	754-91-6		08/02/2022 20:30
PFOS	35 D	0.88	0.28	0.28	10	1763-23-1		08/03/2022 06:51
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/02/2022 20:30
PFDA	0.87	0.096	0.022	0.022	1	335-76-2		08/02/2022 20:30
EtFOSAm	ND	0.096	0.024	0.024	1	4151-50-2		08/02/2022 20:30
8:2 FTS	6.2	0.092	0.042	0.042	1	39108-34-4		08/02/2022 20:30
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/02/2022 20:30
PFNS	0.43	0.092	0.033	0.033	1	68259-12-1		08/02/2022 20:30
PFUnDA	1.2	0.096	0.029	0.029	1	2058-94-8		08/02/2022 20:30
NMeFOSAA	0.14	0.096	0.027	0.027	1	2355-31-9		08/02/2022 20:30
NEtFOSAA	0.073 J	0.096	0.038	0.038	1	2991-50-6		08/02/2022 20:30
PFDS	0.90	0.092	0.027	0.027	1	335-77-3		08/02/2022 20:30
PFDOA	1.3	0.096	0.031	0.031	1	307-55-1		08/02/2022 20:30
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/02/2022 20:30
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/02/2022 20:30
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/02/2022 20:30
PFTTrDA	0.29	0.096	0.030	0.030	1	72629-94-8		08/02/2022 20:30
PFDoS	0.17	0.092	0.025	0.025	1	79780-39-5		08/02/2022 20:30
PFTDA	0.36	0.096	0.033	0.033	1	376-06-7		08/02/2022 20:30

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK11-HA01(0-6)
 Lab Sample ID 10616212011
 Lab File ID B220802A_037
 Matrix Soil
 Collected 07/06/2022 13:30
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.24g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	0.86	90	50-150		08/02/2022 20:30
13C4 PFOA	0.96	0.97	101	50-150		08/02/2022 20:30
13C2 PFDA	0.96	0.87	91	50-150		08/02/2022 20:30
13C4 PFOS	0.91	0.67	74	50-150		08/02/2022 20:30

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.78	82	25-150		08/02/2022 20:30
13C5 PFPeA	0.96	0.72	75	25-150		08/02/2022 20:30
13C3 PFBS	0.89	0.72	81	25-150		08/02/2022 20:30
13C2 4:2FTS	0.89	0.73	82	25-150		08/02/2022 20:30
13C5 PFHxA	0.96	0.74	77	25-150		08/02/2022 20:30
13C4 PFHpA	0.96	0.83	87	25-150		08/02/2022 20:30
13C3 PFHxS	0.90	0.72	80	25-150		08/02/2022 20:30
13C2 6:2FTS	0.91	0.63	69	25-150		08/02/2022 20:30
13C8 PFOA	0.96	0.89	93	25-150		08/02/2022 20:30
13C9 PFNA	0.96	0.74	78	25-150		08/02/2022 20:30
13C8 PFOS	0.91	0.92	101	25-150	D	08/03/2022 06:51
13C2 8:2FTS	0.91	0.72	79	25-150		08/02/2022 20:30
13C6 PFDA	0.96	0.77	81	25-150		08/02/2022 20:30
d3-MeFOSAA	0.96	0.78	82	25-150		08/02/2022 20:30
13C8 PFOSA	0.96	0.70	73	25-150		08/02/2022 20:30
d5-EtFOSAA	0.96	0.80	84	25-150		08/02/2022 20:30
13C7 PFUdA	0.96	0.97	102	25-150		08/02/2022 20:30
13C2 PFDoA	0.96	0.97	101	25-150		08/02/2022 20:30
13C2 PFTeDA	0.96	0.72	76	25-150		08/02/2022 20:30
13C3 HFPO-DA	0.96	0.78	81	25-150		08/02/2022 20:30
d7-N-MeFOSE	0.96	0.52	54	10-150		08/02/2022 20:30
d9-N-EtFOSE	0.96	0.38	40	10-150		08/02/2022 20:30
d3-N-MeFOSA	0.96	0.076	8	10-150	R	08/02/2022 20:30
d5-N-EtFOSA	0.96	0.059	6	10-150	R	08/02/2022 20:30

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK11-HA01(0-6)
 Lab Sample ID 10616212011
 Lab File ID B220802A_037
 Matrix Soil
 Collected 07/06/2022 13:30
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.24g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.71	18		08/02/2022 20:30
13C4 PFOA	N/A	N/A	7.07	6.96	17		08/02/2022 20:30
13C2 PFDA	N/A	N/A	8.38	8.27	17		08/02/2022 20:30
13C4 PFOS	N/A	N/A	8.86	8.75	14		08/02/2022 20:30

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.38	25		08/02/2022 20:30
13C5 PFPeA	N/A	N/A	5.14	5.13	20		08/02/2022 20:30
13C3 PFBS	N/A	N/A	6.04	5.96	14		08/02/2022 20:30
13C2 4:2FTS	N/A	N/A	5.53	5.48	44		08/02/2022 20:30
13C5 PFHxA	N/A	N/A	5.80	5.73	15		08/02/2022 20:30
13C4 PFHpA	N/A	N/A	6.44	6.32	15		08/02/2022 20:30
13C3 PFHxS	N/A	N/A	7.47	7.47	17		08/02/2022 20:30
13C2 6:2FTS	N/A	N/A	6.74	6.73	98		08/02/2022 20:30
13C8 PFOA	N/A	N/A	7.07	6.94	19		08/02/2022 20:30
13C9 PFNA	N/A	N/A	7.72	7.61	15		08/02/2022 20:30
13C8 PFOS	N/A	N/A	8.87	8.80	99	D	08/03/2022 06:51
13C2 8:2FTS	N/A	N/A	8.00	7.94	94		08/02/2022 20:30
13C6 PFDA	N/A	N/A	8.38	8.32	15		08/02/2022 20:30
d3-MeFOSAA	N/A	N/A	8.24	8.19	19		08/02/2022 20:30
13C8 PFOSA	N/A	N/A	10.56	10.61	11		08/02/2022 20:30
d5-EtFOSAA	N/A	N/A	8.54	8.49	18		08/02/2022 20:30
13C7 PFUdA	N/A	N/A	9.06	9.00	16		08/02/2022 20:30
13C2 PFDoA	N/A	N/A	9.73	9.67	12		08/02/2022 20:30
13C2 PFTeDA	N/A	N/A	11.03	11.00	13		08/02/2022 20:30
13C3 HFPO-DA	N/A	N/A	6.06	5.97	21		08/02/2022 20:30
d7-N-MeFOSE	N/A	N/A	12.40	12.38	56		08/02/2022 20:30
d9-N-EtFOSE	N/A	N/A	12.86	12.85	29		08/02/2022 20:30
d3-N-MeFOSA	N/A	N/A	12.61	12.64	47	R	08/02/2022 20:30
d5-N-EtFOSA	N/A	N/A	13.02	13.01	38	R	08/02/2022 20:30

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK11-HA01(0-6)
 Lab Sample ID 10616212011
 Lab File ID B220802A_037
 Matrix Soil
 Collected 07/06/2022 13:30
 Received 07/08/2022 18:45
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.24g
 Ical ID 220728A02
 CCal File B220802A_032
 Ending CCal File B220802A_044
 Blank File B220802A_024

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	16		08/02/2022 20:30
PFPeA	N/A	N/A	5.15	5.12	91		08/02/2022 20:30
HFPO-DA	1.20	0.25	6.07	6.02	ND		08/02/2022 20:30
PFBS	0.48	0.43	6.05	5.99	ND		08/02/2022 20:30
PFHxA	0.08	0.08	5.81	5.75	32		08/02/2022 20:30
4:2 FTS	0.00	0.85	0.00	5.49	ND		08/02/2022 20:30
PFPeS	0.41	0.40	6.78	6.73	23	J	08/02/2022 20:30
PFHpA	0.30	0.28	6.44	6.39	21		08/02/2022 20:30
DONA	0.00	0.60	0.00	6.62	ND		08/02/2022 20:30
PFHxS	0.37	0.38	7.48	7.43	12		08/02/2022 20:30
PFOA	0.41	0.42	7.08	7.03	25		08/02/2022 20:30
6:2 FTS	0.84	0.89	6.75	6.72	10		08/02/2022 20:30
PFHpS	0.43	0.33	8.18	8.13	21		08/02/2022 20:30
PFNA	0.14	0.13	7.73	7.67	46		08/02/2022 20:30
PFOSAm	N/A	N/A	10.57	10.55	40		08/02/2022 20:30
PFOS	0.44	0.38	8.88	8.81	10	D	08/03/2022 06:51
MeFOSA	0.00	0.57	0.00	12.61	ND		08/02/2022 20:30
PFDA	0.18	0.18	8.39	8.34	64		08/02/2022 20:30
EtFOSAm	0.00	0.54	0.00	13.03	ND		08/02/2022 20:30
8:2 FTS	0.92	0.85	8.01	7.95	18		08/02/2022 20:30
9-CI-PF3ON	0.00	0.06	0.00	9.31	ND		08/02/2022 20:30
PFNS	0.52	0.54	9.55	9.52	29		08/02/2022 20:30
PFUnDA	0.13	0.11	9.06	9.01	79		08/02/2022 20:30
NMeFOSAA	0.78	0.86	8.25	8.19	13		08/02/2022 20:30
NEtFOSAA	0.56	0.60	8.55	8.51	20	J	08/02/2022 20:30
PFDS	0.34	0.34	10.21	10.16	42		08/02/2022 20:30
PFDOA	0.16	0.19	9.73	9.69	74		08/02/2022 20:30
MeFOSE	N/A	N/A	0.00	12.41	ND		08/02/2022 20:30
EtFOSE	0.00	0.00	12.90	12.89	ND		08/02/2022 20:30
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		08/02/2022 20:30
PFTTrDA	0.16	0.17	10.40	10.36	21		08/02/2022 20:30
PFDoS	0.57	0.54	11.43	11.39	26		08/02/2022 20:30
PFTDA	0.25	0.28	11.04	11.00	37		08/02/2022 20:30

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK12-HA01(0-6)
 Lab Sample ID 10616212012
 Lab File ID B220805B_005
 Matrix Soil
 Collected 07/06/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.21g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.070 J	0.096	0.027	0.027	1	375-22-4		08/05/2022 22:31
PFPeA	0.31	0.096	0.027	0.027	1	2706-90-3		08/05/2022 22:31
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/05/2022 22:31
PFBS	ND	0.085	0.025	0.025	1	375-73-5		08/05/2022 22:31
PFHxA	0.19	0.096	0.026	0.026	1	307-24-4		08/05/2022 22:31
4:2 FTS	ND	0.090	0.022	0.022	1	757124-72-4		08/05/2022 22:31
PFPeS	ND	0.090	0.023	0.023	1	2706-91-4		08/05/2022 22:31
PFHpA	0.13	0.096	0.033	0.033	1	375-85-9		08/05/2022 22:31
DONA	ND	0.091	0.035	0.035	1	919005-14-4		08/05/2022 22:31
PFHxS	ND	0.087	0.021	0.021	1	355-46-4		08/05/2022 22:31
PFOA	0.13	0.096	0.030	0.030	1	335-67-1		08/05/2022 22:31
6:2 FTS	ND	0.091	0.040	0.040	1	27619-97-2		08/05/2022 22:31
PFHpS	ND	0.091	0.027	0.027	1	375-92-8		08/05/2022 22:31
PFNA	ND	0.096	0.030	0.030	1	375-95-1		08/05/2022 22:31
PFOSAm	ND	0.096	0.028	0.028	1	754-91-6		08/05/2022 22:31
PFOS	ND	0.089	0.028	0.028	1	1763-23-1		08/05/2022 22:31
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/05/2022 22:31
PFDA	ND	0.096	0.022	0.022	1	335-76-2		08/05/2022 22:31
EtFOSAm	ND	0.096	0.025	0.025	1	4151-50-2		08/05/2022 22:31
8:2 FTS	ND	0.092	0.042	0.042	1	39108-34-4		08/05/2022 22:31
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 22:31
PFNS	ND	0.092	0.033	0.033	1	68259-12-1		08/05/2022 22:31
PFUnDA	ND	0.096	0.029	0.029	1	2058-94-8		08/05/2022 22:31
NMeFOSAA	ND	0.096	0.027	0.027	1	2355-31-9		08/05/2022 22:31
NEtFOSAA	ND	0.096	0.039	0.039	1	2991-50-6		08/05/2022 22:31
PFDS	ND	0.093	0.027	0.027	1	335-77-3		08/05/2022 22:31
PFDOA	ND	0.096	0.032	0.032	1	307-55-1		08/05/2022 22:31
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/05/2022 22:31
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/05/2022 22:31
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 22:31
PFTTrDA	0.47 I	0.096	0.031	0.031	1	72629-94-8		08/05/2022 22:31
PFDoS	ND	0.093	0.025	0.025	1	79780-39-5		08/05/2022 22:31
PFTDA	ND	0.096	0.033	0.033	1	376-06-7		08/05/2022 22:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK12-HA01(0-6)
 Lab Sample ID 10616212012
 Lab File ID B220805B_005
 Matrix Soil
 Collected 07/06/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.21g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	1.2	122	50-150		08/05/2022 22:31
13C4 PFOA	0.96	1.2	123	50-150		08/05/2022 22:31
13C2 PFDA	0.96	1.1	118	50-150		08/05/2022 22:31
13C4 PFOS	0.92	1.2	129	50-150		08/05/2022 22:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.83	86	50-150		08/05/2022 22:31
13C5 PFPeA	0.96	0.86	90	50-150		08/05/2022 22:31
13C3 PFBS	0.89	0.70	78	50-150		08/05/2022 22:31
13C2 4:2FTS	0.90	0.81	90	50-150		08/05/2022 22:31
13C5 PFHxA	0.96	0.85	89	50-150		08/05/2022 22:31
13C4 PFHpA	0.96	0.86	90	50-150		08/05/2022 22:31
13C3 PFHxS	0.91	0.78	86	50-150		08/05/2022 22:31
13C2 6:2FTS	0.91	0.89	98	50-150		08/05/2022 22:31
13C8 PFOA	0.96	0.83	86	50-150		08/05/2022 22:31
13C9 PFNA	0.96	1.1	111	50-150		08/05/2022 22:31
13C8 PFOS	0.92	0.91	100	50-150		08/05/2022 22:31
13C2 8:2FTS	0.92	1.1	116	50-150		08/05/2022 22:31
13C6 PFDA	0.96	0.96	100	50-150		08/05/2022 22:31
d3-MeFOSAA	0.96	0.89	93	50-150		08/05/2022 22:31
13C8 PFOSA	0.96	0.50	53	50-150		08/05/2022 22:31
d5-EtFOSAA	0.96	1.0	106	50-150		08/05/2022 22:31
13C7 PFUdA	0.96	0.95	99	50-150		08/05/2022 22:31
13C2 PFDoA	0.96	0.88	92	50-150		08/05/2022 22:31
13C2 PFTeDA	0.96	0.90	93	50-150		08/05/2022 22:31
13C3 HFPO-DA	0.96	0.88	91	50-150		08/05/2022 22:31
d7-N-MeFOSE	0.96	0.029	3	10-150	R	08/05/2022 22:31
d9-N-EtFOSE	0.96	0.042	4	10-150	R	08/05/2022 22:31
d3-N-MeFOSA	0.96	0.0063	1	10-150	R	08/05/2022 22:31
d5-N-EtFOSA	0.96	0.0056	1	10-150	R	08/05/2022 22:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK12-HA01(0-6)
 Lab Sample ID 10616212012
 Lab File ID B220805B_005
 Matrix Soil
 Collected 07/06/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.21g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	24		08/05/2022 22:31
13C4 PFOA	N/A	N/A	7.07	7.07	23		08/05/2022 22:31
13C2 PFDA	N/A	N/A	8.40	8.39	16		08/05/2022 22:31
13C4 PFOS	N/A	N/A	8.89	8.88	17		08/05/2022 22:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/05/2022 22:31
13C5 PFPeA	N/A	N/A	5.14	5.15	27		08/05/2022 22:31
13C3 PFBS	N/A	N/A	6.04	6.05	19		08/05/2022 22:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	57		08/05/2022 22:31
13C5 PFHxA	N/A	N/A	5.80	5.80	17		08/05/2022 22:31
13C4 PFHpA	N/A	N/A	6.43	6.43	19		08/05/2022 22:31
13C3 PFHxS	N/A	N/A	7.48	7.49	18		08/05/2022 22:31
13C2 6:2FTS	N/A	N/A	6.73	6.74	11		08/05/2022 22:31
13C8 PFOA	N/A	N/A	7.07	7.07	29		08/05/2022 22:31
13C9 PFNA	N/A	N/A	7.72	7.72	24		08/05/2022 22:31
13C8 PFOS	N/A	N/A	8.89	8.88	18		08/05/2022 22:31
13C2 8:2FTS	N/A	N/A	8.01	8.01	20		08/05/2022 22:31
13C6 PFDA	N/A	N/A	8.40	8.39	17		08/05/2022 22:31
d3-MeFOSAA	N/A	N/A	8.26	8.25	13		08/05/2022 22:31
13C8 PFOSA	N/A	N/A	10.64	10.61	13		08/05/2022 22:31
d5-EtFOSAA	N/A	N/A	8.55	8.54	14		08/05/2022 22:31
13C7 PFUdA	N/A	N/A	9.08	9.07	23		08/05/2022 22:31
13C2 PFDoA	N/A	N/A	9.76	9.74	10		08/05/2022 22:31
13C2 PFTeDA	N/A	N/A	11.07	11.07	16		08/05/2022 22:31
13C3 HFPO-DA	N/A	N/A	6.05	6.06	19		08/05/2022 22:31
d7-N-MeFOSE	N/A	N/A	12.46	12.45	30	R	08/05/2022 22:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	11	R	08/05/2022 22:31
d3-N-MeFOSA	N/A	N/A	12.67	12.66	10	R	08/05/2022 22:31
d5-N-EtFOSA	N/A	N/A	13.08	13.08	72	R	08/05/2022 22:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK12-HA01(0-6)
 Lab Sample ID 10616212012
 Lab File ID B220805B_005
 Matrix Soil
 Collected 07/06/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.21g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	82	J	08/05/2022 22:31
PFPeA	N/A	N/A	5.15	5.15	29		08/05/2022 22:31
HFPO-DA	0.00	0.30	0.00	6.07	ND		08/05/2022 22:31
PFBS	0.23	0.48	6.03	6.06	ND		08/05/2022 22:31
PFHxA	0.08	0.08	5.81	5.81	17		08/05/2022 22:31
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/05/2022 22:31
PFPeS	0.00	0.43	0.00	6.79	ND		08/05/2022 22:31
PFHpA	0.37	0.30	6.43	6.44	12		08/05/2022 22:31
DONA	0.00	0.59	0.00	6.67	ND		08/05/2022 22:31
PFHxS	0.35	0.40	7.49	7.49	ND		08/05/2022 22:31
PFOA	0.48	0.40	7.07	7.08	11		08/05/2022 22:31
6:2 FTS	0.62	0.87	6.74	6.74	ND		08/05/2022 22:31
PFHpS	0.00	0.42	0.00	8.20	ND		08/05/2022 22:31
PFNA	0.11	0.13	7.73	7.73	ND		08/05/2022 22:31
PFOSAm	N/A	N/A	0.00	10.61	ND		08/05/2022 22:31
PFOS	0.36	0.42	8.90	8.90	ND		08/05/2022 22:31
MeFOSA	0.00	0.59	0.00	12.69	ND		08/05/2022 22:31
PFDA	0.23	0.18	8.41	8.40	ND		08/05/2022 22:31
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/05/2022 22:31
8:2 FTS	0.68	0.78	8.02	8.02	ND		08/05/2022 22:31
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/05/2022 22:31
PFNS	0.00	0.49	0.00	9.58	ND		08/05/2022 22:31
PFUnDA	0.52	0.13	9.09	9.08	ND		08/05/2022 22:31
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 22:31
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/05/2022 22:31
PFDS	0.00	0.37	0.00	10.24	ND		08/05/2022 22:31
PFDOA	2.70	0.17	9.77	9.75	ND		08/05/2022 22:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 22:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 22:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 22:31
PFTTrDA	0.44	0.19	10.24	10.42	37	I	08/05/2022 22:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 22:31
PFTDA	0.00	0.25	0.00	11.07	ND		08/05/2022 22:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK13-HA01(0-6)
 Lab Sample ID 10616212013
 Lab File ID B220804B_009
 Matrix Soil
 Collected 07/05/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.23	0.096	0.027	0.027	1	375-22-4		08/05/2022 03:31
PFPeA	1.1	0.096	0.027	0.027	1	2706-90-3		08/05/2022 03:31
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/05/2022 03:31
PFBS	0.065 J	0.085	0.025	0.025	1	375-73-5		08/05/2022 03:31
PFHxA	0.43	0.096	0.026	0.026	1	307-24-4		08/05/2022 03:31
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		08/05/2022 03:31
PFPeS	0.094	0.090	0.023	0.023	1	2706-91-4		08/05/2022 03:31
PFHpA	0.17	0.096	0.033	0.033	1	375-85-9		08/05/2022 03:31
DONA	ND	0.090	0.035	0.035	1	919005-14-4		08/05/2022 03:31
PFHxS	1.0	0.087	0.021	0.021	1	355-46-4		08/05/2022 03:31
PFOA	0.15	0.096	0.030	0.030	1	335-67-1		08/05/2022 03:31
6:2 FTS	0.23	0.091	0.040	0.040	1	27619-97-2		08/05/2022 03:31
PFHpS	0.051 J	0.091	0.027	0.027	1	375-92-8		08/05/2022 03:31
PFNA	0.11	0.096	0.030	0.030	1	375-95-1		08/05/2022 03:31
PFOSAm	0.034 J	0.096	0.028	0.028	1	754-91-6		08/05/2022 03:31
PFOS	6.7	0.089	0.028	0.028	1	1763-23-1		08/05/2022 03:31
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/05/2022 03:31
PFDA	0.11	0.096	0.022	0.022	1	335-76-2		08/05/2022 03:31
EtFOSAm	ND	0.096	0.025	0.025	1	4151-50-2		08/05/2022 03:31
8:2 FTS	0.054 J	0.092	0.042	0.042	1	39108-34-4		08/05/2022 03:31
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 03:31
PFNS	ND	0.092	0.033	0.033	1	68259-12-1		08/05/2022 03:31
PFUnDA	ND	0.096	0.029	0.029	1	2058-94-8		08/05/2022 03:31
NMeFOSAA	ND	0.096	0.027	0.027	1	2355-31-9		08/05/2022 03:31
NEtFOSAA	ND	0.096	0.038	0.038	1	2991-50-6		08/05/2022 03:31
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/05/2022 03:31
PFDOA	ND	0.096	0.031	0.031	1	307-55-1		08/05/2022 03:31
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/05/2022 03:31
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/05/2022 03:31
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 03:31
PFTTrDA	ND	0.096	0.031	0.031	1	72629-94-8		08/05/2022 03:31
PFDoS	ND	0.093	0.025	0.025	1	79780-39-5		08/05/2022 03:31
PFTDA	ND	0.096	0.033	0.033	1	376-06-7		08/05/2022 03:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK13-HA01(0-6)
 Lab Sample ID 10616212013
 Lab File ID B220804B_009
 Matrix Soil
 Collected 07/05/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	1.1	111	50-150		08/05/2022 03:31
13C4 PFOA	0.96	1.3	131	50-150		08/05/2022 03:31
13C2 PFDA	0.96	1.3	136	50-150		08/05/2022 03:31
13C4 PFOS	0.92	0.97	106	50-150		08/05/2022 03:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.81	84	25-150		08/05/2022 03:31
13C5 PFPeA	0.96	0.84	88	25-150		08/05/2022 03:31
13C3 PFBS	0.89	0.77	87	25-150		08/05/2022 03:31
13C2 4:2FTS	0.89	0.77	86	25-150		08/05/2022 03:31
13C5 PFHxA	0.96	0.84	88	25-150		08/05/2022 03:31
13C4 PFHpA	0.96	0.76	80	25-150		08/05/2022 03:31
13C3 PFHxS	0.91	0.73	80	25-150		08/05/2022 03:31
13C2 6:2FTS	0.91	0.80	88	25-150		08/05/2022 03:31
13C8 PFOA	0.96	0.89	93	25-150		08/05/2022 03:31
13C9 PFNA	0.96	0.88	92	25-150		08/05/2022 03:31
13C8 PFOS	0.92	0.75	82	25-150		08/05/2022 03:31
13C2 8:2FTS	0.92	0.93	101	25-150		08/05/2022 03:31
13C6 PFDA	0.96	0.76	80	25-150		08/05/2022 03:31
d3-MeFOSAA	0.96	0.93	97	25-150		08/05/2022 03:31
13C8 PFOSA	0.96	0.65	68	25-150		08/05/2022 03:31
d5-EtFOSAA	0.96	0.76	80	25-150		08/05/2022 03:31
13C7 PFUdA	0.96	0.89	93	25-150		08/05/2022 03:31
13C2 PFDaA	0.96	0.87	91	25-150		08/05/2022 03:31
13C2 PFTeDA	0.96	0.87	90	25-150		08/05/2022 03:31
13C3 HFPO-DA	0.96	0.84	88	25-150		08/05/2022 03:31
d7-N-MeFOSE	0.96	0.091	10	10-150		08/05/2022 03:31
d9-N-EtFOSE	0.96	0.071	7	10-150	R	08/05/2022 03:31
d3-N-MeFOSA	0.96	0.011	1	10-150	R	08/05/2022 03:31
d5-N-EtFOSA	0.96	0.0084	1	10-150	R	08/05/2022 03:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK13-HA01(0-6)
 Lab Sample ID 10616212013
 Lab File ID B220804B_009
 Matrix Soil
 Collected 07/05/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	19		08/05/2022 03:31
13C4 PFOA	N/A	N/A	7.05	7.07	19		08/05/2022 03:31
13C2 PFDA	N/A	N/A	8.37	8.39	14		08/05/2022 03:31
13C4 PFOS	N/A	N/A	8.86	8.88	12		08/05/2022 03:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	25		08/05/2022 03:31
13C5 PFPeA	N/A	N/A	5.14	5.15	23		08/05/2022 03:31
13C3 PFBS	N/A	N/A	6.04	6.05	13		08/05/2022 03:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	61		08/05/2022 03:31
13C5 PFHxA	N/A	N/A	5.79	5.80	17		08/05/2022 03:31
13C4 PFHpA	N/A	N/A	6.41	6.43	13		08/05/2022 03:31
13C3 PFHxS	N/A	N/A	7.47	7.49	18		08/05/2022 03:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	89		08/05/2022 03:31
13C8 PFOA	N/A	N/A	7.05	7.07	19		08/05/2022 03:31
13C9 PFNA	N/A	N/A	7.70	7.72	19		08/05/2022 03:31
13C8 PFOS	N/A	N/A	8.87	8.88	11		08/05/2022 03:31
13C2 8:2FTS	N/A	N/A	7.99	8.01	19		08/05/2022 03:31
13C6 PFDA	N/A	N/A	8.37	8.39	16		08/05/2022 03:31
d3-MeFOSAA	N/A	N/A	8.23	8.25	14		08/05/2022 03:31
13C8 PFOSA	N/A	N/A	10.60	10.61	12		08/05/2022 03:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	12		08/05/2022 03:31
13C7 PFUdA	N/A	N/A	9.04	9.07	30		08/05/2022 03:31
13C2 PFDoA	N/A	N/A	9.71	9.74	12		08/05/2022 03:31
13C2 PFTeDA	N/A	N/A	11.04	11.07	11		08/05/2022 03:31
13C3 HFPO-DA	N/A	N/A	6.05	6.06	17		08/05/2022 03:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	41		08/05/2022 03:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	17	R	08/05/2022 03:31
d3-N-MeFOSA	N/A	N/A	12.66	12.66	13	R	08/05/2022 03:31
d5-N-EtFOSA	N/A	N/A	13.07	13.08	13	R	08/05/2022 03:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK13-HA01(0-6)
 Lab Sample ID 10616212013
 Lab File ID B220804B_009
 Matrix Soil
 Collected 07/05/2022 13:20
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	12		08/05/2022 03:31
PFPeA	N/A	N/A	5.15	5.15	60		08/05/2022 03:31
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/05/2022 03:31
PFBS	0.45	0.43	6.04	6.06	30	J	08/05/2022 03:31
PFHxA	0.08	0.07	5.80	5.81	31		08/05/2022 03:31
4:2 FTS	0.00	0.85	0.00	5.54	ND		08/05/2022 03:31
PFPeS	0.43	0.46	6.77	6.79	37		08/05/2022 03:31
PFHpA	0.28	0.29	6.42	6.44	22		08/05/2022 03:31
DONA	0.00	0.57	0.00	6.67	ND		08/05/2022 03:31
PFHxS	0.38	0.40	7.48	7.49	11		08/05/2022 03:31
PFOA	0.42	0.40	7.05	7.08	18		08/05/2022 03:31
6:2 FTS	0.85	0.97	6.72	6.74	49		08/05/2022 03:31
PFHpS	0.48	0.36	8.19	8.20	19	J	08/05/2022 03:31
PFNA	0.13	0.12	7.71	7.73	30		08/05/2022 03:31
PFOSAm	N/A	N/A	10.61	10.61	16	J	08/05/2022 03:31
PFOS	0.40	0.44	8.88	8.90	48		08/05/2022 03:31
MeFOSA	0.00	0.51	0.00	12.69	ND		08/05/2022 03:31
PFDA	0.20	0.19	8.38	8.40	22		08/05/2022 03:31
EtFOSAm	0.00	0.59	0.00	13.10	ND		08/05/2022 03:31
8:2 FTS	1.10	0.88	8.00	8.02	15	J	08/05/2022 03:31
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 03:31
PFNS	0.46	0.47	9.54	9.58	ND		08/05/2022 03:31
PFUnDA	0.16	0.15	9.05	9.08	ND		08/05/2022 03:31
NMeFOSAA	0.63	0.90	8.24	8.26	ND		08/05/2022 03:31
NEtFOSAA	0.00	0.71	0.00	8.55	ND		08/05/2022 03:31
PFDS	0.39	0.32	10.21	10.24	ND		08/05/2022 03:31
PFDOA	0.23	0.20	9.72	9.75	ND		08/05/2022 03:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 03:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 03:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 03:31
PFTTrDA	0.22	0.16	10.39	10.42	ND		08/05/2022 03:31
PFDoS	0.59	0.48	11.46	11.48	ND		08/05/2022 03:31
PFTDA	0.15	0.30	11.04	11.07	ND		08/05/2022 03:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK14-HA01(0-6)
 Lab Sample ID 10616212014
 Lab File ID B220805B_006
 Matrix Soil
 Collected 07/05/2022 13:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.028 J	0.092	0.026	0.026	1	375-22-4		08/05/2022 22:51
PFPeA	0.11	0.092	0.026	0.026	1	2706-90-3		08/05/2022 22:51
HFPO-DA	ND	0.092	0.026	0.026	1	13252-13-6		08/05/2022 22:51
PFBS	ND	0.082	0.024	0.024	1	375-73-5		08/05/2022 22:51
PFHxA	0.064 J	0.092	0.025	0.025	1	307-24-4		08/05/2022 22:51
4:2 FTS	ND	0.086	0.021	0.021	1	757124-72-4		08/05/2022 22:51
PFPeS	ND	0.087	0.022	0.022	1	2706-91-4		08/05/2022 22:51
PFHpA	0.046 J	0.092	0.032	0.032	1	375-85-9		08/05/2022 22:51
DONA	ND	0.087	0.033	0.033	1	919005-14-4		08/05/2022 22:51
PFHxS	0.064 J	0.084	0.020	0.020	1	355-46-4		08/05/2022 22:51
PFOA	0.089 J	0.092	0.029	0.029	1	335-67-1		08/05/2022 22:51
6:2 FTS	ND	0.088	0.038	0.038	1	27619-97-2		08/05/2022 22:51
PFHpS	ND	0.088	0.026	0.026	1	375-92-8		08/05/2022 22:51
PFNA	0.065 J	0.092	0.029	0.029	1	375-95-1		08/05/2022 22:51
PFOSAm	ND	0.092	0.027	0.027	1	754-91-6		08/05/2022 22:51
PFOS	0.20	0.085	0.027	0.027	1	1763-23-1		08/05/2022 22:51
MeFOSA	ND	0.092	0.025	0.025	1	31506-32-8		08/05/2022 22:51
PFDA	0.027 J	0.092	0.021	0.021	1	335-76-2		08/05/2022 22:51
EtFOSAm	ND	0.092	0.024	0.024	1	4151-50-2		08/05/2022 22:51
8:2 FTS	ND	0.089	0.040	0.040	1	39108-34-4		08/05/2022 22:51
9-CI-PF3ON	ND	0.086	0.023	0.023	1	756426-58-1		08/05/2022 22:51
PFNS	ND	0.089	0.032	0.032	1	68259-12-1		08/05/2022 22:51
PFUnDA	ND	0.092	0.028	0.028	1	2058-94-8		08/05/2022 22:51
NMeFOSAA	ND	0.092	0.026	0.026	1	2355-31-9		08/05/2022 22:51
NEtFOSAA	ND	0.092	0.037	0.037	1	2991-50-6		08/05/2022 22:51
PFDS	ND	0.089	0.026	0.026	1	335-77-3		08/05/2022 22:51
PFDOA	ND	0.092	0.030	0.030	1	307-55-1		08/05/2022 22:51
MeFOSE	ND	0.092	0.028	0.028	1	24448-09-7		08/05/2022 22:51
EtFOSE	ND	0.092	0.030	0.030	1	1691-99-2		08/05/2022 22:51
11-CI-PF3OUdS	ND	0.087	0.023	0.023	1	763051-92-9		08/05/2022 22:51
PFTTrDA	ND	0.092	0.029	0.029	1	72629-94-8		08/05/2022 22:51
PFDoS	ND	0.089	0.024	0.024	1	79780-39-5		08/05/2022 22:51
PFTDA	ND	0.092	0.032	0.032	1	376-06-7		08/05/2022 22:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK14-HA01(0-6)
 Lab Sample ID 10616212014
 Lab File ID B220805B_006
 Matrix Soil
 Collected 07/05/2022 13:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.92	1.2	128	50-150		08/05/2022 22:51
13C4 PFOA	0.92	1.1	117	50-150		08/05/2022 22:51
13C2 PFDA	0.92	1.2	135	50-150		08/05/2022 22:51
13C4 PFOS	0.88	1.1	126	50-150		08/05/2022 22:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.92	0.78	84	25-150		08/05/2022 22:51
13C5 PFPeA	0.92	0.80	86	25-150		08/05/2022 22:51
13C3 PFBS	0.86	0.68	80	25-150		08/05/2022 22:51
13C2 4:2FTS	0.86	0.73	84	25-150		08/05/2022 22:51
13C5 PFHxA	0.92	0.86	93	25-150		08/05/2022 22:51
13C4 PFHpA	0.92	0.81	88	25-150		08/05/2022 22:51
13C3 PFHxS	0.87	0.75	86	25-150		08/05/2022 22:51
13C2 6:2FTS	0.88	0.71	81	25-150		08/05/2022 22:51
13C8 PFOA	0.92	0.77	84	25-150		08/05/2022 22:51
13C9 PFNA	0.92	0.87	94	25-150		08/05/2022 22:51
13C8 PFOS	0.88	0.90	102	25-150		08/05/2022 22:51
13C2 8:2FTS	0.88	0.87	99	25-150		08/05/2022 22:51
13C6 PFDA	0.92	0.99	107	25-150		08/05/2022 22:51
d3-MeFOSAA	0.92	0.89	96	25-150		08/05/2022 22:51
13C8 PFOSA	0.92	0.69	74	25-150		08/05/2022 22:51
d5-EtFOSAA	0.92	0.87	95	25-150		08/05/2022 22:51
13C7 PFUdA	0.92	0.86	93	25-150		08/05/2022 22:51
13C2 PFDaA	0.92	0.90	97	25-150		08/05/2022 22:51
13C2 PFTeDA	0.92	0.71	77	25-150		08/05/2022 22:51
13C3 HFPO-DA	0.92	0.76	83	25-150		08/05/2022 22:51
d7-N-MeFOSE	0.92	0.016	2	10-150	R	08/05/2022 22:51
d9-N-EtFOSE	0.92	0.026	3	10-150	R	08/05/2022 22:51
d3-N-MeFOSA	0.92	0.0047	1	10-150	R	08/05/2022 22:51
d5-N-EtFOSA	0.92	0.0068	1	10-150	R	08/05/2022 22:51

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Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	25		08/05/2022 22:51
13C4 PFOA	N/A	N/A	7.07	7.07	25		08/05/2022 22:51
13C2 PFDA	N/A	N/A	8.40	8.39	21		08/05/2022 22:51
13C4 PFOS	N/A	N/A	8.88	8.88	18		08/05/2022 22:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/05/2022 22:51
13C5 PFPeA	N/A	N/A	5.14	5.15	28		08/05/2022 22:51
13C3 PFBS	N/A	N/A	6.04	6.05	19		08/05/2022 22:51
13C2 4:2FTS	N/A	N/A	5.54	5.54	68		08/05/2022 22:51
13C5 PFHxA	N/A	N/A	5.80	5.80	21		08/05/2022 22:51
13C4 PFHpA	N/A	N/A	6.43	6.43	23		08/05/2022 22:51
13C3 PFHxS	N/A	N/A	7.48	7.49	19		08/05/2022 22:51
13C2 6:2FTS	N/A	N/A	6.74	6.74	13		08/05/2022 22:51
13C8 PFOA	N/A	N/A	7.07	7.07	21		08/05/2022 22:51
13C9 PFNA	N/A	N/A	7.72	7.72	22		08/05/2022 22:51
13C8 PFOS	N/A	N/A	8.89	8.88	19		08/05/2022 22:51
13C2 8:2FTS	N/A	N/A	8.01	8.01	16		08/05/2022 22:51
13C6 PFDA	N/A	N/A	8.40	8.39	17		08/05/2022 22:51
d3-MeFOSAA	N/A	N/A	8.26	8.25	17		08/05/2022 22:51
13C8 PFOSA	N/A	N/A	10.64	10.61	14		08/05/2022 22:51
d5-EtFOSAA	N/A	N/A	8.55	8.54	15		08/05/2022 22:51
13C7 PFUdA	N/A	N/A	9.08	9.07	21		08/05/2022 22:51
13C2 PFDoA	N/A	N/A	9.75	9.74	11		08/05/2022 22:51
13C2 PFTeDA	N/A	N/A	11.07	11.07	11		08/05/2022 22:51
13C3 HFPO-DA	N/A	N/A	6.06	6.06	16		08/05/2022 22:51
d7-N-MeFOSE	N/A	N/A	12.47	12.45	31	R	08/05/2022 22:51
d9-N-EtFOSE	N/A	N/A	12.93	12.92	10	R	08/05/2022 22:51
d3-N-MeFOSA	N/A	N/A	12.68	12.66	11	R	08/05/2022 22:51
d5-N-EtFOSA	N/A	N/A	13.09	13.08	12	R	08/05/2022 22:51

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 PFAS by Isotope Dilution

Client Sample ID PR-TK14-HA01(0-6)
 Lab Sample ID 10616212014
 Lab File ID B220805B_006
 Matrix Soil
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Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	70	J	08/05/2022 22:51
PFPeA	N/A	N/A	5.15	5.15	28		08/05/2022 22:51
HFPO-DA	0.86	0.30	6.07	6.07	ND		08/05/2022 22:51
PFBS	0.32	0.48	6.04	6.06	ND		08/05/2022 22:51
PFHxA	0.07	0.08	5.81	5.81	14	J	08/05/2022 22:51
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/05/2022 22:51
PFPeS	0.38	0.43	6.78	6.79	ND		08/05/2022 22:51
PFHpA	0.32	0.30	6.44	6.44	17	J	08/05/2022 22:51
DONA	0.00	0.59	0.00	6.67	ND		08/05/2022 22:51
PFHxS	0.41	0.40	7.49	7.49	50	J	08/05/2022 22:51
PFOA	0.43	0.40	7.07	7.08	13	J	08/05/2022 22:51
6:2 FTS	1.20	0.87	6.74	6.74	ND		08/05/2022 22:51
PFHpS	0.00	0.42	0.00	8.20	ND		08/05/2022 22:51
PFNA	0.12	0.13	7.73	7.73	18	J	08/05/2022 22:51
PFOSAm	N/A	N/A	10.65	10.61	ND		08/05/2022 22:51
PFOS	0.37	0.42	8.90	8.90	42		08/05/2022 22:51
MeFOSA	0.00	0.59	0.00	12.69	ND		08/05/2022 22:51
PFDA	0.22	0.18	8.41	8.40	11	J	08/05/2022 22:51
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/05/2022 22:51
8:2 FTS	0.00	0.78	0.00	8.02	ND		08/05/2022 22:51
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/05/2022 22:51
PFNS	0.00	0.49	0.00	9.58	ND		08/05/2022 22:51
PFUnDA	0.17	0.13	9.08	9.08	ND		08/05/2022 22:51
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 22:51
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/05/2022 22:51
PFDS	0.00	0.37	0.00	10.24	ND		08/05/2022 22:51
PFDOA	0.08	0.17	9.76	9.75	ND		08/05/2022 22:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 22:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 22:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 22:51
PFTTrDA	0.49	0.19	10.23	10.42	ND		08/05/2022 22:51
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 22:51
PFTDA	0.00	0.25	0.00	11.07	ND		08/05/2022 22:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK15-HA01(0-6)
 Lab Sample ID 10616212015
 Lab File ID B220804B_011
 Matrix Soil
 Collected 07/05/2022 13:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.78	0.095	0.027	0.027	1	375-22-4		08/05/2022 04:11
PFPeA	3.8	0.095	0.027	0.027	1	2706-90-3		08/05/2022 04:11
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		08/05/2022 04:11
PFBS	ND	0.084	0.025	0.025	1	375-73-5		08/05/2022 04:11
PFHxA	1.7	0.095	0.026	0.026	1	307-24-4		08/05/2022 04:11
4:2 FTS	ND	0.088	0.022	0.022	1	757124-72-4		08/05/2022 04:11
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		08/05/2022 04:11
PFHpA	0.58	0.095	0.033	0.033	1	375-85-9		08/05/2022 04:11
DONA	ND	0.089	0.034	0.034	1	919005-14-4		08/05/2022 04:11
PFHxS	0.20	0.086	0.021	0.021	1	355-46-4		08/05/2022 04:11
PFOA	0.87	0.095	0.029	0.029	1	335-67-1		08/05/2022 04:11
6:2 FTS	3.6	0.090	0.039	0.039	1	27619-97-2		08/05/2022 04:11
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/05/2022 04:11
PFNA	0.61	0.095	0.029	0.029	1	375-95-1		08/05/2022 04:11
PFOSAm	0.075 J	0.095	0.028	0.028	1	754-91-6		08/05/2022 04:11
PFOS	9.2 D	0.17	0.056	0.056	2	1763-23-1		08/06/2022 00:51
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		08/05/2022 04:11
PFDA	1.9	0.095	0.022	0.022	1	335-76-2		08/05/2022 04:11
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		08/05/2022 04:11
8:2 FTS	3.5	0.091	0.041	0.041	1	39108-34-4		08/05/2022 04:11
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		08/05/2022 04:11
PFNS	0.077 J	0.091	0.033	0.033	1	68259-12-1		08/05/2022 04:11
PFUnDA	1.1	0.095	0.029	0.029	1	2058-94-8		08/05/2022 04:11
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		08/05/2022 04:11
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		08/05/2022 04:11
PFDS	0.040 J	0.091	0.027	0.027	1	335-77-3		08/05/2022 04:11
PFDOA	0.53	0.095	0.031	0.031	1	307-55-1		08/05/2022 04:11
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		08/05/2022 04:11
EtFOSE	ND	0.095	0.030	0.030	1	1691-99-2		08/05/2022 04:11
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		08/05/2022 04:11
PFTTrDA	0.096	0.095	0.030	0.030	1	72629-94-8		08/05/2022 04:11
PFDoS	ND	0.091	0.025	0.025	1	79780-39-5		08/05/2022 04:11
PFTDA	0.074 J	0.095	0.032	0.032	1	376-06-7		08/05/2022 04:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK15-HA01(0-6)
 Lab Sample ID 10616212015
 Lab File ID B220804B_011
 Matrix Soil
 Collected 07/05/2022 13:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	1.0	110	50-150		08/05/2022 04:11
13C4 PFOA	0.95	1.2	130	50-150		08/05/2022 04:11
13C2 PFDA	0.95	1.2	125	50-150		08/05/2022 04:11
13C4 PFOS	0.90	0.90	100	50-150		08/05/2022 04:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.73	78	25-150		08/05/2022 04:11
13C5 PFPeA	0.95	0.74	78	25-150		08/05/2022 04:11
13C3 PFBS	0.88	0.70	80	25-150		08/05/2022 04:11
13C2 4:2FTS	0.88	0.62	71	25-150		08/05/2022 04:11
13C5 PFHxA	0.95	0.77	81	25-150		08/05/2022 04:11
13C4 PFHpA	0.95	0.70	74	25-150		08/05/2022 04:11
13C3 PFHxS	0.89	0.69	77	25-150		08/05/2022 04:11
13C2 6:2FTS	0.90	0.63	70	25-150		08/05/2022 04:11
13C8 PFOA	0.95	0.69	73	25-150		08/05/2022 04:11
13C9 PFNA	0.95	0.80	85	25-150		08/05/2022 04:11
13C8 PFOS	0.90	0.85	94	25-150	D	08/06/2022 00:51
13C2 8:2FTS	0.91	0.83	92	25-150		08/05/2022 04:11
13C6 PFDA	0.95	0.84	89	25-150		08/05/2022 04:11
d3-MeFOSAA	0.95	0.79	84	25-150		08/05/2022 04:11
13C8 PFOSA	0.95	0.43	46	25-150		08/05/2022 04:11
d5-EtFOSAA	0.95	0.70	75	25-150		08/05/2022 04:11
13C7 PFUdA	0.95	0.87	92	25-150		08/05/2022 04:11
13C2 PFDoA	0.95	0.77	82	25-150		08/05/2022 04:11
13C2 PFTeDA	0.95	0.89	94	25-150		08/05/2022 04:11
13C3 HFPO-DA	0.95	0.75	80	25-150		08/05/2022 04:11
d7-N-MeFOSE	0.95	0.13	14	10-150		08/05/2022 04:11
d9-N-EtFOSE	0.95	0.057	6	10-150	R	08/05/2022 04:11
d3-N-MeFOSA	0.95	0.012	1	10-150	R	08/05/2022 04:11
d5-N-EtFOSA	0.95	0.0068	1	10-150	R	08/05/2022 04:11

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 Lab Sample ID 10616212015
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Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	18		08/05/2022 04:11
13C4 PFOA	N/A	N/A	7.05	7.07	25		08/05/2022 04:11
13C2 PFDA	N/A	N/A	8.38	8.39	25		08/05/2022 04:11
13C4 PFOS	N/A	N/A	8.87	8.88	15		08/05/2022 04:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	25		08/05/2022 04:11
13C5 PFPeA	N/A	N/A	5.14	5.15	23		08/05/2022 04:11
13C3 PFBS	N/A	N/A	6.04	6.05	21		08/05/2022 04:11
13C2 4:2FTS	N/A	N/A	5.52	5.54	60		08/05/2022 04:11
13C5 PFHxA	N/A	N/A	5.79	5.80	17		08/05/2022 04:11
13C4 PFHpA	N/A	N/A	6.42	6.43	22		08/05/2022 04:11
13C3 PFHxS	N/A	N/A	7.48	7.49	21		08/05/2022 04:11
13C2 6:2FTS	N/A	N/A	6.72	6.74	13		08/05/2022 04:11
13C8 PFOA	N/A	N/A	7.05	7.07	22		08/05/2022 04:11
13C9 PFNA	N/A	N/A	7.71	7.72	25		08/05/2022 04:11
13C8 PFOS	N/A	N/A	8.89	8.88	13	D	08/06/2022 00:51
13C2 8:2FTS	N/A	N/A	8.00	8.01	17		08/05/2022 04:11
13C6 PFDA	N/A	N/A	8.38	8.39	24		08/05/2022 04:11
d3-MeFOSAA	N/A	N/A	8.24	8.25	17		08/05/2022 04:11
13C8 PFOSA	N/A	N/A	10.61	10.61	95		08/05/2022 04:11
d5-EtFOSAA	N/A	N/A	8.53	8.54	13		08/05/2022 04:11
13C7 PFUdA	N/A	N/A	9.06	9.07	10		08/05/2022 04:11
13C2 PFDoA	N/A	N/A	9.73	9.74	10		08/05/2022 04:11
13C2 PFTeDA	N/A	N/A	11.05	11.07	12		08/05/2022 04:11
13C3 HFPO-DA	N/A	N/A	6.04	6.06	20		08/05/2022 04:11
d7-N-MeFOSE	N/A	N/A	12.45	12.45	39		08/05/2022 04:11
d9-N-EtFOSE	N/A	N/A	12.92	12.92	21	R	08/05/2022 04:11
d3-N-MeFOSA	N/A	N/A	12.66	12.66	18	R	08/05/2022 04:11
d5-N-EtFOSA	N/A	N/A	13.08	13.08	97	R	08/05/2022 04:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK15-HA01(0-6)
 Lab Sample ID 10616212015
 Lab File ID B220804B_011
 Matrix Soil
 Collected 07/05/2022 13:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	24		08/05/2022 04:11
PFPeA	N/A	N/A	5.14	5.15	11		08/05/2022 04:11
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/05/2022 04:11
PFBS	0.38	0.43	6.04	6.06	ND		08/05/2022 04:11
PFHxA	0.09	0.07	5.80	5.81	57		08/05/2022 04:11
4:2 FTS	0.00	0.85	0.00	5.54	ND		08/05/2022 04:11
PFPeS	0.46	0.46	6.78	6.79	ND		08/05/2022 04:11
PFHpA	0.31	0.29	6.43	6.44	22		08/05/2022 04:11
DONA	0.00	0.57	0.00	6.67	ND		08/05/2022 04:11
PFHxS	0.39	0.40	7.49	7.49	67		08/05/2022 04:11
PFOA	0.37	0.40	7.06	7.08	30		08/05/2022 04:11
6:2 FTS	0.91	0.97	6.73	6.74	14		08/05/2022 04:11
PFHpS	0.38	0.36	8.20	8.20	ND		08/05/2022 04:11
PFNA	0.13	0.12	7.72	7.73	59		08/05/2022 04:11
PFOSAm	N/A	N/A	10.62	10.61	33	J	08/05/2022 04:11
PFOS	0.44	0.42	8.90	8.90	10	D	08/06/2022 00:51
MeFOSA	0.00	0.51	0.00	12.69	ND		08/05/2022 04:11
PFDA	0.19	0.19	8.40	8.40	93		08/05/2022 04:11
EtFOSAm	0.00	0.59	0.00	13.10	ND		08/05/2022 04:11
8:2 FTS	0.86	0.88	8.01	8.02	17		08/05/2022 04:11
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 04:11
PFNS	0.48	0.47	9.57	9.58	16	J	08/05/2022 04:11
PFUnDA	0.14	0.15	9.07	9.08	29		08/05/2022 04:11
NMeFOSAA	0.90	0.90	8.25	8.26	ND		08/05/2022 04:11
NEtFOSAA	0.55	0.71	8.54	8.55	ND		08/05/2022 04:11
PFDS	0.38	0.32	10.23	10.24	16	J	08/05/2022 04:11
PFDOA	0.19	0.20	9.74	9.75	24		08/05/2022 04:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 04:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 04:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 04:11
PFTTrDA	0.18	0.16	10.41	10.42	25		08/05/2022 04:11
PFDoS	0.48	0.48	11.47	11.48	ND		08/05/2022 04:11
PFTDA	0.34	0.30	11.05	11.07	63	J	08/05/2022 04:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK16-HA01(0-6)
 Lab Sample ID 10616212016
 Lab File ID B220804B_012
 Matrix Soil
 Collected 07/05/2022 14:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.35g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.040 J	0.093	0.026	0.026	1	375-22-4		08/05/2022 04:31
PFPeA	0.12	0.093	0.027	0.027	1	2706-90-3		08/05/2022 04:31
HFPO-DA	ND	0.093	0.026	0.026	1	13252-13-6		08/05/2022 04:31
PFBS	ND	0.083	0.025	0.025	1	375-73-5		08/05/2022 04:31
PFHxA	0.079 J	0.093	0.026	0.026	1	307-24-4		08/05/2022 04:31
4:2 FTS	ND	0.087	0.022	0.022	1	757124-72-4		08/05/2022 04:31
PFPeS	ND	0.088	0.022	0.022	1	2706-91-4		08/05/2022 04:31
PFHpA	0.073 J	0.093	0.032	0.032	1	375-85-9		08/05/2022 04:31
DONA	ND	0.088	0.034	0.034	1	919005-14-4		08/05/2022 04:31
PFHxS	ND	0.085	0.020	0.020	1	355-46-4		08/05/2022 04:31
PFOA	0.069 J	0.093	0.029	0.029	1	335-67-1		08/05/2022 04:31
6:2 FTS	ND	0.089	0.039	0.039	1	27619-97-2		08/05/2022 04:31
PFHpS	ND	0.089	0.026	0.026	1	375-92-8		08/05/2022 04:31
PFNA	0.049 J	0.093	0.029	0.029	1	375-95-1		08/05/2022 04:31
PFOSAm	ND	0.093	0.027	0.027	1	754-91-6		08/05/2022 04:31
PFOS	0.085 J	0.086	0.028	0.028	1	1763-23-1		08/05/2022 04:31
MeFOSA	ND	0.093	0.025	0.025	1	31506-32-8		08/05/2022 04:31
PFDA	0.090 J	0.093	0.021	0.021	1	335-76-2		08/05/2022 04:31
EtFOSAm	ND	0.093	0.024	0.024	1	4151-50-2		08/05/2022 04:31
8:2 FTS	0.086 J	0.090	0.041	0.041	1	39108-34-4		08/05/2022 04:31
9-CI-PF3ON	ND	0.087	0.023	0.023	1	756426-58-1		08/05/2022 04:31
PFNS	ND	0.090	0.032	0.032	1	68259-12-1		08/05/2022 04:31
PFUnDA	0.073 J	0.093	0.028	0.028	1	2058-94-8		08/05/2022 04:31
NMeFOSAA	ND	0.093	0.026	0.026	1	2355-31-9		08/05/2022 04:31
NEtFOSAA	ND	0.093	0.038	0.038	1	2991-50-6		08/05/2022 04:31
PFDS	ND	0.090	0.026	0.026	1	335-77-3		08/05/2022 04:31
PFDOA	0.049 J	0.093	0.031	0.031	1	307-55-1		08/05/2022 04:31
MeFOSE	ND	0.093	0.028	0.028	1	24448-09-7		08/05/2022 04:31
EtFOSE	ND	0.093	0.030	0.030	1	1691-99-2		08/05/2022 04:31
11-CI-PF3OUdS	ND	0.088	0.024	0.024	1	763051-92-9		08/05/2022 04:31
PFTTrDA	ND	0.093	0.030	0.030	1	72629-94-8		08/05/2022 04:31
PFDoS	ND	0.090	0.024	0.024	1	79780-39-5		08/05/2022 04:31
PFTDA	ND	0.093	0.032	0.032	1	376-06-7		08/05/2022 04:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK16-HA01(0-6)
 Lab Sample ID 10616212016
 Lab File ID B220804B_012
 Matrix Soil
 Collected 07/05/2022 14:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.35g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.93	1.0	111	50-150		08/05/2022 04:31
13C4 PFOA	0.93	1.3	143	50-150		08/05/2022 04:31
13C2 PFDA	0.93	1.3	141	50-150		08/05/2022 04:31
13C4 PFOS	0.89	1.2	129	50-150		08/05/2022 04:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.93	0.77	83	25-150		08/05/2022 04:31
13C5 PFPeA	0.93	0.78	84	25-150		08/05/2022 04:31
13C3 PFBS	0.87	0.73	84	25-150		08/05/2022 04:31
13C2 4:2FTS	0.87	0.66	76	25-150		08/05/2022 04:31
13C5 PFHxA	0.93	0.78	84	25-150		08/05/2022 04:31
13C4 PFHpA	0.93	0.74	79	25-150		08/05/2022 04:31
13C3 PFHxS	0.88	0.68	77	25-150		08/05/2022 04:31
13C2 6:2FTS	0.89	0.67	75	25-150		08/05/2022 04:31
13C8 PFOA	0.93	0.72	78	25-150		08/05/2022 04:31
13C9 PFNA	0.93	0.67	72	25-150		08/05/2022 04:31
13C8 PFOS	0.89	0.71	79	25-150		08/05/2022 04:31
13C2 8:2FTS	0.90	0.73	81	25-150		08/05/2022 04:31
13C6 PFDA	0.93	0.68	72	25-150		08/05/2022 04:31
d3-MeFOSAA	0.93	0.77	82	25-150		08/05/2022 04:31
13C8 PFOSA	0.93	0.24	26	25-150		08/05/2022 04:31
d5-EtFOSAA	0.93	0.66	70	25-150		08/05/2022 04:31
13C7 PFUdA	0.93	0.76	81	25-150		08/05/2022 04:31
13C2 PFDoA	0.93	0.66	71	25-150		08/05/2022 04:31
13C2 PFTeDA	0.93	0.98	105	25-150		08/05/2022 04:31
13C3 HFPO-DA	0.93	0.72	77	25-150		08/05/2022 04:31
d7-N-MeFOSE	0.93	0.020	2	10-150	R	08/05/2022 04:31
d9-N-EtFOSE	0.93	0.021	2	10-150	R	08/05/2022 04:31
d3-N-MeFOSA	0.93	0.0027	0	10-150	R	08/05/2022 04:31
d5-N-EtFOSA	0.93	0.0035	0	10-150	R	08/05/2022 04:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK16-HA01(0-6)
 Lab Sample ID 10616212016
 Lab File ID B220804B_012
 Matrix Soil
 Collected 07/05/2022 14:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.35g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	17		08/05/2022 04:31
13C4 PFOA	N/A	N/A	7.05	7.07	25		08/05/2022 04:31
13C2 PFDA	N/A	N/A	8.38	8.39	20		08/05/2022 04:31
13C4 PFOS	N/A	N/A	8.87	8.88	16		08/05/2022 04:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	21		08/05/2022 04:31
13C5 PFPeA	N/A	N/A	5.14	5.15	24		08/05/2022 04:31
13C3 PFBS	N/A	N/A	6.04	6.05	20		08/05/2022 04:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	71		08/05/2022 04:31
13C5 PFHxA	N/A	N/A	5.79	5.80	13		08/05/2022 04:31
13C4 PFHpA	N/A	N/A	6.42	6.43	17		08/05/2022 04:31
13C3 PFHxS	N/A	N/A	7.48	7.49	16		08/05/2022 04:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	13		08/05/2022 04:31
13C8 PFOA	N/A	N/A	7.06	7.07	22		08/05/2022 04:31
13C9 PFNA	N/A	N/A	7.71	7.72	20		08/05/2022 04:31
13C8 PFOS	N/A	N/A	8.87	8.88	23		08/05/2022 04:31
13C2 8:2FTS	N/A	N/A	7.99	8.01	75		08/05/2022 04:31
13C6 PFDA	N/A	N/A	8.38	8.39	11		08/05/2022 04:31
d3-MeFOSAA	N/A	N/A	8.24	8.25	14		08/05/2022 04:31
13C8 PFOSA	N/A	N/A	10.62	10.61	16		08/05/2022 04:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	10		08/05/2022 04:31
13C7 PFUdA	N/A	N/A	9.05	9.07	15		08/05/2022 04:31
13C2 PFDoA	N/A	N/A	9.73	9.74	11		08/05/2022 04:31
13C2 PFTeDA	N/A	N/A	11.06	11.07	10		08/05/2022 04:31
13C3 HFPO-DA	N/A	N/A	6.05	6.06	20		08/05/2022 04:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	35	R	08/05/2022 04:31
d9-N-EtFOSE	N/A	N/A	12.93	12.92	14	R	08/05/2022 04:31
d3-N-MeFOSA	N/A	N/A	12.68	12.66	50	R	08/05/2022 04:31
d5-N-EtFOSA	N/A	N/A	13.07	13.08	85	R	08/05/2022 04:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK16-HA01(0-6)
 Lab Sample ID 10616212016
 Lab File ID B220804B_012
 Matrix Soil
 Collected 07/05/2022 14:55
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.35g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	57	J	08/05/2022 04:31
PFPeA	N/A	N/A	5.14	5.15	24		08/05/2022 04:31
HFPO-DA	1.20	0.27	6.06	6.07	ND		08/05/2022 04:31
PFBS	0.38	0.43	6.04	6.06	ND		08/05/2022 04:31
PFHxA	0.08	0.07	5.80	5.81	21	J	08/05/2022 04:31
4:2 FTS	0.00	0.85	0.00	5.54	ND		08/05/2022 04:31
PFPeS	0.00	0.46	0.00	6.79	ND		08/05/2022 04:31
PFHpA	0.26	0.29	6.42	6.44	14	J	08/05/2022 04:31
DONA	0.00	0.57	0.00	6.67	ND		08/05/2022 04:31
PFHxS	0.53	0.40	7.48	7.49	ND		08/05/2022 04:31
PFOA	0.45	0.40	7.06	7.08	11	J	08/05/2022 04:31
6:2 FTS	0.66	0.97	6.72	6.74	ND		08/05/2022 04:31
PFHpS	0.00	0.36	0.00	8.20	ND		08/05/2022 04:31
PFNA	0.15	0.12	7.72	7.73	92	J	08/05/2022 04:31
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 04:31
PFOS	0.42	0.44	8.88	8.90	56	J	08/05/2022 04:31
MeFOSA	0.00	0.51	0.00	12.69	ND		08/05/2022 04:31
PFDA	0.17	0.19	8.39	8.40	12	J	08/05/2022 04:31
EtFOSAm	0.00	0.59	0.00	13.10	ND		08/05/2022 04:31
8:2 FTS	0.84	0.88	8.00	8.02	43	J	08/05/2022 04:31
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 04:31
PFNS	0.00	0.47	0.00	9.58	ND		08/05/2022 04:31
PFUnDA	0.17	0.15	9.06	9.08	34	J	08/05/2022 04:31
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 04:31
NEtFOSAA	0.00	0.71	0.00	8.55	ND		08/05/2022 04:31
PFDS	0.00	0.32	0.00	10.24	ND		08/05/2022 04:31
PFDOA	0.18	0.20	9.74	9.75	42	J	08/05/2022 04:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 04:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 04:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 04:31
PFTTrDA	0.25	0.16	10.41	10.42	ND		08/05/2022 04:31
PFDoS	0.00	0.48	0.00	11.48	ND		08/05/2022 04:31
PFTDA	0.25	0.30	11.07	11.07	ND		08/05/2022 04:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK17-HA01(0-6)
 Lab Sample ID 10616212017
 Lab File ID B220805B_008
 Matrix Soil
 Collected 07/05/2022 14:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.62g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.15	0.089	0.025	0.025	1	375-22-4		08/05/2022 23:31
PFPeA	0.30	0.089	0.025	0.025	1	2706-90-3		08/05/2022 23:31
HFPO-DA	ND	0.089	0.025	0.025	1	13252-13-6		08/05/2022 23:31
PFBS	ND	0.079	0.023	0.023	1	375-73-5		08/05/2022 23:31
PFHxA	0.19	0.089	0.024	0.024	1	307-24-4		08/05/2022 23:31
4:2 FTS	ND	0.083	0.021	0.021	1	757124-72-4		08/05/2022 23:31
PFPeS	ND	0.084	0.021	0.021	1	2706-91-4		08/05/2022 23:31
PFHpA	0.11	0.089	0.031	0.031	1	375-85-9		08/05/2022 23:31
DONA	ND	0.084	0.032	0.032	1	919005-14-4		08/05/2022 23:31
PFHxS	ND	0.081	0.019	0.019	1	355-46-4		08/05/2022 23:31
PFOA	0.13	0.089	0.028	0.028	1	335-67-1		08/05/2022 23:31
6:2 FTS	ND	0.084	0.037	0.037	1	27619-97-2		08/05/2022 23:31
PFHpS	ND	0.084	0.025	0.025	1	375-92-8		08/05/2022 23:31
PFNA	0.075 J	0.089	0.028	0.028	1	375-95-1		08/05/2022 23:31
PFOSAm	ND	0.089	0.026	0.026	1	754-91-6		08/05/2022 23:31
PFOS	0.10	0.082	0.026	0.026	1	1763-23-1		08/05/2022 23:31
MeFOSA	ND	0.089	0.024	0.024	1	31506-32-8		08/05/2022 23:31
PFDA	0.043 J	0.089	0.020	0.020	1	335-76-2		08/05/2022 23:31
EtFOSAm	ND	0.089	0.023	0.023	1	4151-50-2		08/05/2022 23:31
8:2 FTS	ND	0.085	0.039	0.039	1	39108-34-4		08/05/2022 23:31
9-CI-PF3ON	ND	0.083	0.022	0.022	1	756426-58-1		08/05/2022 23:31
PFNS	ND	0.085	0.031	0.031	1	68259-12-1		08/05/2022 23:31
PFUnDA	0.030 J	0.089	0.027	0.027	1	2058-94-8		08/05/2022 23:31
NMeFOSAA	ND	0.089	0.025	0.025	1	2355-31-9		08/05/2022 23:31
NEtFOSAA	ND	0.089	0.036	0.036	1	2991-50-6		08/05/2022 23:31
PFDS	ND	0.086	0.025	0.025	1	335-77-3		08/05/2022 23:31
PFDOA	ND	0.089	0.029	0.029	1	307-55-1		08/05/2022 23:31
MeFOSE	ND	0.089	0.027	0.027	1	24448-09-7		08/05/2022 23:31
EtFOSE	ND	0.089	0.029	0.029	1	1691-99-2		08/05/2022 23:31
11-CI-PF3OUdS	ND	0.084	0.022	0.022	1	763051-92-9		08/05/2022 23:31
PFTTrDA	ND	0.089	0.028	0.028	1	72629-94-8		08/05/2022 23:31
PFDoS	ND	0.086	0.023	0.023	1	79780-39-5		08/05/2022 23:31
PFTDA	ND	0.089	0.030	0.030	1	376-06-7		08/05/2022 23:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK17-HA01(0-6)
 Lab Sample ID 10616212017
 Lab File ID B220805B_008
 Matrix Soil
 Collected 07/05/2022 14:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.62g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.89	1.2	138	50-150		08/05/2022 23:31
13C4 PFOA	0.89	1.1	128	50-150		08/05/2022 23:31
13C2 PFDA	0.89	1.1	122	50-150		08/05/2022 23:31
13C4 PFOS	0.85	1.2	137	50-150		08/05/2022 23:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.89	0.79	88	25-150		08/05/2022 23:31
13C5 PFPeA	0.89	0.83	93	25-150		08/05/2022 23:31
13C3 PFBS	0.83	0.77	93	25-150		08/05/2022 23:31
13C2 4:2FTS	0.83	0.69	83	25-150		08/05/2022 23:31
13C5 PFHxA	0.89	0.87	98	25-150		08/05/2022 23:31
13C4 PFHpA	0.89	0.79	88	25-150		08/05/2022 23:31
13C3 PFHxS	0.84	0.74	88	25-150		08/05/2022 23:31
13C2 6:2FTS	0.84	0.77	91	25-150		08/05/2022 23:31
13C8 PFOA	0.89	0.76	85	25-150		08/05/2022 23:31
13C9 PFNA	0.89	0.87	97	25-150		08/05/2022 23:31
13C8 PFOS	0.85	0.91	106	25-150		08/05/2022 23:31
13C2 8:2FTS	0.85	1.1	126	25-150		08/05/2022 23:31
13C6 PFDA	0.89	0.94	106	25-150		08/05/2022 23:31
d3-MeFOSAA	0.89	0.98	111	25-150		08/05/2022 23:31
13C8 PFOSA	0.89	0.62	70	25-150		08/05/2022 23:31
d5-EtFOSAA	0.89	0.86	97	25-150		08/05/2022 23:31
13C7 PFUdA	0.89	0.87	97	25-150		08/05/2022 23:31
13C2 PFDoA	0.89	0.79	88	25-150		08/05/2022 23:31
13C2 PFTeDA	0.89	0.76	86	25-150		08/05/2022 23:31
13C3 HFPO-DA	0.89	0.89	100	25-150		08/05/2022 23:31
d7-N-MeFOSE	0.89	0.041	5	10-150	R	08/05/2022 23:31
d9-N-EtFOSE	0.89	0.064	7	10-150	R	08/05/2022 23:31
d3-N-MeFOSA	0.89	0.0045	1	10-150	R	08/05/2022 23:31
d5-N-EtFOSA	0.89	0.0050	1	10-150	R	08/05/2022 23:31

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Total Amount Extracted 5.62g
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 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	33		08/05/2022 23:31
13C4 PFOA	N/A	N/A	7.07	7.07	25		08/05/2022 23:31
13C2 PFDA	N/A	N/A	8.41	8.39	15		08/05/2022 23:31
13C4 PFOS	N/A	N/A	8.90	8.88	14		08/05/2022 23:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	29		08/05/2022 23:31
13C5 PFPeA	N/A	N/A	5.14	5.15	25		08/05/2022 23:31
13C3 PFBS	N/A	N/A	6.04	6.05	13		08/05/2022 23:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	53		08/05/2022 23:31
13C5 PFHxA	N/A	N/A	5.80	5.80	21		08/05/2022 23:31
13C4 PFHpA	N/A	N/A	6.43	6.43	21		08/05/2022 23:31
13C3 PFHxS	N/A	N/A	7.48	7.49	15		08/05/2022 23:31
13C2 6:2FTS	N/A	N/A	6.74	6.74	87		08/05/2022 23:31
13C8 PFOA	N/A	N/A	7.07	7.07	20		08/05/2022 23:31
13C9 PFNA	N/A	N/A	7.73	7.72	21		08/05/2022 23:31
13C8 PFOS	N/A	N/A	8.90	8.88	11		08/05/2022 23:31
13C2 8:2FTS	N/A	N/A	8.01	8.01	11		08/05/2022 23:31
13C6 PFDA	N/A	N/A	8.40	8.39	20		08/05/2022 23:31
d3-MeFOSAA	N/A	N/A	8.26	8.25	21		08/05/2022 23:31
13C8 PFOSA	N/A	N/A	10.65	10.61	26		08/05/2022 23:31
d5-EtFOSAA	N/A	N/A	8.56	8.54	11		08/05/2022 23:31
13C7 PFUdA	N/A	N/A	9.09	9.07	23		08/05/2022 23:31
13C2 PFDoA	N/A	N/A	9.76	9.74	10		08/05/2022 23:31
13C2 PFTeDA	N/A	N/A	11.08	11.07	13		08/05/2022 23:31
13C3 HFPO-DA	N/A	N/A	6.06	6.06	18		08/05/2022 23:31
d7-N-MeFOSE	N/A	N/A	12.47	12.45	47	R	08/05/2022 23:31
d9-N-EtFOSE	N/A	N/A	12.93	12.92	17	R	08/05/2022 23:31
d3-N-MeFOSA	N/A	N/A	12.69	12.66	42	R	08/05/2022 23:31
d5-N-EtFOSA	N/A	N/A	13.09	13.08	12	R	08/05/2022 23:31

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 PFAS by Isotope Dilution

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 Lab File ID B220805B_008
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Total Amount Extracted 5.62g
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 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	11		08/05/2022 23:31
PFPeA	N/A	N/A	5.15	5.15	34		08/05/2022 23:31
HFPO-DA	0.29	0.30	6.07	6.07	ND		08/05/2022 23:31
PFBS	0.24	0.48	6.02	6.06	ND		08/05/2022 23:31
PFHxA	0.07	0.08	5.80	5.81	19		08/05/2022 23:31
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/05/2022 23:31
PFPeS	0.92	0.43	6.79	6.79	ND		08/05/2022 23:31
PFHpA	0.35	0.30	6.44	6.44	22		08/05/2022 23:31
DONA	0.00	0.59	0.00	6.67	ND		08/05/2022 23:31
PFHxS	0.36	0.40	7.49	7.49	ND		08/05/2022 23:31
PFOA	0.37	0.40	7.07	7.08	15		08/05/2022 23:31
6:2 FTS	1.10	0.87	6.73	6.74	ND		08/05/2022 23:31
PFHpS	0.00	0.42	0.00	8.20	ND		08/05/2022 23:31
PFNA	0.13	0.13	7.73	7.73	27	J	08/05/2022 23:31
PFOSAm	N/A	N/A	10.67	10.61	ND		08/05/2022 23:31
PFOS	0.44	0.42	8.91	8.90	67		08/05/2022 23:31
MeFOSA	0.00	0.59	0.00	12.69	ND		08/05/2022 23:31
PFDA	0.20	0.18	8.41	8.40	13	J	08/05/2022 23:31
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/05/2022 23:31
8:2 FTS	1.00	0.78	8.02	8.02	ND		08/05/2022 23:31
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/05/2022 23:31
PFNS	0.00	0.49	0.00	9.58	ND		08/05/2022 23:31
PFUnDA	0.13	0.13	9.10	9.08	61	J	08/05/2022 23:31
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 23:31
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/05/2022 23:31
PFDS	0.43	0.37	10.25	10.24	ND		08/05/2022 23:31
PFDOA	0.17	0.17	9.77	9.75	ND		08/05/2022 23:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 23:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 23:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 23:31
PFTTrDA	0.15	0.19	10.44	10.42	ND		08/05/2022 23:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 23:31
PFTDA	0.27	0.25	11.08	11.07	ND		08/05/2022 23:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK18-HA01(0-6)
 Lab Sample ID 10616212018
 Lab File ID B220805B_009
 Matrix Soil
 Collected 07/05/2022 14:25
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.26g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.12	0.095	0.027	0.027	1	375-22-4		08/05/2022 23:51
PFPeA	0.41	0.095	0.027	0.027	1	2706-90-3		08/05/2022 23:51
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		08/05/2022 23:51
PFBS	ND	0.084	0.025	0.025	1	375-73-5		08/05/2022 23:51
PFHxA	0.21	0.095	0.026	0.026	1	307-24-4		08/05/2022 23:51
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		08/05/2022 23:51
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		08/05/2022 23:51
PFHpA	0.30	0.095	0.033	0.033	1	375-85-9		08/05/2022 23:51
DONA	ND	0.090	0.034	0.034	1	919005-14-4		08/05/2022 23:51
PFHxS	ND	0.086	0.021	0.021	1	355-46-4		08/05/2022 23:51
PFOA	0.26	0.095	0.030	0.030	1	335-67-1		08/05/2022 23:51
6:2 FTS	ND	0.090	0.039	0.039	1	27619-97-2		08/05/2022 23:51
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/05/2022 23:51
PFNA	0.29	0.095	0.030	0.030	1	375-95-1		08/05/2022 23:51
PFOSAm	ND	0.095	0.028	0.028	1	754-91-6		08/05/2022 23:51
PFOS	0.19	0.088	0.028	0.028	1	1763-23-1		08/05/2022 23:51
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		08/05/2022 23:51
PFDA	1.0	0.095	0.022	0.022	1	335-76-2		08/05/2022 23:51
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		08/05/2022 23:51
8:2 FTS	0.32	0.091	0.042	0.042	1	39108-34-4		08/05/2022 23:51
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 23:51
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		08/05/2022 23:51
PFUnDA	0.32	0.095	0.029	0.029	1	2058-94-8		08/05/2022 23:51
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		08/05/2022 23:51
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		08/05/2022 23:51
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/05/2022 23:51
PFDOA	0.16	0.095	0.031	0.031	1	307-55-1		08/05/2022 23:51
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		08/05/2022 23:51
EtFOSE	ND	0.095	0.031	0.031	1	1691-99-2		08/05/2022 23:51
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 23:51
PFTTrDA	ND	0.095	0.030	0.030	1	72629-94-8		08/05/2022 23:51
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		08/05/2022 23:51
PFTDA	ND	0.095	0.033	0.033	1	376-06-7		08/05/2022 23:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK18-HA01(0-6)
 Lab Sample ID 10616212018
 Lab File ID B220805B_009
 Matrix Soil
 Collected 07/05/2022 14:25
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.26g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	1.2	128	50-150		08/05/2022 23:51
13C4 PFOA	0.95	1.1	118	50-150		08/05/2022 23:51
13C2 PFDA	0.95	1.2	123	50-150		08/05/2022 23:51
13C4 PFOS	0.91	1.1	123	50-150		08/05/2022 23:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.75	79	25-150		08/05/2022 23:51
13C5 PFPeA	0.95	0.78	82	25-150		08/05/2022 23:51
13C3 PFBS	0.88	0.74	84	25-150		08/05/2022 23:51
13C2 4:2FTS	0.89	0.67	76	25-150		08/05/2022 23:51
13C5 PFHxA	0.95	0.87	92	25-150		08/05/2022 23:51
13C4 PFHpA	0.95	0.79	83	25-150		08/05/2022 23:51
13C3 PFHxS	0.90	0.76	85	25-150		08/05/2022 23:51
13C2 6:2FTS	0.90	0.77	85	25-150		08/05/2022 23:51
13C8 PFOA	0.95	0.80	84	25-150		08/05/2022 23:51
13C9 PFNA	0.95	0.90	95	25-150		08/05/2022 23:51
13C8 PFOS	0.91	0.80	88	25-150		08/05/2022 23:51
13C2 8:2FTS	0.91	0.97	107	25-150		08/05/2022 23:51
13C6 PFDA	0.95	0.85	90	25-150		08/05/2022 23:51
d3-MeFOSAA	0.95	0.75	79	25-150		08/05/2022 23:51
13C8 PFOSA	0.95	0.45	47	25-150		08/05/2022 23:51
d5-EtFOSAA	0.95	0.83	87	25-150		08/05/2022 23:51
13C7 PFUdA	0.95	0.84	89	25-150		08/05/2022 23:51
13C2 PFDoA	0.95	0.91	96	25-150		08/05/2022 23:51
13C2 PFTeDA	0.95	0.90	95	25-150		08/05/2022 23:51
13C3 HFPO-DA	0.95	0.83	88	25-150		08/05/2022 23:51
d7-N-MeFOSE	0.95	0.020	2	10-150	R	08/05/2022 23:51
d9-N-EtFOSE	0.95	0.033	3	10-150	R	08/05/2022 23:51
d3-N-MeFOSA	0.95	0.0031	0	10-150	R	08/05/2022 23:51
d5-N-EtFOSA	0.95	0.0040	0	10-150	R	08/05/2022 23:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK18-HA01(0-6)
 Lab Sample ID 10616212018
 Lab File ID B220805B_009
 Matrix Soil
 Collected 07/05/2022 14:25
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.26g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	16		08/05/2022 23:51
13C4 PFOA	N/A	N/A	7.07	7.07	21		08/05/2022 23:51
13C2 PFDA	N/A	N/A	8.40	8.39	18		08/05/2022 23:51
13C4 PFOS	N/A	N/A	8.89	8.88	14		08/05/2022 23:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/05/2022 23:51
13C5 PFPeA	N/A	N/A	5.14	5.15	25		08/05/2022 23:51
13C3 PFBS	N/A	N/A	6.05	6.05	18		08/05/2022 23:51
13C2 4:2FTS	N/A	N/A	5.54	5.54	47		08/05/2022 23:51
13C5 PFHxA	N/A	N/A	5.80	5.80	19		08/05/2022 23:51
13C4 PFHpA	N/A	N/A	6.43	6.43	23		08/05/2022 23:51
13C3 PFHxS	N/A	N/A	7.48	7.49	15		08/05/2022 23:51
13C2 6:2FTS	N/A	N/A	6.74	6.74	10		08/05/2022 23:51
13C8 PFOA	N/A	N/A	7.07	7.07	27		08/05/2022 23:51
13C9 PFNA	N/A	N/A	7.72	7.72	19		08/05/2022 23:51
13C8 PFOS	N/A	N/A	8.89	8.88	14		08/05/2022 23:51
13C2 8:2FTS	N/A	N/A	8.01	8.01	17		08/05/2022 23:51
13C6 PFDA	N/A	N/A	8.40	8.39	17		08/05/2022 23:51
d3-MeFOSAA	N/A	N/A	8.26	8.25	13		08/05/2022 23:51
13C8 PFOSA	N/A	N/A	10.65	10.61	20		08/05/2022 23:51
d5-EtFOSAA	N/A	N/A	8.55	8.54	15		08/05/2022 23:51
13C7 PFUdA	N/A	N/A	9.08	9.07	22		08/05/2022 23:51
13C2 PFDoA	N/A	N/A	9.76	9.74	10		08/05/2022 23:51
13C2 PFTeDA	N/A	N/A	11.08	11.07	15		08/05/2022 23:51
13C3 HFPO-DA	N/A	N/A	6.06	6.06	13		08/05/2022 23:51
d7-N-MeFOSE	N/A	N/A	12.47	12.45	25	R	08/05/2022 23:51
d9-N-EtFOSE	N/A	N/A	12.93	12.92	85	R	08/05/2022 23:51
d3-N-MeFOSA	N/A	N/A	12.67	12.66	50	R	08/05/2022 23:51
d5-N-EtFOSA	N/A	N/A	13.09	13.08	93	R	08/05/2022 23:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK18-HA01(0-6)
 Lab Sample ID 10616212018
 Lab File ID B220805B_009
 Matrix Soil
 Collected 07/05/2022 14:25
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.26g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	12		08/05/2022 23:51
PFPeA	N/A	N/A	5.15	5.15	36		08/05/2022 23:51
HFPO-DA	0.00	0.30	0.00	6.07	ND		08/05/2022 23:51
PFBS	0.00	0.48	0.00	6.06	ND		08/05/2022 23:51
PFHxA	0.08	0.08	5.81	5.81	26		08/05/2022 23:51
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/05/2022 23:51
PFPeS	0.00	0.43	0.00	6.79	ND		08/05/2022 23:51
PFHpA	0.28	0.30	6.44	6.44	21		08/05/2022 23:51
DONA	0.00	0.59	0.00	6.67	ND		08/05/2022 23:51
PFHxS	0.40	0.40	7.49	7.49	ND		08/05/2022 23:51
PFOA	0.42	0.40	7.07	7.08	16		08/05/2022 23:51
6:2 FTS	1.00	0.87	6.74	6.74	ND		08/05/2022 23:51
PFHpS	0.00	0.42	0.00	8.20	ND		08/05/2022 23:51
PFNA	0.12	0.13	7.73	7.73	57		08/05/2022 23:51
PFOSAm	N/A	N/A	10.66	10.61	ND		08/05/2022 23:51
PFOS	0.41	0.42	8.90	8.90	51		08/05/2022 23:51
MeFOSA	0.00	0.59	0.00	12.69	ND		08/05/2022 23:51
PFDA	0.16	0.18	8.41	8.40	64		08/05/2022 23:51
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/05/2022 23:51
8:2 FTS	0.99	0.78	8.02	8.02	88		08/05/2022 23:51
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/05/2022 23:51
PFNS	0.00	0.49	0.00	9.58	ND		08/05/2022 23:51
PFUnDA	0.17	0.13	9.09	9.08	14		08/05/2022 23:51
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 23:51
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/05/2022 23:51
PFDS	0.45	0.37	10.26	10.24	ND		08/05/2022 23:51
PFDOA	0.17	0.17	9.76	9.75	19		08/05/2022 23:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 23:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 23:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 23:51
PFTTrDA	0.16	0.19	10.43	10.42	ND		08/05/2022 23:51
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 23:51
PFTDA	0.29	0.25	11.08	11.07	ND		08/05/2022 23:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK19-HA01(0-6)
 Lab Sample ID 10616212019
 Lab File ID B220805B_010
 Matrix Soil
 Collected 07/05/2022 14:10
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.27g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.19	0.095	0.027	0.027	1	375-22-4		08/06/2022 00:11
PFPeA	0.90	0.095	0.027	0.027	1	2706-90-3		08/06/2022 00:11
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		08/06/2022 00:11
PFBS	ND	0.084	0.025	0.025	1	375-73-5		08/06/2022 00:11
PFHxA	0.25	0.095	0.026	0.026	1	307-24-4		08/06/2022 00:11
4:2 FTS	ND	0.089	0.022	0.022	1	757124-72-4		08/06/2022 00:11
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		08/06/2022 00:11
PFHpA	0.14	0.095	0.033	0.033	1	375-85-9		08/06/2022 00:11
DONA	ND	0.090	0.034	0.034	1	919005-14-4		08/06/2022 00:11
PFHxS	ND	0.086	0.021	0.021	1	355-46-4		08/06/2022 00:11
PFOA	0.15	0.095	0.030	0.030	1	335-67-1		08/06/2022 00:11
6:2 FTS	0.86	0.090	0.039	0.039	1	27619-97-2		08/06/2022 00:11
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/06/2022 00:11
PFNA	0.13	0.095	0.030	0.030	1	375-95-1		08/06/2022 00:11
PFOSAm	ND	0.095	0.028	0.028	1	754-91-6		08/06/2022 00:11
PFOS	0.37	0.088	0.028	0.028	1	1763-23-1		08/06/2022 00:11
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		08/06/2022 00:11
PFDA	0.11	0.095	0.022	0.022	1	335-76-2		08/06/2022 00:11
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		08/06/2022 00:11
8:2 FTS	0.65	0.091	0.042	0.042	1	39108-34-4		08/06/2022 00:11
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		08/06/2022 00:11
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		08/06/2022 00:11
PFUnDA	ND	0.095	0.029	0.029	1	2058-94-8		08/06/2022 00:11
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		08/06/2022 00:11
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		08/06/2022 00:11
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/06/2022 00:11
PFDOA	ND	0.095	0.031	0.031	1	307-55-1		08/06/2022 00:11
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		08/06/2022 00:11
EtFOSE	ND	0.095	0.031	0.031	1	1691-99-2		08/06/2022 00:11
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		08/06/2022 00:11
PFTTrDA	ND	0.095	0.030	0.030	1	72629-94-8		08/06/2022 00:11
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		08/06/2022 00:11
PFTDA	ND	0.095	0.033	0.033	1	376-06-7		08/06/2022 00:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK19-HA01(0-6)
 Lab Sample ID 10616212019
 Lab File ID B220805B_010
 Matrix Soil
 Collected 07/05/2022 14:10
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.27g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	1.2	129	50-150		08/06/2022 00:11
13C4 PFOA	0.95	1.2	124	50-150		08/06/2022 00:11
13C2 PFDA	0.95	1.2	124	50-150		08/06/2022 00:11
13C4 PFOS	0.91	1.1	124	50-150		08/06/2022 00:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.79	83	25-150		08/06/2022 00:11
13C5 PFPeA	0.95	0.82	87	25-150		08/06/2022 00:11
13C3 PFBS	0.88	0.71	80	25-150		08/06/2022 00:11
13C2 4:2FTS	0.89	0.67	76	25-150		08/06/2022 00:11
13C5 PFHxA	0.95	0.90	94	25-150		08/06/2022 00:11
13C4 PFHpA	0.95	0.84	89	25-150		08/06/2022 00:11
13C3 PFHxS	0.90	0.78	87	25-150		08/06/2022 00:11
13C2 6:2FTS	0.90	0.72	80	25-150		08/06/2022 00:11
13C8 PFOA	0.95	0.79	83	25-150		08/06/2022 00:11
13C9 PFNA	0.95	0.92	97	25-150		08/06/2022 00:11
13C8 PFOS	0.91	0.83	91	25-150		08/06/2022 00:11
13C2 8:2FTS	0.91	0.98	108	25-150		08/06/2022 00:11
13C6 PFDA	0.95	0.89	94	25-150		08/06/2022 00:11
d3-MeFOSAA	0.95	0.83	87	25-150		08/06/2022 00:11
13C8 PFOSA	0.95	0.44	47	25-150		08/06/2022 00:11
d5-EtFOSAA	0.95	0.87	91	25-150		08/06/2022 00:11
13C7 PFUdA	0.95	0.89	94	25-150		08/06/2022 00:11
13C2 PFDoA	0.95	0.71	75	25-150		08/06/2022 00:11
13C2 PFTeDA	0.95	0.81	85	25-150		08/06/2022 00:11
13C3 HFPO-DA	0.95	0.82	87	25-150		08/06/2022 00:11
d7-N-MeFOSE	0.95	0.019	2	10-150	R	08/06/2022 00:11
d9-N-EtFOSE	0.95	0.025	3	10-150	R	08/06/2022 00:11
d3-N-MeFOSA	0.95	0.0040	0	10-150	R	08/06/2022 00:11
d5-N-EtFOSA	0.95	0.0049	1	10-150	R	08/06/2022 00:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK19-HA01(0-6)
 Lab Sample ID 10616212019
 Lab File ID B220805B_010
 Matrix Soil
 Collected 07/05/2022 14:10
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.27g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	21		08/06/2022 00:11
13C4 PFOA	N/A	N/A	7.07	7.07	22		08/06/2022 00:11
13C2 PFDA	N/A	N/A	8.40	8.39	17		08/06/2022 00:11
13C4 PFOS	N/A	N/A	8.89	8.88	19		08/06/2022 00:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/06/2022 00:11
13C5 PFPeA	N/A	N/A	5.14	5.15	25		08/06/2022 00:11
13C3 PFBS	N/A	N/A	6.05	6.05	29		08/06/2022 00:11
13C2 4:2FTS	N/A	N/A	5.54	5.54	69		08/06/2022 00:11
13C5 PFHxA	N/A	N/A	5.80	5.80	14		08/06/2022 00:11
13C4 PFHpA	N/A	N/A	6.44	6.43	21		08/06/2022 00:11
13C3 PFHxS	N/A	N/A	7.49	7.49	18		08/06/2022 00:11
13C2 6:2FTS	N/A	N/A	6.74	6.74	16		08/06/2022 00:11
13C8 PFOA	N/A	N/A	7.07	7.07	32		08/06/2022 00:11
13C9 PFNA	N/A	N/A	7.73	7.72	23		08/06/2022 00:11
13C8 PFOS	N/A	N/A	8.90	8.88	24		08/06/2022 00:11
13C2 8:2FTS	N/A	N/A	8.02	8.01	87		08/06/2022 00:11
13C6 PFDA	N/A	N/A	8.40	8.39	23		08/06/2022 00:11
d3-MeFOSAA	N/A	N/A	8.26	8.25	20		08/06/2022 00:11
13C8 PFOSA	N/A	N/A	10.65	10.61	20		08/06/2022 00:11
d5-EtFOSAA	N/A	N/A	8.55	8.54	10		08/06/2022 00:11
13C7 PFUdA	N/A	N/A	9.09	9.07	21		08/06/2022 00:11
13C2 PFDoA	N/A	N/A	9.76	9.74	10		08/06/2022 00:11
13C2 PFTeDA	N/A	N/A	11.08	11.07	11		08/06/2022 00:11
13C3 HFPO-DA	N/A	N/A	6.06	6.06	15		08/06/2022 00:11
d7-N-MeFOSE	N/A	N/A	12.47	12.45	39	R	08/06/2022 00:11
d9-N-EtFOSE	N/A	N/A	12.93	12.92	10	R	08/06/2022 00:11
d3-N-MeFOSA	N/A	N/A	12.67	12.66	63	R	08/06/2022 00:11
d5-N-EtFOSA	N/A	N/A	13.09	13.08	12	R	08/06/2022 00:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK19-HA01(0-6)
 Lab Sample ID 10616212019
 Lab File ID B220805B_010
 Matrix Soil
 Collected 07/05/2022 14:10
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.27g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	16		08/06/2022 00:11
PFPeA	N/A	N/A	5.15	5.15	64		08/06/2022 00:11
HFPO-DA	0.00	0.30	0.00	6.07	ND		08/06/2022 00:11
PFBS	0.35	0.48	6.05	6.06	ND		08/06/2022 00:11
PFHxA	0.08	0.08	5.81	5.81	35		08/06/2022 00:11
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 00:11
PFPeS	0.44	0.43	6.79	6.79	ND		08/06/2022 00:11
PFHpA	0.29	0.30	6.44	6.44	20		08/06/2022 00:11
DONA	0.00	0.59	0.00	6.67	ND		08/06/2022 00:11
PFHxS	0.41	0.40	7.50	7.49	ND		08/06/2022 00:11
PFOA	0.46	0.40	7.08	7.08	15		08/06/2022 00:11
6:2 FTS	0.90	0.87	6.74	6.74	62		08/06/2022 00:11
PFHpS	0.00	0.42	0.00	8.20	ND		08/06/2022 00:11
PFNA	0.13	0.13	7.73	7.73	20		08/06/2022 00:11
PFOSAm	N/A	N/A	10.66	10.61	ND		08/06/2022 00:11
PFOS	0.42	0.42	8.91	8.90	48		08/06/2022 00:11
MeFOSA	0.00	0.59	0.00	12.69	ND		08/06/2022 00:11
PFDA	0.15	0.18	8.41	8.40	94		08/06/2022 00:11
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/06/2022 00:11
8:2 FTS	0.76	0.78	8.02	8.02	13		08/06/2022 00:11
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/06/2022 00:11
PFNS	0.00	0.49	0.00	9.58	ND		08/06/2022 00:11
PFUnDA	0.19	0.13	9.09	9.08	ND		08/06/2022 00:11
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/06/2022 00:11
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/06/2022 00:11
PFDS	0.00	0.37	0.00	10.24	ND		08/06/2022 00:11
PFDOA	0.19	0.17	9.77	9.75	ND		08/06/2022 00:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 00:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 00:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 00:11
PFTTrDA	0.29	0.19	10.43	10.42	ND		08/06/2022 00:11
PFDoS	0.00	0.49	0.00	11.48	ND		08/06/2022 00:11
PFTDA	0.15	0.25	11.08	11.07	ND		08/06/2022 00:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK20-HA01(0-6)
 Lab Sample ID 10616212020
 Lab File ID B220804B_017
 Matrix Soil
 Collected 07/05/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.27	0.098	0.028	0.028	1	375-22-4		08/05/2022 06:11
PFPeA	1.5	0.098	0.028	0.028	1	2706-90-3		08/05/2022 06:11
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		08/05/2022 06:11
PFBS	ND	0.087	0.026	0.026	1	375-73-5		08/05/2022 06:11
PFHxA	0.50	0.098	0.027	0.027	1	307-24-4		08/05/2022 06:11
4:2 FTS	ND	0.092	0.023	0.023	1	757124-72-4		08/05/2022 06:11
PFPeS	ND	0.092	0.024	0.024	1	2706-91-4		08/05/2022 06:11
PFHpA	0.21	0.098	0.034	0.034	1	375-85-9		08/05/2022 06:11
DONA	ND	0.093	0.036	0.036	1	919005-14-4		08/05/2022 06:11
PFHxS	0.089 J	0.089	0.021	0.021	1	355-46-4		08/05/2022 06:11
PFOA	0.35	0.098	0.030	0.030	1	335-67-1		08/05/2022 06:11
6:2 FTS	0.18	0.093	0.041	0.041	1	27619-97-2		08/05/2022 06:11
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		08/05/2022 06:11
PFNA	0.18	0.098	0.030	0.030	1	375-95-1		08/05/2022 06:11
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		08/05/2022 06:11
PFOS	1.2	0.091	0.029	0.029	1	1763-23-1		08/05/2022 06:11
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		08/05/2022 06:11
PFDA	0.23	0.098	0.022	0.022	1	335-76-2		08/05/2022 06:11
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		08/05/2022 06:11
8:2 FTS	0.13	0.094	0.043	0.043	1	39108-34-4		08/05/2022 06:11
9-CI-PF3ON	ND	0.091	0.025	0.025	1	756426-58-1		08/05/2022 06:11
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		08/05/2022 06:11
PFUnDA	0.081 J	0.098	0.030	0.030	1	2058-94-8		08/05/2022 06:11
NMeFOSAA	ND	0.098	0.028	0.028	1	2355-31-9		08/05/2022 06:11
NEtFOSAA	ND	0.098	0.039	0.039	1	2991-50-6		08/05/2022 06:11
PFDS	ND	0.095	0.028	0.028	1	335-77-3		08/05/2022 06:11
PFDOA	ND	0.098	0.032	0.032	1	307-55-1		08/05/2022 06:11
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		08/05/2022 06:11
EtFOSE	ND	0.098	0.032	0.032	1	1691-99-2		08/05/2022 06:11
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		08/05/2022 06:11
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		08/05/2022 06:11
PFDoS	ND	0.095	0.026	0.026	1	79780-39-5		08/05/2022 06:11
PFTDA	ND	0.098	0.034	0.034	1	376-06-7		08/05/2022 06:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK20-HA01(0-6)
 Lab Sample ID 10616212020
 Lab File ID B220804B_017
 Matrix Soil
 Collected 07/05/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	1.2	120	50-150		08/05/2022 06:11
13C4 PFOA	0.98	0.94	96	50-150		08/05/2022 06:11
13C2 PFDA	0.98	1.1	112	50-150		08/05/2022 06:11
13C4 PFOS	0.94	1.1	120	50-150		08/05/2022 06:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.78	80	25-150		08/05/2022 06:11
13C5 PFPeA	0.98	0.75	77	25-150		08/05/2022 06:11
13C3 PFBS	0.91	0.81	88	25-150		08/05/2022 06:11
13C2 4:2FTS	0.92	0.73	80	25-150		08/05/2022 06:11
13C5 PFHxA	0.98	0.82	84	25-150		08/05/2022 06:11
13C4 PFHpA	0.98	0.87	89	25-150		08/05/2022 06:11
13C3 PFHxS	0.93	0.74	79	25-150		08/05/2022 06:11
13C2 6:2FTS	0.93	0.73	79	25-150		08/05/2022 06:11
13C8 PFOA	0.98	0.75	77	25-150		08/05/2022 06:11
13C9 PFNA	0.98	0.84	86	25-150		08/05/2022 06:11
13C8 PFOS	0.94	0.80	85	25-150		08/05/2022 06:11
13C2 8:2FTS	0.94	0.94	100	25-150		08/05/2022 06:11
13C6 PFDA	0.98	0.89	91	25-150		08/05/2022 06:11
d3-MeFOSAA	0.98	0.78	79	25-150		08/05/2022 06:11
13C8 PFOSA	0.98	0.55	56	25-150		08/05/2022 06:11
d5-EtFOSAA	0.98	0.85	87	25-150		08/05/2022 06:11
13C7 PFUdA	0.98	0.99	101	25-150		08/05/2022 06:11
13C2 PFDoA	0.98	0.85	87	25-150		08/05/2022 06:11
13C2 PFTeDA	0.98	0.78	80	25-150		08/05/2022 06:11
13C3 HFPO-DA	0.98	0.77	79	25-150		08/05/2022 06:11
d7-N-MeFOSE	0.98	0.035	4	10-150	R	08/05/2022 06:11
d9-N-EtFOSE	0.98	0.045	5	10-150	R	08/05/2022 06:11
d3-N-MeFOSA	0.98	0.0054	1	10-150	R	08/05/2022 06:11
d5-N-EtFOSA	0.98	0.0050	1	10-150	R	08/05/2022 06:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK20-HA01(0-6)
 Lab Sample ID 10616212020
 Lab File ID B220804B_017
 Matrix Soil
 Collected 07/05/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	22		08/05/2022 06:11
13C4 PFOA	N/A	N/A	7.05	7.07	20		08/05/2022 06:11
13C2 PFDA	N/A	N/A	8.38	8.39	15		08/05/2022 06:11
13C4 PFOS	N/A	N/A	8.87	8.88	17		08/05/2022 06:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	22		08/05/2022 06:11
13C5 PFPeA	N/A	N/A	5.13	5.15	21		08/05/2022 06:11
13C3 PFBS	N/A	N/A	6.04	6.05	18		08/05/2022 06:11
13C2 4:2FTS	N/A	N/A	5.52	5.54	77		08/05/2022 06:11
13C5 PFHxA	N/A	N/A	5.78	5.80	22		08/05/2022 06:11
13C4 PFHpA	N/A	N/A	6.41	6.43	15		08/05/2022 06:11
13C3 PFHxS	N/A	N/A	7.48	7.49	17		08/05/2022 06:11
13C2 6:2FTS	N/A	N/A	6.72	6.74	11		08/05/2022 06:11
13C8 PFOA	N/A	N/A	7.05	7.07	23		08/05/2022 06:11
13C9 PFNA	N/A	N/A	7.71	7.72	19		08/05/2022 06:11
13C8 PFOS	N/A	N/A	8.88	8.88	16		08/05/2022 06:11
13C2 8:2FTS	N/A	N/A	8.00	8.01	24		08/05/2022 06:11
13C6 PFDA	N/A	N/A	8.38	8.39	16		08/05/2022 06:11
d3-MeFOSAA	N/A	N/A	8.24	8.25	21		08/05/2022 06:11
13C8 PFOSA	N/A	N/A	10.62	10.61	12		08/05/2022 06:11
d5-EtFOSAA	N/A	N/A	8.53	8.54	11		08/05/2022 06:11
13C7 PFUdA	N/A	N/A	9.06	9.07	16		08/05/2022 06:11
13C2 PFDoA	N/A	N/A	9.74	9.74	13		08/05/2022 06:11
13C2 PFTeDA	N/A	N/A	11.05	11.07	14		08/05/2022 06:11
13C3 HFPO-DA	N/A	N/A	6.04	6.06	15		08/05/2022 06:11
d7-N-MeFOSE	N/A	N/A	12.45	12.45	47	R	08/05/2022 06:11
d9-N-EtFOSE	N/A	N/A	12.92	12.92	14	R	08/05/2022 06:11
d3-N-MeFOSA	N/A	N/A	12.66	12.66	20	R	08/05/2022 06:11
d5-N-EtFOSA	N/A	N/A	13.08	13.08	78	R	08/05/2022 06:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK20-HA01(0-6)
 Lab Sample ID 10616212020
 Lab File ID B220804B_017
 Matrix Soil
 Collected 07/05/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	16		08/05/2022 06:11
PFPeA	N/A	N/A	5.14	5.15	75		08/05/2022 06:11
HFPO-DA	0.00	0.25	0.00	6.07	ND		08/05/2022 06:11
PFBS	0.44	0.43	6.04	6.06	ND		08/05/2022 06:11
PFHxA	0.08	0.08	5.79	5.81	29		08/05/2022 06:11
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 06:11
PFPeS	0.37	0.44	6.77	6.79	ND		08/05/2022 06:11
PFHpA	0.34	0.25	6.42	6.44	22		08/05/2022 06:11
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 06:11
PFHxS	0.37	0.40	7.48	7.49	65	J	08/05/2022 06:11
PFOA	0.38	0.45	7.06	7.08	19		08/05/2022 06:11
6:2 FTS	0.80	0.79	6.72	6.74	51		08/05/2022 06:11
PFHpS	0.36	0.37	8.20	8.20	ND		08/05/2022 06:11
PFNA	0.15	0.13	7.71	7.73	42		08/05/2022 06:11
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 06:11
PFOS	0.42	0.41	8.89	8.90	62		08/05/2022 06:11
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 06:11
PFDA	0.15	0.19	8.39	8.40	48		08/05/2022 06:11
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 06:11
8:2 FTS	0.89	0.84	8.00	8.02	10		08/05/2022 06:11
9-Cl-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 06:11
PFNS	0.35	0.45	9.56	9.58	ND		08/05/2022 06:11
PFUnDA	0.13	0.12	9.07	9.08	15	J	08/05/2022 06:11
NMeFOSAA	0.00	0.91	0.00	8.26	ND		08/05/2022 06:11
NEtFOSAA	0.00	0.61	0.00	8.55	ND		08/05/2022 06:11
PFDS	0.00	0.36	0.00	10.24	ND		08/05/2022 06:11
PFDOA	0.19	0.17	9.74	9.75	ND		08/05/2022 06:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 06:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 06:11
11-Cl-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 06:11
PFTTrDA	0.17	0.15	10.40	10.42	ND		08/05/2022 06:11
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 06:11
PFTDA	0.22	0.24	11.05	11.07	ND		08/05/2022 06:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK21-HA01(0-6)
 Lab Sample ID 10616212021
 Lab File ID B220804B_018
 Matrix Soil
 Collected 07/06/2022 09:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.093	0.092	0.026	0.026	1	375-22-4		08/05/2022 06:31
PFPeA	0.24	0.092	0.026	0.026	1	2706-90-3		08/05/2022 06:31
HFPO-DA	ND	0.092	0.026	0.026	1	13252-13-6		08/05/2022 06:31
PFBS	ND	0.082	0.024	0.024	1	375-73-5		08/05/2022 06:31
PFHxA	0.13	0.092	0.025	0.025	1	307-24-4		08/05/2022 06:31
4:2 FTS	ND	0.086	0.021	0.021	1	757124-72-4		08/05/2022 06:31
PFPeS	ND	0.087	0.022	0.022	1	2706-91-4		08/05/2022 06:31
PFHpA	0.13	0.092	0.032	0.032	1	375-85-9		08/05/2022 06:31
DONA	ND	0.087	0.033	0.033	1	919005-14-4		08/05/2022 06:31
PFHxS	0.035 J	0.084	0.020	0.020	1	355-46-4		08/05/2022 06:31
PFOA	0.18	0.092	0.029	0.029	1	335-67-1		08/05/2022 06:31
6:2 FTS	0.052 J	0.088	0.038	0.038	1	27619-97-2		08/05/2022 06:31
PFHpS	ND	0.088	0.026	0.026	1	375-92-8		08/05/2022 06:31
PFNA	0.19	0.092	0.029	0.029	1	375-95-1		08/05/2022 06:31
PFOSAm	ND	0.092	0.027	0.027	1	754-91-6		08/05/2022 06:31
PFOS	0.69	0.085	0.027	0.027	1	1763-23-1		08/05/2022 06:31
MeFOSA	ND	0.092	0.025	0.025	1	31506-32-8		08/05/2022 06:31
PFDA	0.62	0.092	0.021	0.021	1	335-76-2		08/05/2022 06:31
EtFOSAm	ND	0.092	0.024	0.024	1	4151-50-2		08/05/2022 06:31
8:2 FTS	0.28	0.089	0.041	0.041	1	39108-34-4		08/05/2022 06:31
9-CI-PF3ON	ND	0.086	0.023	0.023	1	756426-58-1		08/05/2022 06:31
PFNS	ND	0.089	0.032	0.032	1	68259-12-1		08/05/2022 06:31
PFUnDA	0.48	0.092	0.028	0.028	1	2058-94-8		08/05/2022 06:31
NMeFOSAA	ND	0.092	0.026	0.026	1	2355-31-9		08/05/2022 06:31
NEtFOSAA	ND	0.092	0.037	0.037	1	2991-50-6		08/05/2022 06:31
PFDS	ND	0.089	0.026	0.026	1	335-77-3		08/05/2022 06:31
PFDOA	0.22	0.092	0.030	0.030	1	307-55-1		08/05/2022 06:31
MeFOSE	ND	0.092	0.028	0.028	1	24448-09-7		08/05/2022 06:31
EtFOSE	ND	0.092	0.030	0.030	1	1691-99-2		08/05/2022 06:31
11-CI-PF3OUdS	ND	0.087	0.023	0.023	1	763051-92-9		08/05/2022 06:31
PFTTrDA	0.041 J	0.092	0.029	0.029	1	72629-94-8		08/05/2022 06:31
PFDoS	ND	0.089	0.024	0.024	1	79780-39-5		08/05/2022 06:31
PFTDA	0.042 J	0.092	0.032	0.032	1	376-06-7		08/05/2022 06:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK21-HA01(0-6)
 Lab Sample ID 10616212021
 Lab File ID B220804B_018
 Matrix Soil
 Collected 07/06/2022 09:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.92	1.2	126	50-150		08/05/2022 06:31
13C4 PFOA	0.92	1.0	113	50-150		08/05/2022 06:31
13C2 PFDA	0.92	1.2	126	50-150		08/05/2022 06:31
13C4 PFOS	0.88	1.1	129	50-150		08/05/2022 06:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.92	0.82	89	25-150		08/05/2022 06:31
13C5 PFPeA	0.92	0.80	86	25-150		08/05/2022 06:31
13C3 PFBS	0.86	0.84	98	25-150		08/05/2022 06:31
13C2 4:2FTS	0.86	0.94	109	25-150		08/05/2022 06:31
13C5 PFHxA	0.92	0.84	91	25-150		08/05/2022 06:31
13C4 PFHpA	0.92	0.89	96	25-150		08/05/2022 06:31
13C3 PFHxS	0.87	0.79	90	25-150		08/05/2022 06:31
13C2 6:2FTS	0.88	1.00	114	25-150		08/05/2022 06:31
13C8 PFOA	0.92	0.87	95	25-150		08/05/2022 06:31
13C9 PFNA	0.92	0.99	107	25-150		08/05/2022 06:31
13C8 PFOS	0.88	0.89	101	25-150		08/05/2022 06:31
13C2 8:2FTS	0.88	1.3	142	25-150		08/05/2022 06:31
13C6 PFDA	0.92	1.1	117	25-150		08/05/2022 06:31
d3-MeFOSAA	0.92	0.87	95	25-150		08/05/2022 06:31
13C8 PFOSA	0.92	0.71	77	25-150		08/05/2022 06:31
d5-EtFOSAA	0.92	0.98	106	25-150		08/05/2022 06:31
13C7 PFUdA	0.92	1.3	146	25-150		08/05/2022 06:31
13C2 PFDaA	0.92	1.1	120	25-150		08/05/2022 06:31
13C2 PFTeDA	0.92	0.84	91	25-150		08/05/2022 06:31
13C3 HFPO-DA	0.92	0.89	96	25-150		08/05/2022 06:31
d7-N-MeFOSE	0.92	0.26	29	10-150		08/05/2022 06:31
d9-N-EtFOSE	0.92	0.39	42	10-150		08/05/2022 06:31
d3-N-MeFOSA	0.92	0.048	5	10-150	R	08/05/2022 06:31
d5-N-EtFOSA	0.92	0.065	7	10-150	R	08/05/2022 06:31

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 Lab Sample ID 10616212021
 Lab File ID B220804B_018
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 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	18		08/05/2022 06:31
13C4 PFOA	N/A	N/A	7.05	7.07	16		08/05/2022 06:31
13C2 PFDA	N/A	N/A	8.38	8.39	17		08/05/2022 06:31
13C4 PFOS	N/A	N/A	8.87	8.88	98		08/05/2022 06:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/05/2022 06:31
13C5 PFPeA	N/A	N/A	5.14	5.15	22		08/05/2022 06:31
13C3 PFBS	N/A	N/A	6.04	6.05	10		08/05/2022 06:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	40		08/05/2022 06:31
13C5 PFHxA	N/A	N/A	5.79	5.80	16		08/05/2022 06:31
13C4 PFHpA	N/A	N/A	6.42	6.43	19		08/05/2022 06:31
13C3 PFHxS	N/A	N/A	7.47	7.49	13		08/05/2022 06:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	58		08/05/2022 06:31
13C8 PFOA	N/A	N/A	7.05	7.07	21		08/05/2022 06:31
13C9 PFNA	N/A	N/A	7.70	7.72	18		08/05/2022 06:31
13C8 PFOS	N/A	N/A	8.87	8.88	79		08/05/2022 06:31
13C2 8:2FTS	N/A	N/A	7.99	8.01	76		08/05/2022 06:31
13C6 PFDA	N/A	N/A	8.38	8.39	16		08/05/2022 06:31
d3-MeFOSAA	N/A	N/A	8.24	8.25	14		08/05/2022 06:31
13C8 PFOSA	N/A	N/A	10.62	10.61	13		08/05/2022 06:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	15		08/05/2022 06:31
13C7 PFUdA	N/A	N/A	9.05	9.07	15		08/05/2022 06:31
13C2 PFDoA	N/A	N/A	9.73	9.74	11		08/05/2022 06:31
13C2 PFTeDA	N/A	N/A	11.05	11.07	11		08/05/2022 06:31
13C3 HFPO-DA	N/A	N/A	6.04	6.06	15		08/05/2022 06:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	68		08/05/2022 06:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	17		08/05/2022 06:31
d3-N-MeFOSA	N/A	N/A	12.67	12.66	30	R	08/05/2022 06:31
d5-N-EtFOSA	N/A	N/A	13.08	13.08	27	R	08/05/2022 06:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK21-HA01(0-6)
 Lab Sample ID 10616212021
 Lab File ID B220804B_018
 Matrix Soil
 Collected 07/06/2022 09:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.42g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	90		08/05/2022 06:31
PFPeA	N/A	N/A	5.14	5.15	22		08/05/2022 06:31
HFPO-DA	0.00	0.25	0.00	6.07	ND		08/05/2022 06:31
PFBS	0.30	0.43	6.04	6.06	ND		08/05/2022 06:31
PFHxA	0.08	0.08	5.80	5.81	15		08/05/2022 06:31
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 06:31
PFPeS	0.42	0.44	6.77	6.79	ND		08/05/2022 06:31
PFHpA	0.32	0.25	6.42	6.44	28		08/05/2022 06:31
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 06:31
PFHxS	0.41	0.40	7.48	7.49	20	J	08/05/2022 06:31
PFOA	0.38	0.45	7.06	7.08	14		08/05/2022 06:31
6:2 FTS	0.97	0.79	6.72	6.74	29	J	08/05/2022 06:31
PFHpS	0.00	0.37	0.00	8.20	ND		08/05/2022 06:31
PFNA	0.14	0.13	7.71	7.73	35		08/05/2022 06:31
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 06:31
PFOS	0.38	0.41	8.88	8.90	53		08/05/2022 06:31
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 06:31
PFDA	0.20	0.19	8.39	8.40	44		08/05/2022 06:31
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 06:31
8:2 FTS	0.87	0.84	8.00	8.02	99		08/05/2022 06:31
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 06:31
PFNS	0.61	0.45	9.56	9.58	ND		08/05/2022 06:31
PFUnDA	0.14	0.12	9.06	9.08	42		08/05/2022 06:31
NMeFOSAA	0.90	0.91	8.23	8.26	ND		08/05/2022 06:31
NEtFOSAA	0.00	0.61	0.00	8.55	ND		08/05/2022 06:31
PFDS	0.36	0.36	10.23	10.24	ND		08/05/2022 06:31
PFDOA	0.21	0.17	9.74	9.75	45		08/05/2022 06:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 06:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 06:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 06:31
PFTTrDA	0.17	0.15	10.41	10.42	78	J	08/05/2022 06:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 06:31
PFTDA	0.32	0.24	11.05	11.07	12	J	08/05/2022 06:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK22-HA01(0-6)
 Lab Sample ID 10616212022
 Lab File ID B220804B_019
 Matrix Soil
 Collected 07/05/2022 15:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.31g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.24	0.094	0.027	0.027	1	375-22-4		08/05/2022 06:51
PFPeA	0.49	0.094	0.027	0.027	1	2706-90-3		08/05/2022 06:51
HFPO-DA	ND	0.094	0.026	0.026	1	13252-13-6		08/05/2022 06:51
PFBS	ND	0.083	0.025	0.025	1	375-73-5		08/05/2022 06:51
PFHxA	0.27	0.094	0.026	0.026	1	307-24-4		08/05/2022 06:51
4:2 FTS	ND	0.088	0.022	0.022	1	757124-72-4		08/05/2022 06:51
PFPeS	ND	0.089	0.023	0.023	1	2706-91-4		08/05/2022 06:51
PFHpA	0.30	0.094	0.033	0.033	1	375-85-9		08/05/2022 06:51
DONA	ND	0.089	0.034	0.034	1	919005-14-4		08/05/2022 06:51
PFHxS	ND	0.086	0.021	0.021	1	355-46-4		08/05/2022 06:51
PFOA	0.33	0.094	0.029	0.029	1	335-67-1		08/05/2022 06:51
6:2 FTS	0.099	0.090	0.039	0.039	1	27619-97-2		08/05/2022 06:51
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/05/2022 06:51
PFNA	0.26	0.094	0.029	0.029	1	375-95-1		08/05/2022 06:51
PFOSAm	ND	0.094	0.028	0.028	1	754-91-6		08/05/2022 06:51
PFOS	0.82	0.087	0.028	0.028	1	1763-23-1		08/05/2022 06:51
MeFOSA	ND	0.094	0.026	0.026	1	31506-32-8		08/05/2022 06:51
PFDA	0.74	0.094	0.021	0.021	1	335-76-2		08/05/2022 06:51
EtFOSAm	ND	0.094	0.024	0.024	1	4151-50-2		08/05/2022 06:51
8:2 FTS	1.3	0.090	0.041	0.041	1	39108-34-4		08/05/2022 06:51
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		08/05/2022 06:51
PFNS	ND	0.090	0.033	0.033	1	68259-12-1		08/05/2022 06:51
PFUnDA	0.52	0.094	0.028	0.028	1	2058-94-8		08/05/2022 06:51
NMeFOSAA	ND	0.094	0.026	0.026	1	2355-31-9		08/05/2022 06:51
NEtFOSAA	ND	0.094	0.038	0.038	1	2991-50-6		08/05/2022 06:51
PFDS	ND	0.091	0.027	0.027	1	335-77-3		08/05/2022 06:51
PFDOA	0.24	0.094	0.031	0.031	1	307-55-1		08/05/2022 06:51
MeFOSE	ND	0.094	0.029	0.029	1	24448-09-7		08/05/2022 06:51
EtFOSE	ND	0.094	0.030	0.030	1	1691-99-2		08/05/2022 06:51
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		08/05/2022 06:51
PFTTrDA	0.059 J	0.094	0.030	0.030	1	72629-94-8		08/05/2022 06:51
PFDoS	ND	0.091	0.025	0.025	1	79780-39-5		08/05/2022 06:51
PFTDA	ND	0.094	0.032	0.032	1	376-06-7		08/05/2022 06:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK22-HA01(0-6)
 Lab Sample ID 10616212022
 Lab File ID B220804B_019
 Matrix Soil
 Collected 07/05/2022 15:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.31g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.94	1.1	120	50-150		08/05/2022 06:51
13C4 PFOA	0.94	1.1	119	50-150		08/05/2022 06:51
13C2 PFDA	0.94	1.1	113	50-150		08/05/2022 06:51
13C4 PFOS	0.90	1.1	122	50-150		08/05/2022 06:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.94	0.80	84	25-150		08/05/2022 06:51
13C5 PFPeA	0.94	0.80	85	25-150		08/05/2022 06:51
13C3 PFBS	0.88	0.85	97	25-150		08/05/2022 06:51
13C2 4:2FTS	0.88	0.93	106	25-150		08/05/2022 06:51
13C5 PFHxA	0.94	0.80	85	25-150		08/05/2022 06:51
13C4 PFHpA	0.94	0.88	93	25-150		08/05/2022 06:51
13C3 PFHxS	0.89	0.78	88	25-150		08/05/2022 06:51
13C2 6:2FTS	0.89	0.87	97	25-150		08/05/2022 06:51
13C8 PFOA	0.94	0.82	87	25-150		08/05/2022 06:51
13C9 PFNA	0.94	0.94	99	25-150		08/05/2022 06:51
13C8 PFOS	0.90	0.87	96	25-150		08/05/2022 06:51
13C2 8:2FTS	0.90	1.2	131	25-150		08/05/2022 06:51
13C6 PFDA	0.94	0.86	91	25-150		08/05/2022 06:51
d3-MeFOSAA	0.94	0.95	101	25-150		08/05/2022 06:51
13C8 PFOSA	0.94	0.56	59	25-150		08/05/2022 06:51
d5-EtFOSAA	0.94	0.95	101	25-150		08/05/2022 06:51
13C7 PFUdA	0.94	1.2	130	25-150		08/05/2022 06:51
13C2 PFDoA	0.94	0.95	101	25-150		08/05/2022 06:51
13C2 PFTeDA	0.94	0.91	97	25-150		08/05/2022 06:51
13C3 HFPO-DA	0.94	0.88	93	25-150		08/05/2022 06:51
d7-N-MeFOSE	0.94	0.20	21	10-150		08/05/2022 06:51
d9-N-EtFOSE	0.94	0.31	33	10-150		08/05/2022 06:51
d3-N-MeFOSA	0.94	0.031	3	10-150	R	08/05/2022 06:51
d5-N-EtFOSA	0.94	0.050	5	10-150	R	08/05/2022 06:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK22-HA01(0-6)
 Lab Sample ID 10616212022
 Lab File ID B220804B_019
 Matrix Soil
 Collected 07/05/2022 15:40
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.31g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	20		08/05/2022 06:51
13C4 PFOA	N/A	N/A	7.05	7.07	22		08/05/2022 06:51
13C2 PFDA	N/A	N/A	8.37	8.39	11		08/05/2022 06:51
13C4 PFOS	N/A	N/A	8.86	8.88	10		08/05/2022 06:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	23		08/05/2022 06:51
13C5 PFPeA	N/A	N/A	5.13	5.15	21		08/05/2022 06:51
13C3 PFBS	N/A	N/A	6.04	6.05	11		08/05/2022 06:51
13C2 4:2FTS	N/A	N/A	5.52	5.54	51		08/05/2022 06:51
13C5 PFHxA	N/A	N/A	5.79	5.80	20		08/05/2022 06:51
13C4 PFHpA	N/A	N/A	6.41	6.43	15		08/05/2022 06:51
13C3 PFHxS	N/A	N/A	7.47	7.49	15		08/05/2022 06:51
13C2 6:2FTS	N/A	N/A	6.72	6.74	60		08/05/2022 06:51
13C8 PFOA	N/A	N/A	7.05	7.07	20		08/05/2022 06:51
13C9 PFNA	N/A	N/A	7.70	7.72	16		08/05/2022 06:51
13C8 PFOS	N/A	N/A	8.87	8.88	92		08/05/2022 06:51
13C2 8:2FTS	N/A	N/A	7.99	8.01	90		08/05/2022 06:51
13C6 PFDA	N/A	N/A	8.38	8.39	15		08/05/2022 06:51
d3-MeFOSAA	N/A	N/A	8.23	8.25	23		08/05/2022 06:51
13C8 PFOSA	N/A	N/A	10.62	10.61	14		08/05/2022 06:51
d5-EtFOSAA	N/A	N/A	8.53	8.54	17		08/05/2022 06:51
13C7 PFUdA	N/A	N/A	9.05	9.07	14		08/05/2022 06:51
13C2 PFDoA	N/A	N/A	9.72	9.74	98		08/05/2022 06:51
13C2 PFTeDA	N/A	N/A	11.05	11.07	13		08/05/2022 06:51
13C3 HFPO-DA	N/A	N/A	6.04	6.06	17		08/05/2022 06:51
d7-N-MeFOSE	N/A	N/A	12.45	12.45	62		08/05/2022 06:51
d9-N-EtFOSE	N/A	N/A	12.92	12.92	18		08/05/2022 06:51
d3-N-MeFOSA	N/A	N/A	12.67	12.66	29	R	08/05/2022 06:51
d5-N-EtFOSA	N/A	N/A	13.08	13.08	24	R	08/05/2022 06:51

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 Lab File ID B220804B_019
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 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.31g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	11		08/05/2022 06:51
PFPeA	N/A	N/A	5.14	5.15	34		08/05/2022 06:51
HFPO-DA	2.70	0.25	6.06	6.07	ND		08/05/2022 06:51
PFBS	0.36	0.43	6.03	6.06	ND		08/05/2022 06:51
PFHxA	0.07	0.08	5.79	5.81	17		08/05/2022 06:51
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 06:51
PFPeS	0.32	0.44	6.78	6.79	ND		08/05/2022 06:51
PFHpA	0.33	0.25	6.42	6.44	23		08/05/2022 06:51
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 06:51
PFHxS	0.45	0.40	7.48	7.49	ND		08/05/2022 06:51
PFOA	0.40	0.45	7.06	7.08	22		08/05/2022 06:51
6:2 FTS	0.84	0.79	6.72	6.74	28		08/05/2022 06:51
PFHpS	0.00	0.37	0.00	8.20	ND		08/05/2022 06:51
PFNA	0.14	0.13	7.71	7.73	32		08/05/2022 06:51
PFOSAm	N/A	N/A	10.62	10.61	ND		08/05/2022 06:51
PFOS	0.44	0.41	8.88	8.90	74		08/05/2022 06:51
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 06:51
PFDA	0.19	0.19	8.38	8.40	46		08/05/2022 06:51
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 06:51
8:2 FTS	0.74	0.84	8.00	8.02	17		08/05/2022 06:51
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 06:51
PFNS	0.59	0.45	9.56	9.58	ND		08/05/2022 06:51
PFUnDA	0.13	0.12	9.05	9.08	26		08/05/2022 06:51
NMeFOSAA	1.30	0.91	8.22	8.26	ND		08/05/2022 06:51
NEtFOSAA	1.80	0.61	8.54	8.55	ND		08/05/2022 06:51
PFDS	0.36	0.36	10.23	10.24	ND		08/05/2022 06:51
PFDOA	0.16	0.17	9.73	9.75	31		08/05/2022 06:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 06:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 06:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 06:51
PFTTrDA	0.18	0.15	10.40	10.42	47	J	08/05/2022 06:51
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 06:51
PFTDA	0.30	0.24	11.06	11.07	ND		08/05/2022 06:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK23-HA01(0-6)
 Lab Sample ID 10616212023
 Lab File ID B220804B_020
 Matrix Soil
 Collected 07/05/2022 16:00
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.049 J	0.096	0.027	0.027	1	375-22-4		08/05/2022 07:11
PFPeA	0.17	0.096	0.027	0.027	1	2706-90-3		08/05/2022 07:11
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/05/2022 07:11
PFBS	ND	0.085	0.025	0.025	1	375-73-5		08/05/2022 07:11
PFHxA	0.11	0.096	0.026	0.026	1	307-24-4		08/05/2022 07:11
4:2 FTS	ND	0.090	0.022	0.022	1	757124-72-4		08/05/2022 07:11
PFPeS	ND	0.090	0.023	0.023	1	2706-91-4		08/05/2022 07:11
PFHpA	0.13	0.096	0.033	0.033	1	375-85-9		08/05/2022 07:11
DONA	ND	0.091	0.035	0.035	1	919005-14-4		08/05/2022 07:11
PFHxS	0.13	0.087	0.021	0.021	1	355-46-4		08/05/2022 07:11
PFOA	0.17	0.096	0.030	0.030	1	335-67-1		08/05/2022 07:11
6:2 FTS	ND	0.091	0.040	0.040	1	27619-97-2		08/05/2022 07:11
PFHpS	ND	0.091	0.027	0.027	1	375-92-8		08/05/2022 07:11
PFNA	0.17	0.096	0.030	0.030	1	375-95-1		08/05/2022 07:11
PFOSAm	ND	0.096	0.028	0.028	1	754-91-6		08/05/2022 07:11
PFOS	2.7	0.089	0.028	0.028	1	1763-23-1		08/05/2022 07:11
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/05/2022 07:11
PFDA	0.50	0.096	0.022	0.022	1	335-76-2		08/05/2022 07:11
EtFOSAm	ND	0.096	0.025	0.025	1	4151-50-2		08/05/2022 07:11
8:2 FTS	0.35	0.092	0.042	0.042	1	39108-34-4		08/05/2022 07:11
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 07:11
PFNS	ND	0.092	0.033	0.033	1	68259-12-1		08/05/2022 07:11
PFUnDA	0.32	0.096	0.029	0.029	1	2058-94-8		08/05/2022 07:11
NMeFOSAA	ND	0.096	0.027	0.027	1	2355-31-9		08/05/2022 07:11
NEtFOSAA	ND	0.096	0.039	0.039	1	2991-50-6		08/05/2022 07:11
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/05/2022 07:11
PFDOA	0.14	0.096	0.032	0.032	1	307-55-1		08/05/2022 07:11
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/05/2022 07:11
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/05/2022 07:11
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 07:11
PFTTrDA	0.057 J	0.096	0.031	0.031	1	72629-94-8		08/05/2022 07:11
PFDoS	ND	0.093	0.025	0.025	1	79780-39-5		08/05/2022 07:11
PFTDA	ND	0.096	0.033	0.033	1	376-06-7		08/05/2022 07:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK23-HA01(0-6)
 Lab Sample ID 10616212023
 Lab File ID B220804B_020
 Matrix Soil
 Collected 07/05/2022 16:00
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	1.2	124	50-150		08/05/2022 07:11
13C4 PFOA	0.96	1.2	120	50-150		08/05/2022 07:11
13C2 PFDA	0.96	1.3	135	50-150		08/05/2022 07:11
13C4 PFOS	0.92	1.1	124	50-150		08/05/2022 07:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.84	88	25-150		08/05/2022 07:11
13C5 PFPeA	0.96	0.85	89	25-150		08/05/2022 07:11
13C3 PFBS	0.89	0.86	96	25-150		08/05/2022 07:11
13C2 4:2FTS	0.90	1.2	130	25-150		08/05/2022 07:11
13C5 PFHxA	0.96	0.88	92	25-150		08/05/2022 07:11
13C4 PFHpA	0.96	0.85	88	25-150		08/05/2022 07:11
13C3 PFHxS	0.91	0.81	89	25-150		08/05/2022 07:11
13C2 6:2FTS	0.91	1.3	148	25-150		08/05/2022 07:11
13C8 PFOA	0.96	1.0	106	25-150		08/05/2022 07:11
13C9 PFNA	0.96	1.1	113	25-150		08/05/2022 07:11
13C8 PFOS	0.92	0.88	96	25-150		08/05/2022 07:11
13C2 8:2FTS	0.92	1.7	181	25-150	R	08/05/2022 07:11
13C6 PFDA	0.96	0.96	100	25-150		08/05/2022 07:11
d3-MeFOSAA	0.96	1.0	106	25-150		08/05/2022 07:11
13C8 PFOSA	0.96	0.97	101	25-150		08/05/2022 07:11
d5-EtFOSAA	0.96	1.3	134	25-150		08/05/2022 07:11
13C7 PFUdA	0.96	1.5	152	25-150	R	08/05/2022 07:11
13C2 PFDoA	0.96	1.1	118	25-150		08/05/2022 07:11
13C2 PFTeDA	0.96	1.3	131	25-150		08/05/2022 07:11
13C3 HFPO-DA	0.96	0.90	93	25-150		08/05/2022 07:11
d7-N-MeFOSE	0.96	0.55	58	10-150		08/05/2022 07:11
d9-N-EtFOSE	0.96	0.75	78	10-150		08/05/2022 07:11
d3-N-MeFOSA	0.96	0.30	31	10-150		08/05/2022 07:11
d5-N-EtFOSA	0.96	0.29	30	10-150		08/05/2022 07:11

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 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	13		08/05/2022 07:11
13C4 PFOA	N/A	N/A	7.05	7.07	19		08/05/2022 07:11
13C2 PFDA	N/A	N/A	8.37	8.39	16		08/05/2022 07:11
13C4 PFOS	N/A	N/A	8.87	8.88	32		08/05/2022 07:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	22		08/05/2022 07:11
13C5 PFPeA	N/A	N/A	5.14	5.15	26		08/05/2022 07:11
13C3 PFBS	N/A	N/A	6.04	6.05	39		08/05/2022 07:11
13C2 4:2FTS	N/A	N/A	5.53	5.54	36		08/05/2022 07:11
13C5 PFHxA	N/A	N/A	5.79	5.80	12		08/05/2022 07:11
13C4 PFHpA	N/A	N/A	6.41	6.43	12		08/05/2022 07:11
13C3 PFHxS	N/A	N/A	7.47	7.49	55		08/05/2022 07:11
13C2 6:2FTS	N/A	N/A	6.71	6.74	30		08/05/2022 07:11
13C8 PFOA	N/A	N/A	7.05	7.07	21		08/05/2022 07:11
13C9 PFNA	N/A	N/A	7.70	7.72	19		08/05/2022 07:11
13C8 PFOS	N/A	N/A	8.87	8.88	26		08/05/2022 07:11
13C2 8:2FTS	N/A	N/A	7.99	8.01	38	R	08/05/2022 07:11
13C6 PFDA	N/A	N/A	8.38	8.39	18		08/05/2022 07:11
d3-MeFOSAA	N/A	N/A	8.24	8.25	10		08/05/2022 07:11
13C8 PFOSA	N/A	N/A	10.62	10.61	15		08/05/2022 07:11
d5-EtFOSAA	N/A	N/A	8.53	8.54	13		08/05/2022 07:11
13C7 PFUdA	N/A	N/A	9.05	9.07	19	R	08/05/2022 07:11
13C2 PFDoA	N/A	N/A	9.73	9.74	82		08/05/2022 07:11
13C2 PFTeDA	N/A	N/A	11.05	11.07	13		08/05/2022 07:11
13C3 HFPO-DA	N/A	N/A	6.04	6.06	16		08/05/2022 07:11
d7-N-MeFOSE	N/A	N/A	12.45	12.45	49		08/05/2022 07:11
d9-N-EtFOSE	N/A	N/A	12.92	12.92	16		08/05/2022 07:11
d3-N-MeFOSA	N/A	N/A	12.66	12.66	42		08/05/2022 07:11
d5-N-EtFOSA	N/A	N/A	13.08	13.08	39		08/05/2022 07:11

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Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	61	J	08/05/2022 07:11
PFPeA	N/A	N/A	5.14	5.15	16		08/05/2022 07:11
HFPO-DA	5.90	0.25	6.05	6.07	ND		08/05/2022 07:11
PFBS	0.31	0.43	6.04	6.06	ND		08/05/2022 07:11
PFHxA	0.07	0.08	5.79	5.81	57		08/05/2022 07:11
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 07:11
PFPeS	0.40	0.44	6.77	6.79	ND		08/05/2022 07:11
PFHpA	0.29	0.25	6.42	6.44	30		08/05/2022 07:11
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 07:11
PFHxS	0.37	0.40	7.48	7.49	12		08/05/2022 07:11
PFOA	0.43	0.45	7.05	7.08	10		08/05/2022 07:11
6:2 FTS	0.88	0.79	6.72	6.74	ND		08/05/2022 07:11
PFHpS	0.34	0.37	8.19	8.20	ND		08/05/2022 07:11
PFNA	0.15	0.13	7.71	7.73	91		08/05/2022 07:11
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 07:11
PFOS	0.39	0.41	8.88	8.90	41		08/05/2022 07:11
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 07:11
PFDA	0.18	0.19	8.38	8.40	21		08/05/2022 07:11
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 07:11
8:2 FTS	0.82	0.84	8.00	8.02	19		08/05/2022 07:11
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 07:11
PFNS	0.44	0.45	9.57	9.58	ND		08/05/2022 07:11
PFUnDA	0.14	0.12	9.06	9.08	10		08/05/2022 07:11
NMeFOSAA	1.40	0.91	8.25	8.26	ND		08/05/2022 07:11
NEtFOSAA	0.00	0.61	0.00	8.55	ND		08/05/2022 07:11
PFDS	0.43	0.36	10.23	10.24	ND		08/05/2022 07:11
PFDOA	0.19	0.17	9.74	9.75	14		08/05/2022 07:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 07:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 07:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 07:11
PFTTrDA	0.18	0.15	10.40	10.42	24	J	08/05/2022 07:11
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 07:11
PFTDA	0.30	0.24	11.06	11.07	ND		08/05/2022 07:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK24-HA01(0-6)
 Lab Sample ID 10616212024
 Lab File ID B220804B_021
 Matrix Soil
 Collected 07/05/2022 16:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.53g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.32	0.090	0.026	0.026	1	375-22-4		08/05/2022 07:31
PFPeA	1.2	0.090	0.026	0.026	1	2706-90-3		08/05/2022 07:31
HFPO-DA	ND	0.090	0.025	0.025	1	13252-13-6		08/05/2022 07:31
PFBS	ND	0.080	0.024	0.024	1	375-73-5		08/05/2022 07:31
PFHxA	0.49	0.090	0.025	0.025	1	307-24-4		08/05/2022 07:31
4:2 FTS	ND	0.085	0.021	0.021	1	757124-72-4		08/05/2022 07:31
PFPeS	ND	0.085	0.022	0.022	1	2706-91-4		08/05/2022 07:31
PFHpA	0.43	0.090	0.031	0.031	1	375-85-9		08/05/2022 07:31
DONA	ND	0.086	0.033	0.033	1	919005-14-4		08/05/2022 07:31
PFHxS	0.28	0.082	0.020	0.020	1	355-46-4		08/05/2022 07:31
PFOA	0.54	0.090	0.028	0.028	1	335-67-1		08/05/2022 07:31
6:2 FTS	0.091	0.086	0.037	0.037	1	27619-97-2		08/05/2022 07:31
PFHpS	0.044 J	0.086	0.025	0.025	1	375-92-8		08/05/2022 07:31
PFNA	0.38	0.090	0.028	0.028	1	375-95-1		08/05/2022 07:31
PFOSAm	0.33	0.090	0.027	0.027	1	754-91-6		08/05/2022 07:31
PFOS	18 D	0.84	0.27	0.27	10	1763-23-1		08/06/2022 01:11
MeFOSA	ND	0.090	0.025	0.025	1	31506-32-8		08/05/2022 07:31
PFDA	0.81	0.090	0.021	0.021	1	335-76-2		08/05/2022 07:31
EtFOSAm	ND	0.090	0.023	0.023	1	4151-50-2		08/05/2022 07:31
8:2 FTS	1.9	0.087	0.040	0.040	1	39108-34-4		08/05/2022 07:31
9-CI-PF3ON	ND	0.084	0.023	0.023	1	756426-58-1		08/05/2022 07:31
PFNS	0.15	0.087	0.031	0.031	1	68259-12-1		08/05/2022 07:31
PFUnDA	0.28	0.090	0.027	0.027	1	2058-94-8		08/05/2022 07:31
NMeFOSAA	ND	0.090	0.025	0.025	1	2355-31-9		08/05/2022 07:31
NEtFOSAA	ND	0.090	0.036	0.036	1	2991-50-6		08/05/2022 07:31
PFDS	0.060 J	0.087	0.026	0.026	1	335-77-3		08/05/2022 07:31
PFDOA	0.19	0.090	0.030	0.030	1	307-55-1		08/05/2022 07:31
MeFOSE	ND	0.090	0.027	0.027	1	24448-09-7		08/05/2022 07:31
EtFOSE	ND	0.090	0.029	0.029	1	1691-99-2		08/05/2022 07:31
11-CI-PF3OUdS	ND	0.085	0.023	0.023	1	763051-92-9		08/05/2022 07:31
PFTTrDA	0.059 J	0.090	0.029	0.029	1	72629-94-8		08/05/2022 07:31
PFDoS	ND	0.088	0.024	0.024	1	79780-39-5		08/05/2022 07:31
PFTDA	0.044 J	0.090	0.031	0.031	1	376-06-7		08/05/2022 07:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK24-HA01(0-6)
 Lab Sample ID 10616212024
 Lab File ID B220804B_021
 Matrix Soil
 Collected 07/05/2022 16:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.53g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.90	1.1	127	50-150		08/05/2022 07:31
13C4 PFOA	0.90	1.1	119	50-150		08/05/2022 07:31
13C2 PFDA	0.90	1.1	126	50-150		08/05/2022 07:31
13C4 PFOS	0.87	0.86	99	50-150		08/05/2022 07:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.90	0.72	80	25-150		08/05/2022 07:31
13C5 PFPeA	0.90	0.71	78	25-150		08/05/2022 07:31
13C3 PFBS	0.84	0.70	83	25-150		08/05/2022 07:31
13C2 4:2FTS	0.85	0.82	97	25-150		08/05/2022 07:31
13C5 PFHxA	0.90	0.80	88	25-150		08/05/2022 07:31
13C4 PFHpA	0.90	0.80	88	25-150		08/05/2022 07:31
13C3 PFHxS	0.86	0.74	87	25-150		08/05/2022 07:31
13C2 6:2FTS	0.86	0.76	88	25-150		08/05/2022 07:31
13C8 PFOA	0.90	0.74	82	25-150		08/05/2022 07:31
13C9 PFNA	0.90	0.82	91	25-150		08/05/2022 07:31
13C8 PFOS	0.87	0.87	101	25-150	D	08/06/2022 01:11
13C2 8:2FTS	0.87	1.0	116	25-150		08/05/2022 07:31
13C6 PFDA	0.90	0.83	91	25-150		08/05/2022 07:31
d3-MeFOSAA	0.90	0.79	87	25-150		08/05/2022 07:31
13C8 PFOSA	0.90	0.56	62	25-150		08/05/2022 07:31
d5-EtFOSAA	0.90	0.87	96	25-150		08/05/2022 07:31
13C7 PFUdA	0.90	1.3	141	25-150		08/05/2022 07:31
13C2 PFDoA	0.90	0.90	100	25-150		08/05/2022 07:31
13C2 PFTeDA	0.90	0.64	71	25-150		08/05/2022 07:31
13C3 HFPO-DA	0.90	0.73	81	25-150		08/05/2022 07:31
d7-N-MeFOSE	0.90	0.21	24	10-150		08/05/2022 07:31
d9-N-EtFOSE	0.90	0.20	22	10-150		08/05/2022 07:31
d3-N-MeFOSA	0.90	0.018	2	10-150	R	08/05/2022 07:31
d5-N-EtFOSA	0.90	0.023	3	10-150	R	08/05/2022 07:31

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Sample Analysis Summary
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Client Sample ID PR-TK24-HA01(0-6)
 Lab Sample ID 10616212024
 Lab File ID B220804B_021
 Matrix Soil
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 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.53g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	20		08/05/2022 07:31
13C4 PFOA	N/A	N/A	7.05	7.07	17		08/05/2022 07:31
13C2 PFDA	N/A	N/A	8.37	8.39	17		08/05/2022 07:31
13C4 PFOS	N/A	N/A	8.87	8.88	91		08/05/2022 07:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	22		08/05/2022 07:31
13C5 PFPeA	N/A	N/A	5.13	5.15	24		08/05/2022 07:31
13C3 PFBS	N/A	N/A	6.04	6.05	12		08/05/2022 07:31
13C2 4:2FTS	N/A	N/A	5.52	5.54	43		08/05/2022 07:31
13C5 PFHxA	N/A	N/A	5.78	5.80	21		08/05/2022 07:31
13C4 PFHpA	N/A	N/A	6.41	6.43	13		08/05/2022 07:31
13C3 PFHxS	N/A	N/A	7.47	7.49	14		08/05/2022 07:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	60		08/05/2022 07:31
13C8 PFOA	N/A	N/A	7.05	7.07	16		08/05/2022 07:31
13C9 PFNA	N/A	N/A	7.70	7.72	18		08/05/2022 07:31
13C8 PFOS	N/A	N/A	8.90	8.88	78	D	08/06/2022 01:11
13C2 8:2FTS	N/A	N/A	7.99	8.01	97		08/05/2022 07:31
13C6 PFDA	N/A	N/A	8.38	8.39	21		08/05/2022 07:31
d3-MeFOSAA	N/A	N/A	8.23	8.25	21		08/05/2022 07:31
13C8 PFOSA	N/A	N/A	10.62	10.61	13		08/05/2022 07:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	19		08/05/2022 07:31
13C7 PFUdA	N/A	N/A	9.05	9.07	19		08/05/2022 07:31
13C2 PFDoA	N/A	N/A	9.73	9.74	74		08/05/2022 07:31
13C2 PFTeDA	N/A	N/A	11.05	11.07	13		08/05/2022 07:31
13C3 HFPO-DA	N/A	N/A	6.04	6.06	14		08/05/2022 07:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	50		08/05/2022 07:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	17		08/05/2022 07:31
d3-N-MeFOSA	N/A	N/A	12.66	12.66	19	R	08/05/2022 07:31
d5-N-EtFOSA	N/A	N/A	13.08	13.08	16	R	08/05/2022 07:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK24-HA01(0-6)
 Lab Sample ID 10616212024
 Lab File ID B220804B_021
 Matrix Soil
 Collected 07/05/2022 16:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.53g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	16		08/05/2022 07:31
PFPeA	N/A	N/A	5.14	5.15	51		08/05/2022 07:31
HFPO-DA	5.20	0.25	6.05	6.07	ND		08/05/2022 07:31
PFBS	0.39	0.43	6.04	6.06	ND		08/05/2022 07:31
PFHxA	0.08	0.08	5.79	5.81	22		08/05/2022 07:31
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 07:31
PFPeS	0.50	0.44	6.77	6.79	ND		08/05/2022 07:31
PFHpA	0.29	0.25	6.42	6.44	22		08/05/2022 07:31
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 07:31
PFHxS	0.39	0.40	7.48	7.49	54		08/05/2022 07:31
PFOA	0.39	0.45	7.06	7.08	20		08/05/2022 07:31
6:2 FTS	0.80	0.79	6.72	6.74	33		08/05/2022 07:31
PFHpS	0.36	0.37	8.19	8.20	15	J	08/05/2022 07:31
PFNA	0.15	0.13	7.71	7.73	39		08/05/2022 07:31
PFOSAm	N/A	N/A	10.63	10.61	56		08/05/2022 07:31
PFOS	0.49	0.42	8.91	8.90	97	D	08/06/2022 01:11
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 07:31
PFDA	0.20	0.19	8.39	8.40	40		08/05/2022 07:31
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 07:31
8:2 FTS	0.84	0.84	8.00	8.02	13		08/05/2022 07:31
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 07:31
PFNS	0.50	0.45	9.56	9.58	15		08/05/2022 07:31
PFUnDA	0.16	0.12	9.06	9.08	99		08/05/2022 07:31
NMeFOSAA	0.73	0.91	8.24	8.26	ND		08/05/2022 07:31
NEtFOSAA	0.00	0.61	0.00	8.55	ND		08/05/2022 07:31
PFDS	0.40	0.36	10.23	10.24	11	J	08/05/2022 07:31
PFDOA	0.20	0.17	9.73	9.75	15		08/05/2022 07:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 07:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 07:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 07:31
PFTTrDA	0.20	0.15	10.40	10.42	9	J	08/05/2022 07:31
PFDoS	0.60	0.49	11.47	11.48	ND		08/05/2022 07:31
PFTDA	0.29	0.24	11.05	11.07	41	J	08/05/2022 07:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK25-HA01(0-6)
 Lab Sample ID 10616212025
 Lab File ID B220804B_022
 Matrix Soil
 Collected 07/06/2022 13:05
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.66g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.41	0.088	0.025	0.025	1	375-22-4		08/05/2022 07:51
PFPeA	1.7	0.088	0.025	0.025	1	2706-90-3		08/05/2022 07:51
HFPO-DA	ND	0.088	0.025	0.025	1	13252-13-6		08/05/2022 07:51
PFBS	0.077 J	0.078	0.023	0.023	1	375-73-5		08/05/2022 07:51
PFHxA	1.1	0.088	0.024	0.024	1	307-24-4		08/05/2022 07:51
4:2 FTS	ND	0.083	0.020	0.020	1	757124-72-4		08/05/2022 07:51
PFPeS	0.16	0.083	0.021	0.021	1	2706-91-4		08/05/2022 07:51
PFHpA	0.34	0.088	0.031	0.031	1	375-85-9		08/05/2022 07:51
DONA	ND	0.083	0.032	0.032	1	919005-14-4		08/05/2022 07:51
PFHxS	1.9	0.080	0.019	0.019	1	355-46-4		08/05/2022 07:51
PFOA	0.57	0.088	0.027	0.027	1	335-67-1		08/05/2022 07:51
6:2 FTS	9.2 D	1.7	0.73	0.73	20	27619-97-2		08/06/2022 01:31
PFHpS	0.32	0.084	0.025	0.025	1	375-92-8		08/05/2022 07:51
PFNA	0.36	0.088	0.027	0.027	1	375-95-1		08/05/2022 07:51
PFOSAm	1.4	0.088	0.026	0.026	1	754-91-6		08/05/2022 07:51
PFOS	45 D	1.6	0.52	0.52	20	1763-23-1		08/06/2022 01:31
MeFOSA	ND	0.088	0.024	0.024	1	31506-32-8		08/05/2022 07:51
PFDA	1.4	0.088	0.020	0.020	1	335-76-2		08/05/2022 07:51
EtFOSAm	ND	0.088	0.023	0.023	1	4151-50-2		08/05/2022 07:51
8:2 FTS	12 D	1.7	0.78	0.78	20	39108-34-4		08/06/2022 01:31
9-CI-PF3ON	ND	0.082	0.022	0.022	1	756426-58-1		08/05/2022 07:51
PFNS	0.40	0.085	0.031	0.031	1	68259-12-1		08/05/2022 07:51
PFUnDA	1.0	0.088	0.027	0.027	1	2058-94-8		08/05/2022 07:51
NMeFOSAA	0.10	0.088	0.025	0.025	1	2355-31-9		08/05/2022 07:51
NEtFOSAA	0.12	0.088	0.036	0.036	1	2991-50-6		08/05/2022 07:51
PFDS	0.64	0.085	0.025	0.025	1	335-77-3		08/05/2022 07:51
PFDOA	1.5	0.088	0.029	0.029	1	307-55-1		08/05/2022 07:51
MeFOSE	ND	0.088	0.027	0.027	1	24448-09-7		08/05/2022 07:51
EtFOSE	0.069 J	0.088	0.028	0.028	1	1691-99-2		08/05/2022 07:51
11-CI-PF3OUdS	ND	0.083	0.022	0.022	1	763051-92-9		08/05/2022 07:51
PFTTrDA	0.33	0.088	0.028	0.028	1	72629-94-8		08/05/2022 07:51
PFDoS	0.055 J	0.085	0.023	0.023	1	79780-39-5		08/05/2022 07:51
PFTDA	0.72	0.088	0.030	0.030	1	376-06-7		08/05/2022 07:51

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 Lab Sample ID 10616212025
 Lab File ID B220804B_022
 Matrix Soil
 Collected 07/06/2022 13:05
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 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.66g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.88	1.1	125	50-150		08/05/2022 07:51
13C4 PFOA	0.88	0.97	110	50-150		08/05/2022 07:51
13C2 PFDA	0.88	1.1	127	50-150		08/05/2022 07:51
13C4 PFOS	0.85	0.70	83	50-150		08/05/2022 07:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.88	0.76	86	25-150		08/05/2022 07:51
13C5 PFPeA	0.88	0.74	84	25-150		08/05/2022 07:51
13C3 PFBS	0.82	0.77	94	25-150		08/05/2022 07:51
13C2 4:2FTS	0.83	0.77	93	25-150		08/05/2022 07:51
13C5 PFHxA	0.88	0.78	89	25-150		08/05/2022 07:51
13C4 PFHpA	0.88	0.75	85	25-150		08/05/2022 07:51
13C3 PFHxS	0.84	0.68	82	25-150		08/05/2022 07:51
13C2 6:2FTS	0.84	0.87	103	25-150	D	08/06/2022 01:31
13C8 PFOA	0.88	0.74	84	25-150		08/05/2022 07:51
13C9 PFNA	0.88	0.69	78	25-150		08/05/2022 07:51
13C8 PFOS	0.85	0.85	100	25-150	D	08/06/2022 01:31
13C2 8:2FTS	0.85	0.91	107	25-150	D	08/06/2022 01:31
13C6 PFDA	0.88	0.73	83	25-150		08/05/2022 07:51
d3-MeFOSAA	0.88	0.72	81	25-150		08/05/2022 07:51
13C8 PFOSA	0.88	0.68	77	25-150		08/05/2022 07:51
d5-EtFOSAA	0.88	0.74	84	25-150		08/05/2022 07:51
13C7 PFUdA	0.88	1.0	116	25-150		08/05/2022 07:51
13C2 PFDoA	0.88	0.65	74	25-150		08/05/2022 07:51
13C2 PFTeDA	0.88	0.27	30	25-150		08/05/2022 07:51
13C3 HFPO-DA	0.88	0.77	87	25-150		08/05/2022 07:51
d7-N-MeFOSE	0.88	0.44	50	10-150		08/05/2022 07:51
d9-N-EtFOSE	0.88	0.36	41	10-150		08/05/2022 07:51
d3-N-MeFOSA	0.88	0.040	5	10-150	R	08/05/2022 07:51
d5-N-EtFOSA	0.88	0.025	3	10-150	R	08/05/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK25-HA01(0-6)
 Lab Sample ID 10616212025
 Lab File ID B220804B_022
 Matrix Soil
 Collected 07/06/2022 13:05
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.66g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	18		08/05/2022 07:51
13C4 PFOA	N/A	N/A	7.05	7.07	17		08/05/2022 07:51
13C2 PFDA	N/A	N/A	8.37	8.39	16		08/05/2022 07:51
13C4 PFOS	N/A	N/A	8.87	8.88	10		08/05/2022 07:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	22		08/05/2022 07:51
13C5 PFPeA	N/A	N/A	5.13	5.15	25		08/05/2022 07:51
13C3 PFBS	N/A	N/A	6.03	6.05	15		08/05/2022 07:51
13C2 4:2FTS	N/A	N/A	5.52	5.54	80		08/05/2022 07:51
13C5 PFHxA	N/A	N/A	5.78	5.80	14		08/05/2022 07:51
13C4 PFHpA	N/A	N/A	6.41	6.43	14		08/05/2022 07:51
13C3 PFHxS	N/A	N/A	7.47	7.49	17		08/05/2022 07:51
13C2 6:2FTS	N/A	N/A	6.74	6.74	88	D	08/06/2022 01:31
13C8 PFOA	N/A	N/A	7.05	7.07	17		08/05/2022 07:51
13C9 PFNA	N/A	N/A	7.71	7.72	16		08/05/2022 07:51
13C8 PFOS	N/A	N/A	8.90	8.88	85	D	08/06/2022 01:31
13C2 8:2FTS	N/A	N/A	8.01	8.01	11	D	08/06/2022 01:31
13C6 PFDA	N/A	N/A	8.38	8.39	18		08/05/2022 07:51
d3-MeFOSAA	N/A	N/A	8.24	8.25	16		08/05/2022 07:51
13C8 PFOSA	N/A	N/A	10.62	10.61	97		08/05/2022 07:51
d5-EtFOSAA	N/A	N/A	8.53	8.54	10		08/05/2022 07:51
13C7 PFUdA	N/A	N/A	9.05	9.07	18		08/05/2022 07:51
13C2 PFDoA	N/A	N/A	9.74	9.74	89		08/05/2022 07:51
13C2 PFTeDA	N/A	N/A	11.05	11.07	79		08/05/2022 07:51
13C3 HFPO-DA	N/A	N/A	6.04	6.06	16		08/05/2022 07:51
d7-N-MeFOSE	N/A	N/A	12.45	12.45	60		08/05/2022 07:51
d9-N-EtFOSE	N/A	N/A	12.92	12.92	24		08/05/2022 07:51
d3-N-MeFOSA	N/A	N/A	12.66	12.66	48	R	08/05/2022 07:51
d5-N-EtFOSA	N/A	N/A	13.08	13.08	26	R	08/05/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK25-HA01(0-6)
 Lab Sample ID 10616212025
 Lab File ID B220804B_022
 Matrix Soil
 Collected 07/06/2022 13:05
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.66g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	20		08/05/2022 07:51
PFPeA	N/A	N/A	5.14	5.15	68		08/05/2022 07:51
HFPO-DA	1.60	0.25	6.05	6.07	ND		08/05/2022 07:51
PFBS	0.48	0.43	6.04	6.06	35	J	08/05/2022 07:51
PFHxA	0.08	0.08	5.79	5.81	44		08/05/2022 07:51
4:2 FTS	0.91	0.88	5.53	5.54	ND		08/05/2022 07:51
PFPeS	0.45	0.44	6.77	6.79	45		08/05/2022 07:51
PFHpA	0.32	0.25	6.42	6.44	21		08/05/2022 07:51
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 07:51
PFHxS	0.39	0.40	7.48	7.49	12		08/05/2022 07:51
PFOA	0.42	0.45	7.06	7.08	26		08/05/2022 07:51
6:2 FTS	0.87	0.87	6.74	6.74	10	D	08/06/2022 01:31
PFHpS	0.38	0.37	8.19	8.20	42		08/05/2022 07:51
PFNA	0.14	0.13	7.71	7.73	41		08/05/2022 07:51
PFOSAm	N/A	N/A	10.63	10.61	26		08/05/2022 07:51
PFOS	0.40	0.42	8.90	8.90	66	D	08/06/2022 01:31
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 07:51
PFDA	0.18	0.19	8.39	8.40	71		08/05/2022 07:51
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 07:51
8:2 FTS	0.81	0.78	8.02	8.02	10	D	08/06/2022 01:31
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 07:51
PFNS	0.50	0.45	9.57	9.58	20		08/05/2022 07:51
PFUnDA	0.13	0.12	9.06	9.08	31		08/05/2022 07:51
NMeFOSAA	0.80	0.91	8.24	8.26	67		08/05/2022 07:51
NEtFOSAA	0.65	0.61	8.54	8.55	27		08/05/2022 07:51
PFDS	0.39	0.36	10.23	10.24	27		08/05/2022 07:51
PFDOA	0.19	0.17	9.74	9.75	51		08/05/2022 07:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 07:51
EtFOSE	0.00	0.00	12.96	12.96	69	J	08/05/2022 07:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 07:51
PFTTrDA	0.18	0.15	10.40	10.42	59		08/05/2022 07:51
PFDoS	0.52	0.49	11.47	11.48	11	J	08/05/2022 07:51
PFTDA	0.26	0.24	11.06	11.07	16		08/05/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK26-HA01(0-6)
 Lab Sample ID 10616212026
 Lab File ID B220805B_011
 Matrix Soil
 Collected 07/06/2022 08:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.11	0.095	0.027	0.027	1	375-22-4		08/06/2022 00:31
PFPeA	0.42	0.095	0.027	0.027	1	2706-90-3		08/06/2022 00:31
HFPO-DA	ND	0.095	0.026	0.026	1	13252-13-6		08/06/2022 00:31
PFBS	ND	0.084	0.025	0.025	1	375-73-5		08/06/2022 00:31
PFHxA	0.20	0.095	0.026	0.026	1	307-24-4		08/06/2022 00:31
4:2 FTS	ND	0.088	0.022	0.022	1	757124-72-4		08/06/2022 00:31
PFPeS	0.033 J	0.089	0.023	0.023	1	2706-91-4		08/06/2022 00:31
PFHpA	0.098	0.095	0.033	0.033	1	375-85-9		08/06/2022 00:31
DONA	ND	0.089	0.034	0.034	1	919005-14-4		08/06/2022 00:31
PFHxS	0.33	0.086	0.021	0.021	1	355-46-4		08/06/2022 00:31
PFOA	0.16	0.095	0.029	0.029	1	335-67-1		08/06/2022 00:31
6:2 FTS	0.72	0.090	0.039	0.039	1	27619-97-2		08/06/2022 00:31
PFHpS	ND	0.090	0.026	0.026	1	375-92-8		08/06/2022 00:31
PFNA	0.13	0.095	0.029	0.029	1	375-95-1		08/06/2022 00:31
PFOSAm	ND	0.095	0.028	0.028	1	754-91-6		08/06/2022 00:31
PFOS	2.0	0.087	0.028	0.028	1	1763-23-1		08/06/2022 00:31
MeFOSA	ND	0.095	0.026	0.026	1	31506-32-8		08/06/2022 00:31
PFDA	0.52	0.095	0.022	0.022	1	335-76-2		08/06/2022 00:31
EtFOSAm	ND	0.095	0.024	0.024	1	4151-50-2		08/06/2022 00:31
8:2 FTS	0.12	0.091	0.042	0.042	1	39108-34-4		08/06/2022 00:31
9-CI-PF3ON	ND	0.088	0.024	0.024	1	756426-58-1		08/06/2022 00:31
PFNS	ND	0.091	0.033	0.033	1	68259-12-1		08/06/2022 00:31
PFUnDA	0.098	0.095	0.029	0.029	1	2058-94-8		08/06/2022 00:31
NMeFOSAA	ND	0.095	0.027	0.027	1	2355-31-9		08/06/2022 00:31
NEtFOSAA	ND	0.095	0.038	0.038	1	2991-50-6		08/06/2022 00:31
PFDS	ND	0.091	0.027	0.027	1	335-77-3		08/06/2022 00:31
PFDOA	0.037 J	0.095	0.031	0.031	1	307-55-1		08/06/2022 00:31
MeFOSE	ND	0.095	0.029	0.029	1	24448-09-7		08/06/2022 00:31
EtFOSE	ND	0.095	0.030	0.030	1	1691-99-2		08/06/2022 00:31
11-CI-PF3OUdS	ND	0.089	0.024	0.024	1	763051-92-9		08/06/2022 00:31
PFTTrDA	ND	0.095	0.030	0.030	1	72629-94-8		08/06/2022 00:31
PFDoS	ND	0.092	0.025	0.025	1	79780-39-5		08/06/2022 00:31
PFTDA	ND	0.095	0.032	0.032	1	376-06-7		08/06/2022 00:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK26-HA01(0-6)
 Lab Sample ID 10616212026
 Lab File ID B220805B_011
 Matrix Soil
 Collected 07/06/2022 08:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.29g
 Ical ID 220803A02
 CCal File B220805B_003
 Ending CCal File B220805B_015
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.95	1.2	128	50-150		08/06/2022 00:31
13C4 PFOA	0.95	1.3	137	50-150		08/06/2022 00:31
13C2 PFDA	0.95	1.3	139	50-150		08/06/2022 00:31
13C4 PFOS	0.91	1.3	140	50-150		08/06/2022 00:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.95	0.84	89	25-150		08/06/2022 00:31
13C5 PFPeA	0.95	0.88	93	25-150		08/06/2022 00:31
13C3 PFBS	0.88	0.73	83	25-150		08/06/2022 00:31
13C2 4:2FTS	0.88	0.74	84	25-150		08/06/2022 00:31
13C5 PFHxA	0.95	0.94	99	25-150		08/06/2022 00:31
13C4 PFHpA	0.95	0.92	98	25-150		08/06/2022 00:31
13C3 PFHxS	0.89	0.85	95	25-150		08/06/2022 00:31
13C2 6:2FTS	0.90	0.80	89	25-150		08/06/2022 00:31
13C8 PFOA	0.95	0.76	80	25-150		08/06/2022 00:31
13C9 PFNA	0.95	1.00	105	25-150		08/06/2022 00:31
13C8 PFOS	0.91	0.91	101	25-150		08/06/2022 00:31
13C2 8:2FTS	0.91	1.1	126	25-150		08/06/2022 00:31
13C6 PFDA	0.95	1.2	124	25-150		08/06/2022 00:31
d3-MeFOSAA	0.95	0.94	100	25-150		08/06/2022 00:31
13C8 PFOSA	0.95	0.42	44	25-150		08/06/2022 00:31
d5-EtFOSAA	0.95	0.90	95	25-150		08/06/2022 00:31
13C7 PFUdA	0.95	0.96	102	25-150		08/06/2022 00:31
13C2 PFDoA	0.95	1.1	113	25-150		08/06/2022 00:31
13C2 PFTeDA	0.95	0.93	98	25-150		08/06/2022 00:31
13C3 HFPO-DA	0.95	0.91	96	25-150		08/06/2022 00:31
d7-N-MeFOSE	0.95	0.030	3	10-150	R	08/06/2022 00:31
d9-N-EtFOSE	0.95	0.053	6	10-150	R	08/06/2022 00:31
d3-N-MeFOSA	0.95	0.0072	1	10-150	R	08/06/2022 00:31
d5-N-EtFOSA	0.95	0.014	1	10-150	R	08/06/2022 00:31

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Client Sample ID PR-TK26-HA01(0-6)
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Total Amount Extracted 5.29g
 Ical ID 220803A02
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 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.80	25		08/06/2022 00:31
13C4 PFOA	N/A	N/A	7.07	7.07	25		08/06/2022 00:31
13C2 PFDA	N/A	N/A	8.39	8.39	18		08/06/2022 00:31
13C4 PFOS	N/A	N/A	8.89	8.88	10		08/06/2022 00:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	25		08/06/2022 00:31
13C5 PFPeA	N/A	N/A	5.14	5.15	24		08/06/2022 00:31
13C3 PFBS	N/A	N/A	6.05	6.05	81		08/06/2022 00:31
13C2 4:2FTS	N/A	N/A	5.54	5.54	38		08/06/2022 00:31
13C5 PFHxA	N/A	N/A	5.80	5.80	19		08/06/2022 00:31
13C4 PFHpA	N/A	N/A	6.43	6.43	26		08/06/2022 00:31
13C3 PFHxS	N/A	N/A	7.49	7.49	11		08/06/2022 00:31
13C2 6:2FTS	N/A	N/A	6.74	6.74	66		08/06/2022 00:31
13C8 PFOA	N/A	N/A	7.07	7.07	24		08/06/2022 00:31
13C9 PFNA	N/A	N/A	7.72	7.72	22		08/06/2022 00:31
13C8 PFOS	N/A	N/A	8.89	8.88	10		08/06/2022 00:31
13C2 8:2FTS	N/A	N/A	8.01	8.01	11		08/06/2022 00:31
13C6 PFDA	N/A	N/A	8.40	8.39	17		08/06/2022 00:31
d3-MeFOSAA	N/A	N/A	8.25	8.25	29		08/06/2022 00:31
13C8 PFOSA	N/A	N/A	10.65	10.61	17		08/06/2022 00:31
d5-EtFOSAA	N/A	N/A	8.55	8.54	14		08/06/2022 00:31
13C7 PFUdA	N/A	N/A	9.08	9.07	25		08/06/2022 00:31
13C2 PFDoA	N/A	N/A	9.76	9.74	13		08/06/2022 00:31
13C2 PFTeDA	N/A	N/A	11.08	11.07	12		08/06/2022 00:31
13C3 HFPO-DA	N/A	N/A	6.06	6.06	20		08/06/2022 00:31
d7-N-MeFOSE	N/A	N/A	12.47	12.45	29	R	08/06/2022 00:31
d9-N-EtFOSE	N/A	N/A	12.93	12.92	14	R	08/06/2022 00:31
d3-N-MeFOSA	N/A	N/A	12.68	12.66	29	R	08/06/2022 00:31
d5-N-EtFOSA	N/A	N/A	13.09	13.08	16	R	08/06/2022 00:31

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 PFAS by Isotope Dilution

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 Ending CCal File B220805B_015
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.31	4.31	13		08/06/2022 00:31
PFPeA	N/A	N/A	5.15	5.15	35		08/06/2022 00:31
HFPO-DA	0.00	0.30	0.00	6.07	ND		08/06/2022 00:31
PFBS	0.40	0.48	6.05	6.06	ND		08/06/2022 00:31
PFHxA	0.09	0.08	5.81	5.81	16		08/06/2022 00:31
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 00:31
PFPeS	0.47	0.43	6.79	6.79	13	J	08/06/2022 00:31
PFHpA	0.29	0.30	6.44	6.44	23		08/06/2022 00:31
DONA	0.00	0.59	0.00	6.67	ND		08/06/2022 00:31
PFHxS	0.40	0.40	7.49	7.49	42		08/06/2022 00:31
PFOA	0.40	0.40	7.08	7.08	16		08/06/2022 00:31
6:2 FTS	0.83	0.87	6.74	6.74	90		08/06/2022 00:31
PFHpS	0.46	0.42	8.20	8.20	ND		08/06/2022 00:31
PFNA	0.14	0.13	7.73	7.73	28		08/06/2022 00:31
PFOSAm	N/A	N/A	10.66	10.61	ND		08/06/2022 00:31
PFOS	0.42	0.42	8.90	8.90	54		08/06/2022 00:31
MeFOSA	0.00	0.59	0.00	12.69	ND		08/06/2022 00:31
PFDA	0.20	0.18	8.41	8.40	60		08/06/2022 00:31
EtFOSAm	0.00	0.63	0.00	13.10	ND		08/06/2022 00:31
8:2 FTS	0.93	0.78	8.02	8.02	14		08/06/2022 00:31
9-CI-PF3ON	0.00	0.07	0.00	9.39	ND		08/06/2022 00:31
PFNS	0.26	0.49	9.38	9.58	ND		08/06/2022 00:31
PFUnDA	0.13	0.13	9.09	9.08	10		08/06/2022 00:31
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/06/2022 00:31
NEtFOSAA	0.00	0.58	0.00	8.55	ND		08/06/2022 00:31
PFDS	0.00	0.37	0.00	10.24	ND		08/06/2022 00:31
PFDOA	0.15	0.17	9.76	9.75	13	J	08/06/2022 00:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 00:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 00:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 00:31
PFTTrDA	0.13	0.19	10.43	10.42	ND		08/06/2022 00:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/06/2022 00:31
PFTDA	0.20	0.25	11.07	11.07	ND		08/06/2022 00:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK27-HA01(0-6)
 Lab Sample ID 10616212027
 Lab File ID B220804B_024
 Matrix Soil
 Collected 07/06/2022 08:30
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.096	0.027	0.027	1	375-22-4		08/05/2022 08:31
PFPeA	0.090 J	0.096	0.027	0.027	1	2706-90-3		08/05/2022 08:31
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/05/2022 08:31
PFBS	ND	0.085	0.025	0.025	1	375-73-5		08/05/2022 08:31
PFHxA	0.045 J	0.096	0.026	0.026	1	307-24-4		08/05/2022 08:31
4:2 FTS	ND	0.090	0.022	0.022	1	757124-72-4		08/05/2022 08:31
PFPeS	ND	0.090	0.023	0.023	1	2706-91-4		08/05/2022 08:31
PFHpA	ND	0.096	0.033	0.033	1	375-85-9		08/05/2022 08:31
DONA	ND	0.090	0.035	0.035	1	919005-14-4		08/05/2022 08:31
PFHxS	ND	0.087	0.021	0.021	1	355-46-4		08/05/2022 08:31
PFOA	0.035 J	0.096	0.030	0.030	1	335-67-1		08/05/2022 08:31
6:2 FTS	ND	0.091	0.040	0.040	1	27619-97-2		08/05/2022 08:31
PFHpS	ND	0.091	0.027	0.027	1	375-92-8		08/05/2022 08:31
PFNA	0.053 J	0.096	0.030	0.030	1	375-95-1		08/05/2022 08:31
PFOSAm	ND	0.096	0.028	0.028	1	754-91-6		08/05/2022 08:31
PFOS	0.16	0.089	0.028	0.028	1	1763-23-1		08/05/2022 08:31
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/05/2022 08:31
PFDA	0.077 J	0.096	0.022	0.022	1	335-76-2		08/05/2022 08:31
EtFOSAm	ND	0.096	0.025	0.025	1	4151-50-2		08/05/2022 08:31
8:2 FTS	ND	0.092	0.042	0.042	1	39108-34-4		08/05/2022 08:31
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 08:31
PFNS	ND	0.092	0.033	0.033	1	68259-12-1		08/05/2022 08:31
PFUnDA	ND	0.096	0.029	0.029	1	2058-94-8		08/05/2022 08:31
NMeFOSAA	ND	0.096	0.027	0.027	1	2355-31-9		08/05/2022 08:31
NEtFOSAA	ND	0.096	0.038	0.038	1	2991-50-6		08/05/2022 08:31
PFDS	ND	0.092	0.027	0.027	1	335-77-3		08/05/2022 08:31
PFDOA	ND	0.096	0.032	0.032	1	307-55-1		08/05/2022 08:31
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/05/2022 08:31
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/05/2022 08:31
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 08:31
PFTTrDA	ND	0.096	0.031	0.031	1	72629-94-8		08/05/2022 08:31
PFDoS	ND	0.093	0.025	0.025	1	79780-39-5		08/05/2022 08:31
PFTDA	ND	0.096	0.033	0.033	1	376-06-7		08/05/2022 08:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK27-HA01(0-6)
 Lab Sample ID 10616212027
 Lab File ID B220804B_024
 Matrix Soil
 Collected 07/06/2022 08:30
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	1.2	128	50-150		08/05/2022 08:31
13C4 PFOA	0.96	1.1	114	50-150		08/05/2022 08:31
13C2 PFDA	0.96	1.2	128	50-150		08/05/2022 08:31
13C4 PFOS	0.92	1.2	132	50-150		08/05/2022 08:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.82	85	25-150		08/05/2022 08:31
13C5 PFPeA	0.96	0.78	81	25-150		08/05/2022 08:31
13C3 PFBS	0.89	0.80	90	25-150		08/05/2022 08:31
13C2 4:2FTS	0.90	0.78	87	25-150		08/05/2022 08:31
13C5 PFHxA	0.96	0.83	87	25-150		08/05/2022 08:31
13C4 PFHpA	0.96	0.88	92	25-150		08/05/2022 08:31
13C3 PFHxS	0.91	0.75	83	25-150		08/05/2022 08:31
13C2 6:2FTS	0.91	0.81	89	25-150		08/05/2022 08:31
13C8 PFOA	0.96	0.89	93	25-150		08/05/2022 08:31
13C9 PFNA	0.96	0.87	90	25-150		08/05/2022 08:31
13C8 PFOS	0.92	0.88	96	25-150		08/05/2022 08:31
13C2 8:2FTS	0.92	1.1	118	25-150		08/05/2022 08:31
13C6 PFDA	0.96	0.90	94	25-150		08/05/2022 08:31
d3-MeFOSAA	0.96	0.88	92	25-150		08/05/2022 08:31
13C8 PFOSA	0.96	0.62	65	25-150		08/05/2022 08:31
d5-EtFOSAA	0.96	0.95	99	25-150		08/05/2022 08:31
13C7 PFUdA	0.96	1.3	131	25-150		08/05/2022 08:31
13C2 PFDoA	0.96	0.95	99	25-150		08/05/2022 08:31
13C2 PFTeDA	0.96	0.97	101	25-150		08/05/2022 08:31
13C3 HFPO-DA	0.96	0.88	91	25-150		08/05/2022 08:31
d7-N-MeFOSE	0.96	0.17	17	10-150		08/05/2022 08:31
d9-N-EtFOSE	0.96	0.21	22	10-150		08/05/2022 08:31
d3-N-MeFOSA	0.96	0.056	6	10-150	R	08/05/2022 08:31
d5-N-EtFOSA	0.96	0.065	7	10-150	R	08/05/2022 08:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK27-HA01(0-6)
 Lab Sample ID 10616212027
 Lab File ID B220804B_024
 Matrix Soil
 Collected 07/06/2022 08:30
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	17		08/05/2022 08:31
13C4 PFOA	N/A	N/A	7.05	7.07	19		08/05/2022 08:31
13C2 PFDA	N/A	N/A	8.38	8.39	18		08/05/2022 08:31
13C4 PFOS	N/A	N/A	8.87	8.88	11		08/05/2022 08:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	23		08/05/2022 08:31
13C5 PFPeA	N/A	N/A	5.13	5.15	21		08/05/2022 08:31
13C3 PFBS	N/A	N/A	6.03	6.05	11		08/05/2022 08:31
13C2 4:2FTS	N/A	N/A	5.52	5.54	51		08/05/2022 08:31
13C5 PFHxA	N/A	N/A	5.78	5.80	17		08/05/2022 08:31
13C4 PFHpA	N/A	N/A	6.41	6.43	19		08/05/2022 08:31
13C3 PFHxS	N/A	N/A	7.47	7.49	11		08/05/2022 08:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	66		08/05/2022 08:31
13C8 PFOA	N/A	N/A	7.05	7.07	21		08/05/2022 08:31
13C9 PFNA	N/A	N/A	7.70	7.72	18		08/05/2022 08:31
13C8 PFOS	N/A	N/A	8.87	8.88	10		08/05/2022 08:31
13C2 8:2FTS	N/A	N/A	7.99	8.01	13		08/05/2022 08:31
13C6 PFDA	N/A	N/A	8.38	8.39	14		08/05/2022 08:31
d3-MeFOSAA	N/A	N/A	8.24	8.25	17		08/05/2022 08:31
13C8 PFOSA	N/A	N/A	10.62	10.61	13		08/05/2022 08:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	17		08/05/2022 08:31
13C7 PFUdA	N/A	N/A	9.05	9.07	21		08/05/2022 08:31
13C2 PFDoA	N/A	N/A	9.73	9.74	10		08/05/2022 08:31
13C2 PFTeDA	N/A	N/A	11.05	11.07	12		08/05/2022 08:31
13C3 HFPO-DA	N/A	N/A	6.04	6.06	16		08/05/2022 08:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	47		08/05/2022 08:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	23		08/05/2022 08:31
d3-N-MeFOSA	N/A	N/A	12.66	12.66	40	R	08/05/2022 08:31
d5-N-EtFOSA	N/A	N/A	13.08	13.08	38	R	08/05/2022 08:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK27-HA01(0-6)
 Lab Sample ID 10616212027
 Lab File ID B220804B_024
 Matrix Soil
 Collected 07/06/2022 08:30
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	ND		08/05/2022 08:31
PFPeA	N/A	N/A	5.14	5.15	15	J	08/05/2022 08:31
HFPO-DA	0.00	0.25	0.00	6.07	ND		08/05/2022 08:31
PFBS	0.12	0.43	6.01	6.06	ND		08/05/2022 08:31
PFHxA	0.08	0.08	5.79	5.81	84	J	08/05/2022 08:31
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 08:31
PFPeS	0.45	0.44	6.80	6.79	ND		08/05/2022 08:31
PFHpA	0.34	0.25	6.42	6.44	ND		08/05/2022 08:31
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 08:31
PFHxS	0.36	0.40	7.48	7.49	ND		08/05/2022 08:31
PFOA	0.42	0.45	7.06	7.08	69	J	08/05/2022 08:31
6:2 FTS	1.20	0.79	6.73	6.74	ND		08/05/2022 08:31
PFHpS	0.00	0.37	0.00	8.20	ND		08/05/2022 08:31
PFNA	0.12	0.13	7.71	7.73	16	J	08/05/2022 08:31
PFOSAm	N/A	N/A	0.00	10.61	ND		08/05/2022 08:31
PFOS	0.37	0.41	8.88	8.90	36		08/05/2022 08:31
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 08:31
PFDA	0.17	0.19	8.39	8.40	16	J	08/05/2022 08:31
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 08:31
8:2 FTS	0.97	0.84	7.99	8.02	ND		08/05/2022 08:31
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 08:31
PFNS	0.00	0.45	0.00	9.58	ND		08/05/2022 08:31
PFUnDA	0.04	0.12	9.06	9.08	ND		08/05/2022 08:31
NMeFOSAA	0.00	0.91	0.00	8.26	ND		08/05/2022 08:31
NEtFOSAA	0.00	0.61	0.00	8.55	ND		08/05/2022 08:31
PFDS	0.00	0.36	0.00	10.24	ND		08/05/2022 08:31
PFDOA	0.17	0.17	9.74	9.75	ND		08/05/2022 08:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 08:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 08:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 08:31
PFTTrDA	0.00	0.15	0.00	10.42	ND		08/05/2022 08:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 08:31
PFTDA	0.00	0.24	0.00	11.07	ND		08/05/2022 08:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK28-HA01(0-6)
 Lab Sample ID 10616212028
 Lab File ID B220804B_025
 Matrix Soil
 Collected 07/06/2022 15:05
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.13	0.096	0.027	0.027	1	375-22-4		08/05/2022 08:51
PFPeA	0.041 J	0.096	0.027	0.027	1	2706-90-3		08/05/2022 08:51
HFPO-DA	ND	0.096	0.027	0.027	1	13252-13-6		08/05/2022 08:51
PFBS	ND	0.085	0.025	0.025	1	375-73-5		08/05/2022 08:51
PFHxA	0.046 J	0.096	0.026	0.026	1	307-24-4		08/05/2022 08:51
4:2 FTS	ND	0.090	0.022	0.022	1	757124-72-4		08/05/2022 08:51
PFPeS	ND	0.090	0.023	0.023	1	2706-91-4		08/05/2022 08:51
PFHpA	0.073 J	0.096	0.033	0.033	1	375-85-9		08/05/2022 08:51
DONA	ND	0.091	0.035	0.035	1	919005-14-4		08/05/2022 08:51
PFHxS	ND	0.087	0.021	0.021	1	355-46-4		08/05/2022 08:51
PFOA	0.22	0.096	0.030	0.030	1	335-67-1		08/05/2022 08:51
6:2 FTS	ND	0.091	0.040	0.040	1	27619-97-2		08/05/2022 08:51
PFHpS	ND	0.091	0.027	0.027	1	375-92-8		08/05/2022 08:51
PFNA	0.10	0.096	0.030	0.030	1	375-95-1		08/05/2022 08:51
PFOSAm	ND	0.096	0.028	0.028	1	754-91-6		08/05/2022 08:51
PFOS	0.29	0.089	0.028	0.028	1	1763-23-1		08/05/2022 08:51
MeFOSA	ND	0.096	0.026	0.026	1	31506-32-8		08/05/2022 08:51
PFDA	0.054 J	0.096	0.022	0.022	1	335-76-2		08/05/2022 08:51
EtFOSAm	ND	0.096	0.025	0.025	1	4151-50-2		08/05/2022 08:51
8:2 FTS	ND	0.092	0.042	0.042	1	39108-34-4		08/05/2022 08:51
9-CI-PF3ON	ND	0.089	0.024	0.024	1	756426-58-1		08/05/2022 08:51
PFNS	ND	0.092	0.033	0.033	1	68259-12-1		08/05/2022 08:51
PFUnDA	0.063 J	0.096	0.029	0.029	1	2058-94-8		08/05/2022 08:51
NMeFOSAA	ND	0.096	0.027	0.027	1	2355-31-9		08/05/2022 08:51
NEtFOSAA	ND	0.096	0.039	0.039	1	2991-50-6		08/05/2022 08:51
PFDS	ND	0.093	0.027	0.027	1	335-77-3		08/05/2022 08:51
PFDOA	ND	0.096	0.032	0.032	1	307-55-1		08/05/2022 08:51
MeFOSE	ND	0.096	0.029	0.029	1	24448-09-7		08/05/2022 08:51
EtFOSE	ND	0.096	0.031	0.031	1	1691-99-2		08/05/2022 08:51
11-CI-PF3OUdS	ND	0.090	0.024	0.024	1	763051-92-9		08/05/2022 08:51
PFTTrDA	ND	0.096	0.031	0.031	1	72629-94-8		08/05/2022 08:51
PFDoS	ND	0.093	0.025	0.025	1	79780-39-5		08/05/2022 08:51
PFTDA	ND	0.096	0.033	0.033	1	376-06-7		08/05/2022 08:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-TK28-HA01(0-6)
 Lab Sample ID 10616212028
 Lab File ID B220804B_025
 Matrix Soil
 Collected 07/06/2022 15:05
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.96	1.1	120	50-150		08/05/2022 08:51
13C4 PFOA	0.96	0.99	103	50-150		08/05/2022 08:51
13C2 PFDA	0.96	1.1	119	50-150		08/05/2022 08:51
13C4 PFOS	0.92	1.1	119	50-150		08/05/2022 08:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.96	0.80	83	25-150		08/05/2022 08:51
13C5 PFPeA	0.96	0.79	82	25-150		08/05/2022 08:51
13C3 PFBS	0.89	0.71	80	25-150		08/05/2022 08:51
13C2 4:2FTS	0.90	0.71	80	25-150		08/05/2022 08:51
13C5 PFHxA	0.96	0.82	86	25-150		08/05/2022 08:51
13C4 PFHpA	0.96	0.79	83	25-150		08/05/2022 08:51
13C3 PFHxS	0.91	0.76	84	25-150		08/05/2022 08:51
13C2 6:2FTS	0.91	0.75	82	25-150		08/05/2022 08:51
13C8 PFOA	0.96	0.86	90	25-150		08/05/2022 08:51
13C9 PFNA	0.96	0.81	84	25-150		08/05/2022 08:51
13C8 PFOS	0.92	0.85	92	25-150		08/05/2022 08:51
13C2 8:2FTS	0.92	1.0	109	25-150		08/05/2022 08:51
13C6 PFDA	0.96	0.83	87	25-150		08/05/2022 08:51
d3-MeFOSAA	0.96	0.78	81	25-150		08/05/2022 08:51
13C8 PFOSA	0.96	0.49	51	25-150		08/05/2022 08:51
d5-EtFOSAA	0.96	0.84	88	25-150		08/05/2022 08:51
13C7 PFUdA	0.96	1.1	112	25-150		08/05/2022 08:51
13C2 PFDoA	0.96	0.89	92	25-150		08/05/2022 08:51
13C2 PFTeDA	0.96	0.67	70	25-150		08/05/2022 08:51
13C3 HFPO-DA	0.96	0.77	80	25-150		08/05/2022 08:51
d7-N-MeFOSE	0.96	0.069	7	10-150	R	08/05/2022 08:51
d9-N-EtFOSE	0.96	0.084	9	10-150	R	08/05/2022 08:51
d3-N-MeFOSA	0.96	0.0081	1	10-150	R	08/05/2022 08:51
d5-N-EtFOSA	0.96	0.0065	1	10-150	R	08/05/2022 08:51

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 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.78	5.80	17		08/05/2022 08:51
13C4 PFOA	N/A	N/A	7.05	7.07	19		08/05/2022 08:51
13C2 PFDA	N/A	N/A	8.38	8.39	20		08/05/2022 08:51
13C4 PFOS	N/A	N/A	8.87	8.88	15		08/05/2022 08:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	27		08/05/2022 08:51
13C5 PFPeA	N/A	N/A	5.13	5.15	24		08/05/2022 08:51
13C3 PFBS	N/A	N/A	6.03	6.05	14		08/05/2022 08:51
13C2 4:2FTS	N/A	N/A	5.52	5.54	50		08/05/2022 08:51
13C5 PFHxA	N/A	N/A	5.78	5.80	17		08/05/2022 08:51
13C4 PFHpA	N/A	N/A	6.42	6.43	17		08/05/2022 08:51
13C3 PFHxS	N/A	N/A	7.47	7.49	13		08/05/2022 08:51
13C2 6:2FTS	N/A	N/A	6.72	6.74	91		08/05/2022 08:51
13C8 PFOA	N/A	N/A	7.05	7.07	23		08/05/2022 08:51
13C9 PFNA	N/A	N/A	7.71	7.72	18		08/05/2022 08:51
13C8 PFOS	N/A	N/A	8.88	8.88	13		08/05/2022 08:51
13C2 8:2FTS	N/A	N/A	8.00	8.01	13		08/05/2022 08:51
13C6 PFDA	N/A	N/A	8.38	8.39	14		08/05/2022 08:51
d3-MeFOSAA	N/A	N/A	8.24	8.25	13		08/05/2022 08:51
13C8 PFOSA	N/A	N/A	10.62	10.61	12		08/05/2022 08:51
d5-EtFOSAA	N/A	N/A	8.53	8.54	14		08/05/2022 08:51
13C7 PFUdA	N/A	N/A	9.06	9.07	18		08/05/2022 08:51
13C2 PFDoA	N/A	N/A	9.74	9.74	11		08/05/2022 08:51
13C2 PFTeDA	N/A	N/A	11.05	11.07	12		08/05/2022 08:51
13C3 HFPO-DA	N/A	N/A	6.04	6.06	17		08/05/2022 08:51
d7-N-MeFOSE	N/A	N/A	12.45	12.45	47	R	08/05/2022 08:51
d9-N-EtFOSE	N/A	N/A	12.92	12.92	20	R	08/05/2022 08:51
d3-N-MeFOSA	N/A	N/A	12.66	12.66	11	R	08/05/2022 08:51
d5-N-EtFOSA	N/A	N/A	13.07	13.08	83	R	08/05/2022 08:51

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Total Amount Extracted 5.22g
 Ical ID 220803A02
 CCal File B220804B_015
 Ending CCal File B220804B_026
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	10		08/05/2022 08:51
PFPeA	N/A	N/A	5.14	5.15	10	J	08/05/2022 08:51
HFPO-DA	1.40	0.25	6.05	6.07	ND		08/05/2022 08:51
PFBS	0.44	0.43	6.03	6.06	ND		08/05/2022 08:51
PFHxA	0.11	0.08	5.79	5.81	14	J	08/05/2022 08:51
4:2 FTS	0.00	0.88	0.00	5.54	ND		08/05/2022 08:51
PFPeS	0.39	0.44	6.77	6.79	ND		08/05/2022 08:51
PFHpA	0.29	0.25	6.42	6.44	23	J	08/05/2022 08:51
DONA	0.00	0.58	0.00	6.67	ND		08/05/2022 08:51
PFHxS	0.44	0.40	7.48	7.49	ND		08/05/2022 08:51
PFOA	0.43	0.45	7.06	7.08	19		08/05/2022 08:51
6:2 FTS	0.66	0.79	6.72	6.74	ND		08/05/2022 08:51
PFHpS	0.00	0.37	0.00	8.20	ND		08/05/2022 08:51
PFNA	0.14	0.13	7.71	7.73	27		08/05/2022 08:51
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 08:51
PFOS	0.36	0.41	8.89	8.90	61		08/05/2022 08:51
MeFOSA	0.00	0.58	0.00	12.69	ND		08/05/2022 08:51
PFDA	0.19	0.19	8.39	8.40	12	J	08/05/2022 08:51
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 08:51
8:2 FTS	2.20	0.84	8.00	8.02	ND		08/05/2022 08:51
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/05/2022 08:51
PFNS	0.00	0.45	0.00	9.58	ND		08/05/2022 08:51
PFUnDA	0.13	0.12	9.06	9.08	69	J	08/05/2022 08:51
NMeFOSAA	1.50	0.91	8.26	8.26	ND		08/05/2022 08:51
NEtFOSAA	0.52	0.61	8.54	8.55	ND		08/05/2022 08:51
PFDS	0.36	0.36	10.23	10.24	ND		08/05/2022 08:51
PFDOA	0.21	0.17	9.75	9.75	ND		08/05/2022 08:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 08:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 08:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 08:51
PFTTrDA	0.17	0.15	10.41	10.42	ND		08/05/2022 08:51
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 08:51
PFTDA	0.14	0.24	11.06	11.07	ND		08/05/2022 08:51

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 PFAS by Isotope Dilution

Client Sample ID PR-TK29-HA01(0-6)
 Lab Sample ID 10616212029
 Lab File ID B220804B_027
 Matrix Soil
 Collected 07/06/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.56g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	0.11	0.090	0.025	0.025	1	375-22-4		08/05/2022 09:31
PFPeA	0.030 J	0.090	0.026	0.026	1	2706-90-3		08/05/2022 09:31
HFPO-DA	ND	0.090	0.025	0.025	1	13252-13-6		08/05/2022 09:31
PFBS	0.024 IJ	0.080	0.024	0.024	1	375-73-5		08/05/2022 09:31
PFHxA	0.029 J	0.090	0.025	0.025	1	307-24-4		08/05/2022 09:31
4:2 FTS	ND	0.084	0.021	0.021	1	757124-72-4		08/05/2022 09:31
PFPeS	ND	0.085	0.022	0.022	1	2706-91-4		08/05/2022 09:31
PFHpA	0.047 J	0.090	0.031	0.031	1	375-85-9		08/05/2022 09:31
DONA	ND	0.085	0.033	0.033	1	919005-14-4		08/05/2022 09:31
PFHxS	ND	0.082	0.020	0.020	1	355-46-4		08/05/2022 09:31
PFOA	0.069 J	0.090	0.028	0.028	1	335-67-1		08/05/2022 09:31
6:2 FTS	ND	0.085	0.037	0.037	1	27619-97-2		08/05/2022 09:31
PFHpS	ND	0.085	0.025	0.025	1	375-92-8		08/05/2022 09:31
PFNA	0.074 J	0.090	0.028	0.028	1	375-95-1		08/05/2022 09:31
PFOSAm	ND	0.090	0.026	0.026	1	754-91-6		08/05/2022 09:31
PFOS	0.26	0.083	0.027	0.027	1	1763-23-1		08/05/2022 09:31
MeFOSA	ND	0.090	0.024	0.024	1	31506-32-8		08/05/2022 09:31
PFDA	0.060 J	0.090	0.021	0.021	1	335-76-2		08/05/2022 09:31
EtFOSAm	0.30	0.090	0.023	0.023	1	4151-50-2		08/05/2022 09:31
8:2 FTS	ND	0.086	0.040	0.040	1	39108-34-4		08/05/2022 09:31
9-CI-PF3ON	ND	0.084	0.023	0.023	1	756426-58-1		08/05/2022 09:31
PFNS	ND	0.086	0.031	0.031	1	68259-12-1		08/05/2022 09:31
PFUnDA	0.062 J	0.090	0.027	0.027	1	2058-94-8		08/05/2022 09:31
NMeFOSAA	ND	0.090	0.025	0.025	1	2355-31-9		08/05/2022 09:31
NEtFOSAA	ND	0.090	0.036	0.036	1	2991-50-6		08/05/2022 09:31
PFDS	ND	0.087	0.025	0.025	1	335-77-3		08/05/2022 09:31
PFDOA	ND	0.090	0.030	0.030	1	307-55-1		08/05/2022 09:31
MeFOSE	ND	0.090	0.027	0.027	1	24448-09-7		08/05/2022 09:31
EtFOSE	ND	0.090	0.029	0.029	1	1691-99-2		08/05/2022 09:31
11-CI-PF3OUdS	ND	0.085	0.023	0.023	1	763051-92-9		08/05/2022 09:31
PFTTrDA	ND	0.090	0.029	0.029	1	72629-94-8		08/05/2022 09:31
PFDoS	ND	0.087	0.023	0.023	1	79780-39-5		08/05/2022 09:31
PFTDA	ND	0.090	0.031	0.031	1	376-06-7		08/05/2022 09:31

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Total Amount Extracted 5.56g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.90	1.2	130	50-150		08/05/2022 09:31
13C4 PFOA	0.90	1.1	127	50-150		08/05/2022 09:31
13C2 PFDA	0.90	1.3	142	50-150		08/05/2022 09:31
13C4 PFOS	0.86	1.1	123	50-150		08/05/2022 09:31

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.90	0.75	84	25-150		08/05/2022 09:31
13C5 PFPeA	0.90	0.79	88	25-150		08/05/2022 09:31
13C3 PFBS	0.84	0.78	93	25-150		08/05/2022 09:31
13C2 4:2FTS	0.84	0.69	82	25-150		08/05/2022 09:31
13C5 PFHxA	0.90	0.76	84	25-150		08/05/2022 09:31
13C4 PFHpA	0.90	0.78	86	25-150		08/05/2022 09:31
13C3 PFHxS	0.85	0.75	88	25-150		08/05/2022 09:31
13C2 6:2FTS	0.85	0.80	94	25-150		08/05/2022 09:31
13C8 PFOA	0.90	0.78	87	25-150		08/05/2022 09:31
13C9 PFNA	0.90	0.87	97	25-150		08/05/2022 09:31
13C8 PFOS	0.86	0.80	92	25-150		08/05/2022 09:31
13C2 8:2FTS	0.86	0.98	114	25-150		08/05/2022 09:31
13C6 PFDA	0.90	0.91	101	25-150		08/05/2022 09:31
d3-MeFOSAA	0.90	0.77	86	25-150		08/05/2022 09:31
13C8 PFOSA	0.90	0.47	52	25-150		08/05/2022 09:31
d5-EtFOSAA	0.90	0.78	87	25-150		08/05/2022 09:31
13C7 PFUdA	0.90	0.83	92	25-150		08/05/2022 09:31
13C2 PFDoA	0.90	0.84	93	25-150		08/05/2022 09:31
13C2 PFTeDA	0.90	0.78	87	25-150		08/05/2022 09:31
13C3 HFPO-DA	0.90	0.75	83	25-150		08/05/2022 09:31
d7-N-MeFOSE	0.90	0.033	4	10-150	R	08/05/2022 09:31
d9-N-EtFOSE	0.90	0.046	5	10-150	R	08/05/2022 09:31
d3-N-MeFOSA	0.90	0.0070	1	10-150	R	08/05/2022 09:31
d5-N-EtFOSA	0.90	0.0075	1	10-150	R	08/05/2022 09:31

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Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	25		08/05/2022 09:31
13C4 PFOA	N/A	N/A	7.05	7.07	22		08/05/2022 09:31
13C2 PFDA	N/A	N/A	8.38	8.39	18		08/05/2022 09:31
13C4 PFOS	N/A	N/A	8.87	8.88	80		08/05/2022 09:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	26		08/05/2022 09:31
13C5 PFPeA	N/A	N/A	5.14	5.15	22		08/05/2022 09:31
13C3 PFBS	N/A	N/A	6.04	6.05	99		08/05/2022 09:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	41		08/05/2022 09:31
13C5 PFHxA	N/A	N/A	5.79	5.80	17		08/05/2022 09:31
13C4 PFHpA	N/A	N/A	6.42	6.43	15		08/05/2022 09:31
13C3 PFHxS	N/A	N/A	7.48	7.49	12		08/05/2022 09:31
13C2 6:2FTS	N/A	N/A	6.72	6.74	69		08/05/2022 09:31
13C8 PFOA	N/A	N/A	7.06	7.07	18		08/05/2022 09:31
13C9 PFNA	N/A	N/A	7.71	7.72	21		08/05/2022 09:31
13C8 PFOS	N/A	N/A	8.87	8.88	82		08/05/2022 09:31
13C2 8:2FTS	N/A	N/A	8.00	8.01	10		08/05/2022 09:31
13C6 PFDA	N/A	N/A	8.38	8.39	24		08/05/2022 09:31
d3-MeFOSAA	N/A	N/A	8.24	8.25	14		08/05/2022 09:31
13C8 PFOSA	N/A	N/A	10.62	10.61	15		08/05/2022 09:31
d5-EtFOSAA	N/A	N/A	8.53	8.54	14		08/05/2022 09:31
13C7 PFUdA	N/A	N/A	9.06	9.07	16		08/05/2022 09:31
13C2 PFDoA	N/A	N/A	9.74	9.74	10		08/05/2022 09:31
13C2 PFTeDA	N/A	N/A	11.05	11.07	11		08/05/2022 09:31
13C3 HFPO-DA	N/A	N/A	6.05	6.06	17		08/05/2022 09:31
d7-N-MeFOSE	N/A	N/A	12.45	12.45	37	R	08/05/2022 09:31
d9-N-EtFOSE	N/A	N/A	12.92	12.92	13	R	08/05/2022 09:31
d3-N-MeFOSA	N/A	N/A	12.66	12.66	78	R	08/05/2022 09:31
d5-N-EtFOSA	N/A	N/A	13.08	13.08	10	R	08/05/2022 09:31

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 Collected 07/06/2022 15:15
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.56g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	13		08/05/2022 09:31
PFPeA	N/A	N/A	5.14	5.15	10	J	08/05/2022 09:31
HFPO-DA	0.35	0.29	6.05	6.07	ND		08/05/2022 09:31
PFBS	0.07	0.47	6.00	6.06	10	IJ	08/05/2022 09:31
PFHxA	0.10	0.08	5.79	5.81	74	J	08/05/2022 09:31
4:2 FTS	0.00	0.86	0.00	5.54	ND		08/05/2022 09:31
PFPeS	0.32	0.47	6.78	6.79	ND		08/05/2022 09:31
PFHpA	0.27	0.33	6.42	6.44	26	J	08/05/2022 09:31
DONA	0.49	0.55	6.66	6.67	ND		08/05/2022 09:31
PFHxS	0.40	0.40	7.48	7.49	ND		08/05/2022 09:31
PFOA	0.43	0.42	7.06	7.08	11	J	08/05/2022 09:31
6:2 FTS	1.40	0.82	6.73	6.74	ND		08/05/2022 09:31
PFHpS	0.00	0.40	0.00	8.20	ND		08/05/2022 09:31
PFNA	0.13	0.15	7.72	7.73	22	J	08/05/2022 09:31
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 09:31
PFOS	0.43	0.40	8.89	8.90	46		08/05/2022 09:31
MeFOSA	0.00	0.57	0.00	12.69	ND		08/05/2022 09:31
PFDA	0.16	0.20	8.40	8.40	18	J	08/05/2022 09:31
EtFOSAm	0.47	0.58	13.09	13.10	68		08/05/2022 09:31
8:2 FTS	0.73	0.92	8.01	8.02	ND		08/05/2022 09:31
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 09:31
PFNS	0.28	0.51	9.58	9.58	ND		08/05/2022 09:31
PFUnDA	0.14	0.15	9.06	9.08	80	J	08/05/2022 09:31
NMeFOSAA	0.48	0.92	8.25	8.26	ND		08/05/2022 09:31
NEtFOSAA	0.70	0.63	8.54	8.55	ND		08/05/2022 09:31
PFDS	0.39	0.37	10.23	10.24	ND		08/05/2022 09:31
PFDOA	0.18	0.21	9.75	9.75	ND		08/05/2022 09:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 09:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 09:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 09:31
PFTTrDA	0.17	0.18	10.41	10.42	ND		08/05/2022 09:31
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 09:31
PFTDA	0.21	0.27	11.06	11.07	ND		08/05/2022 09:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building A-HA01(0-6)
 Lab Sample ID 10616212030
 Lab File ID B220804B_028
 Matrix Soil
 Collected 07/06/2022 14:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.098	0.028	0.028	1	375-22-4		08/05/2022 09:51
PFPeA	0.076 J	0.098	0.028	0.028	1	2706-90-3		08/05/2022 09:51
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		08/05/2022 09:51
PFBS	ND	0.087	0.026	0.026	1	375-73-5		08/05/2022 09:51
PFHxA	0.057 J	0.098	0.027	0.027	1	307-24-4		08/05/2022 09:51
4:2 FTS	ND	0.092	0.023	0.023	1	757124-72-4		08/05/2022 09:51
PFPeS	ND	0.092	0.024	0.024	1	2706-91-4		08/05/2022 09:51
PFHpA	ND	0.098	0.034	0.034	1	375-85-9		08/05/2022 09:51
DONA	ND	0.093	0.036	0.036	1	919005-14-4		08/05/2022 09:51
PFHxS	0.029 J	0.089	0.021	0.021	1	355-46-4		08/05/2022 09:51
PFOA	0.038 J	0.098	0.030	0.030	1	335-67-1		08/05/2022 09:51
6:2 FTS	ND	0.093	0.041	0.041	1	27619-97-2		08/05/2022 09:51
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		08/05/2022 09:51
PFNA	ND	0.098	0.030	0.030	1	375-95-1		08/05/2022 09:51
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		08/05/2022 09:51
PFOS	0.73	0.091	0.029	0.029	1	1763-23-1		08/05/2022 09:51
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		08/05/2022 09:51
PFDA	0.32	0.098	0.022	0.022	1	335-76-2		08/05/2022 09:51
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		08/05/2022 09:51
8:2 FTS	ND	0.094	0.043	0.043	1	39108-34-4		08/05/2022 09:51
9-CI-PF3ON	ND	0.091	0.025	0.025	1	756426-58-1		08/05/2022 09:51
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		08/05/2022 09:51
PFUnDA	0.049 J	0.098	0.030	0.030	1	2058-94-8		08/05/2022 09:51
NMeFOSAA	ND	0.098	0.028	0.028	1	2355-31-9		08/05/2022 09:51
NEtFOSAA	0.074 J	0.098	0.039	0.039	1	2991-50-6		08/05/2022 09:51
PFDS	0.039 J	0.095	0.028	0.028	1	335-77-3		08/05/2022 09:51
PFDOA	0.069 J	0.098	0.032	0.032	1	307-55-1		08/05/2022 09:51
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		08/05/2022 09:51
EtFOSE	ND	0.098	0.032	0.032	1	1691-99-2		08/05/2022 09:51
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		08/05/2022 09:51
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		08/05/2022 09:51
PFDoS	ND	0.095	0.026	0.026	1	79780-39-5		08/05/2022 09:51
PFTDA	ND	0.098	0.034	0.034	1	376-06-7		08/05/2022 09:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building A-HA01(0-6)
 Lab Sample ID 10616212030
 Lab File ID B220804B_028
 Matrix Soil
 Collected 07/06/2022 14:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	1.3	137	50-150		08/05/2022 09:51
13C4 PFOA	0.98	1.2	119	50-150		08/05/2022 09:51
13C2 PFDA	0.98	1.3	138	50-150		08/05/2022 09:51
13C4 PFOS	0.94	1.2	131	50-150		08/05/2022 09:51

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.84	86	25-150		08/05/2022 09:51
13C5 PFPeA	0.98	0.92	94	25-150		08/05/2022 09:51
13C3 PFBS	0.91	0.88	96	25-150		08/05/2022 09:51
13C2 4:2FTS	0.92	1.2	133	25-150		08/05/2022 09:51
13C5 PFHxA	0.98	0.86	88	25-150		08/05/2022 09:51
13C4 PFHpA	0.98	0.93	95	25-150		08/05/2022 09:51
13C3 PFHxS	0.93	0.82	89	25-150		08/05/2022 09:51
13C2 6:2FTS	0.93	1.1	120	25-150		08/05/2022 09:51
13C8 PFOA	0.98	0.87	88	25-150		08/05/2022 09:51
13C9 PFNA	0.98	0.95	97	25-150		08/05/2022 09:51
13C8 PFOS	0.94	0.90	96	25-150		08/05/2022 09:51
13C2 8:2FTS	0.94	1.4	152	25-150	R	08/05/2022 09:51
13C6 PFDA	0.98	1.0	104	25-150		08/05/2022 09:51
d3-MeFOSAA	0.98	1.0	106	25-150		08/05/2022 09:51
13C8 PFOSA	0.98	0.72	74	25-150		08/05/2022 09:51
d5-EtFOSAA	0.98	1.0	103	25-150		08/05/2022 09:51
13C7 PFUdA	0.98	1.0	105	25-150		08/05/2022 09:51
13C2 PFDoA	0.98	1.3	129	25-150		08/05/2022 09:51
13C2 PFTeDA	0.98	1.1	110	25-150		08/05/2022 09:51
13C3 HFPO-DA	0.98	0.76	77	25-150		08/05/2022 09:51
d7-N-MeFOSE	0.98	0.32	33	10-150		08/05/2022 09:51
d9-N-EtFOSE	0.98	0.31	32	10-150		08/05/2022 09:51
d3-N-MeFOSA	0.98	0.080	8	10-150	R	08/05/2022 09:51
d5-N-EtFOSA	0.98	0.087	9	10-150	R	08/05/2022 09:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building A-HA01(0-6)
 Lab Sample ID 10616212030
 Lab File ID B220804B_028
 Matrix Soil
 Collected 07/06/2022 14:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	19		08/05/2022 09:51
13C4 PFOA	N/A	N/A	7.05	7.07	17		08/05/2022 09:51
13C2 PFDA	N/A	N/A	8.38	8.39	15		08/05/2022 09:51
13C4 PFOS	N/A	N/A	8.87	8.88	49		08/05/2022 09:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.29	4.30	22		08/05/2022 09:51
13C5 PFPeA	N/A	N/A	5.13	5.15	23		08/05/2022 09:51
13C3 PFBS	N/A	N/A	6.03	6.05	73		08/05/2022 09:51
13C2 4:2FTS	N/A	N/A	5.52	5.54	44		08/05/2022 09:51
13C5 PFHxA	N/A	N/A	5.79	5.80	15		08/05/2022 09:51
13C4 PFHpA	N/A	N/A	6.42	6.43	11		08/05/2022 09:51
13C3 PFHxS	N/A	N/A	7.47	7.49	93		08/05/2022 09:51
13C2 6:2FTS	N/A	N/A	6.72	6.74	40		08/05/2022 09:51
13C8 PFOA	N/A	N/A	7.05	7.07	16		08/05/2022 09:51
13C9 PFNA	N/A	N/A	7.71	7.72	19		08/05/2022 09:51
13C8 PFOS	N/A	N/A	8.88	8.88	50		08/05/2022 09:51
13C2 8:2FTS	N/A	N/A	8.00	8.01	59	R	08/05/2022 09:51
13C6 PFDA	N/A	N/A	8.38	8.39	15		08/05/2022 09:51
d3-MeFOSAA	N/A	N/A	8.24	8.25	16		08/05/2022 09:51
13C8 PFOSA	N/A	N/A	10.62	10.61	15		08/05/2022 09:51
d5-EtFOSAA	N/A	N/A	8.54	8.54	12		08/05/2022 09:51
13C7 PFUdA	N/A	N/A	9.06	9.07	20		08/05/2022 09:51
13C2 PFDoA	N/A	N/A	9.74	9.74	11		08/05/2022 09:51
13C2 PFTeDA	N/A	N/A	11.05	11.07	12		08/05/2022 09:51
13C3 HFPO-DA	N/A	N/A	6.04	6.06	13		08/05/2022 09:51
d7-N-MeFOSE	N/A	N/A	12.45	12.45	46		08/05/2022 09:51
d9-N-EtFOSE	N/A	N/A	12.92	12.92	22		08/05/2022 09:51
d3-N-MeFOSA	N/A	N/A	12.66	12.66	41	R	08/05/2022 09:51
d5-N-EtFOSA	N/A	N/A	13.08	13.08	38	R	08/05/2022 09:51

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building A-HA01(0-6)
 Lab Sample ID 10616212030
 Lab File ID B220804B_028
 Matrix Soil
 Collected 07/06/2022 14:50
 Received 07/08/2022 18:45
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.10g
 Ical ID 220803A02
 CCal File B220804B_026
 Ending CCal File B220804B_031
 Blank File B220804B_005

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	ND		08/05/2022 09:51
PFPeA	N/A	N/A	5.14	5.15	14	J	08/05/2022 09:51
HFPO-DA	0.00	0.29	0.00	6.07	ND		08/05/2022 09:51
PFBS	0.28	0.47	6.03	6.06	ND		08/05/2022 09:51
PFHxA	0.09	0.08	5.79	5.81	66	J	08/05/2022 09:51
4:2 FTS	0.00	0.86	0.00	5.54	ND		08/05/2022 09:51
PFPeS	0.42	0.47	6.78	6.79	ND		08/05/2022 09:51
PFHpA	0.31	0.33	6.42	6.44	ND		08/05/2022 09:51
DONA	0.00	0.55	0.00	6.67	ND		08/05/2022 09:51
PFHxS	0.34	0.40	7.48	7.49	78	J	08/05/2022 09:51
PFOA	0.38	0.42	7.06	7.08	62	J	08/05/2022 09:51
6:2 FTS	1.00	0.82	6.72	6.74	ND		08/05/2022 09:51
PFHpS	0.00	0.40	0.00	8.20	ND		08/05/2022 09:51
PFNA	0.12	0.15	7.71	7.73	ND		08/05/2022 09:51
PFOSAm	N/A	N/A	10.63	10.61	ND		08/05/2022 09:51
PFOS	0.44	0.40	8.89	8.90	37		08/05/2022 09:51
MeFOSA	0.00	0.57	0.00	12.69	ND		08/05/2022 09:51
PFDA	0.19	0.20	8.39	8.40	35		08/05/2022 09:51
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/05/2022 09:51
8:2 FTS	1.00	0.92	8.01	8.02	ND		08/05/2022 09:51
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 09:51
PFNS	0.38	0.51	9.57	9.58	ND		08/05/2022 09:51
PFUnDA	0.12	0.15	9.07	9.08	65	J	08/05/2022 09:51
NMeFOSAA	0.92	0.92	8.25	8.26	ND		08/05/2022 09:51
NEtFOSAA	0.65	0.63	8.55	8.55	25	J	08/05/2022 09:51
PFDS	0.47	0.37	10.23	10.24	73	J	08/05/2022 09:51
PFDOA	0.20	0.21	9.74	9.75	20	J	08/05/2022 09:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 09:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 09:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 09:51
PFTTrDA	0.15	0.18	10.41	10.42	ND		08/05/2022 09:51
PFDoS	0.00	0.49	0.00	11.48	ND		08/05/2022 09:51
PFTDA	0.26	0.27	11.05	11.07	ND		08/05/2022 09:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building B-HA01(0-6)
 Lab Sample ID 10616212031
 Lab File ID B220811A_008
 Matrix Soil
 Collected 07/06/2022 14:35
 Received 07/08/2022 18:45
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811A_005
 Ending CCal File B220811A_017
 Blank File B220811C_044

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.098	0.028	0.028	1	375-22-4		08/11/2022 11:30
PFPeA	0.065 J	0.098	0.028	0.028	1	2706-90-3		08/11/2022 11:30
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		08/11/2022 11:30
PFBS	ND	0.086	0.026	0.026	1	375-73-5		08/11/2022 11:30
PFHxA	0.056 J	0.098	0.027	0.027	1	307-24-4		08/11/2022 11:30
4:2 FTS	ND	0.091	0.023	0.023	1	757124-72-4		08/11/2022 11:30
PFPeS	ND	0.092	0.023	0.023	1	2706-91-4		08/11/2022 11:30
PFHpA	0.050 J	0.098	0.034	0.034	1	375-85-9		08/11/2022 11:30
DONA	ND	0.092	0.035	0.035	1	919005-14-4		08/11/2022 11:30
PFHxS	ND	0.089	0.021	0.021	1	355-46-4		08/11/2022 11:30
PFOA	0.051 J	0.098	0.030	0.030	1	335-67-1		08/11/2022 11:30
6:2 FTS	ND	0.093	0.040	0.040	1	27619-97-2		08/11/2022 11:30
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		08/11/2022 11:30
PFNA	0.041 J	0.098	0.030	0.030	1	375-95-1		08/11/2022 11:30
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		08/11/2022 11:30
PFOS	0.17	0.090	0.029	0.029	1	1763-23-1		08/11/2022 11:30
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		08/11/2022 11:30
PFDA	0.049 J	0.098	0.022	0.022	1	335-76-2		08/11/2022 11:30
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		08/11/2022 11:30
8:2 FTS	1.3	0.094	0.043	0.043	1	39108-34-4		08/11/2022 11:30
9-CI-PF3ON	ND	0.091	0.025	0.025	1	756426-58-1		08/11/2022 11:30
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		08/11/2022 11:30
PFUnDA	ND	0.098	0.029	0.029	1	2058-94-8		08/11/2022 11:30
NMeFOSAA	ND	0.098	0.027	0.027	1	2355-31-9		08/11/2022 11:30
NEtFOSAA	ND	0.098	0.039	0.039	1	2991-50-6		08/11/2022 11:30
PFDS	ND	0.094	0.028	0.028	1	335-77-3		08/11/2022 11:30
PFDOA	ND	0.098	0.032	0.032	1	307-55-1		08/11/2022 11:30
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		08/11/2022 11:30
EtFOSE	ND	0.098	0.031	0.031	1	1691-99-2		08/11/2022 11:30
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		08/11/2022 11:30
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		08/11/2022 11:30
PFDoS	ND	0.094	0.025	0.025	1	79780-39-5		08/11/2022 11:30
PFTDA	ND	0.098	0.033	0.033	1	376-06-7		08/11/2022 11:30

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building B-HA01(0-6)
 Lab Sample ID 10616212031
 Lab File ID B220811A_008
 Matrix Soil
 Collected 07/06/2022 14:35
 Received 07/08/2022 18:45
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811A_005
 Ending CCal File B220811A_017
 Blank File B220811C_044

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	1.2	127	50-150		08/11/2022 11:30
13C4 PFOA	0.98	1.2	122	50-150		08/11/2022 11:30
13C2 PFDA	0.98	1.3	132	50-150		08/11/2022 11:30
13C4 PFOS	0.93	1.2	128	50-150		08/11/2022 11:30

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.97	99	50-150		08/11/2022 11:30
13C5 PFPeA	0.98	0.96	99	50-150		08/11/2022 11:30
13C3 PFBS	0.91	0.92	102	50-150		08/11/2022 11:30
13C2 4:2FTS	0.91	0.90	99	50-150		08/11/2022 11:30
13C5 PFHxA	0.98	0.97	100	50-150		08/11/2022 11:30
13C4 PFHpA	0.98	0.94	97	50-150		08/11/2022 11:30
13C3 PFHxS	0.92	0.89	96	50-150		08/11/2022 11:30
13C2 6:2FTS	0.93	0.92	100	50-150		08/11/2022 11:30
13C8 PFOA	0.98	0.97	99	50-150		08/11/2022 11:30
13C9 PFNA	0.98	0.96	98	50-150		08/11/2022 11:30
13C8 PFOS	0.93	0.98	105	50-150		08/11/2022 11:30
13C2 8:2FTS	0.94	0.88	95	50-150		08/11/2022 11:30
13C6 PFDA	0.98	1.1	108	50-150		08/11/2022 11:30
d3-MeFOSAA	0.98	0.95	98	50-150		08/11/2022 11:30
13C8 PFOSA	0.98	0.94	97	50-150		08/11/2022 11:30
d5-EtFOSAA	0.98	1.0	106	50-150		08/11/2022 11:30
13C7 PFUdA	0.98	1.1	109	50-150		08/11/2022 11:30
13C2 PFDaA	0.98	1.0	108	50-150		08/11/2022 11:30
13C2 PFTeDA	0.98	1.1	111	50-150		08/11/2022 11:30
13C3 HFPO-DA	0.98	1.0	104	50-150		08/11/2022 11:30
d7-N-MeFOSE	0.98	0.37	38	10-150		08/11/2022 11:30
d9-N-EtFOSE	0.98	0.38	38	10-150		08/11/2022 11:30
d3-N-MeFOSA	0.98	0.68	70	10-150		08/11/2022 11:30
d5-N-EtFOSA	0.98	0.51	52	10-150		08/11/2022 11:30

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building B-HA01(0-6)
 Lab Sample ID 10616212031
 Lab File ID B220811A_008
 Matrix Soil
 Collected 07/06/2022 14:35
 Received 07/08/2022 18:45
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811A_005
 Ending CCal File B220811A_017
 Blank File B220811C_044

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.82	5.77	28		08/11/2022 11:30
13C4 PFOA	N/A	N/A	7.09	7.07	31		08/11/2022 11:30
13C2 PFDA	N/A	N/A	8.39	8.39	27		08/11/2022 11:30
13C4 PFOS	N/A	N/A	8.86	8.88	18		08/11/2022 11:30

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.18	4.23	18		08/11/2022 11:30
13C5 PFPeA	N/A	N/A	5.12	5.10	21		08/11/2022 11:30
13C3 PFBS	N/A	N/A	6.05	6.02	16		08/11/2022 11:30
13C2 4:2FTS	N/A	N/A	5.55	5.51	84		08/11/2022 11:30
13C5 PFHxA	N/A	N/A	5.82	5.78	22		08/11/2022 11:30
13C4 PFHpA	N/A	N/A	6.46	6.42	18		08/11/2022 11:30
13C3 PFHxS	N/A	N/A	7.49	7.47	19		08/11/2022 11:30
13C2 6:2FTS	N/A	N/A	6.76	6.73	17		08/11/2022 11:30
13C8 PFOA	N/A	N/A	7.09	7.06	26		08/11/2022 11:30
13C9 PFNA	N/A	N/A	7.74	7.71	28		08/11/2022 11:30
13C8 PFOS	N/A	N/A	8.86	8.86	12		08/11/2022 11:30
13C2 8:2FTS	N/A	N/A	8.02	8.00	20		08/11/2022 11:30
13C6 PFDA	N/A	N/A	8.39	8.38	18		08/11/2022 11:30
d3-MeFOSAA	N/A	N/A	8.25	8.25	24		08/11/2022 11:30
13C8 PFOSA	N/A	N/A	10.38	10.42	11		08/11/2022 11:30
d5-EtFOSAA	N/A	N/A	8.54	8.54	11		08/11/2022 11:30
13C7 PFUdA	N/A	N/A	9.06	9.07	23		08/11/2022 11:30
13C2 PFDoA	N/A	N/A	9.72	9.71	14		08/11/2022 11:30
13C2 PFTeDA	N/A	N/A	11.02	11.02	12		08/11/2022 11:30
13C3 HFPO-DA	N/A	N/A	6.08	6.04	15		08/11/2022 11:30
d7-N-MeFOSE	N/A	N/A	12.42	12.44	44		08/11/2022 11:30
d9-N-EtFOSE	N/A	N/A	12.89	12.88	37		08/11/2022 11:30
d3-N-MeFOSA	N/A	N/A	12.63	12.65	98		08/11/2022 11:30
d5-N-EtFOSA	N/A	N/A	13.05	13.07	60		08/11/2022 11:30

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Building B-HA01(0-6)
 Lab Sample ID 10616212031
 Lab File ID B220811A_008
 Matrix Soil
 Collected 07/06/2022 14:35
 Received 07/08/2022 18:45
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811A_005
 Ending CCal File B220811A_017
 Blank File B220811C_044

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.18	4.23	ND		08/11/2022 11:30
PFPeA	N/A	N/A	5.13	5.15	20	J	08/11/2022 11:30
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/11/2022 11:30
PFBS	0.45	0.50	6.06	6.02	ND		08/11/2022 11:30
PFHxA	0.08	0.08	5.82	5.81	11	J	08/11/2022 11:30
4:2 FTS	0.00	0.83	0.00	5.54	ND		08/11/2022 11:30
PFPeS	0.00	0.44	0.00	6.79	ND		08/11/2022 11:30
PFHpA	0.27	0.29	6.46	6.44	21	J	08/11/2022 11:30
DONA	0.00	0.55	0.00	6.67	ND		08/11/2022 11:30
PFHxS	0.51	0.36	7.50	7.49	ND		08/11/2022 11:30
PFOA	0.46	0.41	7.10	7.08	10	J	08/11/2022 11:30
6:2 FTS	0.75	0.94	6.77	6.74	ND		08/11/2022 11:30
PFHpS	0.00	0.33	0.00	8.20	ND		08/11/2022 11:30
PFNA	0.13	0.14	7.74	7.73	23	J	08/11/2022 11:30
PFOSAm	N/A	N/A	10.38	10.44	ND		08/11/2022 11:30
PFOS	0.42	0.41	8.88	8.90	71		08/11/2022 11:30
MeFOSA	0.00	0.62	0.00	12.69	ND		08/11/2022 11:30
PFDA	0.18	0.16	8.40	8.40	26	J	08/11/2022 11:30
EtFOSAm	0.00	0.49	0.00	13.10	ND		08/11/2022 11:30
8:2 FTS	0.88	0.82	8.02	8.02	14		08/11/2022 11:30
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/11/2022 11:30
PFNS	0.00	0.51	0.00	9.58	ND		08/11/2022 11:30
PFUnDA	0.13	0.12	9.06	9.05	ND		08/11/2022 11:30
NMeFOSAA	0.00	0.82	0.00	8.26	ND		08/11/2022 11:30
NEtFOSAA	0.60	0.73	8.55	8.55	ND		08/11/2022 11:30
PFDS	0.35	0.36	10.20	10.19	ND		08/11/2022 11:30
PFDOA	0.19	0.18	9.73	9.72	ND		08/11/2022 11:30
MeFOSE	N/A	N/A	0.00	12.45	ND		08/11/2022 11:30
EtFOSE	0.00	0.00	12.93	12.92	ND		08/11/2022 11:30
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/11/2022 11:30
PFTTrDA	0.18	0.13	10.38	10.37	ND		08/11/2022 11:30
PFDoS	0.00	0.49	0.00	11.43	ND		08/11/2022 11:30
PFTDA	0.30	0.22	11.03	11.02	ND		08/11/2022 11:30

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-01
 Lab Sample ID 10616212032
 Lab File ID B220806A_010
 Matrix Water
 Collected 07/06/2022 08:40
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 259mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	1.9	0.43	0.43	1	375-22-4	WIB	08/06/2022 07:11
PFPeA	ND	1.9	0.42	0.42	1	2706-90-3	WIB	08/06/2022 07:11
HFPO-DA	ND	1.9	0.51	0.51	1	13252-13-6		08/06/2022 07:11
PFBS	ND	1.7	0.46	0.46	1	375-73-5	WIB	08/06/2022 07:11
PFHxA	ND	1.9	0.42	0.42	1	307-24-4	WIB	08/06/2022 07:11
4:2 FTS	ND	1.8	0.54	0.54	1	757124-72-4		08/06/2022 07:11
PFPeS	ND	1.8	0.46	0.46	1	2706-91-4		08/06/2022 07:11
PFHpA	ND	1.9	0.53	0.53	1	375-85-9		08/06/2022 07:11
DONA	ND	1.8	0.50	0.50	1	919005-14-4		08/06/2022 07:11
PFHxS	ND	1.8	0.49	0.49	1	355-46-4	WIB	08/06/2022 07:11
PFOA	ND	1.9	0.56	0.56	1	335-67-1	WIB	08/06/2022 07:11
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2	WIB	08/06/2022 07:11
PFHpS	ND	1.8	0.40	0.40	1	375-92-8		08/06/2022 07:11
PFNA	ND	1.9	0.71	0.71	1	375-95-1		08/06/2022 07:11
PFOSAm	ND	1.9	0.79	0.79	1	754-91-6	WIB	08/06/2022 07:11
PFOS	ND	1.8	0.53	0.53	1	1763-23-1	WIB	08/06/2022 07:11
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8	WIB	08/06/2022 07:11
PFDA	ND	1.9	0.54	0.54	1	335-76-2		08/06/2022 07:11
EtFOSAm	ND	1.9	0.59	0.59	1	4151-50-2		08/06/2022 07:11
8:2 FTS	ND	1.9	0.63	0.63	1	39108-34-4		08/06/2022 07:11
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/06/2022 07:11
PFNS	ND	1.9	0.43	0.43	1	68259-12-1		08/06/2022 07:11
PFUnDA	ND	1.9	0.52	0.52	1	2058-94-8		08/06/2022 07:11
NMeFOSAA	ND	1.9	0.42	0.42	1	2355-31-9		08/06/2022 07:11
NEtFOSAA	ND	1.9	0.53	0.53	1	2991-50-6		08/06/2022 07:11
PFDS	ND	1.9	0.43	0.43	1	335-77-3		08/06/2022 07:11
PFDOA	ND	1.9	0.47	0.47	1	307-55-1		08/06/2022 07:11
MeFOSE	ND	1.9	0.32	0.32	1	24448-09-7		08/06/2022 07:11
EtFOSE	ND	1.9	0.48	0.48	1	1691-99-2		08/06/2022 07:11
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/06/2022 07:11
PFTTrDA	ND	1.9	0.60	0.60	1	72629-94-8		08/06/2022 07:11
PFDoS	ND	1.9	0.44	0.44	1	79780-39-5		08/06/2022 07:11
PFTDA	ND	1.9	0.46	0.46	1	376-06-7		08/06/2022 07:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-01	Total Amount Extracted	259mL
Lab Sample ID	10616212032	Ical ID	220803A02
Lab File ID	B220806A_010	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 08:40	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	25	130	50-150		08/06/2022 07:11
13C4 PFOA	19	23	120	50-150		08/06/2022 07:11
13C2 PFDA	19	22	115	50-150		08/06/2022 07:11
13C4 PFOS	18	26	140	50-150		08/06/2022 07:11

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	20	105	25-150		08/06/2022 07:11
13C5 PFPeA	19	21	107	25-150		08/06/2022 07:11
13C3 PFBS	18	19	104	25-150		08/06/2022 07:11
13C2 4:2FTS	18	20	110	25-150		08/06/2022 07:11
13C5 PFHxA	19	21	109	25-150		08/06/2022 07:11
13C4 PFHpA	19	21	111	25-150		08/06/2022 07:11
13C3 PFHxS	18	19	104	25-150		08/06/2022 07:11
13C2 6:2FTS	18	21	112	25-150		08/06/2022 07:11
13C8 PFOA	19	20	103	25-150		08/06/2022 07:11
13C9 PFNA	19	20	105	25-150		08/06/2022 07:11
13C8 PFOS	18	22	119	25-150		08/06/2022 07:11
13C2 8:2FTS	18	21	112	25-150		08/06/2022 07:11
13C6 PFDA	19	26	135	25-150		08/06/2022 07:11
d3-MeFOSAA	19	17	90	25-150		08/06/2022 07:11
13C8 PFOSA	19	18	94	25-150		08/06/2022 07:11
d5-EtFOSAA	19	17	88	25-150		08/06/2022 07:11
13C7 PFUdA	19	23	119	25-150		08/06/2022 07:11
13C2 PFDoA	19	24	124	25-150		08/06/2022 07:11
13C2 PFTeDA	19	15	78	25-150		08/06/2022 07:11
13C3 HFPO-DA	19	20	103	25-150		08/06/2022 07:11
d7-N-MeFOSE	19	16	82	10-150		08/06/2022 07:11
d9-N-EtFOSE	19	16	85	10-150		08/06/2022 07:11
d3-N-MeFOSA	19	13	67	10-150		08/06/2022 07:11
d5-N-EtFOSA	19	10	52	10-150		08/06/2022 07:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-01	Total Amount Extracted	259mL
Lab Sample ID	10616212032	Ical ID	220803A02
Lab File ID	B220806A_010	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 08:40	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.82	5.80	16		08/06/2022 07:11
13C4 PFOA	N/A	N/A	7.08	7.07	20		08/06/2022 07:11
13C2 PFDA	N/A	N/A	8.41	8.39	21		08/06/2022 07:11
13C4 PFOS	N/A	N/A	8.90	8.88	20		08/06/2022 07:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.30	28		08/06/2022 07:11
13C5 PFPeA	N/A	N/A	5.16	5.15	28		08/06/2022 07:11
13C3 PFBS	N/A	N/A	6.06	6.05	22		08/06/2022 07:11
13C2 4:2FTS	N/A	N/A	5.56	5.54	11		08/06/2022 07:11
13C5 PFHxA	N/A	N/A	5.82	5.80	15		08/06/2022 07:11
13C4 PFHpA	N/A	N/A	6.45	6.43	24		08/06/2022 07:11
13C3 PFHxS	N/A	N/A	7.50	7.49	18		08/06/2022 07:11
13C2 6:2FTS	N/A	N/A	6.75	6.74	13		08/06/2022 07:11
13C8 PFOA	N/A	N/A	7.08	7.07	22		08/06/2022 07:11
13C9 PFNA	N/A	N/A	7.74	7.72	24		08/06/2022 07:11
13C8 PFOS	N/A	N/A	8.90	8.88	23		08/06/2022 07:11
13C2 8:2FTS	N/A	N/A	8.02	8.01	12		08/06/2022 07:11
13C6 PFDA	N/A	N/A	8.41	8.39	13		08/06/2022 07:11
d3-MeFOSAA	N/A	N/A	8.26	8.25	21		08/06/2022 07:11
13C8 PFOSA	N/A	N/A	10.66	10.61	18		08/06/2022 07:11
d5-EtFOSAA	N/A	N/A	8.56	8.54	14		08/06/2022 07:11
13C7 PFUdA	N/A	N/A	9.09	9.07	19		08/06/2022 07:11
13C2 PFDoA	N/A	N/A	9.77	9.74	13		08/06/2022 07:11
13C2 PFTeDA	N/A	N/A	11.10	11.07	10		08/06/2022 07:11
13C3 HFPO-DA	N/A	N/A	6.07	6.06	14		08/06/2022 07:11
d7-N-MeFOSE	N/A	N/A	12.48	12.45	52		08/06/2022 07:11
d9-N-EtFOSE	N/A	N/A	12.95	12.92	59		08/06/2022 07:11
d3-N-MeFOSA	N/A	N/A	12.69	12.66	10		08/06/2022 07:11
d5-N-EtFOSA	N/A	N/A	13.10	13.08	65		08/06/2022 07:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-01	Total Amount Extracted	259mL
Lab Sample ID	10616212032	Ical ID	220803A02
Lab File ID	B220806A_010	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 08:40	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.32	4.31	ND		08/06/2022 07:11
PFPeA	N/A	N/A	5.16	5.15	ND		08/06/2022 07:11
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/06/2022 07:11
PFBS	0.50	0.45	6.07	6.06	ND		08/06/2022 07:11
PFHxA	0.06	0.08	5.82	5.81	ND		08/06/2022 07:11
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 07:11
PFPeS	0.00	0.44	0.00	6.79	ND		08/06/2022 07:11
PFHpA	0.37	0.35	6.46	6.44	ND		08/06/2022 07:11
DONA	0.00	0.52	0.00	6.67	ND		08/06/2022 07:11
PFHxS	0.47	0.37	7.51	7.49	ND		08/06/2022 07:11
PFOA	0.58	0.41	7.09	7.08	ND		08/06/2022 07:11
6:2 FTS	0.71	0.83	6.75	6.74	ND		08/06/2022 07:11
PFHpS	0.00	0.36	0.00	8.20	ND		08/06/2022 07:11
PFNA	0.29	0.14	7.75	7.73	ND		08/06/2022 07:11
PFOSAm	N/A	N/A	10.67	10.61	ND		08/06/2022 07:11
PFOS	0.54	0.38	8.91	8.90	ND		08/06/2022 07:11
MeFOSA	0.00	0.55	0.00	12.69	ND		08/06/2022 07:11
PFDA	0.00	0.18	0.00	8.40	ND		08/06/2022 07:11
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/06/2022 07:11
8:2 FTS	0.00	0.99	0.00	8.02	ND		08/06/2022 07:11
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/06/2022 07:11
PFNS	0.00	0.51	0.00	9.58	ND		08/06/2022 07:11
PFUnDA	0.00	0.17	0.00	9.08	ND		08/06/2022 07:11
NMeFOSAA	0.00	0.86	0.00	8.26	ND		08/06/2022 07:11
NEtFOSAA	0.00	0.66	0.00	8.55	ND		08/06/2022 07:11
PFDS	0.00	0.38	0.00	10.24	ND		08/06/2022 07:11
PFDOA	0.00	0.18	0.00	9.75	ND		08/06/2022 07:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 07:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 07:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 07:11
PFTTrDA	0.00	0.14	0.00	10.42	ND		08/06/2022 07:11
PFDoS	0.00	0.48	0.00	11.48	ND		08/06/2022 07:11
PFTDA	0.00	0.32	0.00	11.07	ND		08/06/2022 07:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Decon-01
 Lab Sample ID 10616212033
 Lab File ID B220806A_011
 Matrix Water
 Collected 07/06/2022 09:55
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 259mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	9.2	1.9	0.43	0.43	1	375-22-4		08/06/2022 07:31
PFPeA	1.3 J	1.9	0.42	0.42	1	2706-90-3		08/06/2022 07:31
HFPO-DA	ND	1.9	0.51	0.51	1	13252-13-6		08/06/2022 07:31
PFBS	0.98 J	1.7	0.46	0.46	1	375-73-5		08/06/2022 07:31
PFHxA	1.4 J	1.9	0.42	0.42	1	307-24-4		08/06/2022 07:31
4:2 FTS	ND	1.8	0.54	0.54	1	757124-72-4		08/06/2022 07:31
PFPeS	ND	1.8	0.46	0.46	1	2706-91-4		08/06/2022 07:31
PFHpA	0.97 J	1.9	0.53	0.53	1	375-85-9		08/06/2022 07:31
DONA	ND	1.8	0.50	0.50	1	919005-14-4		08/06/2022 07:31
PFHxS	ND	1.8	0.49	0.49	1	355-46-4		08/06/2022 07:31
PFOA	1.2 J	1.9	0.57	0.57	1	335-67-1		08/06/2022 07:31
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2		08/06/2022 07:31
PFHpS	ND	1.8	0.40	0.40	1	375-92-8		08/06/2022 07:31
PFNA	ND	1.9	0.72	0.72	1	375-95-1		08/06/2022 07:31
PFOSAm	ND	1.9	0.79	0.79	1	754-91-6		08/06/2022 07:31
PFOS	ND	1.8	0.53	0.53	1	1763-23-1		08/06/2022 07:31
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8		08/06/2022 07:31
PFDA	ND	1.9	0.55	0.55	1	335-76-2		08/06/2022 07:31
EtFOSAm	ND	1.9	0.59	0.59	1	4151-50-2		08/06/2022 07:31
8:2 FTS	ND	1.9	0.63	0.63	1	39108-34-4		08/06/2022 07:31
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/06/2022 07:31
PFNS	ND	1.9	0.43	0.43	1	68259-12-1		08/06/2022 07:31
PFUnDA	ND	1.9	0.52	0.52	1	2058-94-8		08/06/2022 07:31
NMeFOSAA	ND	1.9	0.42	0.42	1	2355-31-9		08/06/2022 07:31
NEtFOSAA	ND	1.9	0.54	0.54	1	2991-50-6		08/06/2022 07:31
PFDS	ND	1.9	0.43	0.43	1	335-77-3		08/06/2022 07:31
PFDOA	ND	1.9	0.47	0.47	1	307-55-1		08/06/2022 07:31
MeFOSE	ND	1.9	0.32	0.32	1	24448-09-7		08/06/2022 07:31
EtFOSE	ND	1.9	0.48	0.48	1	1691-99-2		08/06/2022 07:31
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/06/2022 07:31
PFTTrDA	ND	1.9	0.60	0.60	1	72629-94-8		08/06/2022 07:31
PFDoS	ND	1.9	0.44	0.44	1	79780-39-5		08/06/2022 07:31
PFTDA	ND	1.9	0.46	0.46	1	376-06-7		08/06/2022 07:31

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-Decon-01
 Lab Sample ID 10616212033
 Lab File ID B220806A_011
 Matrix Water
 Collected 07/06/2022 09:55
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 259mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	26	133	50-150		08/06/2022 07:31
13C4 PFOA	19	24	126	50-150		08/06/2022 07:31
13C2 PFDA	19	26	135	50-150		08/06/2022 07:31
13C4 PFOS	19	26	141	50-150		08/06/2022 07:31

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	15	78	25-150		08/06/2022 07:31
13C5 PFPeA	19	19	98	25-150		08/06/2022 07:31
13C3 PFBS	18	20	109	25-150		08/06/2022 07:31
13C2 4:2FTS	18	47	260	25-150	R	08/06/2022 07:31
13C5 PFHxA	19	20	103	25-150		08/06/2022 07:31
13C4 PFHpA	19	25	131	25-150		08/06/2022 07:31
13C3 PFHxS	18	20	108	25-150		08/06/2022 07:31
13C2 6:2FTS	18	31	167	25-150	R	08/06/2022 07:31
13C8 PFOA	19	24	125	25-150		08/06/2022 07:31
13C9 PFNA	19	22	115	25-150		08/06/2022 07:31
13C8 PFOS	19	21	114	25-150		08/06/2022 07:31
13C2 8:2FTS	19	21	113	25-150		08/06/2022 07:31
13C6 PFDA	19	23	118	25-150		08/06/2022 07:31
d3-MeFOSAA	19	19	97	25-150		08/06/2022 07:31
13C8 PFOSA	19	9.2	48	25-150		08/06/2022 07:31
d5-EtFOSAA	19	17	89	25-150		08/06/2022 07:31
13C7 PFUdA	19	22	113	25-150		08/06/2022 07:31
13C2 PFDaA	19	17	88	25-150		08/06/2022 07:31
13C2 PFTeDA	19	13	67	25-150		08/06/2022 07:31
13C3 HFPO-DA	19	22	112	25-150		08/06/2022 07:31
d7-N-MeFOSE	19	4.1	21	10-150		08/06/2022 07:31
d9-N-EtFOSE	19	4.1	21	10-150		08/06/2022 07:31
d3-N-MeFOSA	19	0.077	0	10-150	R	08/06/2022 07:31
d5-N-EtFOSA	19	0.068	0	10-150	R	08/06/2022 07:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-Decon-01	Total Amount Extracted	259mL
Lab Sample ID	10616212033	Ical ID	220803A02
Lab File ID	B220806A_011	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 09:55	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.81	5.80	25		08/06/2022 07:31
13C4 PFOA	N/A	N/A	7.08	7.07	22		08/06/2022 07:31
13C2 PFDA	N/A	N/A	8.41	8.39	27		08/06/2022 07:31
13C4 PFOS	N/A	N/A	8.90	8.88	17		08/06/2022 07:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	21		08/06/2022 07:31
13C5 PFPeA	N/A	N/A	5.15	5.15	18		08/06/2022 07:31
13C3 PFBS	N/A	N/A	6.06	6.05	77		08/06/2022 07:31
13C2 4:2FTS	N/A	N/A	5.55	5.54	28	R	08/06/2022 07:31
13C5 PFHxA	N/A	N/A	5.81	5.80	12		08/06/2022 07:31
13C4 PFHpA	N/A	N/A	6.44	6.43	18		08/06/2022 07:31
13C3 PFHxS	N/A	N/A	7.50	7.49	19		08/06/2022 07:31
13C2 6:2FTS	N/A	N/A	6.75	6.74	67	R	08/06/2022 07:31
13C8 PFOA	N/A	N/A	7.08	7.07	22		08/06/2022 07:31
13C9 PFNA	N/A	N/A	7.73	7.72	26		08/06/2022 07:31
13C8 PFOS	N/A	N/A	8.90	8.88	19		08/06/2022 07:31
13C2 8:2FTS	N/A	N/A	8.02	8.01	11		08/06/2022 07:31
13C6 PFDA	N/A	N/A	8.41	8.39	14		08/06/2022 07:31
d3-MeFOSAA	N/A	N/A	8.27	8.25	14		08/06/2022 07:31
13C8 PFOSA	N/A	N/A	10.66	10.61	17		08/06/2022 07:31
d5-EtFOSAA	N/A	N/A	8.56	8.54	12		08/06/2022 07:31
13C7 PFUdA	N/A	N/A	9.09	9.07	26		08/06/2022 07:31
13C2 PFDoA	N/A	N/A	9.78	9.74	11		08/06/2022 07:31
13C2 PFTeDA	N/A	N/A	11.10	11.07	13		08/06/2022 07:31
13C3 HFPO-DA	N/A	N/A	6.07	6.06	12		08/06/2022 07:31
d7-N-MeFOSE	N/A	N/A	12.47	12.45	51		08/06/2022 07:31
d9-N-EtFOSE	N/A	N/A	12.93	12.92	33		08/06/2022 07:31
d3-N-MeFOSA	N/A	N/A	12.69	12.66	62	R	08/06/2022 07:31
d5-N-EtFOSA	N/A	N/A	13.09	13.08	62	R	08/06/2022 07:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-Decon-01	Total Amount Extracted	259mL
Lab Sample ID	10616212033	Ical ID	220803A02
Lab File ID	B220806A_011	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 09:55	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	57		08/06/2022 07:31
PFPeA	N/A	N/A	5.16	5.15	60	J	08/06/2022 07:31
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/06/2022 07:31
PFBS	0.40	0.45	6.06	6.06	87	J	08/06/2022 07:31
PFHxA	0.07	0.08	5.82	5.81	88	J	08/06/2022 07:31
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 07:31
PFPeS	0.34	0.44	6.79	6.79	ND		08/06/2022 07:31
PFHpA	0.32	0.35	6.45	6.44	25	J	08/06/2022 07:31
DONA	0.00	0.52	0.00	6.67	ND		08/06/2022 07:31
PFHxS	0.38	0.37	7.50	7.49	ND		08/06/2022 07:31
PFOA	0.41	0.41	7.08	7.08	11	J	08/06/2022 07:31
6:2 FTS	0.94	0.83	6.75	6.74	ND		08/06/2022 07:31
PFHpS	0.00	0.36	0.00	8.20	ND		08/06/2022 07:31
PFNA	0.14	0.14	7.74	7.73	ND		08/06/2022 07:31
PFOSAm	N/A	N/A	10.68	10.61	ND		08/06/2022 07:31
PFOS	0.32	0.38	8.83	8.90	ND		08/06/2022 07:31
MeFOSA	0.00	0.55	0.00	12.69	ND		08/06/2022 07:31
PFDA	0.14	0.18	8.42	8.40	ND		08/06/2022 07:31
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/06/2022 07:31
8:2 FTS	0.00	0.99	0.00	8.02	ND		08/06/2022 07:31
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/06/2022 07:31
PFNS	0.00	0.51	0.00	9.58	ND		08/06/2022 07:31
PFUnDA	0.00	0.17	0.00	9.08	ND		08/06/2022 07:31
NMeFOSAA	0.72	0.86	8.28	8.26	ND		08/06/2022 07:31
NEtFOSAA	0.00	0.66	0.00	8.55	ND		08/06/2022 07:31
PFDS	0.00	0.38	0.00	10.24	ND		08/06/2022 07:31
PFDOA	0.00	0.18	0.00	9.75	ND		08/06/2022 07:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 07:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 07:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 07:31
PFTTrDA	0.00	0.14	0.00	10.42	ND		08/06/2022 07:31
PFDoS	0.00	0.48	0.00	11.48	ND		08/06/2022 07:31
PFTDA	0.00	0.32	0.00	11.07	ND		08/06/2022 07:31

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-FB-01
 Lab Sample ID 10616212034
 Lab File ID B220806A_012
 Matrix Water
 Collected 07/06/2022 10:00
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 256mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	2.0	0.43	0.43	1	375-22-4		08/06/2022 07:51
PFPeA	ND	2.0	0.43	0.43	1	2706-90-3		08/06/2022 07:51
HFPO-DA	ND	2.0	0.52	0.52	1	13252-13-6		08/06/2022 07:51
PFBS	ND	1.7	0.46	0.46	1	375-73-5		08/06/2022 07:51
PFHxA	ND	2.0	0.43	0.43	1	307-24-4		08/06/2022 07:51
4:2 FTS	ND	1.8	0.54	0.54	1	757124-72-4		08/06/2022 07:51
PFPeS	ND	1.8	0.46	0.46	1	2706-91-4		08/06/2022 07:51
PFHpA	ND	2.0	0.54	0.54	1	375-85-9		08/06/2022 07:51
DONA	ND	1.8	0.50	0.50	1	919005-14-4		08/06/2022 07:51
PFHxS	ND	1.8	0.50	0.50	1	355-46-4		08/06/2022 07:51
PFOA	ND	2.0	0.57	0.57	1	335-67-1		08/06/2022 07:51
6:2 FTS	ND	1.9	0.63	0.63	1	27619-97-2		08/06/2022 07:51
PFHpS	ND	1.9	0.40	0.40	1	375-92-8		08/06/2022 07:51
PFNA	ND	2.0	0.72	0.72	1	375-95-1		08/06/2022 07:51
PFOSAm	ND	2.0	0.80	0.80	1	754-91-6		08/06/2022 07:51
PFOS	ND	1.8	0.53	0.53	1	1763-23-1		08/06/2022 07:51
MeFOSA	ND	2.0	0.50	0.50	1	31506-32-8		08/06/2022 07:51
PFDA	ND	2.0	0.55	0.55	1	335-76-2		08/06/2022 07:51
EtFOSAm	ND	2.0	0.59	0.59	1	4151-50-2		08/06/2022 07:51
8:2 FTS	ND	1.9	0.64	0.64	1	39108-34-4		08/06/2022 07:51
9-CI-PF3ON	ND	1.8	0.30	0.30	1	756426-58-1		08/06/2022 07:51
PFNS	ND	1.9	0.44	0.44	1	68259-12-1		08/06/2022 07:51
PFUnDA	ND	2.0	0.53	0.53	1	2058-94-8		08/06/2022 07:51
NMeFOSAA	ND	2.0	0.42	0.42	1	2355-31-9		08/06/2022 07:51
NEtFOSAA	ND	2.0	0.54	0.54	1	2991-50-6		08/06/2022 07:51
PFDS	ND	1.9	0.44	0.44	1	335-77-3		08/06/2022 07:51
PFDOA	ND	2.0	0.47	0.47	1	307-55-1		08/06/2022 07:51
MeFOSE	ND	2.0	0.32	0.32	1	24448-09-7		08/06/2022 07:51
EtFOSE	ND	2.0	0.48	0.48	1	1691-99-2		08/06/2022 07:51
11-CI-PF3OUdS	ND	1.8	0.43	0.43	1	763051-92-9		08/06/2022 07:51
PFTTrDA	ND	2.0	0.61	0.61	1	72629-94-8		08/06/2022 07:51
PFDoS	ND	1.9	0.45	0.45	1	79780-39-5		08/06/2022 07:51
PFTDA	ND	2.0	0.46	0.46	1	376-06-7		08/06/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-01	Total Amount Extracted	256mL
Lab Sample ID	10616212034	Ical ID	220803A02
Lab File ID	B220806A_012	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 10:00	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc. Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	20	25	127	50-150		08/06/2022 07:51
13C4 PFOA	20	27	139	50-150		08/06/2022 07:51
13C2 PFDA	20	22	112	50-150		08/06/2022 07:51
13C4 PFOS	19	26	141	50-150		08/06/2022 07:51

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc. Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	20	22	112	25-150		08/06/2022 07:51
13C5 PFPeA	20	22	115	25-150		08/06/2022 07:51
13C3 PFBS	18	20	108	25-150		08/06/2022 07:51
13C2 4:2FTS	18	21	114	25-150		08/06/2022 07:51
13C5 PFHxA	20	21	109	25-150		08/06/2022 07:51
13C4 PFHpA	20	21	109	25-150		08/06/2022 07:51
13C3 PFHxS	18	19	104	25-150		08/06/2022 07:51
13C2 6:2FTS	19	20	110	25-150		08/06/2022 07:51
13C8 PFOA	20	22	112	25-150		08/06/2022 07:51
13C9 PFNA	20	19	100	25-150		08/06/2022 07:51
13C8 PFOS	19	21	115	25-150		08/06/2022 07:51
13C2 8:2FTS	19	20	107	25-150		08/06/2022 07:51
13C6 PFDA	20	23	116	25-150		08/06/2022 07:51
d3-MeFOSAA	20	17	88	25-150		08/06/2022 07:51
13C8 PFOSA	20	15	77	25-150		08/06/2022 07:51
d5-EtFOSAA	20	18	92	25-150		08/06/2022 07:51
13C7 PFUdA	20	22	111	25-150		08/06/2022 07:51
13C2 PFDaA	20	20	100	25-150		08/06/2022 07:51
13C2 PFTeDA	20	19	95	25-150		08/06/2022 07:51
13C3 HFPO-DA	20	24	124	25-150		08/06/2022 07:51
d7-N-MeFOSE	20	8.5	43	10-150		08/06/2022 07:51
d9-N-EtFOSE	20	7.8	40	10-150		08/06/2022 07:51
d3-N-MeFOSA	20	1.5	8	10-150	R	08/06/2022 07:51
d5-N-EtFOSA	20	0.89	5	10-150	R	08/06/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-01	Total Amount Extracted	256mL
Lab Sample ID	10616212034	Ical ID	220803A02
Lab File ID	B220806A_012	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 10:00	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.81	5.80	20		08/06/2022 07:51
13C4 PFOA	N/A	N/A	7.08	7.07	25		08/06/2022 07:51
13C2 PFDA	N/A	N/A	8.41	8.39	14		08/06/2022 07:51
13C4 PFOS	N/A	N/A	8.90	8.88	17		08/06/2022 07:51

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	26		08/06/2022 07:51
13C5 PFPeA	N/A	N/A	5.15	5.15	33		08/06/2022 07:51
13C3 PFBS	N/A	N/A	6.06	6.05	27		08/06/2022 07:51
13C2 4:2FTS	N/A	N/A	5.55	5.54	98		08/06/2022 07:51
13C5 PFHxA	N/A	N/A	5.81	5.80	25		08/06/2022 07:51
13C4 PFHpA	N/A	N/A	6.45	6.43	23		08/06/2022 07:51
13C3 PFHxS	N/A	N/A	7.49	7.49	17		08/06/2022 07:51
13C2 6:2FTS	N/A	N/A	6.75	6.74	36		08/06/2022 07:51
13C8 PFOA	N/A	N/A	7.08	7.07	21		08/06/2022 07:51
13C9 PFNA	N/A	N/A	7.73	7.72	22		08/06/2022 07:51
13C8 PFOS	N/A	N/A	8.90	8.88	22		08/06/2022 07:51
13C2 8:2FTS	N/A	N/A	8.02	8.01	94		08/06/2022 07:51
13C6 PFDA	N/A	N/A	8.40	8.39	12		08/06/2022 07:51
d3-MeFOSAA	N/A	N/A	8.26	8.25	18		08/06/2022 07:51
13C8 PFOSA	N/A	N/A	10.66	10.61	20		08/06/2022 07:51
d5-EtFOSAA	N/A	N/A	8.56	8.54	10		08/06/2022 07:51
13C7 PFUdA	N/A	N/A	9.09	9.07	27		08/06/2022 07:51
13C2 PFDoA	N/A	N/A	9.78	9.74	14		08/06/2022 07:51
13C2 PFTeDA	N/A	N/A	11.11	11.07	11		08/06/2022 07:51
13C3 HFPO-DA	N/A	N/A	6.07	6.06	21		08/06/2022 07:51
d7-N-MeFOSE	N/A	N/A	12.49	12.45	63		08/06/2022 07:51
d9-N-EtFOSE	N/A	N/A	12.95	12.92	46		08/06/2022 07:51
d3-N-MeFOSA	N/A	N/A	12.70	12.66	51	R	08/06/2022 07:51
d5-N-EtFOSA	N/A	N/A	13.11	13.08	37	R	08/06/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-01	Total Amount Extracted	256mL
Lab Sample ID	10616212034	Ical ID	220803A02
Lab File ID	B220806A_012	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/06/2022 10:00	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	ND		08/06/2022 07:51
PFPeA	N/A	N/A	5.16	5.15	ND		08/06/2022 07:51
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/06/2022 07:51
PFBS	0.38	0.45	6.06	6.06	ND		08/06/2022 07:51
PFHxA	0.07	0.08	5.82	5.81	ND		08/06/2022 07:51
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 07:51
PFPeS	0.00	0.44	0.00	6.79	ND		08/06/2022 07:51
PFHpA	0.42	0.35	6.45	6.44	ND		08/06/2022 07:51
DONA	0.00	0.52	0.00	6.67	ND		08/06/2022 07:51
PFHxS	0.41	0.37	7.50	7.49	ND		08/06/2022 07:51
PFOA	0.33	0.41	7.08	7.08	ND		08/06/2022 07:51
6:2 FTS	0.97	0.83	6.74	6.74	ND		08/06/2022 07:51
PFHpS	0.00	0.36	0.00	8.20	ND		08/06/2022 07:51
PFNA	0.00	0.14	0.00	7.73	ND		08/06/2022 07:51
PFOSAm	N/A	N/A	10.66	10.61	ND		08/06/2022 07:51
PFOS	0.39	0.38	8.92	8.90	ND		08/06/2022 07:51
MeFOSA	0.00	0.55	0.00	12.69	ND		08/06/2022 07:51
PFDA	0.00	0.18	0.00	8.40	ND		08/06/2022 07:51
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/06/2022 07:51
8:2 FTS	0.00	0.99	0.00	8.02	ND		08/06/2022 07:51
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/06/2022 07:51
PFNS	0.00	0.51	0.00	9.58	ND		08/06/2022 07:51
PFUnDA	0.00	0.17	0.00	9.08	ND		08/06/2022 07:51
NMeFOSAA	0.00	0.86	0.00	8.26	ND		08/06/2022 07:51
NEtFOSAA	0.00	0.66	0.00	8.55	ND		08/06/2022 07:51
PFDS	0.00	0.38	0.00	10.24	ND		08/06/2022 07:51
PFDOA	0.00	0.18	0.00	9.75	ND		08/06/2022 07:51
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 07:51
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 07:51
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 07:51
PFTTrDA	0.00	0.14	0.00	10.42	ND		08/06/2022 07:51
PFDoS	0.00	0.48	0.00	11.48	ND		08/06/2022 07:51
PFTDA	0.00	0.32	0.00	11.07	ND		08/06/2022 07:51

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-02
 Lab Sample ID 10616212035
 Lab File ID B220806A_013
 Matrix Water
 Collected 07/07/2022 15:30
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 262mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	1.9	0.42	0.42	1	375-22-4		08/06/2022 08:11
PFPeA	ND	1.9	0.42	0.42	1	2706-90-3		08/06/2022 08:11
HFPO-DA	ND	1.9	0.51	0.51	1	13252-13-6		08/06/2022 08:11
PFBS	ND	1.7	0.45	0.45	1	375-73-5		08/06/2022 08:11
PFHxA	ND	1.9	0.42	0.42	1	307-24-4		08/06/2022 08:11
4:2 FTS	ND	1.8	0.53	0.53	1	757124-72-4		08/06/2022 08:11
PFPeS	ND	1.8	0.45	0.45	1	2706-91-4		08/06/2022 08:11
PFHpA	ND	1.9	0.53	0.53	1	375-85-9		08/06/2022 08:11
DONA	ND	1.8	0.49	0.49	1	919005-14-4		08/06/2022 08:11
PFHxS	ND	1.7	0.49	0.49	1	355-46-4		08/06/2022 08:11
PFOA	ND	1.9	0.56	0.56	1	335-67-1		08/06/2022 08:11
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2		08/06/2022 08:11
PFHpS	ND	1.8	0.39	0.39	1	375-92-8		08/06/2022 08:11
PFNA	ND	1.9	0.71	0.71	1	375-95-1		08/06/2022 08:11
PFOSAm	ND	1.9	0.78	0.78	1	754-91-6		08/06/2022 08:11
PFOS	ND	1.8	0.52	0.52	1	1763-23-1		08/06/2022 08:11
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8		08/06/2022 08:11
PFDA	ND	1.9	0.54	0.54	1	335-76-2		08/06/2022 08:11
EtFOSAm	ND	1.9	0.58	0.58	1	4151-50-2		08/06/2022 08:11
8:2 FTS	ND	1.8	0.62	0.62	1	39108-34-4		08/06/2022 08:11
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/06/2022 08:11
PFNS	ND	1.8	0.43	0.43	1	68259-12-1		08/06/2022 08:11
PFUnDA	ND	1.9	0.52	0.52	1	2058-94-8		08/06/2022 08:11
NMeFOSAA	ND	1.9	0.41	0.41	1	2355-31-9		08/06/2022 08:11
NEtFOSAA	ND	1.9	0.53	0.53	1	2991-50-6		08/06/2022 08:11
PFDS	ND	1.8	0.43	0.43	1	335-77-3		08/06/2022 08:11
PFDOA	ND	1.9	0.46	0.46	1	307-55-1		08/06/2022 08:11
MeFOSE	ND	1.9	0.31	0.31	1	24448-09-7		08/06/2022 08:11
EtFOSE	ND	1.9	0.47	0.47	1	1691-99-2		08/06/2022 08:11
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/06/2022 08:11
PFTTrDA	ND	1.9	0.59	0.59	1	72629-94-8		08/06/2022 08:11
PFDoS	ND	1.8	0.44	0.44	1	79780-39-5		08/06/2022 08:11
PFTDA	ND	1.9	0.45	0.45	1	376-06-7		08/06/2022 08:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-02
 Lab Sample ID 10616212035
 Lab File ID B220806A_013
 Matrix Water
 Collected 07/07/2022 15:30
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 262mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	23	122	50-150		08/06/2022 08:11
13C4 PFOA	19	22	115	50-150		08/06/2022 08:11
13C2 PFDA	19	26	136	50-150		08/06/2022 08:11
13C4 PFOS	18	25	136	50-150		08/06/2022 08:11

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	20	107	25-150		08/06/2022 08:11
13C5 PFPeA	19	21	111	25-150		08/06/2022 08:11
13C3 PFBS	18	19	104	25-150		08/06/2022 08:11
13C2 4:2FTS	18	18	103	25-150		08/06/2022 08:11
13C5 PFHxA	19	21	108	25-150		08/06/2022 08:11
13C4 PFHpA	19	21	108	25-150		08/06/2022 08:11
13C3 PFHxS	18	18	100	25-150		08/06/2022 08:11
13C2 6:2FTS	18	20	111	25-150		08/06/2022 08:11
13C8 PFOA	19	20	102	25-150		08/06/2022 08:11
13C9 PFNA	19	20	103	25-150		08/06/2022 08:11
13C8 PFOS	18	22	118	25-150		08/06/2022 08:11
13C2 8:2FTS	18	20	111	25-150		08/06/2022 08:11
13C6 PFDA	19	25	131	25-150		08/06/2022 08:11
d3-MeFOSAA	19	19	101	25-150		08/06/2022 08:11
13C8 PFOSA	19	18	95	25-150		08/06/2022 08:11
d5-EtFOSAA	19	18	94	25-150		08/06/2022 08:11
13C7 PFUdA	19	24	124	25-150		08/06/2022 08:11
13C2 PFDaA	19	25	132	25-150		08/06/2022 08:11
13C2 PFTeDA	19	18	92	25-150		08/06/2022 08:11
13C3 HFPO-DA	19	22	118	25-150		08/06/2022 08:11
d7-N-MeFOSE	19	14	75	10-150		08/06/2022 08:11
d9-N-EtFOSE	19	15	78	10-150		08/06/2022 08:11
d3-N-MeFOSA	19	13	71	10-150		08/06/2022 08:11
d5-N-EtFOSA	19	11	55	10-150		08/06/2022 08:11

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-02
 Lab Sample ID 10616212035
 Lab File ID B220806A_013
 Matrix Water
 Collected 07/07/2022 15:30
 Received 07/08/2022 18:45
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 262mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File B220806A_005

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.81	5.80	19		08/06/2022 08:11
13C4 PFOA	N/A	N/A	7.09	7.07	22		08/06/2022 08:11
13C2 PFDA	N/A	N/A	8.41	8.39	22		08/06/2022 08:11
13C4 PFOS	N/A	N/A	8.90	8.88	14		08/06/2022 08:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	24		08/06/2022 08:11
13C5 PFPeA	N/A	N/A	5.15	5.15	25		08/06/2022 08:11
13C3 PFBS	N/A	N/A	6.06	6.05	15		08/06/2022 08:11
13C2 4:2FTS	N/A	N/A	5.55	5.54	87		08/06/2022 08:11
13C5 PFHxA	N/A	N/A	5.82	5.80	18		08/06/2022 08:11
13C4 PFHpA	N/A	N/A	6.45	6.43	18		08/06/2022 08:11
13C3 PFHxS	N/A	N/A	7.50	7.49	23		08/06/2022 08:11
13C2 6:2FTS	N/A	N/A	6.75	6.74	31		08/06/2022 08:11
13C8 PFOA	N/A	N/A	7.08	7.07	26		08/06/2022 08:11
13C9 PFNA	N/A	N/A	7.74	7.72	27		08/06/2022 08:11
13C8 PFOS	N/A	N/A	8.90	8.88	26		08/06/2022 08:11
13C2 8:2FTS	N/A	N/A	8.03	8.01	30		08/06/2022 08:11
13C6 PFDA	N/A	N/A	8.41	8.39	17		08/06/2022 08:11
d3-MeFOSAA	N/A	N/A	8.27	8.25	43		08/06/2022 08:11
13C8 PFOSA	N/A	N/A	10.66	10.61	16		08/06/2022 08:11
d5-EtFOSAA	N/A	N/A	8.56	8.54	13		08/06/2022 08:11
13C7 PFUdA	N/A	N/A	9.09	9.07	32		08/06/2022 08:11
13C2 PFDoA	N/A	N/A	9.77	9.74	19		08/06/2022 08:11
13C2 PFTeDA	N/A	N/A	11.10	11.07	11		08/06/2022 08:11
13C3 HFPO-DA	N/A	N/A	6.07	6.06	13		08/06/2022 08:11
d7-N-MeFOSE	N/A	N/A	12.49	12.45	56		08/06/2022 08:11
d9-N-EtFOSE	N/A	N/A	12.95	12.92	60		08/06/2022 08:11
d3-N-MeFOSA	N/A	N/A	12.70	12.66	20		08/06/2022 08:11
d5-N-EtFOSA	N/A	N/A	13.11	13.08	64		08/06/2022 08:11

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-02	Total Amount Extracted	262mL
Lab Sample ID	10616212035	Ical ID	220803A02
Lab File ID	B220806A_013	CCal File	B220806A_003
Matrix	Water	Ending CCal File	B220806A_015
Collected	07/07/2022 15:30	Blank File	B220806A_005
Received	07/08/2022 18:45		
Extraction Date	07/28/2022 08:56		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.30	4.31	ND		08/06/2022 08:11
PFPeA	N/A	N/A	5.16	5.15	ND		08/06/2022 08:11
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/06/2022 08:11
PFBS	0.54	0.45	6.07	6.06	ND		08/06/2022 08:11
PFHxA	0.08	0.08	5.83	5.81	ND		08/06/2022 08:11
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 08:11
PFPeS	0.00	0.44	0.00	6.79	ND		08/06/2022 08:11
PFHpA	0.36	0.35	6.45	6.44	ND		08/06/2022 08:11
DONA	0.00	0.52	0.00	6.67	ND		08/06/2022 08:11
PFHxS	0.33	0.37	7.51	7.49	ND		08/06/2022 08:11
PFOA	0.36	0.41	7.10	7.08	ND		08/06/2022 08:11
6:2 FTS	1.10	0.83	6.76	6.74	ND		08/06/2022 08:11
PFHpS	0.00	0.36	0.00	8.20	ND		08/06/2022 08:11
PFNA	0.20	0.14	7.75	7.73	ND		08/06/2022 08:11
PFOSAm	N/A	N/A	10.68	10.61	ND		08/06/2022 08:11
PFOS	0.45	0.38	8.91	8.90	ND		08/06/2022 08:11
MeFOSA	0.00	0.55	0.00	12.69	ND		08/06/2022 08:11
PFDA	0.00	0.18	0.00	8.40	ND		08/06/2022 08:11
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/06/2022 08:11
8:2 FTS	0.00	0.99	0.00	8.02	ND		08/06/2022 08:11
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/06/2022 08:11
PFNS	0.00	0.51	0.00	9.58	ND		08/06/2022 08:11
PFUnDA	0.00	0.17	0.00	9.08	ND		08/06/2022 08:11
NMeFOSAA	0.91	0.86	8.28	8.26	ND		08/06/2022 08:11
NEtFOSAA	0.00	0.66	0.00	8.55	ND		08/06/2022 08:11
PFDS	0.00	0.38	0.00	10.24	ND		08/06/2022 08:11
PFDOA	0.00	0.18	0.00	9.75	ND		08/06/2022 08:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 08:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 08:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 08:11
PFTTrDA	0.00	0.14	0.00	10.42	ND		08/06/2022 08:11
PFDoS	0.00	0.48	0.00	11.48	ND		08/06/2022 08:11
PFTDA	0.00	0.32	0.00	11.07	ND		08/06/2022 08:11

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQJ
 Lab Sample ID BLANK-100046
 Lab File ID B220802A_024
 Matrix Soil
 Collected 07/19/2022 08:20
 Received 07/19/2022 08:20
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.10g
 Ical ID 220728A02
 CCal File B220802A_021
 Ending CCal File B220802A_032
 Blank File

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.098	0.028	0.028	1	375-22-4		08/02/2022 16:10
PFPeA	ND	0.098	0.028	0.028	1	2706-90-3		08/02/2022 16:10
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		08/02/2022 16:10
PFBS	ND	0.087	0.026	0.026	1	375-73-5		08/02/2022 16:10
PFHxA	ND	0.098	0.027	0.027	1	307-24-4		08/02/2022 16:10
4:2 FTS	ND	0.092	0.023	0.023	1	757124-72-4		08/02/2022 16:10
PFPeS	ND	0.092	0.024	0.024	1	2706-91-4		08/02/2022 16:10
PFHpA	ND	0.098	0.034	0.034	1	375-85-9		08/02/2022 16:10
DONA	ND	0.093	0.036	0.036	1	919005-14-4		08/02/2022 16:10
PFHxS	ND	0.089	0.021	0.021	1	355-46-4		08/02/2022 16:10
PFOA	ND	0.098	0.031	0.031	1	335-67-1		08/02/2022 16:10
6:2 FTS	ND	0.093	0.041	0.041	1	27619-97-2		08/02/2022 16:10
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		08/02/2022 16:10
PFNA	ND	0.098	0.031	0.031	1	375-95-1		08/02/2022 16:10
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		08/02/2022 16:10
PFOS	ND	0.091	0.029	0.029	1	1763-23-1		08/02/2022 16:10
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		08/02/2022 16:10
PFDA	ND	0.098	0.022	0.022	1	335-76-2		08/02/2022 16:10
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		08/02/2022 16:10
8:2 FTS	ND	0.094	0.043	0.043	1	39108-34-4		08/02/2022 16:10
9-CI-PF3ON	ND	0.091	0.025	0.025	1	756426-58-1		08/02/2022 16:10
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		08/02/2022 16:10
PFUnDA	ND	0.098	0.030	0.030	1	2058-94-8		08/02/2022 16:10
NMeFOSAA	ND	0.098	0.028	0.028	1	2355-31-9		08/02/2022 16:10
NEtFOSAA	ND	0.098	0.039	0.039	1	2991-50-6		08/02/2022 16:10
PFDS	ND	0.095	0.028	0.028	1	335-77-3		08/02/2022 16:10
PFDOA	ND	0.098	0.032	0.032	1	307-55-1		08/02/2022 16:10
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		08/02/2022 16:10
EtFOSE	ND	0.098	0.032	0.032	1	1691-99-2		08/02/2022 16:10
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		08/02/2022 16:10
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		08/02/2022 16:10
PFDoS	ND	0.095	0.026	0.026	1	79780-39-5		08/02/2022 16:10
PFTDA	ND	0.098	0.034	0.034	1	376-06-7		08/02/2022 16:10

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQJ
 Lab Sample ID BLANK-100046
 Lab File ID B220802A_024
 Matrix Soil
 Collected 07/19/2022 08:20
 Received 07/19/2022 08:20
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.10g
 Ical ID 220728A02
 CCal File B220802A_021
 Ending CCal File B220802A_032
 Blank File

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	0.92	94	50-150		08/02/2022 16:10
13C4 PFOA	0.98	1.1	107	50-150		08/02/2022 16:10
13C2 PFDA	0.98	0.95	97	50-150		08/02/2022 16:10
13C4 PFOS	0.94	0.92	98	50-150		08/02/2022 16:10

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.89	91	50-150		08/02/2022 16:10
13C5 PFPeA	0.98	0.91	93	50-150		08/02/2022 16:10
13C3 PFBS	0.91	0.86	94	50-150		08/02/2022 16:10
13C2 4:2FTS	0.92	0.80	87	50-150		08/02/2022 16:10
13C5 PFHxA	0.98	0.90	91	50-150		08/02/2022 16:10
13C4 PFHpA	0.98	0.82	84	50-150		08/02/2022 16:10
13C3 PFHxS	0.93	0.79	85	50-150		08/02/2022 16:10
13C2 6:2FTS	0.93	0.91	97	50-150		08/02/2022 16:10
13C8 PFOA	0.98	0.86	88	50-150		08/02/2022 16:10
13C9 PFNA	0.98	1.0	103	50-150		08/02/2022 16:10
13C8 PFOS	0.94	0.81	86	50-150		08/02/2022 16:10
13C2 8:2FTS	0.94	0.88	94	50-150		08/02/2022 16:10
13C6 PFDA	0.98	0.80	82	50-150		08/02/2022 16:10
d3-MeFOSAA	0.98	0.82	84	50-150		08/02/2022 16:10
13C8 PFOSA	0.98	0.80	82	50-150		08/02/2022 16:10
d5-EtFOSAA	0.98	0.86	87	50-150		08/02/2022 16:10
13C7 PFUdA	0.98	0.82	83	50-150		08/02/2022 16:10
13C2 PFDoA	0.98	0.86	88	50-150		08/02/2022 16:10
13C2 PFTeDA	0.98	0.85	86	50-150		08/02/2022 16:10
13C3 HFPO-DA	0.98	0.91	93	50-150		08/02/2022 16:10
d7-N-MeFOSE	0.98	0.78	79	20-150		08/02/2022 16:10
d9-N-EtFOSE	0.98	0.67	68	20-150		08/02/2022 16:10
d3-N-MeFOSA	0.98	0.82	84	20-150		08/02/2022 16:10
d5-N-EtFOSA	0.98	0.79	81	20-150		08/02/2022 16:10

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQJ
 Lab Sample ID BLANK-100046
 Lab File ID B220802A_024
 Matrix Soil
 Collected 07/19/2022 08:20
 Received 07/19/2022 08:20
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.10g
 Ical ID 220728A02
 CCal File B220802A_021
 Ending CCal File B220802A_032
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.71	21		08/02/2022 16:10
13C4 PFOA	N/A	N/A	7.06	6.96	15		08/02/2022 16:10
13C2 PFDA	N/A	N/A	8.38	8.27	13		08/02/2022 16:10
13C4 PFOS	N/A	N/A	8.85	8.75	17		08/02/2022 16:10

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.31	4.38	25		08/02/2022 16:10
13C5 PFPeA	N/A	N/A	5.14	5.13	22		08/02/2022 16:10
13C3 PFBS	N/A	N/A	6.04	5.96	27		08/02/2022 16:10
13C2 4:2FTS	N/A	N/A	5.53	5.48	72		08/02/2022 16:10
13C5 PFHxA	N/A	N/A	5.80	5.73	16		08/02/2022 16:10
13C4 PFHpA	N/A	N/A	6.42	6.32	17		08/02/2022 16:10
13C3 PFHxS	N/A	N/A	7.47	7.47	22		08/02/2022 16:10
13C2 6:2FTS	N/A	N/A	6.73	6.73	25		08/02/2022 16:10
13C8 PFOA	N/A	N/A	7.06	6.94	17		08/02/2022 16:10
13C9 PFNA	N/A	N/A	7.71	7.61	21		08/02/2022 16:10
13C8 PFOS	N/A	N/A	8.85	8.80	28		08/02/2022 16:10
13C2 8:2FTS	N/A	N/A	8.00	7.94	91		08/02/2022 16:10
13C6 PFDA	N/A	N/A	8.38	8.32	12		08/02/2022 16:10
d3-MeFOSAA	N/A	N/A	8.24	8.19	13		08/02/2022 16:10
13C8 PFOSA	N/A	N/A	10.57	10.61	16		08/02/2022 16:10
d5-EtFOSAA	N/A	N/A	8.53	8.49	12		08/02/2022 16:10
13C7 PFUdA	N/A	N/A	9.05	9.00	21		08/02/2022 16:10
13C2 PFDoA	N/A	N/A	9.72	9.67	11		08/02/2022 16:10
13C2 PFTeDA	N/A	N/A	11.03	11.00	14		08/02/2022 16:10
13C3 HFPO-DA	N/A	N/A	6.05	5.97	14		08/02/2022 16:10
d7-N-MeFOSE	N/A	N/A	12.42	12.38	50		08/02/2022 16:10
d9-N-EtFOSE	N/A	N/A	12.88	12.85	42		08/02/2022 16:10
d3-N-MeFOSA	N/A	N/A	12.63	12.64	14		08/02/2022 16:10
d5-N-EtFOSA	N/A	N/A	13.04	13.01	58		08/02/2022 16:10

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQJ
 Lab Sample ID BLANK-100046
 Lab File ID B220802A_024
 Matrix Soil
 Collected 07/19/2022 08:20
 Received 07/19/2022 08:20
 Extraction Date 07/19/2022 21:00

Total Amount Extracted 5.10g
 Ical ID 220728A02
 CCal File B220802A_021
 Ending CCal File B220802A_032
 Blank File

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.31	ND		08/02/2022 16:10
PFPeA	N/A	N/A	5.16	5.12	ND		08/02/2022 16:10
HFPO-DA	0.00	0.32	0.00	6.02	ND		08/02/2022 16:10
PFBS	0.00	0.45	0.00	5.99	ND		08/02/2022 16:10
PFHxA	0.00	0.07	0.00	5.75	ND		08/02/2022 16:10
4:2 FTS	0.00	0.83	0.00	5.49	ND		08/02/2022 16:10
PFPeS	0.00	0.40	0.00	6.73	ND		08/02/2022 16:10
PFHpA	0.00	0.33	0.00	6.39	ND		08/02/2022 16:10
DONA	0.00	0.50	0.00	6.62	ND		08/02/2022 16:10
PFHxS	0.00	0.41	0.00	7.43	ND		08/02/2022 16:10
PFOA	0.33	0.40	7.07	7.03	ND		08/02/2022 16:10
6:2 FTS	0.77	0.92	6.73	6.72	ND		08/02/2022 16:10
PFHpS	0.00	0.39	0.00	8.13	ND		08/02/2022 16:10
PFNA	0.00	0.13	0.00	7.67	ND		08/02/2022 16:10
PFOSAm	N/A	N/A	10.58	10.55	ND		08/02/2022 16:10
PFOS	0.61	0.33	8.87	8.81	ND		08/02/2022 16:10
MeFOSA	0.00	0.57	0.00	12.61	ND		08/02/2022 16:10
PFDA	0.00	0.19	0.00	8.34	ND		08/02/2022 16:10
EtFOSAm	0.00	0.55	0.00	13.03	ND		08/02/2022 16:10
8:2 FTS	0.00	0.96	0.00	7.95	ND		08/02/2022 16:10
9-CI-PF3ON	0.00	0.05	0.00	9.31	ND		08/02/2022 16:10
PFNS	0.00	0.52	0.00	9.52	ND		08/02/2022 16:10
PFUnDA	0.00	0.11	0.00	9.01	ND		08/02/2022 16:10
NMeFOSAA	0.00	0.86	0.00	8.19	ND		08/02/2022 16:10
NEtFOSAA	0.00	0.66	0.00	8.51	ND		08/02/2022 16:10
PFDS	0.00	0.32	0.00	10.16	ND		08/02/2022 16:10
PFDOA	0.00	0.17	0.00	9.69	ND		08/02/2022 16:10
MeFOSE	N/A	N/A	0.00	12.41	ND		08/02/2022 16:10
EtFOSE	0.00	0.00	0.00	12.89	ND		08/02/2022 16:10
11-CI-PF3OUdS	0.00	0.02	0.00	10.64	ND		08/02/2022 16:10
PFTTrDA	0.00	0.14	0.00	10.36	ND		08/02/2022 16:10
PFDoS	0.00	0.52	0.00	11.39	ND		08/02/2022 16:10
PFTDA	0.00	0.25	0.00	11.00	ND		08/02/2022 16:10

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQK
 Lab Sample ID BLANK-100048
 Lab File ID B220804B_005
 Matrix Soil
 Collected 07/19/2022 08:22
 Received 07/19/2022 08:22
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.00g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.10	0.028	0.028	1	375-22-4		08/05/2022 02:11
PFPeA	ND	0.10	0.029	0.029	1	2706-90-3		08/05/2022 02:11
HFPO-DA	ND	0.10	0.028	0.028	1	13252-13-6		08/05/2022 02:11
PFBS	ND	0.088	0.026	0.026	1	375-73-5		08/05/2022 02:11
PFHxA	ND	0.10	0.028	0.028	1	307-24-4		08/05/2022 02:11
4:2 FTS	ND	0.094	0.023	0.023	1	757124-72-4		08/05/2022 02:11
PFPeS	ND	0.094	0.024	0.024	1	2706-91-4		08/05/2022 02:11
PFHpA	ND	0.10	0.035	0.035	1	375-85-9		08/05/2022 02:11
DONA	ND	0.095	0.036	0.036	1	919005-14-4		08/05/2022 02:11
PFHxS	ND	0.091	0.022	0.022	1	355-46-4		08/05/2022 02:11
PFOA	ND	0.10	0.031	0.031	1	335-67-1		08/05/2022 02:11
6:2 FTS	ND	0.095	0.041	0.041	1	27619-97-2		08/05/2022 02:11
PFHpS	ND	0.095	0.028	0.028	1	375-92-8		08/05/2022 02:11
PFNA	ND	0.10	0.031	0.031	1	375-95-1		08/05/2022 02:11
PFOSAm	ND	0.10	0.029	0.029	1	754-91-6		08/05/2022 02:11
PFOS	ND	0.092	0.030	0.030	1	1763-23-1		08/05/2022 02:11
MeFOSA	ND	0.10	0.027	0.027	1	31506-32-8		08/05/2022 02:11
PFDA	ND	0.10	0.023	0.023	1	335-76-2		08/05/2022 02:11
EtFOSAm	ND	0.10	0.026	0.026	1	4151-50-2		08/05/2022 02:11
8:2 FTS	ND	0.096	0.044	0.044	1	39108-34-4		08/05/2022 02:11
9-CI-PF3ON	ND	0.093	0.025	0.025	1	756426-58-1		08/05/2022 02:11
PFNS	ND	0.096	0.035	0.035	1	68259-12-1		08/05/2022 02:11
PFUnDA	ND	0.10	0.030	0.030	1	2058-94-8		08/05/2022 02:11
NMeFOSAA	ND	0.10	0.028	0.028	1	2355-31-9		08/05/2022 02:11
NEtFOSAA	ND	0.10	0.040	0.040	1	2991-50-6		08/05/2022 02:11
PFDS	ND	0.096	0.028	0.028	1	335-77-3		08/05/2022 02:11
PFDOA	ND	0.10	0.033	0.033	1	307-55-1		08/05/2022 02:11
MeFOSE	ND	0.10	0.030	0.030	1	24448-09-7		08/05/2022 02:11
EtFOSE	ND	0.10	0.032	0.032	1	1691-99-2		08/05/2022 02:11
11-CI-PF3OUdS	ND	0.094	0.025	0.025	1	763051-92-9		08/05/2022 02:11
PFTTrDA	ND	0.10	0.032	0.032	1	72629-94-8		08/05/2022 02:11
PFDoS	ND	0.097	0.026	0.026	1	79780-39-5		08/05/2022 02:11
PFTDA	ND	0.10	0.034	0.034	1	376-06-7		08/05/2022 02:11

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	BLKQK	Total Amount Extracted	5.00g
Lab Sample ID	BLANK-100048	Ical ID	220803A02
Lab File ID	B220804B_005	CCal File	B220804B_003
Matrix	Soil	Ending CCal File	B220804B_015
Collected	07/19/2022 08:22	Blank File	
Received	07/19/2022 08:22		
Extraction Date	07/25/2022 16:00		

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	1.0	1.1	109	50-150		08/05/2022 02:11
13C4 PFOA	1.0	1.3	128	50-150		08/05/2022 02:11
13C2 PFDA	1.0	1.3	129	50-150		08/05/2022 02:11
13C4 PFOS	0.96	1.1	111	50-150		08/05/2022 02:11

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	1.0	0.97	97	50-150		08/05/2022 02:11
13C5 PFPeA	1.0	0.97	97	50-150		08/05/2022 02:11
13C3 PFBS	0.93	0.93	100	50-150		08/05/2022 02:11
13C2 4:2FTS	0.94	0.92	99	50-150		08/05/2022 02:11
13C5 PFHxA	1.0	1.0	101	50-150		08/05/2022 02:11
13C4 PFHpA	1.0	0.97	97	50-150		08/05/2022 02:11
13C3 PFHxS	0.95	0.92	97	50-150		08/05/2022 02:11
13C2 6:2FTS	0.95	0.93	98	50-150		08/05/2022 02:11
13C8 PFOA	1.0	0.99	99	50-150		08/05/2022 02:11
13C9 PFNA	1.0	0.98	98	50-150		08/05/2022 02:11
13C8 PFOS	0.96	1.0	107	50-150		08/05/2022 02:11
13C2 8:2FTS	0.96	1.2	127	50-150		08/05/2022 02:11
13C6 PFDA	1.0	1.1	106	50-150		08/05/2022 02:11
d3-MeFOSAA	1.0	0.99	99	50-150		08/05/2022 02:11
13C8 PFOSA	1.0	0.91	91	50-150		08/05/2022 02:11
d5-EtFOSAA	1.0	1.0	101	50-150		08/05/2022 02:11
13C7 PFUdA	1.0	1.0	104	50-150		08/05/2022 02:11
13C2 PFDoA	1.0	1.1	109	50-150		08/05/2022 02:11
13C2 PFTeDA	1.0	1.1	106	50-150		08/05/2022 02:11
13C3 HFPO-DA	1.0	0.99	99	50-150		08/05/2022 02:11
d7-N-MeFOSE	1.0	0.91	91	20-150		08/05/2022 02:11
d9-N-EtFOSE	1.0	0.84	84	20-150		08/05/2022 02:11
d3-N-MeFOSA	1.0	0.98	98	20-150		08/05/2022 02:11
d5-N-EtFOSA	1.0	0.98	98	20-150		08/05/2022 02:11

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKQK
 Lab Sample ID BLANK-100048
 Lab File ID B220804B_005
 Matrix Soil
 Collected 07/19/2022 08:22
 Received 07/19/2022 08:22
 Extraction Date 07/25/2022 16:00

Total Amount Extracted 5.00g
 Ical ID 220803A02
 CCal File B220804B_003
 Ending CCal File B220804B_015
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	18		08/05/2022 02:11
13C4 PFOA	N/A	N/A	7.05	7.07	16		08/05/2022 02:11
13C2 PFDA	N/A	N/A	8.37	8.39	19		08/05/2022 02:11
13C4 PFOS	N/A	N/A	8.87	8.88	18		08/05/2022 02:11

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.30	4.30	26		08/05/2022 02:11
13C5 PFPeA	N/A	N/A	5.14	5.15	24		08/05/2022 02:11
13C3 PFBS	N/A	N/A	6.04	6.05	32		08/05/2022 02:11
13C2 4:2FTS	N/A	N/A	5.53	5.54	10		08/05/2022 02:11
13C5 PFHxA	N/A	N/A	5.79	5.80	17		08/05/2022 02:11
13C4 PFHpA	N/A	N/A	6.41	6.43	17		08/05/2022 02:11
13C3 PFHxS	N/A	N/A	7.47	7.49	18		08/05/2022 02:11
13C2 6:2FTS	N/A	N/A	6.72	6.74	15		08/05/2022 02:11
13C8 PFOA	N/A	N/A	7.05	7.07	23		08/05/2022 02:11
13C9 PFNA	N/A	N/A	7.70	7.72	20		08/05/2022 02:11
13C8 PFOS	N/A	N/A	8.87	8.88	22		08/05/2022 02:11
13C2 8:2FTS	N/A	N/A	7.99	8.01	48		08/05/2022 02:11
13C6 PFDA	N/A	N/A	8.37	8.39	18		08/05/2022 02:11
d3-MeFOSAA	N/A	N/A	8.23	8.25	11		08/05/2022 02:11
13C8 PFOSA	N/A	N/A	10.61	10.61	14		08/05/2022 02:11
d5-EtFOSAA	N/A	N/A	8.52	8.54	11		08/05/2022 02:11
13C7 PFUdA	N/A	N/A	9.05	9.07	18		08/05/2022 02:11
13C2 PFDoA	N/A	N/A	9.73	9.74	13		08/05/2022 02:11
13C2 PFTeDA	N/A	N/A	11.05	11.07	10		08/05/2022 02:11
13C3 HFPO-DA	N/A	N/A	6.05	6.06	15		08/05/2022 02:11
d7-N-MeFOSE	N/A	N/A	12.45	12.45	61		08/05/2022 02:11
d9-N-EtFOSE	N/A	N/A	12.92	12.92	58		08/05/2022 02:11
d3-N-MeFOSA	N/A	N/A	12.66	12.66	17		08/05/2022 02:11
d5-N-EtFOSA	N/A	N/A	13.08	13.08	79		08/05/2022 02:11

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	BLKQK	Total Amount Extracted	5.00g
Lab Sample ID	BLANK-100048	Ical ID	220803A02
Lab File ID	B220804B_005	CCal File	B220804B_003
Matrix	Soil	Ending CCal File	B220804B_015
Collected	07/19/2022 08:22	Blank File	
Received	07/19/2022 08:22		
Extraction Date	07/25/2022 16:00		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.31	ND		08/05/2022 02:11
PFPeA	N/A	N/A	5.15	5.15	ND		08/05/2022 02:11
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/05/2022 02:11
PFBS	0.34	0.43	6.05	6.06	ND		08/05/2022 02:11
PFHxA	0.18	0.07	5.80	5.81	ND		08/05/2022 02:11
4:2 FTS	0.00	0.85	0.00	5.54	ND		08/05/2022 02:11
PFPeS	0.00	0.46	0.00	6.79	ND		08/05/2022 02:11
PFHpA	0.00	0.29	0.00	6.44	ND		08/05/2022 02:11
DONA	0.00	0.57	0.00	6.67	ND		08/05/2022 02:11
PFHxS	0.00	0.40	0.00	7.49	ND		08/05/2022 02:11
PFOA	0.00	0.40	0.00	7.08	ND		08/05/2022 02:11
6:2 FTS	0.99	0.97	6.72	6.74	ND		08/05/2022 02:11
PFHpS	0.00	0.36	0.00	8.20	ND		08/05/2022 02:11
PFNA	0.09	0.12	7.71	7.73	ND		08/05/2022 02:11
PFOSAm	N/A	N/A	0.00	10.61	ND		08/05/2022 02:11
PFOS	0.00	0.44	0.00	8.90	ND		08/05/2022 02:11
MeFOSA	0.00	0.51	0.00	12.69	ND		08/05/2022 02:11
PFDA	0.00	0.19	0.00	8.40	ND		08/05/2022 02:11
EtFOSAm	0.00	0.59	0.00	13.10	ND		08/05/2022 02:11
8:2 FTS	0.00	0.88	0.00	8.02	ND		08/05/2022 02:11
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/05/2022 02:11
PFNS	0.00	0.47	0.00	9.58	ND		08/05/2022 02:11
PFUnDA	0.00	0.15	0.00	9.08	ND		08/05/2022 02:11
NMeFOSAA	0.00	0.90	0.00	8.26	ND		08/05/2022 02:11
NEtFOSAA	0.00	0.71	0.00	8.55	ND		08/05/2022 02:11
PFDS	0.00	0.32	0.00	10.24	ND		08/05/2022 02:11
PFDOA	0.00	0.20	0.00	9.75	ND		08/05/2022 02:11
MeFOSE	N/A	N/A	0.00	12.49	ND		08/05/2022 02:11
EtFOSE	0.00	0.00	0.00	12.96	ND		08/05/2022 02:11
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/05/2022 02:11
PFTTrDA	0.00	0.16	0.00	10.42	ND		08/05/2022 02:11
PFDoS	0.00	0.48	0.00	11.48	ND		08/05/2022 02:11
PFTDA	0.00	0.30	0.00	11.07	ND		08/05/2022 02:11

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKTH
 Lab Sample ID BLANK-100300
 Lab File ID B220806A_005
 Matrix Water
 Collected 07/27/2022 18:02
 Received 07/27/2022 18:02
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 261mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	1.9	0.42	0.42	1	375-22-4		08/06/2022 05:31
PFPeA	ND	1.9	0.42	0.42	1	2706-90-3		08/06/2022 05:31
HFPO-DA	ND	1.9	0.51	0.51	1	13252-13-6		08/06/2022 05:31
PFBS	ND	1.7	0.45	0.45	1	375-73-5		08/06/2022 05:31
PFHxA	ND	1.9	0.42	0.42	1	307-24-4		08/06/2022 05:31
4:2 FTS	ND	1.8	0.53	0.53	1	757124-72-4		08/06/2022 05:31
PFPeS	ND	1.8	0.45	0.45	1	2706-91-4		08/06/2022 05:31
PFHpA	ND	1.9	0.53	0.53	1	375-85-9		08/06/2022 05:31
DONA	ND	1.8	0.49	0.49	1	919005-14-4		08/06/2022 05:31
PFHxS	ND	1.7	0.49	0.49	1	355-46-4		08/06/2022 05:31
PFOA	ND	1.9	0.56	0.56	1	335-67-1		08/06/2022 05:31
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2		08/06/2022 05:31
PFHpS	ND	1.8	0.39	0.39	1	375-92-8		08/06/2022 05:31
PFNA	ND	1.9	0.71	0.71	1	375-95-1		08/06/2022 05:31
PFOSAm	ND	1.9	0.78	0.78	1	754-91-6		08/06/2022 05:31
PFOS	ND	1.8	0.52	0.52	1	1763-23-1		08/06/2022 05:31
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8		08/06/2022 05:31
PFDA	ND	1.9	0.54	0.54	1	335-76-2		08/06/2022 05:31
EtFOSAm	ND	1.9	0.58	0.58	1	4151-50-2		08/06/2022 05:31
8:2 FTS	ND	1.8	0.63	0.63	1	39108-34-4		08/06/2022 05:31
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/06/2022 05:31
PFNS	ND	1.8	0.43	0.43	1	68259-12-1		08/06/2022 05:31
PFUnDA	ND	1.9	0.52	0.52	1	2058-94-8		08/06/2022 05:31
NMeFOSAA	ND	1.9	0.42	0.42	1	2355-31-9		08/06/2022 05:31
NEtFOSAA	ND	1.9	0.53	0.53	1	2991-50-6		08/06/2022 05:31
PFDS	ND	1.8	0.43	0.43	1	335-77-3		08/06/2022 05:31
PFDOA	ND	1.9	0.46	0.46	1	307-55-1		08/06/2022 05:31
MeFOSE	ND	1.9	0.32	0.32	1	24448-09-7		08/06/2022 05:31
EtFOSE	ND	1.9	0.48	0.48	1	1691-99-2		08/06/2022 05:31
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/06/2022 05:31
PFTTrDA	ND	1.9	0.60	0.60	1	72629-94-8		08/06/2022 05:31
PFDoS	ND	1.9	0.44	0.44	1	79780-39-5		08/06/2022 05:31
PFTDA	ND	1.9	0.46	0.46	1	376-06-7		08/06/2022 05:31

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKTH
 Lab Sample ID BLANK-100300
 Lab File ID B220806A_005
 Matrix Water
 Collected 07/27/2022 18:02
 Received 07/27/2022 18:02
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 261mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	26	137	50-150		08/06/2022 05:31
13C4 PFOA	19	26	135	50-150		08/06/2022 05:31
13C2 PFDA	19	25	131	50-150		08/06/2022 05:31
13C4 PFOS	18	27	148	50-150		08/06/2022 05:31

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	23	122	50-150		08/06/2022 05:31
13C5 PFPeA	19	24	127	50-150		08/06/2022 05:31
13C3 PFBS	18	21	118	50-150		08/06/2022 05:31
13C2 4:2FTS	18	22	124	50-150		08/06/2022 05:31
13C5 PFHxA	19	23	119	50-150		08/06/2022 05:31
13C4 PFHpA	19	24	124	50-150		08/06/2022 05:31
13C3 PFHxS	18	22	123	50-150		08/06/2022 05:31
13C2 6:2FTS	18	23	125	50-150		08/06/2022 05:31
13C8 PFOA	19	24	127	50-150		08/06/2022 05:31
13C9 PFNA	19	23	118	50-150		08/06/2022 05:31
13C8 PFOS	18	22	119	50-150		08/06/2022 05:31
13C2 8:2FTS	18	22	119	50-150		08/06/2022 05:31
13C6 PFDA	19	28	144	50-150		08/06/2022 05:31
d3-MeFOSAA	19	20	104	50-150		08/06/2022 05:31
13C8 PFOSA	19	21	109	50-150		08/06/2022 05:31
d5-EtFOSAA	19	21	109	50-150		08/06/2022 05:31
13C7 PFUdA	19	23	120	50-150		08/06/2022 05:31
13C2 PFDaA	19	21	111	50-150		08/06/2022 05:31
13C2 PFTeDA	19	19	97	50-150		08/06/2022 05:31
13C3 HFPO-DA	19	26	133	50-150		08/06/2022 05:31
d7-N-MeFOSE	19	19	98	20-150		08/06/2022 05:31
d9-N-EtFOSE	19	20	107	20-150		08/06/2022 05:31
d3-N-MeFOSA	19	16	83	20-150		08/06/2022 05:31
d5-N-EtFOSA	19	12	60	20-150		08/06/2022 05:31

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKTH
 Lab Sample ID BLANK-100300
 Lab File ID B220806A_005
 Matrix Water
 Collected 07/27/2022 18:02
 Received 07/27/2022 18:02
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 261mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.80	20		08/06/2022 05:31
13C4 PFOA	N/A	N/A	7.07	7.07	23		08/06/2022 05:31
13C2 PFDA	N/A	N/A	8.40	8.39	20		08/06/2022 05:31
13C4 PFOS	N/A	N/A	8.89	8.88	18		08/06/2022 05:31

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.29	4.30	25		08/06/2022 05:31
13C5 PFPeA	N/A	N/A	5.14	5.15	33		08/06/2022 05:31
13C3 PFBS	N/A	N/A	6.04	6.05	23		08/06/2022 05:31
13C2 4:2FTS	N/A	N/A	5.53	5.54	79		08/06/2022 05:31
13C5 PFHxA	N/A	N/A	5.79	5.80	19		08/06/2022 05:31
13C4 PFHpA	N/A	N/A	6.43	6.43	18		08/06/2022 05:31
13C3 PFHxS	N/A	N/A	7.48	7.49	23		08/06/2022 05:31
13C2 6:2FTS	N/A	N/A	6.73	6.74	12		08/06/2022 05:31
13C8 PFOA	N/A	N/A	7.07	7.07	22		08/06/2022 05:31
13C9 PFNA	N/A	N/A	7.72	7.72	19		08/06/2022 05:31
13C8 PFOS	N/A	N/A	8.90	8.88	23		08/06/2022 05:31
13C2 8:2FTS	N/A	N/A	8.01	8.01	45		08/06/2022 05:31
13C6 PFDA	N/A	N/A	8.40	8.39	18		08/06/2022 05:31
d3-MeFOSAA	N/A	N/A	8.26	8.25	23		08/06/2022 05:31
13C8 PFOSA	N/A	N/A	10.65	10.61	14		08/06/2022 05:31
d5-EtFOSAA	N/A	N/A	8.55	8.54	12		08/06/2022 05:31
13C7 PFUdA	N/A	N/A	9.09	9.07	23		08/06/2022 05:31
13C2 PFDoA	N/A	N/A	9.77	9.74	12		08/06/2022 05:31
13C2 PFTeDA	N/A	N/A	11.07	11.07	13		08/06/2022 05:31
13C3 HFPO-DA	N/A	N/A	6.05	6.06	17		08/06/2022 05:31
d7-N-MeFOSE	N/A	N/A	12.46	12.45	46		08/06/2022 05:31
d9-N-EtFOSE	N/A	N/A	12.93	12.92	57		08/06/2022 05:31
d3-N-MeFOSA	N/A	N/A	12.67	12.66	12		08/06/2022 05:31
d5-N-EtFOSA	N/A	N/A	13.09	13.08	69		08/06/2022 05:31

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKTH
 Lab Sample ID BLANK-100300
 Lab File ID B220806A_005
 Matrix Water
 Collected 07/27/2022 18:02
 Received 07/27/2022 18:02
 Extraction Date 07/28/2022 08:56

Total Amount Extracted 261mL
 Ical ID 220803A02
 CCal File B220806A_003
 Ending CCal File B220806A_015
 Blank File

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.29	4.31	ND		08/06/2022 05:31
PFPeA	N/A	N/A	5.15	5.15	ND		08/06/2022 05:31
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/06/2022 05:31
PFBS	0.47	0.45	6.04	6.06	ND		08/06/2022 05:31
PFHxA	0.08	0.08	5.80	5.81	ND		08/06/2022 05:31
4:2 FTS	0.00	0.90	0.00	5.54	ND		08/06/2022 05:31
PFPeS	0.00	0.44	0.00	6.79	ND		08/06/2022 05:31
PFHpA	0.00	0.35	0.00	6.44	ND		08/06/2022 05:31
DONA	0.00	0.52	0.00	6.67	ND		08/06/2022 05:31
PFHxS	0.38	0.37	7.49	7.49	ND		08/06/2022 05:31
PFOA	0.33	0.41	7.08	7.08	ND		08/06/2022 05:31
6:2 FTS	0.95	0.83	6.74	6.74	ND		08/06/2022 05:31
PFHpS	0.00	0.36	0.00	8.20	ND		08/06/2022 05:31
PFNA	0.00	0.14	0.00	7.73	ND		08/06/2022 05:31
PFOSAm	N/A	N/A	10.66	10.61	ND		08/06/2022 05:31
PFOS	0.44	0.38	8.91	8.90	ND		08/06/2022 05:31
MeFOSA	0.00	0.55	12.70	12.69	ND		08/06/2022 05:31
PFDA	0.00	0.18	0.00	8.40	ND		08/06/2022 05:31
EtFOSAm	0.00	0.58	0.00	13.10	ND		08/06/2022 05:31
8:2 FTS	0.00	0.99	0.00	8.02	ND		08/06/2022 05:31
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/06/2022 05:31
PFNS	0.00	0.51	0.00	9.58	ND		08/06/2022 05:31
PFUnDA	0.00	0.17	0.00	9.08	ND		08/06/2022 05:31
NMeFOSAA	0.00	0.86	0.00	8.26	ND		08/06/2022 05:31
NEtFOSAA	0.00	0.66	0.00	8.55	ND		08/06/2022 05:31
PFDS	0.00	0.38	0.00	10.24	ND		08/06/2022 05:31
PFDOA	0.00	0.18	0.00	9.75	ND		08/06/2022 05:31
MeFOSE	N/A	N/A	0.00	12.49	ND		08/06/2022 05:31
EtFOSE	0.00	0.00	0.00	12.96	ND		08/06/2022 05:31
11-CI-PF3OUdS	0.00	0.02	0.00	10.72	ND		08/06/2022 05:31
PFTTrDA	0.00	0.14	0.00	10.42	ND		08/06/2022 05:31
PFDoS	0.00	0.48	0.00	11.48	ND		08/06/2022 05:31
PFTDA	0.00	0.32	0.00	11.07	ND		08/06/2022 05:31

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKSS
 Lab Sample ID BLANK-100249
 Lab File ID B220811C_044
 Matrix Soil
 Collected 07/26/2022 09:48
 Received 07/26/2022 09:48
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811C_035
 Ending CCal File B220811C_045
 Blank File

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.098	0.028	0.028	1	375-22-4		08/12/2022 12:30
PFPeA	ND	0.098	0.028	0.028	1	2706-90-3		08/12/2022 12:30
HFPO-DA	ND	0.098	0.027	0.027	1	13252-13-6		08/12/2022 12:30
PFBS	ND	0.087	0.026	0.026	1	375-73-5		08/12/2022 12:30
PFHxA	ND	0.098	0.027	0.027	1	307-24-4		08/12/2022 12:30
4:2 FTS	ND	0.091	0.023	0.023	1	757124-72-4		08/12/2022 12:30
PFPeS	ND	0.092	0.023	0.023	1	2706-91-4		08/12/2022 12:30
PFHpA	ND	0.098	0.034	0.034	1	375-85-9		08/12/2022 12:30
DONA	ND	0.092	0.035	0.035	1	919005-14-4		08/12/2022 12:30
PFHxS	ND	0.089	0.021	0.021	1	355-46-4		08/12/2022 12:30
PFOA	ND	0.098	0.030	0.030	1	335-67-1		08/12/2022 12:30
6:2 FTS	ND	0.093	0.040	0.040	1	27619-97-2		08/12/2022 12:30
PFHpS	ND	0.093	0.027	0.027	1	375-92-8		08/12/2022 12:30
PFNA	ND	0.098	0.030	0.030	1	375-95-1		08/12/2022 12:30
PFOSAm	ND	0.098	0.029	0.029	1	754-91-6		08/12/2022 12:30
PFOS	ND	0.090	0.029	0.029	1	1763-23-1		08/12/2022 12:30
MeFOSA	ND	0.098	0.027	0.027	1	31506-32-8		08/12/2022 12:30
PFDA	ND	0.098	0.022	0.022	1	335-76-2		08/12/2022 12:30
EtFOSAm	ND	0.098	0.025	0.025	1	4151-50-2		08/12/2022 12:30
8:2 FTS	ND	0.094	0.043	0.043	1	39108-34-4		08/12/2022 12:30
9-CI-PF3ON	ND	0.091	0.025	0.025	1	756426-58-1		08/12/2022 12:30
PFNS	ND	0.094	0.034	0.034	1	68259-12-1		08/12/2022 12:30
PFUnDA	ND	0.098	0.030	0.030	1	2058-94-8		08/12/2022 12:30
NMeFOSAA	ND	0.098	0.027	0.027	1	2355-31-9		08/12/2022 12:30
NEtFOSAA	ND	0.098	0.039	0.039	1	2991-50-6		08/12/2022 12:30
PFDS	ND	0.094	0.028	0.028	1	335-77-3		08/12/2022 12:30
PFDOA	ND	0.098	0.032	0.032	1	307-55-1		08/12/2022 12:30
MeFOSE	ND	0.098	0.030	0.030	1	24448-09-7		08/12/2022 12:30
EtFOSE	ND	0.098	0.031	0.031	1	1691-99-2		08/12/2022 12:30
11-CI-PF3OUdS	ND	0.092	0.025	0.025	1	763051-92-9		08/12/2022 12:30
PFTTrDA	ND	0.098	0.031	0.031	1	72629-94-8		08/12/2022 12:30
PFDoS	ND	0.095	0.026	0.026	1	79780-39-5		08/12/2022 12:30
PFTDA	ND	0.098	0.034	0.034	1	376-06-7		08/12/2022 12:30

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKSS
 Lab Sample ID BLANK-100249
 Lab File ID B220811C_044
 Matrix Soil
 Collected 07/26/2022 09:48
 Received 07/26/2022 09:48
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811C_035
 Ending CCal File B220811C_045
 Blank File

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.98	1.2	126	50-150		08/12/2022 12:30
13C4 PFOA	0.98	1.2	126	50-150		08/12/2022 12:30
13C2 PFDA	0.98	1.2	124	50-150		08/12/2022 12:30
13C4 PFOS	0.94	1.2	125	50-150		08/12/2022 12:30

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.98	0.95	97	50-150		08/12/2022 12:30
13C5 PFPeA	0.98	0.93	96	50-150		08/12/2022 12:30
13C3 PFBS	0.91	0.92	101	50-150		08/12/2022 12:30
13C2 4:2FTS	0.91	0.91	99	50-150		08/12/2022 12:30
13C5 PFHxA	0.98	1.1	108	50-150		08/12/2022 12:30
13C4 PFHpA	0.98	0.98	101	50-150		08/12/2022 12:30
13C3 PFHxS	0.92	0.93	100	50-150		08/12/2022 12:30
13C2 6:2FTS	0.93	0.83	90	50-150		08/12/2022 12:30
13C8 PFOA	0.98	0.99	101	50-150		08/12/2022 12:30
13C9 PFNA	0.98	0.89	91	50-150		08/12/2022 12:30
13C8 PFOS	0.94	0.91	97	50-150		08/12/2022 12:30
13C2 8:2FTS	0.94	0.97	104	50-150		08/12/2022 12:30
13C6 PFDA	0.98	0.97	100	50-150		08/12/2022 12:30
d3-MeFOSAA	0.98	0.87	89	50-150		08/12/2022 12:30
13C8 PFOSA	0.98	0.96	98	50-150		08/12/2022 12:30
d5-EtFOSAA	0.98	0.97	99	50-150		08/12/2022 12:30
13C7 PFUdA	0.98	0.99	101	50-150		08/12/2022 12:30
13C2 PFDoA	0.98	0.91	93	50-150		08/12/2022 12:30
13C2 PFTeDA	0.98	1.1	109	50-150		08/12/2022 12:30
13C3 HFPO-DA	0.98	0.85	87	50-150		08/12/2022 12:30
d7-N-MeFOSE	0.98	0.95	98	10-150		08/12/2022 12:30
d9-N-EtFOSE	0.98	1.1	108	10-150		08/12/2022 12:30
d3-N-MeFOSA	0.98	0.91	93	10-150		08/12/2022 12:30
d5-N-EtFOSA	0.98	0.93	96	10-150		08/12/2022 12:30

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 Matrix Soil
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 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811C_035
 Ending CCal File B220811C_045
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.77	24		08/12/2022 12:30
13C4 PFOA	N/A	N/A	7.05	7.07	26		08/12/2022 12:30
13C2 PFDA	N/A	N/A	8.41	8.39	28		08/12/2022 12:30
13C4 PFOS	N/A	N/A	8.89	8.88	18		08/12/2022 12:30

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.21	4.23	19		08/12/2022 12:30
13C5 PFPeA	N/A	N/A	5.13	5.10	27		08/12/2022 12:30
13C3 PFBS	N/A	N/A	6.03	6.02	29		08/12/2022 12:30
13C2 4:2FTS	N/A	N/A	5.54	5.51	97		08/12/2022 12:30
13C5 PFHxA	N/A	N/A	5.80	5.78	19		08/12/2022 12:30
13C4 PFHpA	N/A	N/A	6.42	6.42	19		08/12/2022 12:30
13C3 PFHxS	N/A	N/A	7.46	7.47	24		08/12/2022 12:30
13C2 6:2FTS	N/A	N/A	6.73	6.73	21		08/12/2022 12:30
13C8 PFOA	N/A	N/A	7.05	7.06	25		08/12/2022 12:30
13C9 PFNA	N/A	N/A	7.72	7.71	28		08/12/2022 12:30
13C8 PFOS	N/A	N/A	8.89	8.86	22		08/12/2022 12:30
13C2 8:2FTS	N/A	N/A	8.02	8.00	22		08/12/2022 12:30
13C6 PFDA	N/A	N/A	8.41	8.38	19		08/12/2022 12:30
d3-MeFOSAA	N/A	N/A	8.27	8.25	11		08/12/2022 12:30
13C8 PFOSA	N/A	N/A	10.53	10.42	14		08/12/2022 12:30
d5-EtFOSAA	N/A	N/A	8.56	8.54	16		08/12/2022 12:30
13C7 PFUdA	N/A	N/A	9.08	9.07	26		08/12/2022 12:30
13C2 PFDoA	N/A	N/A	9.75	9.71	14		08/12/2022 12:30
13C2 PFTeDA	N/A	N/A	11.05	11.02	21		08/12/2022 12:30
13C3 HFPO-DA	N/A	N/A	6.06	6.04	17		08/12/2022 12:30
d7-N-MeFOSE	N/A	N/A	12.43	12.44	41		08/12/2022 12:30
d9-N-EtFOSE	N/A	N/A	12.91	12.88	40		08/12/2022 12:30
d3-N-MeFOSA	N/A	N/A	12.64	12.65	11		08/12/2022 12:30
d5-N-EtFOSA	N/A	N/A	13.06	13.07	77		08/12/2022 12:30

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKSS
 Lab Sample ID BLANK-100249
 Lab File ID B220811C_044
 Matrix Soil
 Collected 07/26/2022 09:48
 Received 07/26/2022 09:48
 Extraction Date 08/01/2022 12:25

Total Amount Extracted 5.12g
 Ical ID 220810B02
 CCal File B220811C_035
 Ending CCal File B220811C_045
 Blank File

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.39	4.23	ND		08/12/2022 12:30
PFPeA	N/A	N/A	5.14	5.15	ND		08/12/2022 12:30
HFPO-DA	0.00	0.28	0.00	6.07	ND		08/12/2022 12:30
PFBS	0.65	0.45	6.04	6.02	ND		08/12/2022 12:30
PFHxA	0.21	0.08	5.81	5.81	ND		08/12/2022 12:30
4:2 FTS	0.00	0.81	0.00	5.54	ND		08/12/2022 12:30
PFPeS	0.00	0.45	0.00	6.79	ND		08/12/2022 12:30
PFHpA	0.00	0.31	0.00	6.44	ND		08/12/2022 12:30
DONA	0.00	0.55	0.00	6.67	ND		08/12/2022 12:30
PFHxS	1.70	0.36	7.47	7.49	ND		08/12/2022 12:30
PFOA	0.80	0.32	7.06	7.08	ND		08/12/2022 12:30
6:2 FTS	1.00	0.81	6.73	6.74	ND		08/12/2022 12:30
PFHpS	0.00	0.41	0.00	8.20	ND		08/12/2022 12:30
PFNA	0.00	0.13	0.00	7.73	ND		08/12/2022 12:30
PFOSAm	N/A	N/A	0.00	10.44	ND		08/12/2022 12:30
PFOS	0.00	0.40	0.00	8.90	ND		08/12/2022 12:30
MeFOSA	0.00	0.56	0.00	12.69	ND		08/12/2022 12:30
PFDA	0.00	0.19	0.00	8.40	ND		08/12/2022 12:30
EtFOSAm	0.00	0.52	0.00	13.10	ND		08/12/2022 12:30
8:2 FTS	0.00	0.85	0.00	8.02	ND		08/12/2022 12:30
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/12/2022 12:30
PFNS	0.00	0.44	0.00	9.58	ND		08/12/2022 12:30
PFUnDA	0.00	0.15	0.00	9.05	ND		08/12/2022 12:30
NMeFOSAA	0.57	0.81	8.52	8.26	ND		08/12/2022 12:30
NEtFOSAA	0.00	0.62	0.00	8.55	ND		08/12/2022 12:30
PFDS	0.00	0.37	0.00	10.19	ND		08/12/2022 12:30
PFDOA	0.00	0.17	0.00	9.72	ND		08/12/2022 12:30
MeFOSE	N/A	N/A	0.00	12.45	ND		08/12/2022 12:30
EtFOSE	0.00	0.00	0.00	12.92	ND		08/12/2022 12:30
11-CI-PF3OUdS	0.00	0.03	0.00	10.66	ND		08/12/2022 12:30
PFTTrDA	0.00	0.15	0.00	10.37	ND		08/12/2022 12:30
PFDoS	0.00	0.48	0.00	11.43	ND		08/12/2022 12:30
PFTDA	0.00	0.25	0.00	11.02	ND		08/12/2022 12:30

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID	LCS-100049	Instrument ID	10LCMS02
Run File Name	B220804B_006	Column ID	118AB10133
Analyzed	08/05/2022 02:31	Ical ID	220803A02
Injected By	NH	Level	L

Injection Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C2 PFHxA	1.0	1.2	120	50-150	
13C4 PFOA	1.0	1.4	144	50-150	
13C2 PFDA	1.0	1.3	132	50-150	
13C4 PFOS	0.96	1.2	125	50-150	

Extracted Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C4 PFBA	1.0	1.0	103	50-150	
13C5 PFPeA	1.0	1.1	110	50-150	
13C3 PFBS	0.93	1.0	108	50-150	
13C2 4:2FTS	0.94	0.91	98	50-150	
13C5 PFHxA	1.0	1.00	100	50-150	
13C4 PFHpA	1.0	1.0	102	50-150	
13C3 PFHxS	0.95	0.99	105	50-150	
13C2 6:2FTS	0.95	1.0	108	50-150	
13C8 PFOA	1.0	1.1	108	50-150	
13C9 PFNA	1.0	1.2	123	50-150	
13C8 PFOS	0.96	0.97	102	50-150	
13C2 8:2FTS	0.96	1.1	113	50-150	
13C6 PFDA	1.0	0.97	97	50-150	
d3-MeFOSAA	1.0	1.1	107	50-150	
13C8 PFOSA	1.0	1.0	102	50-150	
d5-EtFOSAA	1.0	1.1	107	50-150	
13C7 PFUdA	1.0	1.1	107	50-150	
13C2 PFDoA	1.0	1.0	102	50-150	
13C2 PFTeDA	1.0	1.2	124	50-150	
13C3 HFPO-DA	1.0	1.0	101	50-150	
d7-N-MeFOSE	1.0	1.2	121	20-150	
d9-N-EtFOSE	1.0	0.94	94	20-150	
d3-N-MeFOSA	1.0	1.1	105	20-150	
d5-N-EtFOSA	1.0	1.0	102	20-150	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100049
 Run File Name B220804B_006
 Analyzed 08/05/2022 02:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.20	0.22	112	50-150		375-22-4
PFPeA	0.20	0.23	114	50-150		2706-90-3
HFPO-DA	0.20	0.22	108	50-150		13252-13-6
PFBS	0.18	0.19	106	50-150		375-73-5
PFHxA	0.20	0.22	111	50-150		307-24-4
4:2 FTS	0.19	0.21	110	50-150		757124-72-4
PFPeS	0.19	0.19	103	50-150		2706-91-4
PFHpA	0.20	0.21	106	50-150		375-85-9
DONA	0.19	0.20	103	50-150		919005-14-4
PFHxS	0.18	0.18	100	50-150		355-46-4
PFOA	0.20	0.22	109	50-150		335-67-1
6:2 FTS	0.19	0.19	101	50-150		27619-97-2
PFHpS	0.19	0.20	106	50-150		375-92-8
PFNA	0.20	0.20	102	50-150		375-95-1
PFOSAm	0.20	0.21	107	50-150		754-91-6
PFOS	0.18	0.20	106	50-150		1763-23-1
MeFOSA	0.20	0.20	100	50-150		31506-32-8
PFDA	0.20	0.23	113	50-150		335-76-2
EtFOSAm	0.20	0.20	102	50-150		4151-50-2
8:2 FTS	0.19	0.20	102	50-150		39108-34-4
9-CI-PF3ON	0.19	0.21	115	50-150		756426-58-1
PFNS	0.19	0.22	113	50-150		68259-12-1
PFUnDA	0.20	0.20	102	50-150		2058-94-8
NMeFOSAA	0.20	0.22	112	50-150		2355-31-9
NEtFOSAA	0.20	0.22	110	50-150		2991-50-6
PFDS	0.19	0.22	116	50-150		335-77-3
PFDOA	0.20	0.22	112	50-150		307-55-1
MeFOSE	0.20	0.19	94	50-150		24448-09-7
EtFOSE	0.20	0.23	114	50-150		1691-99-2
11-CI-PF3OUdS	0.19	0.22	115	50-150		763051-92-9
PFTrDA	0.20	0.17	87	50-150		72629-94-8
PFDoS	0.19	0.21	106	50-150		79780-39-5
PFTDA	0.20	0.21	104	50-150		376-06-7

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100049
 Run File Name B220804B_006
 Analyzed 08/05/2022 02:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.78	5.80	1804	
13C4 PFOA	N/A	N/A	7.04	7.07	1827	
13C2 PFDA	N/A	N/A	8.38	8.39	1476	
13C4 PFOS	N/A	N/A	8.87	8.88	1286	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.30	4.30	2488	
13C5 PFPeA	N/A	N/A	5.14	5.15	2510	
13C3 PFBS	N/A	N/A	6.03	6.05	2709	
13C2 4:2FTS	N/A	N/A	5.52	5.54	993	
13C5 PFHxA	N/A	N/A	5.79	5.80	2559	
13C4 PFHpA	N/A	N/A	6.41	6.43	2084	
13C3 PFHxS	N/A	N/A	7.47	7.49	2150	
13C2 6:2FTS	N/A	N/A	6.71	6.74	17284	
13C8 PFOA	N/A	N/A	7.04	7.07	2540	
13C9 PFNA	N/A	N/A	7.70	7.72	2291	
13C8 PFOS	N/A	N/A	8.87	8.88	2586	
13C2 8:2FTS	N/A	N/A	7.99	8.01	37901	
13C6 PFDA	N/A	N/A	8.38	8.39	1323	
d3-MeFOSAA	N/A	N/A	8.23	8.25	1364	
13C8 PFOSA	N/A	N/A	10.61	10.61	1270	
d5-EtFOSAA	N/A	N/A	8.53	8.54	1058	
13C7 PFUdA	N/A	N/A	9.05	9.07	2243	
13C2 PFDoA	N/A	N/A	9.73	9.74	1462	
13C2 PFTeDA	N/A	N/A	11.05	11.07	1502	
13C3 HFPO-DA	N/A	N/A	6.04	6.06	1599	
d7-N-MeFOSE	N/A	N/A	12.45	12.45	39	
d9-N-EtFOSE	N/A	N/A	12.92	12.92	453	
d3-N-MeFOSA	N/A	N/A	12.66	12.66	1240	
d5-N-EtFOSA	N/A	N/A	13.08	13.08	594	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100049
 Run File Name B220804B_006
 Analyzed 08/05/2022 02:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.30	4.31	128	
PFPeA	N/A	N/A	5.14	5.15	363	
HFPO-DA	0.28	0.27	6.05	6.07	1097	
PFBS	0.46	0.43	6.04	6.06	1083	
PFHxA	0.08	0.07	5.79	5.81	340	
4:2 FTS	0.88	0.85	5.53	5.54	56311	
PFPeS	0.43	0.46	6.77	6.79	1666	
PFHpA	0.32	0.29	6.42	6.44	18	
DONA	0.56	0.57	6.65	6.67	1563	
PFHxS	0.39	0.40	7.48	7.49	1725	
PFOA	0.40	0.40	7.05	7.08	200	
6:2 FTS	0.92	0.97	6.72	6.74	649	
PFHpS	0.43	0.36	8.19	8.20	6075	
PFNA	0.13	0.12	7.71	7.73	634	
PFOSAm	N/A	N/A	10.62	10.61	1365	
PFOS	0.40	0.44	8.89	8.90	399	
MeFOSA	0.58	0.51	12.69	12.69	1300	
PFDA	0.15	0.19	8.39	8.40	380	
EtFOSAm	0.60	0.59	13.10	13.10	796	
8:2 FTS	0.78	0.88	8.00	8.02	349776	
9-Cl-PF3ON	0.06	0.06	9.38	9.39	1233	
PFNS	0.50	0.47	9.57	9.58	1379	
PFUnDA	0.12	0.15	9.06	9.08	476	
NMeFOSAA	0.76	0.90	8.24	8.26	1238	
NEtFOSAA	0.55	0.71	8.54	8.55	428	
PFDS	0.34	0.32	10.23	10.24	3778	
PFDOA	0.18	0.20	9.74	9.75	328	
MeFOSE	N/A	N/A	12.49	12.49	500	
EtFOSE	0.00	0.00	12.95	12.96	521	
11-Cl-PF3OUdS	0.02	0.02	10.71	10.72	615	
PFTrDA	0.19	0.16	10.41	10.42	323	
PFDoS	0.50	0.48	11.47	11.48	2300	
PFTDA	0.25	0.30	11.06	11.07	266	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100301
 Run File Name B220806A_006
 Analyzed 08/06/2022 05:51
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	20	28	141	50-150	
13C4_PFOA	20	25	126	50-150	
13C2_PFDA	20	23	115	50-150	
13C4_PFOS	19	25	130	50-150	

Extracted Internal Standards

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers
13C4_PFBFA	20	21	107	50-150	
13C5_PFPeA	20	21	107	50-150	
13C3_PFBFS	18	19	105	50-150	
13C2_4:2FTS	19	20	109	50-150	
13C5_PFHxA	20	20	103	50-150	
13C4_PFHpA	20	23	115	50-150	
13C3_PFHxS	19	19	102	50-150	
13C2_6:2FTS	19	21	110	50-150	
13C8_PFOA	20	21	107	50-150	
13C9_PFNA	20	21	108	50-150	
13C8_PFOS	19	19	103	50-150	
13C2_8:2FTS	19	21	109	50-150	
13C6_PFDA	20	22	109	50-150	
d3-MeFOSAA	20	19	96	50-150	
13C8_PFOA	20	21	104	50-150	
d5-EtFOSAA	20	25	125	50-150	
13C7_PFUdA	20	25	127	50-150	
13C2_PFDaA	20	18	91	50-150	
13C2_PFTeDA	20	15	78	50-150	
13C3_HFPO-DA	20	23	116	50-150	
d7-N-MeFOSE	20	22	109	20-150	
d9-N-EtFOSE	20	21	107	20-150	
d3-N-MeFOSA	20	22	113	20-150	
d5-N-EtFOSA	20	19	98	20-150	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100301
 Run File Name B220806A_006
 Analyzed 08/06/2022 05:51
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	4.0	4.3	108	50-150		375-22-4
PFPeA	4.0	4.5	115	50-150		2706-90-3
HFPO-DA	4.0	4.0	101	50-150		13252-13-6
PFBS	3.5	3.8	107	50-150		375-73-5
PFHxA	4.0	4.4	112	50-150		307-24-4
4:2 FTS	3.7	3.9	107	50-150		757124-72-4
PFPeS	3.7	4.0	107	50-150		2706-91-4
PFHpA	4.0	4.2	107	50-150		375-85-9
DONA	3.7	4.2	112	50-150		919005-14-4
PFHxS	3.6	3.7	103	50-150		355-46-4
PFOA	4.0	4.6	117	50-150		335-67-1
6:2 FTS	3.8	3.7	98	50-150		27619-97-2
PFHpS	3.8	3.9	104	50-150		375-92-8
PFNA	4.0	4.2	107	50-150		375-95-1
PFOSAm	4.0	3.9	99	50-150		754-91-6
PFOS	3.7	3.8	105	50-150		1763-23-1
MeFOSA	4.0	3.6	90	50-150		31506-32-8
PFDA	4.0	4.3	108	50-150		335-76-2
EtFOSAm	4.0	4.0	102	50-150		4151-50-2
8:2 FTS	3.8	3.9	101	50-150		39108-34-4
9-CI-PF3ON	3.7	4.0	109	50-150		756426-58-1
PFNS	3.8	3.8	101	50-150		68259-12-1
PFUnDA	4.0	3.6	91	50-150		2058-94-8
NMeFOSAA	4.0	4.3	110	50-150		2355-31-9
NEtFOSAA	4.0	3.9	99	50-150		2991-50-6
PFDS	3.8	3.5	93	50-150		335-77-3
PFDOA	4.0	4.9	123	50-150		307-55-1
MeFOSE	4.0	3.3	84	50-150		24448-09-7
EtFOSE	4.0	4.0	102	50-150		1691-99-2
11-CI-PF3OUdS	3.7	3.6	98	50-150		763051-92-9
PFTrDA	4.0	4.3	108	50-150		72629-94-8
PFDoS	3.8	3.5	92	50-150		79780-39-5
PFTDA	4.0	4.9	124	50-150		376-06-7

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100301
 Run File Name B220806A_006
 Analyzed 08/06/2022 05:51
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.80	5.80	2135	
13C4 PFOA	N/A	N/A	7.07	7.07	2408	
13C2 PFDA	N/A	N/A	8.40	8.39	2064	
13C4 PFOS	N/A	N/A	8.89	8.88	2032	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.30	4.30	2370	
13C5 PFPeA	N/A	N/A	5.15	5.15	2742	
13C3 PFBS	N/A	N/A	6.05	6.05	3083	
13C2 4:2FTS	N/A	N/A	5.54	5.54	1015	
13C5 PFHxA	N/A	N/A	5.80	5.80	1664	
13C4 PFHpA	N/A	N/A	6.43	6.43	2284	
13C3 PFHxS	N/A	N/A	7.49	7.49	2095	
13C2 6:2FTS	N/A	N/A	6.74	6.74	13355	
13C8 PFOA	N/A	N/A	7.07	7.07	2136	
13C9 PFNA	N/A	N/A	7.73	7.72	1929	
13C8 PFOS	N/A	N/A	8.90	8.88	3620	
13C2 8:2FTS	N/A	N/A	8.01	8.01	59022	
13C6 PFDA	N/A	N/A	8.40	8.39	1469	
d3-MeFOSAA	N/A	N/A	8.26	8.25	1726	
13C8 PFOSA	N/A	N/A	10.66	10.61	1586	
d5-EtFOSAA	N/A	N/A	8.55	8.54	1744	
13C7 PFUdA	N/A	N/A	9.09	9.07	3551	
13C2 PFDoA	N/A	N/A	9.77	9.74	1224	
13C2 PFTeDA	N/A	N/A	11.09	11.07	1076	
13C3 HFPO-DA	N/A	N/A	6.06	6.06	1566	
d7-N-MeFOSE	N/A	N/A	12.47	12.45	52	
d9-N-EtFOSE	N/A	N/A	12.94	12.92	623	
d3-N-MeFOSA	N/A	N/A	12.69	12.66	2227	
d5-N-EtFOSA	N/A	N/A	13.10	13.08	689	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100301
 Run File Name B220806A_006
 Analyzed 08/06/2022 05:51
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.30	4.31	143	
PFPeA	N/A	N/A	5.16	5.15	356	
HFPO-DA	0.28	0.27	6.07	6.07	1057	
PFBS	0.43	0.45	6.05	6.06	1038	
PFHxA	0.08	0.08	5.81	5.81	398	
4:2 FTS	0.86	0.90	5.55	5.54	2742	
PFPeS	0.43	0.44	6.79	6.79	1317	
PFHpA	0.33	0.35	6.44	6.44	20	
DONA	0.55	0.52	6.67	6.67	1404	
PFHxS	0.43	0.37	7.50	7.49	1139	
PFOA	0.38	0.41	7.08	7.08	253	
6:2 FTS	0.85	0.83	6.74	6.74	713	
PFHpS	0.40	0.36	8.21	8.20	2590	
PFNA	0.13	0.14	7.74	7.73	704	
PFOSAm	N/A	N/A	10.67	10.61	1102	
PFOS	0.34	0.38	8.91	8.90	599	
MeFOSA	0.57	0.55	12.71	12.69	1636	
PFDA	0.20	0.18	8.41	8.40	399	
EtFOSAm	0.57	0.58	13.12	13.10	821	
8:2 FTS	0.89	0.99	8.02	8.02	2864727	
9-Cl-PF3ON	0.05	0.06	9.41	9.39	1165	
PFNS	0.54	0.51	9.60	9.58	1772	
PFUnDA	0.14	0.17	9.09	9.08	419	
NMeFOSAA	0.80	0.86	8.27	8.26	181487	
NEtFOSAA	0.57	0.66	8.56	8.55	322	
PFDS	0.36	0.38	10.27	10.24	1693	
PFDOA	0.18	0.18	9.78	9.75	346	
MeFOSE	N/A	N/A	12.52	12.49	348	
EtFOSE	0.00	0.00	12.97	12.96	402	
11-Cl-PF3OUdS	0.02	0.02	10.74	10.72	666	
PFTrDA	0.16	0.14	10.45	10.42	302	
PFDoS	0.51	0.48	11.50	11.48	2440	
PFTDA	0.23	0.32	11.10	11.07	187	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100250
 Run File Name B220808A_034
 Analyzed 08/08/2022 18:44
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C2 PFHxA	0.99	1.1	115	50-150	
13C4 PFOA	0.99	1.1	111	50-150	
13C2 PFDA	0.99	1.1	110	50-150	
13C4 PFOS	0.95	1.1	111	50-150	

Extracted Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C4 PFBA	0.99	0.98	98	50-150	
13C5 PFPeA	0.99	0.96	96	50-150	
13C3 PFBS	0.92	0.97	106	50-150	
13C2 4:2FTS	0.93	0.90	97	50-150	
13C5 PFHxA	0.99	0.98	99	50-150	
13C4 PFHpA	0.99	0.91	92	50-150	
13C3 PFHxS	0.94	0.92	98	50-150	
13C2 6:2FTS	0.94	0.95	101	50-150	
13C8 PFOA	0.99	0.97	97	50-150	
13C9 PFNA	0.99	0.96	97	50-150	
13C8 PFOS	0.95	0.99	104	50-150	
13C2 8:2FTS	0.95	1.1	118	50-150	
13C6 PFDA	0.99	1.2	117	50-150	
d3-MeFOSAA	0.99	1.0	102	50-150	
13C8 PFOSA	0.99	0.90	91	50-150	
d5-EtFOSAA	0.99	1.0	104	50-150	
13C7 PFUdA	0.99	1.0	105	50-150	
13C2 PFDoA	0.99	0.93	94	50-150	
13C2 PFTeDA	0.99	0.93	94	50-150	
13C3 HFPO-DA	0.99	0.86	87	50-150	
d7-N-MeFOSE	0.99	0.98	99	10-150	
d9-N-EtFOSE	0.99	0.82	82	10-150	
d3-N-MeFOSA	0.99	0.86	87	10-150	
d5-N-EtFOSA	0.99	0.80	81	10-150	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100250
 Run File Name B220808A_034
 Analyzed 08/08/2022 18:44
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.20	0.22	109	73-129		375-22-4
PFPeA	0.20	0.23	115	72-129		2706-90-3
HFPO-DA	0.20	0.22	113	70-140		13252-13-6
PFBS	0.18	0.18	104	72-130		375-73-5
PFHxA	0.20	0.21	107	72-129		307-24-4
4:2 FTS	0.19	0.23	122	63-143		757124-72-4
PFPeS	0.19	0.20	108	71-127		2706-91-4
PFHpA	0.20	0.23	114	72-130		375-85-9
DONA	0.19	0.18	96	70-140		919005-14-4
PFHxS	0.18	0.18	102	68-131		355-46-4
PFOA	0.20	0.20	102	71-133		335-67-1
6:2 FTS	0.19	0.19	101	64-140		27619-97-2
PFHpS	0.19	0.22	116	69-134		375-92-8
PFNA	0.20	0.20	102	69-130		375-95-1
PFOSAm	0.20	0.21	105	67-137		754-91-6
PFOS	0.18	0.19	101	65-140		1763-23-1
MeFOSA	0.20	0.21	106	68-141		31506-32-8
PFDA	0.20	0.19	97	71-129		335-76-2
EtFOSAm	0.20	0.21	105	70-140		4151-50-2
8:2 FTS	0.19	0.22	114	67-138		39108-34-4
9-CI-PF3ON	0.18	0.20	111	70-130		756426-58-1
PFNS	0.19	0.22	116	69-127		68259-12-1
PFUnDA	0.20	0.20	101	69-133		2058-94-8
NMeFOSAA	0.20	0.20	103	65-136		2355-31-9
NEtFOSAA	0.20	0.20	99	61-135		2991-50-6
PFDS	0.19	0.21	111	53-142		335-77-3
PFDOA	0.20	0.21	107	72-134		307-55-1
MeFOSE	0.20	0.19	96	70-140		24448-09-7
EtFOSE	0.20	0.26	134	70-140		1691-99-2
11-CI-PF3OUdS	0.19	0.21	110	70-140		763051-92-9
PFTrDA	0.20	0.19	96	65-144		72629-94-8
PFDoS	0.19	0.20	102	70-140		79780-39-5
PFTDA	0.20	0.25	124	71-132		376-06-7

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100250
 Run File Name B220808A_034
 Analyzed 08/08/2022 18:44
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.75	5.80	1568	
13C4 PFOA	N/A	N/A	7.03	7.07	2205	
13C2 PFDA	N/A	N/A	8.34	8.39	2194	
13C4 PFOS	N/A	N/A	8.81	8.88	2033	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.34	4.30	2900	
13C5 PFPeA	N/A	N/A	5.12	5.15	2295	
13C3 PFBS	N/A	N/A	6.00	6.05	3073	
13C2 4:2FTS	N/A	N/A	5.49	5.54	1183	
13C5 PFHxA	N/A	N/A	5.75	5.80	1495	
13C4 PFHpA	N/A	N/A	6.39	6.43	1497	
13C3 PFHxS	N/A	N/A	7.44	7.49	2298	
13C2 6:2FTS	N/A	N/A	6.69	6.74	2165	
13C8 PFOA	N/A	N/A	7.03	7.07	1999	
13C9 PFNA	N/A	N/A	7.68	7.72	2146	
13C8 PFOS	N/A	N/A	8.81	8.88	3074	
13C2 8:2FTS	N/A	N/A	7.96	8.01	730129	
13C6 PFDA	N/A	N/A	8.34	8.39	1310	
d3-MeFOSAA	N/A	N/A	8.20	8.25	1495	
13C8 PFOSA	N/A	N/A	10.61	10.61	1442	
d5-EtFOSAA	N/A	N/A	8.50	8.54	1266	
13C7 PFUdA	N/A	N/A	9.00	9.07	2601	
13C2 PFDoA	N/A	N/A	9.67	9.74	1629	
13C2 PFTeDA	N/A	N/A	10.97	11.07	1342	
13C3 HFPO-DA	N/A	N/A	6.01	6.06	1532	
d7-N-MeFOSE	N/A	N/A	12.37	12.45	54	
d9-N-EtFOSE	N/A	N/A	12.85	12.92	491	
d3-N-MeFOSA	N/A	N/A	12.59	12.66	965	
d5-N-EtFOSA	N/A	N/A	13.02	13.08	711	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100250
 Run File Name B220808A_034
 Analyzed 08/08/2022 18:44
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.34	4.31	100	
PFPeA	N/A	N/A	5.13	5.15	301	
HFPO-DA	0.26	0.27	6.02	6.07	774	
PFBS	0.41	0.43	6.01	6.06	923	
PFHxA	0.08	0.07	5.76	5.81	425	
4:2 FTS	0.81	0.90	5.49	5.54	1036	
PFPeS	0.45	0.45	6.74	6.79	1381	
PFHpA	0.29	0.28	6.39	6.44	21	
DONA	0.52	0.50	6.63	6.67	1735	
PFHxS	0.40	0.38	7.45	7.49	1444	
PFOA	0.38	0.35	7.04	7.08	176	
6:2 FTS	0.85	0.83	6.69	6.74	571	
PFHpS	0.33	0.43	8.14	8.20	2989	
PFNA	0.14	0.16	7.69	7.73	786	
PFOSAm	N/A	N/A	10.62	10.61	1183	
PFOS	0.41	0.35	8.82	8.90	691	
MeFOSA	0.53	0.54	12.61	12.61	826	
PFDA	0.18	0.15	8.35	8.40	56	
EtFOSAm	0.59	0.62	13.04	13.10	724	
8:2 FTS	0.82	0.85	7.97	8.02	6864932	
9-Cl-PF3ON	0.05	0.06	9.31	9.39	1442	
PFNS	0.49	0.48	9.49	9.58	1781	
PFUnDA	0.13	0.14	9.01	9.08	504	
NMeFOSAA	0.89	0.86	8.21	8.26	3308075	
NEtFOSAA	0.71	0.69	8.51	8.55	351	
PFDS	0.35	0.36	10.15	10.24	2483	
PFDOA	0.18	0.18	9.68	9.75	378	
MeFOSE	N/A	N/A	12.41	12.49	325	
EtFOSE	0.00	0.00	12.89	12.96	450	
11-Cl-PF3OUdS	0.02	0.02	10.62	10.72	658	
PFTrDA	0.17	0.15	10.34	10.42	350	
PFDoS	0.49	0.45	11.38	11.48	1916	
PFTDA	0.22	0.21	10.98	11.07	282	

REPORT OF LABORATORY ANALYSIS

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LCSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCSD-100302
 Run File Name B220806A_007
 Analyzed 08/06/2022 06:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Known Conc. ng/L	LCS Conc. Found ng/L	LCS Rec. %	LCSD Conc. Found ng/L	LCSD Rec. %	RPD %	Recovery Limits	Qualifiers
13C2_PFHxA	20	28	141	26	132	7.3	50-150	
13C4_PFOA	20	25	126	24	122	3.1	50-150	
13C2_PFDA	20	23	115	25	125	7.9	50-150	
13C4_PFOS	19	25	130	23	122	6.7	50-150	

Extracted Internal Standards

Compound	Known Conc. ng/L	LCS Conc. Found ng/L	LCS Rec. %	LCSD Conc. Found ng/L	LCSD Rec. %	RPD %	Recovery Limits	Qualifiers
13C4_PFBA	20	21	107	21	104	2.8	50-150	
13C5_PFPeA	20	21	107	21	106	1.0	50-150	
13C3_PFBS	18	19	105	18	99	5.5	50-150	
13C2_4:2FTS	18	20	109	19	104	4.9	50-150	
13C5_PFHxA	20	20	103	20	102	0.8	50-150	
13C4_PFHpA	20	23	115	20	101	13.0	50-150	
13C3_PFHxS	19	19	102	19	101	1.2	50-150	
13C2_6:2FTS	19	21	110	19	102	7.6	50-150	
13C8_PFOA	20	21	107	21	107	0.0	50-150	
13C9_PFNA	20	21	108	20	103	4.5	50-150	
13C8_PFOS	19	19	103	18	95	7.7	50-150	
13C2_8:2FTS	19	21	109	19	103	5.7	50-150	
13C6_PFDA	20	22	109	23	117	7.3	50-150	
d3-MeFOSAA	20	19	96	19	96	0.1	50-150	
13C8_PFOA	20	21	104	17	86	19.7	50-150	
d5-EtFOSAA	20	25	125	22	111	11.6	50-150	
13C7_PFUdA	20	25	127	21	106	17.6	50-150	
13C2_PFDoA	20	18	91	19	95	4.5	50-150	
13C2_PFTeDA	20	15	78	16	82	6.0	50-150	
13C3_HFPO-DA	20	23	116	23	114	1.6	50-150	
d7-N-MeFOSE	20	22	109	16	82	27.8	20-150	
d9-N-EtFOSE	20	21	107	17	84	23.8	20-150	
d3-N-MeFOSA	20	22	113	16	80	34.1	20-150	
d5-N-EtFOSA	20	19	98	16	79	21.7	20-150	

REPORT OF LABORATORY ANALYSIS

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LCSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCSD-100302
 Run File Name B220806A_007
 Analyzed 08/06/2022 06:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Known Conc. ng/L	LCS Conc. Found ng/L	LCS Rec. %	LCSD Conc. Found ng/L	LCSD Rec. %	RPD %	Recovery Limits	Qualifiers
PFBA	4.0	4.3	108	4.4	112	4.2	50-150	
PFPeA	4.0	4.5	115	4.4	112	2.6	50-150	
HFPO-DA	4.0	4.0	101	3.9	98	3.0	50-150	
PFBS	3.5	3.8	107	3.8	109	1.7	50-150	
PFHxA	4.0	4.4	112	4.8	121	8.0	50-150	
4:2 FTS	3.7	3.9	107	4.1	112	4.6	50-150	
PFPeS	3.7	4.0	107	4.0	109	1.2	50-150	
PFHpA	4.0	4.2	107	4.3	108	1.2	50-150	
DONA	3.7	4.2	112	3.9	105	6.2	50-150	
PFHxS	3.6	3.7	103	3.9	107	4.1	50-150	
PFOA	4.0	4.6	117	4.2	105	10.5	50-150	
6:2 FTS	3.8	3.7	98	3.8	102	4.4	50-150	
PFHpS	3.8	3.9	104	4.0	106	1.6	50-150	
PFNA	4.0	4.2	107	4.2	106	0.8	50-150	
PFOSAm	4.0	3.9	99	4.1	105	5.2	50-150	
PFOS	3.7	3.8	105	3.9	106	1.6	50-150	
MeFOSA	4.0	3.6	90	4.1	103	13.3	50-150	
PFDA	4.0	4.3	108	3.4	87	21.3	50-150	
EtFOSAm	4.0	4.0	102	3.7	95	7.6	50-150	
8:2 FTS	3.8	3.9	101	3.9	102	0.9	50-150	
9-CI-PF3ON	3.7	4.0	109	4.3	117	6.8	50-150	
PFNS	3.8	3.8	101	4.4	117	14.6	50-150	
PFUnDA	4.0	3.6	91	4.0	101	10.2	50-150	
NMeFOSAA	4.0	4.3	110	4.4	111	1.0	50-150	
NEtFOSAA	4.0	3.9	99	4.0	102	3.0	50-150	
PFDS	3.8	3.5	93	4.1	108	14.8	50-150	
PFDOA	4.0	4.9	123	4.1	103	17.6	50-150	
MeFOSE	4.0	3.3	84	3.7	94	11.9	50-150	
EtFOSE	4.0	4.0	102	3.8	96	5.9	50-150	
11-CI-PF3OUdS	3.7	3.6	98	4.0	107	8.9	50-150	
PFTTrDA	4.0	4.3	108	4.2	106	2.0	50-150	
PFDoS	3.8	3.5	92	3.8	100	8.5	50-150	
PFTDA	4.0	4.9	124	4.3	108	14.2	50-150	

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LCSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCSD-100302
 Run File Name B220806A_007
 Analyzed 08/06/2022 06:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.81	5.80	1664	
13C4 PFOA	N/A	N/A	7.07	7.07	2017	
13C2 PFDA	N/A	N/A	8.41	8.39	1884	
13C4 PFOS	N/A	N/A	8.90	8.88	2130	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.29	4.30	1945	
13C5 PFPeA	N/A	N/A	5.15	5.15	2771	
13C3 PFBS	N/A	N/A	6.05	6.05	6607	
13C2 4:2FTS	N/A	N/A	5.55	5.54	929	
13C5 PFHxA	N/A	N/A	5.81	5.80	2215	
13C4 PFHpA	N/A	N/A	6.44	6.43	1656	
13C3 PFHxS	N/A	N/A	7.49	7.49	2712	
13C2 6:2FTS	N/A	N/A	6.75	6.74	2942	
13C8 PFOA	N/A	N/A	7.08	7.07	2304	
13C9 PFNA	N/A	N/A	7.73	7.72	1907	
13C8 PFOS	N/A	N/A	8.90	8.88	2492	
13C2 8:2FTS	N/A	N/A	8.02	8.01	73715	
13C6 PFDA	N/A	N/A	8.40	8.39	1700	
d3-MeFOSAA	N/A	N/A	8.26	8.25	1495	
13C8 PFOSA	N/A	N/A	10.67	10.61	1874	
d5-EtFOSAA	N/A	N/A	8.56	8.54	2017	
13C7 PFUdA	N/A	N/A	9.09	9.07	2856	
13C2 PFDoA	N/A	N/A	9.78	9.74	1478	
13C2 PFTeDA	N/A	N/A	11.10	11.07	941	
13C3 HFPO-DA	N/A	N/A	6.07	6.06	1761	
d7-N-MeFOSE	N/A	N/A	12.49	12.45	54	
d9-N-EtFOSE	N/A	N/A	12.94	12.92	671	
d3-N-MeFOSA	N/A	N/A	12.69	12.66	1601	
d5-N-EtFOSA	N/A	N/A	13.10	13.08	769	

REPORT OF LABORATORY ANALYSIS

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LCSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCSD-100302
 Run File Name B220806A_007
 Analyzed 08/06/2022 06:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.30	4.31	172	
PFPeA	N/A	N/A	5.15	5.15	447	
HFPO-DA	0.29	0.27	6.08	6.07	863	
PFBS	0.44	0.45	6.06	6.06	1238	
PFHxA	0.07	0.08	5.82	5.81	351	
4:2 FTS	0.83	0.90	5.55	5.54	3115	
PFPeS	0.41	0.44	6.79	6.79	1380	
PFHpA	0.34	0.35	6.45	6.44	19	
DONA	0.56	0.52	6.68	6.67	1235	
PFHxS	0.39	0.37	7.50	7.49	1161	
PFOA	0.39	0.41	7.08	7.08	208	
6:2 FTS	0.80	0.83	6.75	6.74	670	
PFHpS	0.41	0.36	8.21	8.20	1659	
PFNA	0.13	0.14	7.74	7.73	694	
PFOSAm	N/A	N/A	10.67	10.61	1012	
PFOS	0.37	0.38	8.91	8.90	470	
MeFOSA	0.56	0.55	12.72	12.69	3036	
PFDA	0.21	0.18	8.42	8.40	305	
EtFOSAm	0.63	0.58	13.12	13.10	1067	
8:2 FTS	0.93	0.99	8.03	8.02	377978	
9-CI-PF3ON	0.06	0.06	9.41	9.39	872	
PFNS	0.52	0.51	9.60	9.58	1263	
PFUnDA	0.17	0.17	9.09	9.08	402	
NMeFOSAA	0.82	0.86	8.27	8.26	2126	
NEtFOSAA	0.61	0.66	8.57	8.55	359	
PFDS	0.35	0.38	10.28	10.24	1888	
PFDOA	0.19	0.18	9.78	9.75	317	
MeFOSE	N/A	N/A	12.53	12.49	617	
EtFOSE	0.00	0.00	12.98	12.96	350	
11-CI-PF3OUdS	0.02	0.02	10.76	10.72	632	
PFTrDA	0.12	0.14	10.46	10.42	265	
PFDoS	0.50	0.48	11.51	11.48	2742	
PFTDA	0.31	0.32	11.11	11.07	252	

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MS
 Run File Name B220804B_029
 Analyzed 08/05/2022 10:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	0.96	1.1	112	50-150	
13C4_PFOA	0.96	1.0	109	50-150	
13C2_PFDA	0.96	1.3	137	50-150	
13C4_PFOS	0.92	1.2	134	50-150	

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers
13C4_PFBFA	0.96	0.85	89	25-150	
13C5_PFPeA	0.96	0.92	96	25-150	
13C3_PFBFS	0.89	0.88	98	25-150	
13C2_4:2FTS	0.90	0.90	100	25-150	
13C5_PFHxA	0.96	0.87	91	25-150	
13C4_PFHpA	0.96	0.99	103	25-150	
13C3_PFHxS	0.91	0.85	94	25-150	
13C2_6:2FTS	0.91	0.89	98	25-150	
13C8_PFOA	0.96	0.94	98	25-150	
13C9_PFNA	0.96	0.96	100	25-150	
13C8_PFOS	0.92	0.95	103	25-150	
13C2_8:2FTS	0.92	1.4	147	25-150	
13C6_PFDA	0.96	0.99	104	25-150	
d3-MeFOSAA	0.96	0.95	99	25-150	
13C8_PFOSA	0.96	0.84	87	25-150	
d5-EtFOSAA	0.96	0.99	103	25-150	
13C7_PFUdA	0.96	0.95	99	25-150	
13C2_PFDaA	0.96	1.1	117	25-150	
13C2_PFTeDA	0.96	0.92	96	25-150	
13C3_HFPO-DA	0.96	0.85	89	25-150	
d7-N-MeFOSE	0.96	0.33	34	10-150	
d9-N-EtFOSE	0.96	0.27	28	10-150	
d3-N-MeFOSA	0.96	0.084	9	10-150	R
d5-N-EtFOSA	0.96	0.055	6	10-150	R

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MS Analysis Summary
 PFAS by Isotope Dilution

Page 2 of 4

Lab Sample ID 10616212027-MS
 Run File Name B220804B_029
 Analyzed 08/05/2022 10:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Native Analytes

Compound	Sample Conc. (ug/Kg)	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.00	0.19	0.22	113	50-150		375-22-4
PFPeA	0.090 J	0.19	0.26	87	50-150		2706-90-3
HFPO-DA	0.00	0.19	0.21	111	50-150		13252-13-6
PFBS	0.00	0.17	0.18	107	50-150		375-73-5
PFHxA	0.045 J	0.19	0.23	97	50-150		307-24-4
4:2 FTS	0.00	0.18	0.19	104	50-150		757124-72-4
PFPeS	0.00	0.18	0.18	99	50-150		2706-91-4
PFHpA	0.00	0.19	0.23	117	50-150		375-85-9
DONA	0.00	0.18	0.17	95	50-150		919005-14-4
PFHxS	0.00	0.17	0.18	103	50-150		355-46-4
PFOA	0.035 J	0.19	0.21	91	50-150		335-67-1
6:2 FTS	0.00	0.18	0.19	105	50-150		27619-97-2
PFHpS	0.00	0.18	0.18	101	50-150		375-92-8
PFNA	0.053 J	0.19	0.26	106	50-150		375-95-1
PFOSAm	0.00	0.19	0.19	98	50-150		754-91-6
PFOS	0.16	0.18	0.35	108	50-150		1763-23-1
MeFOSA	0.00	0.19	0.19	100	50-150		31506-32-8
PFDA	0.077 J	0.19	0.31	123	50-150		335-76-2
EtFOSAm	0.00	0.19	0.20	106	50-150		4151-50-2
8:2 FTS	0.00	0.18	0.19	103	50-150		39108-34-4
9-CI-PF3ON	0.00	0.18	0.18	101	50-150		756426-58-1
PFNS	0.00	0.18	0.20	111	50-150		68259-12-1
PFUnDA	0.00	0.19	0.21	111	50-150		2058-94-8
NMeFOSAA	0.00	0.19	0.20	102	50-150		2355-31-9
NEtFOSAA	0.00	0.19	0.19	100	50-150		2991-50-6
PFDS	0.00	0.19	0.18	95	50-150		335-77-3
PFDOA	0.00	0.19	0.19	101	50-150		307-55-1
MeFOSE	0.00	0.19	0.18	92	50-150		24448-09-7
EtFOSE	0.00	0.19	0.19	100	50-150		1691-99-2
11-CI-PF3OUdS	0.00	0.18	0.18	99	50-150		763051-92-9
PFTTrDA	0.00	0.19	0.15	80	50-150		72629-94-8
PFDoS	0.00	0.19	0.18	97	50-150		79780-39-5
PFTDA	0.00	0.19	0.20	102	50-150		376-06-7

REPORT OF LABORATORY ANALYSIS

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MS
 Run File Name B220804B_029
 Analyzed 08/05/2022 10:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.78	5.80	1660	
13C4 PFOA	N/A	N/A	7.05	7.07	2183	
13C2 PFDA	N/A	N/A	8.38	8.39	2014	
13C4 PFOS	N/A	N/A	8.87	8.88	1247	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.29	4.30	2156	
13C5 PFPeA	N/A	N/A	5.13	5.15	2205	
13C3 PFBS	N/A	N/A	6.04	6.05	1273	
13C2 4:2FTS	N/A	N/A	5.53	5.54	639	
13C5 PFHxA	N/A	N/A	5.79	5.80	1912	
13C4 PFHpA	N/A	N/A	6.42	6.43	1721	
13C3 PFHxS	N/A	N/A	7.47	7.49	1507	
13C2 6:2FTS	N/A	N/A	6.72	6.74	935	
13C8 PFOA	N/A	N/A	7.05	7.07	2091	
13C9 PFNA	N/A	N/A	7.71	7.72	2066	
13C8 PFOS	N/A	N/A	8.88	8.88	995	
13C2 8:2FTS	N/A	N/A	8.00	8.01	2135	
13C6 PFDA	N/A	N/A	8.38	8.39	1541	
d3-MeFOSAA	N/A	N/A	8.25	8.25	1873	
13C8 PFOSA	N/A	N/A	10.63	10.61	1401	
d5-EtFOSAA	N/A	N/A	8.54	8.54	1376	
13C7 PFUdA	N/A	N/A	9.06	9.07	2552	
13C2 PFDoA	N/A	N/A	9.74	9.74	958	
13C2 PFTeDA	N/A	N/A	11.05	11.07	1087	
13C3 HFPO-DA	N/A	N/A	6.05	6.06	2144	
d7-N-MeFOSE	N/A	N/A	12.45	12.45	47	
d9-N-EtFOSE	N/A	N/A	12.92	12.92	245	
d3-N-MeFOSA	N/A	N/A	12.66	12.66	543	R
d5-N-EtFOSA	N/A	N/A	13.08	13.08	290	R

REPORT OF LABORATORY ANALYSIS

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MS
 Run File Name B220804B_029
 Analyzed 08/05/2022 10:11
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.30	4.31	143	
PFPeA	N/A	N/A	5.14	5.15	333	
HFPO-DA	0.26	0.29	6.06	6.07	922	
PFBS	0.45	0.47	6.04	6.06	386	
PFHxA	0.08	0.08	5.80	5.81	192	
4:2 FTS	0.83	0.86	5.53	5.54	821	
PFPeS	0.45	0.47	6.77	6.79	472	
PFHpA	0.32	0.33	6.43	6.44	23	
DONA	0.56	0.55	6.66	6.67	1391	
PFHxS	0.41	0.40	7.48	7.49	359	
PFOA	0.40	0.42	7.06	7.08	178	
6:2 FTS	0.80	0.82	6.72	6.74	507	
PFHpS	0.39	0.40	8.19	8.20	598	
PFNA	0.14	0.15	7.72	7.73	498	
PFOSAm	N/A	N/A	10.64	10.61	901	
PFOS	0.37	0.40	8.89	8.90	538	
MeFOSA	0.63	0.57	12.68	12.69	366	
PFDA	0.16	0.20	8.39	8.40	442	
EtFOSAm	0.57	0.58	13.10	13.10	181	
8:2 FTS	0.85	0.92	8.01	8.02	2008	
9-Cl-PF3ON	0.06	0.06	9.38	9.39	1225	
PFNS	0.47	0.51	9.57	9.58	653	
PFUnDA	0.15	0.15	9.07	9.08	263	
NMeFOSAA	0.80	0.92	8.25	8.26	1357	
NEtFOSAA	0.64	0.63	8.55	8.55	349	
PFDS	0.36	0.37	10.24	10.24	815	
PFDOA	0.19	0.21	9.75	9.75	360	
MeFOSE	N/A	N/A	12.49	12.49	157	
EtFOSE	0.00	0.00	12.95	12.96	118	
11-Cl-PF3OUdS	0.02	0.02	10.71	10.72	887	
PFTrDA	0.18	0.18	10.41	10.42	226	
PFDoS	0.47	0.49	11.47	11.48	1115	
PFTDA	0.24	0.27	11.06	11.07	322	

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MSD
 Run File Name B220804B_030
 Analyzed 08/05/2022 10:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers
13C2_PFHxA	0.95	1.1	114	50-150	2.0	
13C4_PFOA	0.95	1.1	113	50-150	3.9	
13C2_PFDA	0.95	1.3	140	50-150	1.7	
13C4_PFOS	0.91	1.2	133	50-150	0.6	

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers
13C4_PFBFA	0.95	0.81	86	25-150	3.3	
13C5_PFPeA	0.95	0.83	87	25-150	9.6	
13C3_PFBFS	0.88	0.79	90	25-150	9.1	
13C2_4:2FTS	0.89	0.86	96	25-150	3.7	
13C5_PFHxA	0.95	0.86	90	25-150	0.4	
13C4_PFHpA	0.95	0.95	100	25-150	2.7	
13C3_PFHxS	0.90	0.79	88	25-150	6.2	
13C2_6:2FTS	0.90	0.89	99	25-150	1.0	
13C8_PFOA	0.95	0.86	90	25-150	8.1	
13C9_PFNA	0.95	0.83	88	25-150	13.3	
13C8_PFOS	0.91	0.85	94	25-150	9.7	
13C2_8:2FTS	0.91	1.1	126	25-150	15.3	
13C6_PFDA	0.95	1.1	113	25-150	8.9	
d3-MeFOSAA	0.95	0.83	87	25-150	13.3	
13C8_PFOSA	0.95	0.62	65	25-150	28.5	
d5-EtFOSAA	0.95	0.78	83	25-150	21.6	
13C7_PFUdA	0.95	0.80	84	25-150	16.0	
13C2_PFDaA	0.95	1.0	106	25-150	9.9	
13C2_PFTeDA	0.95	0.83	87	25-150	9.4	
13C3_HFPO-DA	0.95	0.76	80	25-150	10.9	
d7-N-MeFOSE	0.95	0.062	7	10-150	135.6	R
d9-N-EtFOSE	0.95	0.078	8	10-150	108.1	R
d3-N-MeFOSA	0.95	0.011	1	10-150	155.0	R
d5-N-EtFOSA	0.95	0.015	2	10-150	115.0	R

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MSD
 Run File Name B220804B_030
 Analyzed 08/05/2022 10:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Native Analytes

Compound	Sample Conc. (ug/Kg)	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers	CAS No.
PFBA	0.00	0.19	0.22	116	50-150	2.6		375-22-4
PFPeA	0.090 J	0.19	0.29	104	50-150	12.6		2706-90-3
HFPO-DA	0.00	0.19	0.22	117	50-150	5.4		13252-13-6
PFBS	0.00	0.17	0.20	120	50-150	10.9		375-73-5
PFHxA	0.045 J	0.19	0.22	91	50-150	5.6		307-24-4
4:2 FTS	0.00	0.18	0.19	107	50-150	2.8		757124-72-4
PFPeS	0.00	0.18	0.19	106	50-150	6.8		2706-91-4
PFHpA	0.00	0.19	0.20	105	50-150	10.9		375-85-9
DONA	0.00	0.18	0.18	99	50-150	4.1		919005-14-4
PFHxS	0.00	0.17	0.19	111	50-150	7.4		355-46-4
PFOA	0.035 J	0.19	0.22	95	50-150	4.1		335-67-1
6:2 FTS	0.00	0.18	0.19	105	50-150	0.1		27619-97-2
PFHpS	0.00	0.18	0.18	99	50-150	2.6		375-92-8
PFNA	0.053 J	0.19	0.29	126	50-150	13.8		375-95-1
PFOSAm	0.00	0.19	0.20	106	50-150	8.3		754-91-6
PFOS	0.16	0.18	0.32	93	50-150	7.7		1763-23-1
MeFOSA	0.00	0.19	0.24	129	50-150	25.2		31506-32-8
PFDA	0.077 J	0.19	0.24	84	50-150	26.6		335-76-2
EtFOSAm	0.00	0.19	0.18	96	50-150	9.2		4151-50-2
8:2 FTS	0.00	0.18	0.19	105	50-150	1.7		39108-34-4
9-CI-PF3ON	0.00	0.18	0.19	107	50-150	5.7		756426-58-1
PFNS	0.00	0.18	0.22	122	50-150	9.8		68259-12-1
PFUnDA	0.00	0.19	0.24	127	50-150	12.9		2058-94-8
NMeFOSAA	0.00	0.19	0.21	111	50-150	8.3		2355-31-9
NEtFOSAA	0.00	0.19	0.20	104	50-150	4.0		2991-50-6
PFDS	0.00	0.18	0.20	106	50-150	11.5		335-77-3
PFDOA	0.00	0.19	0.18	97	50-150	4.2		307-55-1
MeFOSE	0.00	0.19	0.18	96	50-150	4.0		24448-09-7
EtFOSE	0.00	0.19	0.24	127	50-150	23.0		1691-99-2
11-CI-PF3OUdS	0.00	0.18	0.18	102	50-150	2.7		763051-92-9
PFTTrDA	0.00	0.19	0.18	92	50-150	14.1		72629-94-8
PFDoS	0.00	0.18	0.19	102	50-150	5.3		79780-39-5
PFTDA	0.00	0.19	0.19	102	50-150	0.3		376-06-7

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10616212027-MSD
 Run File Name B220804B_030
 Analyzed 08/05/2022 10:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.79	5.80	2449	
13C4 PFOA	N/A	N/A	7.05	7.07	2038	
13C2 PFDA	N/A	N/A	8.39	8.39	1699	
13C4 PFOS	N/A	N/A	8.88	8.88	1158	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.30	4.30	2371	
13C5 PFPeA	N/A	N/A	5.13	5.15	2491	
13C3 PFBS	N/A	N/A	6.04	6.05	979	
13C2 4:2FTS	N/A	N/A	5.53	5.54	530	
13C5 PFHxA	N/A	N/A	5.79	5.80	1873	
13C4 PFHpA	N/A	N/A	6.42	6.43	2112	
13C3 PFHxS	N/A	N/A	7.47	7.49	1390	
13C2 6:2FTS	N/A	N/A	6.72	6.74	776	
13C8 PFOA	N/A	N/A	7.05	7.07	2436	
13C9 PFNA	N/A	N/A	7.71	7.72	2086	
13C8 PFOS	N/A	N/A	8.88	8.88	957	
13C2 8:2FTS	N/A	N/A	8.00	8.01	1061	
13C6 PFDA	N/A	N/A	8.39	8.39	1652	
d3-MeFOSAA	N/A	N/A	8.24	8.25	1290	
13C8 PFOSA	N/A	N/A	10.62	10.61	1511	
d5-EtFOSAA	N/A	N/A	8.54	8.54	1264	
13C7 PFUdA	N/A	N/A	9.06	9.07	1478	
13C2 PFDoA	N/A	N/A	9.74	9.74	1092	
13C2 PFTeDA	N/A	N/A	11.05	11.07	1022	
13C3 HFPO-DA	N/A	N/A	6.04	6.06	1634	
d7-N-MeFOSE	N/A	N/A	12.46	12.45	46	R
d9-N-EtFOSE	N/A	N/A	12.93	12.92	141	R
d3-N-MeFOSA	N/A	N/A	12.66	12.66	165	R
d5-N-EtFOSA	N/A	N/A	13.08	13.08	126	R

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

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 Run File Name B220804B_030
 Analyzed 08/05/2022 10:31
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220803A02
 Level

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.30	4.31	134	
PFPeA	N/A	N/A	5.14	5.15	323	
HFPO-DA	0.28	0.29	6.06	6.07	712	
PFBS	0.43	0.47	6.04	6.06	389	
PFHxA	0.09	0.08	5.80	5.81	201	
4:2 FTS	0.88	0.86	5.53	5.54	843	
PFPeS	0.42	0.47	6.77	6.79	482	
PFHpA	0.34	0.33	6.43	6.44	19	
DONA	0.58	0.55	6.66	6.67	1157	
PFHxS	0.39	0.40	7.48	7.49	382	
PFOA	0.42	0.42	7.06	7.08	157	
6:2 FTS	0.90	0.82	6.73	6.74	471	
PFHpS	0.34	0.40	8.19	8.20	371	
PFNA	0.13	0.15	7.72	7.73	395	
PFOSAm	N/A	N/A	10.63	10.61	930	
PFOS	0.40	0.40	8.89	8.90	396	
MeFOSA	0.31	0.57	12.70	12.69	334	
PFDA	0.18	0.20	8.39	8.40	304	
EtFOSAm	0.50	0.58	13.10	13.10	50	
8:2 FTS	0.96	0.92	8.01	8.02	438216	
9-Cl-PF3ON	0.06	0.06	9.38	9.39	1090	
PFNS	0.49	0.51	9.57	9.58	614	
PFUnDA	0.13	0.15	9.07	9.08	247	
NMeFOSAA	0.94	0.92	8.25	8.26	179	
NEtFOSAA	0.66	0.63	8.55	8.55	436	
PFDS	0.38	0.37	10.23	10.24	938	
PFDOA	0.21	0.21	9.74	9.75	358	
MeFOSE	N/A	N/A	12.49	12.49	44	
EtFOSE	0.00	0.00	12.96	12.96	78	
11-Cl-PF3OUdS	0.02	0.02	10.71	10.72	925	
PFTrDA	0.15	0.18	10.41	10.42	251	
PFDoS	0.49	0.49	11.47	11.48	1203	
PFTDA	0.30	0.27	11.06	11.07	239	

REPORT OF LABORATORY ANALYSIS

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Report Prepared for:

Leo Linnemanstons
AECOM
1555 N. RiverCenter Drive
Milwaukee WI 53212

**REPORT OF
LABORATORY
ANALYSIS
FOR PFAAs**

Report Prepared Date:

August 29, 2022

Report Information:

Pace Project #: 10620121
Sample Receipt Date: 08/05/2022
Client Project #: Superior Terminal PFAS/60683
Client Sub PO #: 145286
State Cert #: 999407970

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PFAA Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Kirsten Hogberg, your Pace Project Manager.

This report has been reviewed by:



August 29, 2022

Kirsten Hogberg, Project Manager
(612) 607-6407
(612) 607-6444 (fax)
kirsten.hogberg@pacelabs.com



Report of Laboratory Analysis

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The results relate only to the samples included in this report.

DISCUSSION

This report presents the results from the analyses performed on five samples, one matrix spike, and one matrix spike duplicate submitted by a representative of AECOM. The samples were analyzed for thirty-three perfluorinated compounds using Wisconsin DNR guidance for PFAS. Reporting limits were set to MDL levels. Results for solid samples are expressed on dry weight basis.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank was free of the target perfluorinated compounds at the reporting limits. This indicates that the sample processing procedures did not significantly contribute to the analyte content determined for the sample material.

A laboratory spike sample was also prepared with each sample batch using clean reference matrix that had been fortified with native standards. The recovery results were within the method limits. This spike indicates that extraction performed as expected.

On the matrix spikes there are several analytes that are marked R as the recoveries are diminished or elevated from the expected levels. These deviations may be due to the presence of the affected analytes in the sample material and/or sample inhomogeneity. With the exception of MeFOSA, EtFOSA_m, and EtFOSE, the RPDs (relative percent differences) between one designated matrix spike and its duplicate were within the method limits.

Diminished extracted internal standard (EIS) recovery ("R" flagged) were present in samples and BLANK-100572, however, the use of the isotope dilution method generally precludes any adverse impact on those individual native compounds that have a directly associated standard.

Selected samples have recoveries less than 1% for selected EIS. The results for these native compounds should be considered estimated.

The four injection internal standards (13C4 PFOA, 13C4 PFOS, 13C2_PFDA, and 13C2_PFHxA) pass for each analysis in the batch verifying that the instrument detector is working as expected.

Values were flagged "I" where incorrect isotope ratios were obtained. Results that were below the calibration range were flagged "J".

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Mississippi	MN00064
Alabama	40770	Missouri	10100
Alaska-DW	MN00064	Montana	CERT0092
Alaska-UST	17-009	Nebraska	NE-OS-18-06
Arizona	AZ0014	Nevada	MN00064
Arkansas - WW	88-0680	New Hampshire	2081
Arkansas-DW	MN00064	New Jersey	MN002
California	2929	New York	11647
Colorado	MN00064	North Carolina-	27700
Connecticut	PH-0256	North Carolina-	530
Florida	E87605	North Dakota	R-036
Georgia	959	Ohio-DW	41244
Hawaii	MN00064	Ohio-VAP (170	CL101
Idaho	MN00064	Ohio-VAP (180	CL110
Illinois	200011	Oklahoma	9507
Indiana	C-MN-01	Oregon- rimary	MN300001
Iowa	368	Oregon-Second	MN200001
Kansas	E-10167	Pennsylvania	68-00563
Kentucky-DW	90062	Puerto Rico	MN00064
Kentucky-WW	90062	South Carolina	74003
Louisiana-DEQ	AI-84596	Tennessee	TN02818
Louisiana-DW	MN00064	Texas	T104704192
Maine	MN00064	Utah	MN00064
Maryland	322	Vermont	VT-027053137
Michigan	9909	Virginia	460163
Minnesota	027-053-137	Washington	C486
Minnesota-Ag	via MN 027-053	West Virginia-D	382
Minnesota-Petr	1240	West Virginia-D	9952C
		Wisconsin	999407970
		Wyoming-UST	via A2LA 2926.

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Appendix A

Sample Management

REPORT OF LABORATORY ANALYSIS

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Sample ID Cross Reference

<u>Client Sample ID</u>	<u>Pace Sample ID</u>	<u>Date Received</u>	<u>Sample Type</u>
PR-AFFExcavation-SB01(14-15)	10620121001	08/05/2022	Solid
PR-AFFExcavation-SB01(17-17.5)	10620121002	08/05/2022	Solid
PR-ERB-03	10620121003	08/05/2022	Water
PR-FB-02	10620121004	08/05/2022	Water
PR-DECON-02	10620121005	08/05/2022	Water

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CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

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

LAB USE ONLY- Affix Workorder/Label

WO#: 10620121



10620121

ALL SHA

Container Preservative

U U

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

Company: **AELOM**

Billing Information: **Bill to AELOM**

Address: **230 W. Superior St STE 400, Duluth, MN 55802**

Report To: **leo.linnemanstons@aecom.com**

Email To:

Copy To: **davis.albrecht@aecom.com**

Site Collection Info/Address: **Enbridge Superior Terminal**

Customer Project Name/Number: **Superior Terminal PFAS/60683192 WI/ Superior**

State: County/City: Time Zone Collected: [] PT [] MT [X] CT [] ET

Phone: **608-829-8208**

Site/Facility ID #: **Enbridge Superior-Term**

Compliance Monitoring? [] Yes [] No

Collected By (print): **William J Montz**

Purchase Order #: **M5286**

DW PWS ID #: DW Location Code:

Collected By (signature): **WJ Montz**

Turnaround Date Required: **Standard**

Immediately Packed on Ice: [X] Yes [] No

Sample Disposal: [X] Dispose as appropriate [] Return [] Archive: [] Hold:

Rush: [] Same Day [] Next Day [] 2 Day [] 3 Day [] 4 Day [] 5 Day (Expedite Charges Apply)

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 (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
PR-AFFFExcavation-SB01(14-15)	SL	G	8/3/22	1205				1
PR-AFFFExcavation-SB01(17-17.5)	SL	G	8/3/22	1220				1
PR-ERB-03	WT	G	8/3/22	1155				1
PR-FB-02	WT	G	8/3/22	1230				1
PR-DECOM-02	WT	G	8/3/22	1235				1

Analyses	
WIS ID36 (PFAS)	WIS ID36 (PFAS) Blanks
X	
X	
	X
	X
	X

Lab Profile/Line: **44709**

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA

Custody Signatures Present Y N NA

Collector Signature Present Y N NA

Bottles Intact Y N NA

Correct Bottles Y N NA

Sufficient Volume Y N NA

Samples Received on Ice Y N NA

VOA - Headspace Acceptable Y N NA

USDA Regulated Soils Y N NA

Samples in Holding Time Y N NA

Residual Chlorine Present Y N NA

Cl Strips:

Sample pH Acceptable Y N NA

pH Strips:

Sulfide Present Y N NA

Lead Acetate Strips:

LAB USE ONLY:
Lab Sample # / Comments:

**OC1
OC2
OC3
OC4
OC5**

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

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

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

Lab Tracking #: **2801947**

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#:

Cooler 1 Temp Upon Receipt: **5.1** oC

Cooler 1 Therm Corr. Factor: **0** oC

Cooler 1 Corrected Temp: **5.1** oC

Comments:

Relinquished by/Company: (Signature) **WJ Montz AELOM**

Date/Time: **8/4/22 0807**

Relinquished by/Company: (Signature) **Delacorte Pace**

Date/Time: **8/4/22 08:07**

Relinquished by/Company: (Signature)

Date/Time:

Received by/Company: (Signature) **Delacorte Pace**

Date/Time: **8/4/22 08107**

Received by/Company: (Signature) **Delacorte Pace**

Date/Time: **8/5/22 0845**

Received by/Company: (Signature)

Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Non-Conformance(s): YES / NO

Page: **1** of: **1**

Report No.: 10620121_ID36_DFR

Page 6 of 34



DC#_Title: ENV-FRM-MIN4-0150 v05_Sample Condition Upon Receipt (SCUR)

Effective Date: 04/12/2022

Sample Condition Upon Receipt

Client Name: AECOM

Project #:

WO#: 10620121
PM: KNH
CLIENT: AECOM
Due Date: 09/07/22

Courier: Fed Ex, UPS, USPS, Client, Pace, SpeeDee, Commercial

See Exceptions: ENV-FRM-MIN4-0142

Tracking Number:

Custody Seal on Cooler/Box Present? Yes No

Seals Intact? Yes No

Biological Tissue Frozen? Yes No N/A

Packing Material: Bubble Wrap, Bubble Bags, None, Other

Temp Blank? Yes No

Thermometer: T1(0461), T2(1336), T3(0459), T4(0254), T5(0489), T6(0235), T7(0042), 0133929/1710, 122639816, 140792808

Type of Ice: Wet, Blue, None, Dry, Melted

Did Samples Originate in West Virginia? Yes No Were All Container Temps Taken? Yes No

Temp should be above freezing to 6°C

Cooler Temp Read w/temp blank: 0.2 °C

Average Corrected Temp (no temp blank only): °C See Exceptions ENV-FRM-MIN4-0142 1 Container

Correction Factor: 10.1 Cooler Temp Corrected w/temp blank: 0.3 °C

USDA Regulated Soil: (N/A, water sample/Other:)

Date/Initials of Person Examining Contents: 8/5/22
Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? Yes No
Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? Yes No

If Yes to either question, fill out a Regulated Soil Checklist ENV-FRM-MIN4-0154 and include with SCUR/COC paperwork.

Table with 2 columns: Location (check one) and COMMENTS. Rows include Chain of Custody Present and Filled Out?, Chain of Custody Relinquished?, Sampler Name and/or Signature on COC?, Samples Arrived within Hold Time?, Short Hold Time Analysis (<72 hr)?, Rush Turn Around Time Requested?, Sufficient Volume?, Correct Containers Used?, -Pace Containers Used?, Containers Intact?, Field Filtered Volume Received for Dissolved Tests?, Is sufficient information available to reconcile the samples to the COC?, Matrix: Water, Soil, Oil, Other-, All containers needing acid/base preservation have been checked?, All containers needing preservation are found to be in compliance with EPA recommendation?, Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS, Headspace in Methyl Mercury Container?, Extra labels present on soil VOA or WIDRO containers?, Headspace in VOA Vials (greater than 6mm)?, Trip Blank Present?, Trip Blank Custody Seals Present?.

CLIENT NOTIFICATION/RESOLUTION

Person Contacted:
Comments/Resolution:

Field Data Required? Yes No
Date/Time:

Project Manager Review: Kirsten Hoxberg

Date: 8/8/2022

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

Labeled by: [Signature]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10620121001	PR-AFFExcavation-SB01(14-15)	SW3535	33646	PFAS-36	B220823B_00
10620121002	PR-AFFExcavation-SB01(17-17.5)	SW3535	33646	PFAS-36	B220823B_00
10620121003	PR-ERB-03	SW3535	33668	PFAS-36	B220817C_06
10620121004	PR-FB-02	SW3535	33668	PFAS-36	B220817C_06
10620121005	PR-DECON-02	SW3535	33668	PFAS-36	B220817C_06



Reporting Flags

- A = Reporting Limit based on signal to noise (EDL)
- B = Less than 10x higher than method blank level
- C = Result obtained from confirmation analysis
- D = Result obtained from analysis of diluted sample
- E = Exceeds calibration range
- I = Isotope ratio out of specification
- J = Estimated value
- L = Suppressive interference, analyte may be biased low
- Nn = Value obtained from additional analysis
- P = PCDE Interference
- R = Recovery outside target range
- S = Peak saturated
- U = Analyte not detected
- V = Result verified by confirmation analysis
- X = %D Exceeds limits
- Y = Calculated using average of daily RFs
- * = See Discussion

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
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Minneapolis, MN 55414
Phone: 612.607.1700
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Appendix B

Sample Analysis Summary

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-AFFFExcavation-SB01(14-15)	Total Amount Extracted	5.06g
Lab Sample ID	10620121001	Percent Moisture	35.2872%
Lab File ID	B220823B_007	Dry Weight Extracted	3.28g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:05	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.15	0.043	0.043	1	375-22-4		08/23/2022 15:16
PFPeA	ND	0.15	0.044	0.044	1	2706-90-3		08/23/2022 15:16
HFPO-DA	ND	0.15	0.042	0.042	1	13252-13-6		08/23/2022 15:16
PFBS	ND	0.14	0.040	0.040	1	375-73-5		08/23/2022 15:16
PFHxA	ND	0.15	0.042	0.042	1	307-24-4		08/23/2022 15:16
4:2 FTS	ND	0.14	0.035	0.035	1	757124-72-4		08/23/2022 15:16
PFPeS	ND	0.14	0.037	0.037	1	2706-91-4		08/23/2022 15:16
PFHpA	ND	0.15	0.053	0.053	1	375-85-9		08/23/2022 15:16
DONA	ND	0.14	0.055	0.055	1	919005-14-4		08/23/2022 15:16
PFHxS	ND	0.14	0.033	0.033	1	355-46-4		08/23/2022 15:16
PFOA	ND	0.15	0.047	0.047	1	335-67-1		08/23/2022 15:16
6:2 FTS	ND	0.15	0.063	0.063	1	27619-97-2		08/23/2022 15:16
PFHpS	ND	0.15	0.042	0.042	1	375-92-8		08/23/2022 15:16
PFNA	ND	0.15	0.047	0.047	1	375-95-1		08/23/2022 15:16
PFOSAm	ND	0.15	0.045	0.045	1	754-91-6		08/23/2022 15:16
PFOS	ND	0.14	0.045	0.045	1	1763-23-1		08/23/2022 15:16
MeFOSA	ND	0.15	0.042	0.042	1	31506-32-8		08/23/2022 15:16
PFDA	ND	0.15	0.035	0.035	1	335-76-2		08/23/2022 15:16
EtFOSAm	ND	0.15	0.039	0.039	1	4151-50-2		08/23/2022 15:16
8:2 FTS	ND	0.15	0.067	0.067	1	39108-34-4		08/23/2022 15:16
9-CI-PF3ON	ND	0.14	0.038	0.038	1	756426-58-1		08/23/2022 15:16
PFNS	ND	0.15	0.053	0.053	1	68259-12-1		08/23/2022 15:16
PFUnDA	ND	0.15	0.046	0.046	1	2058-94-8		08/23/2022 15:16
NMeFOSAA	ND	0.15	0.043	0.043	1	2355-31-9		08/23/2022 15:16
NEtFOSAA	ND	0.15	0.061	0.061	1	2991-50-6		08/23/2022 15:16
PFDS	ND	0.15	0.043	0.043	1	335-77-3		08/23/2022 15:16
PFDOA	ND	0.15	0.050	0.050	1	307-55-1		08/23/2022 15:16
MeFOSE	ND	0.15	0.046	0.046	1	24448-09-7		08/23/2022 15:16
EtFOSE	ND	0.15	0.049	0.049	1	1691-99-2		08/23/2022 15:16
11-CI-PF3OUdS	ND	0.14	0.039	0.039	1	763051-92-9		08/23/2022 15:16
PFTTrDA	ND	0.15	0.049	0.049	1	72629-94-8		08/23/2022 15:16
PFDoS	ND	0.15	0.040	0.040	1	79780-39-5		08/23/2022 15:16
PFTDA	ND	0.15	0.052	0.052	1	376-06-7		08/23/2022 15:16

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Lab File ID	B220823B_007	Dry Weight Extracted	3.28g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:05	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	1.5	1.3	82	50-150		08/23/2022 15:16
13C4 PFOA	1.5	1.2	80	50-150		08/23/2022 15:16
13C2 PFDA	1.5	1.1	75	50-150		08/23/2022 15:16
13C4 PFOS	1.5	1.2	82	50-150		08/23/2022 15:16

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	1.5	1.1	71	25-150		08/23/2022 15:16
13C5 PFPeA	1.5	1.1	71	25-150		08/23/2022 15:16
13C3 PFBS	1.4	0.94	66	25-150		08/23/2022 15:16
13C2 4:2FTS	1.4	0.99	69	25-150		08/23/2022 15:16
13C5 PFHxA	1.5	1.1	73	25-150		08/23/2022 15:16
13C4 PFHpA	1.5	1.1	72	25-150		08/23/2022 15:16
13C3 PFHxS	1.4	1.0	71	25-150		08/23/2022 15:16
13C2 6:2FTS	1.4	0.96	67	25-150		08/23/2022 15:16
13C8 PFOA	1.5	1.0	66	25-150		08/23/2022 15:16
13C9 PFNA	1.5	0.98	64	25-150		08/23/2022 15:16
13C8 PFOS	1.5	1.0	70	25-150		08/23/2022 15:16
13C2 8:2FTS	1.5	0.95	65	25-150		08/23/2022 15:16
13C6 PFDA	1.5	1.2	76	25-150		08/23/2022 15:16
d3-MeFOSAA	1.5	1.2	76	25-150		08/23/2022 15:16
13C8 PFOSA	1.5	0.83	54	25-150		08/23/2022 15:16
d5-EtFOSAA	1.5	0.96	63	25-150		08/23/2022 15:16
13C7 PFUdA	1.5	1.0	66	25-150		08/23/2022 15:16
13C2 PFDoA	1.5	1.2	80	25-150		08/23/2022 15:16
13C2 PFTeDA	1.5	0.76	50	25-150		08/23/2022 15:16
13C3 HFPO-DA	1.5	1.2	79	25-150		08/23/2022 15:16
d7-N-MeFOSE	1.5	0.0061	0	10-150	R	08/23/2022 15:16
d9-N-EtFOSE	1.5	0.010	1	10-150	R	08/23/2022 15:16
d3-N-MeFOSA	1.5	0.00056	0	10-150	R	08/23/2022 15:16
d5-N-EtFOSA	1.5	0.0015	0	10-150	R	08/23/2022 15:16

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Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.86	5.77	11		08/23/2022 15:16
13C4 PFOA	N/A	N/A	7.08	7.07	14		08/23/2022 15:16
13C2 PFDA	N/A	N/A	8.42	8.39	14		08/23/2022 15:16
13C4 PFOS	N/A	N/A	8.89	8.88	13		08/23/2022 15:16

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.29	4.23	20		08/23/2022 15:16
13C5 PFPeA	N/A	N/A	5.20	5.10	21		08/23/2022 15:16
13C3 PFBS	N/A	N/A	6.09	6.09	14		08/23/2022 15:16
13C2 4:2FTS	N/A	N/A	5.60	5.51	41		08/23/2022 15:16
13C5 PFHxA	N/A	N/A	5.86	5.78	19		08/23/2022 15:16
13C4 PFHpA	N/A	N/A	6.47	6.42	12		08/23/2022 15:16
13C3 PFHxS	N/A	N/A	7.49	7.47	11		08/23/2022 15:16
13C2 6:2FTS	N/A	N/A	6.76	6.73	11		08/23/2022 15:16
13C8 PFOA	N/A	N/A	7.08	7.06	18		08/23/2022 15:16
13C9 PFNA	N/A	N/A	7.74	7.71	13		08/23/2022 15:16
13C8 PFOS	N/A	N/A	8.89	8.86	19		08/23/2022 15:16
13C2 8:2FTS	N/A	N/A	8.03	8.00	75		08/23/2022 15:16
13C6 PFDA	N/A	N/A	8.42	8.38	12		08/23/2022 15:16
d3-MeFOSAA	N/A	N/A	8.28	8.25	11		08/23/2022 15:16
13C8 PFOSA	N/A	N/A	10.54	10.42	96		08/23/2022 15:16
d5-EtFOSAA	N/A	N/A	8.57	8.54	22		08/23/2022 15:16
13C7 PFUdA	N/A	N/A	9.09	9.07	17		08/23/2022 15:16
13C2 PFDoA	N/A	N/A	9.75	9.71	11		08/23/2022 15:16
13C2 PFTeDA	N/A	N/A	11.04	11.02	12		08/23/2022 15:16
13C3 HFPO-DA	N/A	N/A	6.11	6.04	13		08/23/2022 15:16
d7-N-MeFOSE	N/A	N/A	12.47	12.44	16	R	08/23/2022 15:16
d9-N-EtFOSE	N/A	N/A	12.94	12.92	77	R	08/23/2022 15:16
d3-N-MeFOSA	N/A	N/A	12.63	12.65	8	R	08/23/2022 15:16
d5-N-EtFOSA	N/A	N/A	13.09	13.07	35	R	08/23/2022 15:16

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Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.23	ND		08/23/2022 15:16
PFPeA	N/A	N/A	5.21	5.21	ND		08/23/2022 15:16
HFPO-DA	0.46	0.26	6.12	6.07	ND		08/23/2022 15:16
PFBS	0.33	0.43	6.10	6.08	ND		08/23/2022 15:16
PFHxA	0.09	0.09	5.87	5.85	ND		08/23/2022 15:16
4:2 FTS	0.00	0.81	0.00	5.54	ND		08/23/2022 15:16
PFPeS	0.56	0.42	6.80	6.79	ND		08/23/2022 15:16
PFHpA	0.26	0.32	6.48	6.44	ND		08/23/2022 15:16
DONA	0.36	0.56	6.69	6.67	ND		08/23/2022 15:16
PFHxS	0.32	0.37	7.50	7.49	ND		08/23/2022 15:16
PFOA	0.57	0.39	7.09	7.08	ND		08/23/2022 15:16
6:2 FTS	0.74	0.93	6.76	6.74	ND		08/23/2022 15:16
PFHpS	0.00	0.41	0.00	8.20	ND		08/23/2022 15:16
PFNA	0.20	0.12	7.75	7.73	ND		08/23/2022 15:16
PFOSAm	N/A	N/A	10.54	10.44	ND		08/23/2022 15:16
PFOS	0.41	0.35	8.89	8.90	ND		08/23/2022 15:16
MeFOSA	0.00	0.47	0.00	12.69	ND		08/23/2022 15:16
PFDA	0.00	0.18	0.00	8.40	ND		08/23/2022 15:16
EtFOSAm	0.00	0.50	0.00	13.10	ND		08/23/2022 15:16
8:2 FTS	0.00	0.96	0.00	8.02	ND		08/23/2022 15:16
9-CI-PF3ON	0.00	0.06	0.00	9.39	ND		08/23/2022 15:16
PFNS	0.00	0.47	0.00	9.58	ND		08/23/2022 15:16
PFUnDA	0.00	0.14	0.00	9.05	ND		08/23/2022 15:16
NMeFOSAA	0.00	0.82	0.00	8.26	ND		08/23/2022 15:16
NEtFOSAA	0.00	0.68	0.00	8.55	ND		08/23/2022 15:16
PFDS	0.00	0.32	0.00	10.19	ND		08/23/2022 15:16
PFDOA	0.00	0.15	0.00	9.72	ND		08/23/2022 15:16
MeFOSE	N/A	N/A	0.00	12.45	ND		08/23/2022 15:16
EtFOSE	0.00	0.00	0.00	12.92	ND		08/23/2022 15:16
11-CI-PF3OUdS	0.00	0.03	0.00	10.66	ND		08/23/2022 15:16
PFTTrDA	0.00	0.16	0.00	10.37	ND		08/23/2022 15:16
PFDoS	0.00	0.46	0.00	11.43	ND		08/23/2022 15:16
PFTDA	0.00	0.26	0.00	11.02	ND		08/23/2022 15:16

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-AFFExcavation-SB01(17-17.5)	Total Amount Extracted	5.28g
Lab Sample ID	10620121002	Percent Moisture	34.5776%
Lab File ID	B220823B_008	Dry Weight Extracted	3.46g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:20	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.14	0.041	0.041	1	375-22-4		08/23/2022 15:36
PFPeA	ND	0.14	0.041	0.041	1	2706-90-3		08/23/2022 15:36
HFPO-DA	ND	0.14	0.040	0.040	1	13252-13-6		08/23/2022 15:36
PFBS	ND	0.13	0.038	0.038	1	375-73-5		08/23/2022 15:36
PFHxA	ND	0.14	0.040	0.040	1	307-24-4		08/23/2022 15:36
4:2 FTS	ND	0.14	0.033	0.033	1	757124-72-4		08/23/2022 15:36
PFPeS	ND	0.14	0.035	0.035	1	2706-91-4		08/23/2022 15:36
PFHpA	ND	0.14	0.050	0.050	1	375-85-9		08/23/2022 15:36
DONA	ND	0.14	0.053	0.053	1	919005-14-4		08/23/2022 15:36
PFHxS	ND	0.13	0.032	0.032	1	355-46-4		08/23/2022 15:36
PFOA	ND	0.14	0.045	0.045	1	335-67-1		08/23/2022 15:36
6:2 FTS	ND	0.14	0.060	0.060	1	27619-97-2		08/23/2022 15:36
PFHpS	ND	0.14	0.040	0.040	1	375-92-8		08/23/2022 15:36
PFNA	ND	0.14	0.045	0.045	1	375-95-1		08/23/2022 15:36
PFOSAm	ND	0.14	0.043	0.043	1	754-91-6		08/23/2022 15:36
PFOS	ND	0.13	0.043	0.043	1	1763-23-1		08/23/2022 15:36
MeFOSA	ND	0.14	0.039	0.039	1	31506-32-8		08/23/2022 15:36
PFDA	ND	0.14	0.033	0.033	1	335-76-2		08/23/2022 15:36
EtFOSAm	ND	0.14	0.037	0.037	1	4151-50-2		08/23/2022 15:36
8:2 FTS	ND	0.14	0.063	0.063	1	39108-34-4		08/23/2022 15:36
9-CI-PF3ON	ND	0.13	0.036	0.036	1	756426-58-1		08/23/2022 15:36
PFNS	ND	0.14	0.050	0.050	1	68259-12-1		08/23/2022 15:36
PFUnDA	ND	0.14	0.044	0.044	1	2058-94-8		08/23/2022 15:36
NMeFOSAA	ND	0.14	0.041	0.041	1	2355-31-9		08/23/2022 15:36
NEtFOSAA	ND	0.14	0.058	0.058	1	2991-50-6		08/23/2022 15:36
PFDS	ND	0.14	0.041	0.041	1	335-77-3		08/23/2022 15:36
PFDOA	ND	0.14	0.048	0.048	1	307-55-1		08/23/2022 15:36
MeFOSE	ND	0.14	0.044	0.044	1	24448-09-7		08/23/2022 15:36
EtFOSE	ND	0.14	0.047	0.047	1	1691-99-2		08/23/2022 15:36
11-CI-PF3OUdS	ND	0.14	0.037	0.037	1	763051-92-9		08/23/2022 15:36
PFTTrDA	ND	0.14	0.046	0.046	1	72629-94-8		08/23/2022 15:36
PFDoS	ND	0.14	0.038	0.038	1	79780-39-5		08/23/2022 15:36
PFTDA	ND	0.14	0.050	0.050	1	376-06-7		08/23/2022 15:36

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-AFFExcavation-SB01(17-17.5)	Total Amount Extracted	5.28g
Lab Sample ID	10620121002	Percent Moisture	34.5776%
Lab File ID	B220823B_008	Dry Weight Extracted	3.46g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:20	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	1.4	1.2	85	50-150		08/23/2022 15:36
13C4 PFOA	1.4	1.4	93	50-150		08/23/2022 15:36
13C2 PFDA	1.4	1.3	90	50-150		08/23/2022 15:36
13C4 PFOS	1.4	1.2	88	50-150		08/23/2022 15:36

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	1.4	1.1	74	25-150		08/23/2022 15:36
13C5 PFPeA	1.4	1.1	76	25-150		08/23/2022 15:36
13C3 PFBS	1.3	0.94	70	25-150		08/23/2022 15:36
13C2 4:2FTS	1.4	1.00	74	25-150		08/23/2022 15:36
13C5 PFHxA	1.4	1.1	75	25-150		08/23/2022 15:36
13C4 PFHpA	1.4	1.1	76	25-150		08/23/2022 15:36
13C3 PFHxS	1.4	1.0	73	25-150		08/23/2022 15:36
13C2 6:2FTS	1.4	0.94	68	25-150		08/23/2022 15:36
13C8 PFOA	1.4	1.1	78	25-150		08/23/2022 15:36
13C9 PFNA	1.4	1.0	70	25-150		08/23/2022 15:36
13C8 PFOS	1.4	1.00	72	25-150		08/23/2022 15:36
13C2 8:2FTS	1.4	0.90	65	25-150		08/23/2022 15:36
13C6 PFDA	1.4	1.3	88	25-150		08/23/2022 15:36
d3-MeFOSAA	1.4	1.1	79	25-150		08/23/2022 15:36
13C8 PFOSA	1.4	0.84	58	25-150		08/23/2022 15:36
d5-EtFOSAA	1.4	0.93	64	25-150		08/23/2022 15:36
13C7 PFUdA	1.4	1.1	77	25-150		08/23/2022 15:36
13C2 PFDoA	1.4	1.5	101	25-150		08/23/2022 15:36
13C2 PFTeDA	1.4	0.86	59	25-150		08/23/2022 15:36
13C3 HFPO-DA	1.4	1.2	80	25-150		08/23/2022 15:36
d7-N-MeFOSE	1.4	0.021	1	10-150	R	08/23/2022 15:36
d9-N-EtFOSE	1.4	0.029	2	10-150	R	08/23/2022 15:36
d3-N-MeFOSA	1.4	0.0066	0	10-150	R	08/23/2022 15:36
d5-N-EtFOSA	1.4	0.0054	0	10-150	R	08/23/2022 15:36

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-AFFExcavation-SB01(17-17.5)	Total Amount Extracted	5.28g
Lab Sample ID	10620121002	Percent Moisture	34.5776%
Lab File ID	B220823B_008	Dry Weight Extracted	3.46g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:20	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.86	5.77	13		08/23/2022 15:36
13C4 PFOA	N/A	N/A	7.09	7.07	16		08/23/2022 15:36
13C2 PFDA	N/A	N/A	8.41	8.39	14		08/23/2022 15:36
13C4 PFOS	N/A	N/A	8.89	8.88	14		08/23/2022 15:36

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.29	4.23	19		08/23/2022 15:36
13C5 PFPeA	N/A	N/A	5.20	5.10	20		08/23/2022 15:36
13C3 PFBS	N/A	N/A	6.09	6.09	16		08/23/2022 15:36
13C2 4:2FTS	N/A	N/A	5.60	5.51	41		08/23/2022 15:36
13C5 PFHxA	N/A	N/A	5.86	5.78	17		08/23/2022 15:36
13C4 PFHpA	N/A	N/A	6.47	6.42	13		08/23/2022 15:36
13C3 PFHxS	N/A	N/A	7.49	7.47	13		08/23/2022 15:36
13C2 6:2FTS	N/A	N/A	6.76	6.73	99		08/23/2022 15:36
13C8 PFOA	N/A	N/A	7.09	7.06	17		08/23/2022 15:36
13C9 PFNA	N/A	N/A	7.74	7.71	18		08/23/2022 15:36
13C8 PFOS	N/A	N/A	8.89	8.86	17		08/23/2022 15:36
13C2 8:2FTS	N/A	N/A	8.03	8.00	27		08/23/2022 15:36
13C6 PFDA	N/A	N/A	8.42	8.38	13		08/23/2022 15:36
d3-MeFOSAA	N/A	N/A	8.28	8.25	14		08/23/2022 15:36
13C8 PFOSA	N/A	N/A	10.53	10.42	11		08/23/2022 15:36
d5-EtFOSAA	N/A	N/A	8.57	8.54	11		08/23/2022 15:36
13C7 PFUdA	N/A	N/A	9.09	9.07	15		08/23/2022 15:36
13C2 PFDoA	N/A	N/A	9.75	9.71	11		08/23/2022 15:36
13C2 PFTeDA	N/A	N/A	11.03	11.02	11		08/23/2022 15:36
13C3 HFPO-DA	N/A	N/A	6.11	6.04	18		08/23/2022 15:36
d7-N-MeFOSE	N/A	N/A	12.47	12.44	41	R	08/23/2022 15:36
d9-N-EtFOSE	N/A	N/A	12.94	12.92	15	R	08/23/2022 15:36
d3-N-MeFOSA	N/A	N/A	12.68	12.65	84	R	08/23/2022 15:36
d5-N-EtFOSA	N/A	N/A	13.09	13.07	11	R	08/23/2022 15:36

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-AFFExcavation-SB01(17-17.5)	Total Amount Extracted	5.28g
Lab Sample ID	10620121002	Percent Moisture	34.5776%
Lab File ID	B220823B_008	Dry Weight Extracted	3.46g
Matrix	Soil	Ical ID	220817B02
Collected	08/03/2022 12:20	CCal File	B220823B_001
Received	08/05/2022 18:45	Ending CCal File	B220823B_011
Extraction Date	08/10/2022 16:12	Blank File	B220817C_006

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.23	ND		08/23/2022 15:36
PFPeA	N/A	N/A	5.21	5.21	ND		08/23/2022 15:36
HFPO-DA	0.26	0.26	6.13	6.07	ND		08/23/2022 15:36
PFBS	0.00	0.43	0.00	6.08	ND		08/23/2022 15:36
PFHxA	0.00	0.09	0.00	5.85	ND		08/23/2022 15:36
4:2 FTS	0.00	0.81	0.00	5.54	ND		08/23/2022 15:36
PFPeS	0.00	0.42	0.00	6.79	ND		08/23/2022 15:36
PFHpA	0.00	0.32	0.00	6.44	ND		08/23/2022 15:36
DONA	0.00	0.56	0.00	6.67	ND		08/23/2022 15:36
PFHxS	0.00	0.37	0.00	7.49	ND		08/23/2022 15:36
PFOA	0.43	0.39	7.09	7.08	ND		08/23/2022 15:36
6:2 FTS	1.10	0.93	6.77	6.74	ND		08/23/2022 15:36
PFHpS	0.00	0.41	0.00	8.20	ND		08/23/2022 15:36
PFNA	0.00	0.12	0.00	7.73	ND		08/23/2022 15:36
PFOSAm	N/A	N/A	10.54	10.44	ND		08/23/2022 15:36
PFOS	0.38	0.35	8.90	8.90	ND		08/23/2022 15:36
MeFOSA	0.00	0.47	0.00	12.69	ND		08/23/2022 15:36
PFDA	0.00	0.18	0.00	8.40	ND		08/23/2022 15:36
EtFOSAm	0.00	0.50	0.00	13.10	ND		08/23/2022 15:36
8:2 FTS	0.00	0.96	0.00	8.02	ND		08/23/2022 15:36
9-Cl-PF3ON	0.00	0.06	0.00	9.39	ND		08/23/2022 15:36
PFNS	0.00	0.47	0.00	9.58	ND		08/23/2022 15:36
PFUnDA	0.00	0.14	0.00	9.05	ND		08/23/2022 15:36
NMeFOSAA	0.00	0.82	0.00	8.26	ND		08/23/2022 15:36
NEtFOSAA	0.00	0.68	0.00	8.55	ND		08/23/2022 15:36
PFDS	0.00	0.32	0.00	10.19	ND		08/23/2022 15:36
PFDOA	0.00	0.15	0.00	9.72	ND		08/23/2022 15:36
MeFOSE	N/A	N/A	0.00	12.45	ND		08/23/2022 15:36
EtFOSE	0.00	0.00	0.00	12.92	ND		08/23/2022 15:36
11-Cl-PF3OUdS	0.00	0.03	0.00	10.66	ND		08/23/2022 15:36
PFTTrDA	0.00	0.16	0.00	10.37	ND		08/23/2022 15:36
PFDoS	0.00	0.46	0.00	11.43	ND		08/23/2022 15:36
PFTDA	0.00	0.26	0.00	11.02	ND		08/23/2022 15:36

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-03
 Lab Sample ID 10620121003
 Lab File ID B220817C_067
 Matrix Non_Potable_Water
 Collected 08/03/2022 11:55
 Received 08/05/2022 18:45
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 259mL
 Ical ID 220817B02
 CCal File B220817C_060
 Ending CCal File B220817C_071
 Blank File B220817C_004

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	1.9	0.43	0.43	1	375-22-4		08/19/2022 13:07
PFPeA	ND	1.9	0.42	0.42	1	2706-90-3		08/19/2022 13:07
HFPO-DA	ND	1.9	0.51	0.51	1	13252-13-6		08/19/2022 13:07
PFBS	ND	1.7	0.46	0.46	1	375-73-5		08/19/2022 13:07
PFHxA	ND	1.9	0.42	0.42	1	307-24-4		08/19/2022 13:07
4:2 FTS	ND	1.8	0.54	0.54	1	757124-72-4		08/19/2022 13:07
PFPeS	ND	1.8	0.46	0.46	1	2706-91-4		08/19/2022 13:07
PFHpA	ND	1.9	0.53	0.53	1	375-85-9		08/19/2022 13:07
DONA	ND	1.8	0.50	0.50	1	919005-14-4		08/19/2022 13:07
PFHxS	ND	1.8	0.49	0.49	1	355-46-4		08/19/2022 13:07
PFOA	ND	1.9	0.56	0.56	1	335-67-1		08/19/2022 13:07
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2		08/19/2022 13:07
PFHpS	ND	1.8	0.40	0.40	1	375-92-8		08/19/2022 13:07
PFNA	ND	1.9	0.71	0.71	1	375-95-1		08/19/2022 13:07
PFOSAm	ND	1.9	0.79	0.79	1	754-91-6		08/19/2022 13:07
PFOS	ND	1.8	0.53	0.53	1	1763-23-1		08/19/2022 13:07
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8		08/19/2022 13:07
PFDA	ND	1.9	0.54	0.54	1	335-76-2		08/19/2022 13:07
EtFOSAm	ND	1.9	0.59	0.59	1	4151-50-2		08/19/2022 13:07
8:2 FTS	ND	1.9	0.63	0.63	1	39108-34-4		08/19/2022 13:07
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/19/2022 13:07
PFNS	ND	1.9	0.43	0.43	1	68259-12-1		08/19/2022 13:07
PFUnDA	ND	1.9	0.52	0.52	1	2058-94-8		08/19/2022 13:07
NMeFOSAA	ND	1.9	0.42	0.42	1	2355-31-9		08/19/2022 13:07
NEtFOSAA	ND	1.9	0.54	0.54	1	2991-50-6		08/19/2022 13:07
PFDS	ND	1.9	0.43	0.43	1	335-77-3		08/19/2022 13:07
PFDOA	ND	1.9	0.47	0.47	1	307-55-1		08/19/2022 13:07
MeFOSE	ND	1.9	0.32	0.32	1	24448-09-7		08/19/2022 13:07
EtFOSE	ND	1.9	0.48	0.48	1	1691-99-2		08/19/2022 13:07
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/19/2022 13:07
PFTTrDA	ND	1.9	0.60	0.60	1	72629-94-8		08/19/2022 13:07
PFDoS	ND	1.9	0.44	0.44	1	79780-39-5		08/19/2022 13:07
PFTDA	ND	1.9	0.46	0.46	1	376-06-7		08/19/2022 13:07

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-03	Total Amount Extracted	259mL
Lab Sample ID	10620121003	Ical ID	220817B02
Lab File ID	B220817C_067	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 11:55	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	14	70	50-150		08/19/2022 13:07
13C4 PFOA	19	14	73	50-150		08/19/2022 13:07
13C2 PFDA	19	14	75	50-150		08/19/2022 13:07
13C4 PFOS	18	15	81	50-150		08/19/2022 13:07

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	16	83	25-150		08/19/2022 13:07
13C5 PFPeA	19	16	85	25-150		08/19/2022 13:07
13C3 PFBS	18	15	84	25-150		08/19/2022 13:07
13C2 4:2FTS	18	16	89	25-150		08/19/2022 13:07
13C5 PFHxA	19	16	84	25-150		08/19/2022 13:07
13C4 PFHpA	19	15	76	25-150		08/19/2022 13:07
13C3 PFHxS	18	15	85	25-150		08/19/2022 13:07
13C2 6:2FTS	18	17	92	25-150		08/19/2022 13:07
13C8 PFOA	19	17	88	25-150		08/19/2022 13:07
13C9 PFNA	19	17	87	25-150		08/19/2022 13:07
13C8 PFOS	18	17	91	25-150		08/19/2022 13:07
13C2 8:2FTS	18	16	88	25-150		08/19/2022 13:07
13C6 PFDA	19	16	82	25-150		08/19/2022 13:07
d3-MeFOSAA	19	13	67	25-150		08/19/2022 13:07
13C8 PFOSA	19	12	61	25-150		08/19/2022 13:07
d5-EtFOSAA	19	9.4	49	25-150		08/19/2022 13:07
13C7 PFUdA	19	16	84	25-150		08/19/2022 13:07
13C2 PFDoA	19	15	76	25-150		08/19/2022 13:07
13C2 PFTeDA	19	9.7	50	25-150		08/19/2022 13:07
13C3 HFPO-DA	19	17	88	25-150		08/19/2022 13:07
d7-N-MeFOSE	19	7.5	39	10-150		08/19/2022 13:07
d9-N-EtFOSE	19	7.2	38	10-150		08/19/2022 13:07
d3-N-MeFOSA	19	5.5	29	10-150		08/19/2022 13:07
d5-N-EtFOSA	19	4.3	22	10-150		08/19/2022 13:07

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-ERB-03
 Lab Sample ID 10620121003
 Lab File ID B220817C_067
 Matrix Non_Potable_Water
 Collected 08/03/2022 11:55
 Received 08/05/2022 18:45
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 259mL
 Ical ID 220817B02
 CCal File B220817C_060
 Ending CCal File B220817C_071
 Blank File B220817C_004

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.77	17		08/19/2022 13:07
13C4 PFOA	N/A	N/A	7.05	7.07	19		08/19/2022 13:07
13C2 PFDA	N/A	N/A	8.39	8.39	26		08/19/2022 13:07
13C4 PFOS	N/A	N/A	8.87	8.88	12		08/19/2022 13:07

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.26	4.23	21		08/19/2022 13:07
13C5 PFPeA	N/A	N/A	5.13	5.10	21		08/19/2022 13:07
13C3 PFBS	N/A	N/A	6.03	6.02	22		08/19/2022 13:07
13C2 4:2FTS	N/A	N/A	5.54	5.51	57		08/19/2022 13:07
13C5 PFHxA	N/A	N/A	5.80	5.78	16		08/19/2022 13:07
13C4 PFHpA	N/A	N/A	6.42	6.42	18		08/19/2022 13:07
13C3 PFHxS	N/A	N/A	7.46	7.47	20		08/19/2022 13:07
13C2 6:2FTS	N/A	N/A	6.72	6.73	16		08/19/2022 13:07
13C8 PFOA	N/A	N/A	7.05	7.06	23		08/19/2022 13:07
13C9 PFNA	N/A	N/A	7.71	7.71	21		08/19/2022 13:07
13C8 PFOS	N/A	N/A	8.88	8.86	17		08/19/2022 13:07
13C2 8:2FTS	N/A	N/A	8.01	8.00	21		08/19/2022 13:07
13C6 PFDA	N/A	N/A	8.39	8.38	11		08/19/2022 13:07
d3-MeFOSAA	N/A	N/A	8.25	8.25	13		08/19/2022 13:07
13C8 PFOSA	N/A	N/A	10.53	10.42	13		08/19/2022 13:07
d5-EtFOSAA	N/A	N/A	8.54	8.54	27		08/19/2022 13:07
13C7 PFUdA	N/A	N/A	9.06	9.07	18		08/19/2022 13:07
13C2 PFDoA	N/A	N/A	9.73	9.71	16		08/19/2022 13:07
13C2 PFTeDA	N/A	N/A	11.03	11.02	12		08/19/2022 13:07
13C3 HFPO-DA	N/A	N/A	6.05	6.04	20		08/19/2022 13:07
d7-N-MeFOSE	N/A	N/A	12.46	12.44	59		08/19/2022 13:07
d9-N-EtFOSE	N/A	N/A	12.94	12.88	61		08/19/2022 13:07
d3-N-MeFOSA	N/A	N/A	12.67	12.65	78		08/19/2022 13:07
d5-N-EtFOSA	N/A	N/A	13.10	13.07	60		08/19/2022 13:07

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-ERB-03	Total Amount Extracted	259mL
Lab Sample ID	10620121003	Ical ID	220817B02
Lab File ID	B220817C_067	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 11:55	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.26	4.23	ND		08/19/2022 13:07
PFPeA	N/A	N/A	5.14	5.15	ND		08/19/2022 13:07
HFPO-DA	0.47	0.28	6.07	6.07	ND		08/19/2022 13:07
PFBS	0.30	0.43	6.04	6.02	ND		08/19/2022 13:07
PFHxA	0.05	0.08	5.81	5.81	ND		08/19/2022 13:07
4:2 FTS	0.00	0.92	0.00	5.54	ND		08/19/2022 13:07
PFPeS	0.00	0.40	0.00	6.79	ND		08/19/2022 13:07
PFHpA	0.32	0.33	6.42	6.44	ND		08/19/2022 13:07
DONA	0.00	0.56	0.00	6.67	ND		08/19/2022 13:07
PFHxS	0.31	0.39	7.48	7.49	ND		08/19/2022 13:07
PFOA	0.45	0.39	7.06	7.08	ND		08/19/2022 13:07
6:2 FTS	0.88	0.95	6.72	6.74	ND		08/19/2022 13:07
PFHpS	0.00	0.43	0.00	8.20	ND		08/19/2022 13:07
PFNA	0.09	0.14	7.71	7.73	ND		08/19/2022 13:07
PFOSAm	N/A	N/A	10.53	10.44	ND		08/19/2022 13:07
PFOS	0.29	0.38	8.89	8.90	ND		08/19/2022 13:07
MeFOSA	0.00	0.59	0.00	12.69	ND		08/19/2022 13:07
PFDA	0.00	0.20	0.00	8.40	ND		08/19/2022 13:07
EtFOSAm	0.00	0.57	0.00	13.10	ND		08/19/2022 13:07
8:2 FTS	0.00	0.93	0.00	8.02	ND		08/19/2022 13:07
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/19/2022 13:07
PFNS	0.00	0.47	0.00	9.58	ND		08/19/2022 13:07
PFUnDA	0.22	0.13	9.08	9.05	ND		08/19/2022 13:07
NMeFOSAA	0.00	0.94	0.00	8.26	ND		08/19/2022 13:07
NEtFOSAA	0.00	0.67	0.00	8.55	ND		08/19/2022 13:07
PFDS	0.00	0.35	0.00	10.19	ND		08/19/2022 13:07
PFDOA	0.00	0.19	0.00	9.72	ND		08/19/2022 13:07
MeFOSE	N/A	N/A	0.00	12.45	ND		08/19/2022 13:07
EtFOSE	0.00	0.00	0.00	12.92	ND		08/19/2022 13:07
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/19/2022 13:07
PFTTrDA	0.00	0.16	0.00	10.37	ND		08/19/2022 13:07
PFDoS	0.00	0.47	0.00	11.43	ND		08/19/2022 13:07
PFTDA	0.00	0.25	0.00	11.02	ND		08/19/2022 13:07

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-02	Total Amount Extracted	262mL
Lab Sample ID	10620121004	Ical ID	220817B02
Lab File ID	B220817C_068	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 12:30	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	1.9	0.42	0.42	1	375-22-4		08/19/2022 13:27
PFPeA	ND	1.9	0.42	0.42	1	2706-90-3		08/19/2022 13:27
HFPO-DA	ND	1.9	0.50	0.50	1	13252-13-6		08/19/2022 13:27
PFBS	ND	1.7	0.45	0.45	1	375-73-5		08/19/2022 13:27
PFHxA	ND	1.9	0.42	0.42	1	307-24-4		08/19/2022 13:27
4:2 FTS	ND	1.8	0.53	0.53	1	757124-72-4		08/19/2022 13:27
PFPeS	ND	1.8	0.45	0.45	1	2706-91-4		08/19/2022 13:27
PFHpA	ND	1.9	0.52	0.52	1	375-85-9		08/19/2022 13:27
DONA	ND	1.8	0.49	0.49	1	919005-14-4		08/19/2022 13:27
PFHxS	ND	1.7	0.48	0.48	1	355-46-4		08/19/2022 13:27
PFOA	ND	1.9	0.56	0.56	1	335-67-1		08/19/2022 13:27
6:2 FTS	ND	1.8	0.62	0.62	1	27619-97-2		08/19/2022 13:27
PFHpS	ND	1.8	0.39	0.39	1	375-92-8		08/19/2022 13:27
PFNA	ND	1.9	0.71	0.71	1	375-95-1		08/19/2022 13:27
PFOSAm	ND	1.9	0.78	0.78	1	754-91-6		08/19/2022 13:27
PFOS	ND	1.8	0.52	0.52	1	1763-23-1		08/19/2022 13:27
MeFOSA	ND	1.9	0.49	0.49	1	31506-32-8		08/19/2022 13:27
PFDA	ND	1.9	0.54	0.54	1	335-76-2		08/19/2022 13:27
EtFOSAm	ND	1.9	0.58	0.58	1	4151-50-2		08/19/2022 13:27
8:2 FTS	ND	1.8	0.62	0.62	1	39108-34-4		08/19/2022 13:27
9-CI-PF3ON	ND	1.8	0.29	0.29	1	756426-58-1		08/19/2022 13:27
PFNS	ND	1.8	0.43	0.43	1	68259-12-1		08/19/2022 13:27
PFUnDA	ND	1.9	0.51	0.51	1	2058-94-8		08/19/2022 13:27
NMeFOSAA	ND	1.9	0.41	0.41	1	2355-31-9		08/19/2022 13:27
NEtFOSAA	ND	1.9	0.53	0.53	1	2991-50-6		08/19/2022 13:27
PFDS	ND	1.8	0.43	0.43	1	335-77-3		08/19/2022 13:27
PFDOA	ND	1.9	0.46	0.46	1	307-55-1		08/19/2022 13:27
MeFOSE	ND	1.9	0.31	0.31	1	24448-09-7		08/19/2022 13:27
EtFOSE	ND	1.9	0.47	0.47	1	1691-99-2		08/19/2022 13:27
11-CI-PF3OUdS	ND	1.8	0.42	0.42	1	763051-92-9		08/19/2022 13:27
PFTTrDA	ND	1.9	0.59	0.59	1	72629-94-8		08/19/2022 13:27
PFDoS	ND	1.8	0.44	0.44	1	79780-39-5		08/19/2022 13:27
PFTDA	ND	1.9	0.45	0.45	1	376-06-7		08/19/2022 13:27

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-02	Total Amount Extracted	262mL
Lab Sample ID	10620121004	Ical ID	220817B02
Lab File ID	B220817C_068	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 12:30	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	19	14	72	50-150		08/19/2022 13:27
13C4 PFOA	19	14	72	50-150		08/19/2022 13:27
13C2 PFDA	19	14	71	50-150		08/19/2022 13:27
13C4 PFOS	18	14	77	50-150		08/19/2022 13:27

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	19	16	84	25-150		08/19/2022 13:27
13C5 PFPeA	19	17	87	25-150		08/19/2022 13:27
13C3 PFBS	18	16	90	25-150		08/19/2022 13:27
13C2 4:2FTS	18	14	80	25-150		08/19/2022 13:27
13C5 PFHxA	19	17	87	25-150		08/19/2022 13:27
13C4 PFHpA	19	16	84	25-150		08/19/2022 13:27
13C3 PFHxS	18	15	82	25-150		08/19/2022 13:27
13C2 6:2FTS	18	17	92	25-150		08/19/2022 13:27
13C8 PFOA	19	16	83	25-150		08/19/2022 13:27
13C9 PFNA	19	16	83	25-150		08/19/2022 13:27
13C8 PFOS	18	15	82	25-150		08/19/2022 13:27
13C2 8:2FTS	18	14	79	25-150		08/19/2022 13:27
13C6 PFDA	19	13	70	25-150		08/19/2022 13:27
d3-MeFOSAA	19	9.4	49	25-150		08/19/2022 13:27
13C8 PFOSA	19	12	64	25-150		08/19/2022 13:27
d5-EtFOSAA	19	9.3	49	25-150		08/19/2022 13:27
13C7 PFUdA	19	13	67	25-150		08/19/2022 13:27
13C2 PFDoA	19	12	62	25-150		08/19/2022 13:27
13C2 PFTeDA	19	13	66	25-150		08/19/2022 13:27
13C3 HFPO-DA	19	17	88	25-150		08/19/2022 13:27
d7-N-MeFOSE	19	8.9	46	10-150		08/19/2022 13:27
d9-N-EtFOSE	19	7.7	40	10-150		08/19/2022 13:27
d3-N-MeFOSA	19	5.4	28	10-150		08/19/2022 13:27
d5-N-EtFOSA	19	4.7	25	10-150		08/19/2022 13:27

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-02	Total Amount Extracted	262mL
Lab Sample ID	10620121004	Ical ID	220817B02
Lab File ID	B220817C_068	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 12:30	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.77	15		08/19/2022 13:27
13C4 PFOA	N/A	N/A	7.04	7.07	20		08/19/2022 13:27
13C2 PFDA	N/A	N/A	8.39	8.39	17		08/19/2022 13:27
13C4 PFOS	N/A	N/A	8.87	8.88	23		08/19/2022 13:27

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.26	4.23	19		08/19/2022 13:27
13C5 PFPeA	N/A	N/A	5.13	5.10	20		08/19/2022 13:27
13C3 PFBS	N/A	N/A	6.03	6.02	23		08/19/2022 13:27
13C2 4:2FTS	N/A	N/A	5.54	5.51	69		08/19/2022 13:27
13C5 PFHxA	N/A	N/A	5.80	5.78	17		08/19/2022 13:27
13C4 PFHpA	N/A	N/A	6.41	6.42	16		08/19/2022 13:27
13C3 PFHxS	N/A	N/A	7.46	7.47	20		08/19/2022 13:27
13C2 6:2FTS	N/A	N/A	6.71	6.73	26		08/19/2022 13:27
13C8 PFOA	N/A	N/A	7.04	7.06	21		08/19/2022 13:27
13C9 PFNA	N/A	N/A	7.70	7.71	23		08/19/2022 13:27
13C8 PFOS	N/A	N/A	8.88	8.86	31		08/19/2022 13:27
13C2 8:2FTS	N/A	N/A	8.00	8.00	44		08/19/2022 13:27
13C6 PFDA	N/A	N/A	8.39	8.38	20		08/19/2022 13:27
d3-MeFOSAA	N/A	N/A	8.25	8.25	18		08/19/2022 13:27
13C8 PFOSA	N/A	N/A	10.53	10.42	17		08/19/2022 13:27
d5-EtFOSAA	N/A	N/A	8.54	8.54	13		08/19/2022 13:27
13C7 PFUdA	N/A	N/A	9.07	9.07	22		08/19/2022 13:27
13C2 PFDoA	N/A	N/A	9.73	9.71	15		08/19/2022 13:27
13C2 PFTeDA	N/A	N/A	11.03	11.02	14		08/19/2022 13:27
13C3 HFPO-DA	N/A	N/A	6.05	6.04	18		08/19/2022 13:27
d7-N-MeFOSE	N/A	N/A	12.46	12.44	51		08/19/2022 13:27
d9-N-EtFOSE	N/A	N/A	12.94	12.88	63		08/19/2022 13:27
d3-N-MeFOSA	N/A	N/A	12.67	12.65	19		08/19/2022 13:27
d5-N-EtFOSA	N/A	N/A	13.10	13.07	58		08/19/2022 13:27

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-FB-02	Total Amount Extracted	262mL
Lab Sample ID	10620121004	Ical ID	220817B02
Lab File ID	B220817C_068	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 12:30	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.26	4.23	ND		08/19/2022 13:27
PFPeA	N/A	N/A	5.14	5.15	ND		08/19/2022 13:27
HFPO-DA	0.21	0.28	6.07	6.07	ND		08/19/2022 13:27
PFBS	0.60	0.43	6.04	6.02	ND		08/19/2022 13:27
PFHxA	0.08	0.08	5.81	5.81	ND		08/19/2022 13:27
4:2 FTS	0.00	0.92	0.00	5.54	ND		08/19/2022 13:27
PFPeS	0.00	0.40	0.00	6.79	ND		08/19/2022 13:27
PFHpA	0.29	0.33	6.42	6.44	ND		08/19/2022 13:27
DONA	0.00	0.56	0.00	6.67	ND		08/19/2022 13:27
PFHxS	0.40	0.39	7.47	7.49	ND		08/19/2022 13:27
PFOA	0.37	0.39	7.05	7.08	ND		08/19/2022 13:27
6:2 FTS	0.89	0.95	6.72	6.74	ND		08/19/2022 13:27
PFHpS	0.00	0.43	0.00	8.20	ND		08/19/2022 13:27
PFNA	0.13	0.14	7.71	7.73	ND		08/19/2022 13:27
PFOSAm	N/A	N/A	10.55	10.44	ND		08/19/2022 13:27
PFOS	0.33	0.38	8.89	8.90	ND		08/19/2022 13:27
MeFOSA	0.00	0.59	0.00	12.69	ND		08/19/2022 13:27
PFDA	0.00	0.20	0.00	8.40	ND		08/19/2022 13:27
EtFOSAm	0.00	0.57	0.00	13.10	ND		08/19/2022 13:27
8:2 FTS	0.00	0.93	0.00	8.02	ND		08/19/2022 13:27
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/19/2022 13:27
PFNS	0.00	0.47	0.00	9.58	ND		08/19/2022 13:27
PFUnDA	0.16	0.13	9.07	9.05	ND		08/19/2022 13:27
NMeFOSAA	0.00	0.94	0.00	8.26	ND		08/19/2022 13:27
NEtFOSAA	0.00	0.67	0.00	8.55	ND		08/19/2022 13:27
PFDS	0.00	0.35	0.00	10.19	ND		08/19/2022 13:27
PFDOA	0.00	0.19	0.00	9.72	ND		08/19/2022 13:27
MeFOSE	N/A	N/A	0.00	12.45	ND		08/19/2022 13:27
EtFOSE	0.00	0.00	0.00	12.92	ND		08/19/2022 13:27
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/19/2022 13:27
PFTTrDA	0.00	0.16	0.00	10.37	ND		08/19/2022 13:27
PFDoS	0.00	0.47	0.00	11.43	ND		08/19/2022 13:27
PFTDA	0.00	0.25	0.00	11.02	ND		08/19/2022 13:27

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-DECON-02
 Lab Sample ID 10620121005
 Lab File ID B220817C_069
 Matrix Non_Potable_Water
 Collected 08/03/2022 12:35
 Received 08/05/2022 18:45
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 251mL
 Ical ID 220817B02
 CCal File B220817C_060
 Ending CCal File B220817C_071
 Blank File B220817C_004

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	2.0	0.44	0.44	1	375-22-4		08/19/2022 13:47
PFPeA	ND	2.0	0.44	0.44	1	2706-90-3		08/19/2022 13:47
HFPO-DA	ND	2.0	0.53	0.53	1	13252-13-6		08/19/2022 13:47
PFBS	ND	1.8	0.47	0.47	1	375-73-5		08/19/2022 13:47
PFHxA	ND	2.0	0.44	0.44	1	307-24-4		08/19/2022 13:47
4:2 FTS	ND	1.9	0.56	0.56	1	757124-72-4		08/19/2022 13:47
PFPeS	ND	1.9	0.47	0.47	1	2706-91-4		08/19/2022 13:47
PFHpA	ND	2.0	0.55	0.55	1	375-85-9		08/19/2022 13:47
DONA	ND	1.9	0.51	0.51	1	919005-14-4		08/19/2022 13:47
PFHxS	ND	1.8	0.51	0.51	1	355-46-4		08/19/2022 13:47
PFOA	ND	2.0	0.58	0.58	1	335-67-1		08/19/2022 13:47
6:2 FTS	ND	1.9	0.64	0.64	1	27619-97-2		08/19/2022 13:47
PFHpS	ND	1.9	0.41	0.41	1	375-92-8		08/19/2022 13:47
PFNA	ND	2.0	0.74	0.74	1	375-95-1		08/19/2022 13:47
PFOSAm	ND	2.0	0.81	0.81	1	754-91-6		08/19/2022 13:47
PFOS	ND	1.8	0.55	0.55	1	1763-23-1		08/19/2022 13:47
MeFOSA	ND	2.0	0.51	0.51	1	31506-32-8		08/19/2022 13:47
PFDA	ND	2.0	0.56	0.56	1	335-76-2		08/19/2022 13:47
EtFOSAm	ND	2.0	0.60	0.60	1	4151-50-2		08/19/2022 13:47
8:2 FTS	ND	1.9	0.65	0.65	1	39108-34-4		08/19/2022 13:47
9-CI-PF3ON	ND	1.9	0.30	0.30	1	756426-58-1		08/19/2022 13:47
PFNS	ND	1.9	0.44	0.44	1	68259-12-1		08/19/2022 13:47
PFUnDA	ND	2.0	0.54	0.54	1	2058-94-8		08/19/2022 13:47
NMeFOSAA	ND	2.0	0.43	0.43	1	2355-31-9		08/19/2022 13:47
NEtFOSAA	ND	2.0	0.55	0.55	1	2991-50-6		08/19/2022 13:47
PFDS	ND	1.9	0.45	0.45	1	335-77-3		08/19/2022 13:47
PFDOA	ND	2.0	0.48	0.48	1	307-55-1		08/19/2022 13:47
MeFOSE	ND	2.0	0.33	0.33	1	24448-09-7		08/19/2022 13:47
EtFOSE	ND	2.0	0.49	0.49	1	1691-99-2		08/19/2022 13:47
11-CI-PF3OUdS	ND	1.9	0.43	0.43	1	763051-92-9		08/19/2022 13:47
PFTTrDA	ND	2.0	0.62	0.62	1	72629-94-8		08/19/2022 13:47
PFDoS	ND	1.9	0.46	0.46	1	79780-39-5		08/19/2022 13:47
PFTDA	ND	2.0	0.47	0.47	1	376-06-7		08/19/2022 13:47

REPORT OF LABORATORY ANALYSIS

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-DECON-02
 Lab Sample ID 10620121005
 Lab File ID B220817C_069
 Matrix Non_Potable_Water
 Collected 08/03/2022 12:35
 Received 08/05/2022 18:45
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 251mL
 Ical ID 220817B02
 CCal File B220817C_060
 Ending CCal File B220817C_071
 Blank File B220817C_004

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	20	14	70	50-150		08/19/2022 13:47
13C4 PFOA	20	16	78	50-150		08/19/2022 13:47
13C2 PFDA	20	13	68	50-150		08/19/2022 13:47
13C4 PFOS	19	14	74	50-150		08/19/2022 13:47

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	20	17	86	25-150		08/19/2022 13:47
13C5 PFPeA	20	17	85	25-150		08/19/2022 13:47
13C3 PFBS	18	16	86	25-150		08/19/2022 13:47
13C2 4:2FTS	19	17	90	25-150		08/19/2022 13:47
13C5 PFHxA	20	16	83	25-150		08/19/2022 13:47
13C4 PFHpA	20	16	81	25-150		08/19/2022 13:47
13C3 PFHxS	19	15	81	25-150		08/19/2022 13:47
13C2 6:2FTS	19	15	77	25-150		08/19/2022 13:47
13C8 PFOA	20	19	93	25-150		08/19/2022 13:47
13C9 PFNA	20	15	74	25-150		08/19/2022 13:47
13C8 PFOS	19	14	73	25-150		08/19/2022 13:47
13C2 8:2FTS	19	11	60	25-150		08/19/2022 13:47
13C6 PFDA	20	14	70	25-150		08/19/2022 13:47
d3-MeFOSAA	20	8.4	42	25-150		08/19/2022 13:47
13C8 PFOSA	20	6.6	33	25-150		08/19/2022 13:47
d5-EtFOSAA	20	8.3	42	25-150		08/19/2022 13:47
13C7 PFUdA	20	10	51	25-150		08/19/2022 13:47
13C2 PFDaA	20	12	58	25-150		08/19/2022 13:47
13C2 PFTeDA	20	11	54	25-150		08/19/2022 13:47
13C3 HFPO-DA	20	18	89	25-150		08/19/2022 13:47
d7-N-MeFOSE	20	1.4	7	10-150	R	08/19/2022 13:47
d9-N-EtFOSE	20	1.0	5	10-150	R	08/19/2022 13:47
d3-N-MeFOSA	20	0.044	0	10-150	R	08/19/2022 13:47
d5-N-EtFOSA	20	0.041	0	10-150	R	08/19/2022 13:47

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID PR-DECON-02
 Lab Sample ID 10620121005
 Lab File ID B220817C_069
 Matrix Non_Potable_Water
 Collected 08/03/2022 12:35
 Received 08/05/2022 18:45
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 251mL
 Ical ID 220817B02
 CCal File B220817C_060
 Ending CCal File B220817C_071
 Blank File B220817C_004

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.77	19		08/19/2022 13:47
13C4 PFOA	N/A	N/A	7.04	7.07	19		08/19/2022 13:47
13C2 PFDA	N/A	N/A	8.39	8.39	15		08/19/2022 13:47
13C4 PFOS	N/A	N/A	8.87	8.88	19		08/19/2022 13:47

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.26	4.23	21		08/19/2022 13:47
13C5 PFPeA	N/A	N/A	5.13	5.10	20		08/19/2022 13:47
13C3 PFBS	N/A	N/A	6.03	6.02	22		08/19/2022 13:47
13C2 4:2FTS	N/A	N/A	5.53	5.51	63		08/19/2022 13:47
13C5 PFHxA	N/A	N/A	5.80	5.78	22		08/19/2022 13:47
13C4 PFHpA	N/A	N/A	6.41	6.42	15		08/19/2022 13:47
13C3 PFHxS	N/A	N/A	7.46	7.47	22		08/19/2022 13:47
13C2 6:2FTS	N/A	N/A	6.71	6.73	15		08/19/2022 13:47
13C8 PFOA	N/A	N/A	7.04	7.06	28		08/19/2022 13:47
13C9 PFNA	N/A	N/A	7.70	7.71	21		08/19/2022 13:47
13C8 PFOS	N/A	N/A	8.88	8.86	21		08/19/2022 13:47
13C2 8:2FTS	N/A	N/A	8.01	8.00	48		08/19/2022 13:47
13C6 PFDA	N/A	N/A	8.39	8.38	15		08/19/2022 13:47
d3-MeFOSAA	N/A	N/A	8.25	8.25	85		08/19/2022 13:47
13C8 PFOSA	N/A	N/A	10.53	10.42	12		08/19/2022 13:47
d5-EtFOSAA	N/A	N/A	8.54	8.54	12		08/19/2022 13:47
13C7 PFUdA	N/A	N/A	9.06	9.07	30		08/19/2022 13:47
13C2 PFDoA	N/A	N/A	9.73	9.71	15		08/19/2022 13:47
13C2 PFTeDA	N/A	N/A	11.03	11.02	10		08/19/2022 13:47
13C3 HFPO-DA	N/A	N/A	6.05	6.04	13		08/19/2022 13:47
d7-N-MeFOSE	N/A	N/A	12.46	12.44	45	R	08/19/2022 13:47
d9-N-EtFOSE	N/A	N/A	12.94	12.88	26	R	08/19/2022 13:47
d3-N-MeFOSA	N/A	N/A	12.68	12.65	40	R	08/19/2022 13:47
d5-N-EtFOSA	N/A	N/A	13.10	13.07	97	R	08/19/2022 13:47

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Sample Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID	PR-DECON-02	Total Amount Extracted	251mL
Lab Sample ID	10620121005	Ical ID	220817B02
Lab File ID	B220817C_069	CCal File	B220817C_060
Matrix	Non_Potable_Water	Ending CCal File	B220817C_071
Collected	08/03/2022 12:35	Blank File	B220817C_004
Received	08/05/2022 18:45		
Extraction Date	08/15/2022 10:35		

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.26	4.23	ND		08/19/2022 13:47
PFPeA	N/A	N/A	5.14	5.15	ND		08/19/2022 13:47
HFPO-DA	0.00	0.28	0.00	6.07	ND		08/19/2022 13:47
PFBS	0.75	0.43	6.04	6.02	ND		08/19/2022 13:47
PFHxA	0.00	0.08	0.00	5.81	ND		08/19/2022 13:47
4:2 FTS	0.00	0.92	0.00	5.54	ND		08/19/2022 13:47
PFPeS	0.00	0.40	0.00	6.79	ND		08/19/2022 13:47
PFHpA	0.40	0.33	6.42	6.44	ND		08/19/2022 13:47
DONA	0.00	0.56	0.00	6.67	ND		08/19/2022 13:47
PFHxS	0.00	0.39	0.00	7.49	ND		08/19/2022 13:47
PFOA	0.33	0.39	7.05	7.08	ND		08/19/2022 13:47
6:2 FTS	0.72	0.95	6.72	6.74	ND		08/19/2022 13:47
PFHpS	0.00	0.43	0.00	8.20	ND		08/19/2022 13:47
PFNA	0.08	0.14	7.71	7.73	ND		08/19/2022 13:47
PFOSAm	N/A	N/A	0.00	10.44	ND		08/19/2022 13:47
PFOS	0.29	0.38	8.88	8.90	ND		08/19/2022 13:47
MeFOSA	0.00	0.59	0.00	12.69	ND		08/19/2022 13:47
PFDA	0.00	0.20	0.00	8.40	ND		08/19/2022 13:47
EtFOSAm	0.00	0.57	0.00	13.10	ND		08/19/2022 13:47
8:2 FTS	0.00	0.93	0.00	8.02	ND		08/19/2022 13:47
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/19/2022 13:47
PFNS	0.00	0.47	0.00	9.58	ND		08/19/2022 13:47
PFUnDA	0.00	0.13	0.00	9.05	ND		08/19/2022 13:47
NMeFOSAA	0.00	0.94	0.00	8.26	ND		08/19/2022 13:47
NEtFOSAA	0.00	0.67	0.00	8.55	ND		08/19/2022 13:47
PFDS	0.00	0.35	0.00	10.19	ND		08/19/2022 13:47
PFDOA	0.00	0.19	0.00	9.72	ND		08/19/2022 13:47
MeFOSE	N/A	N/A	0.00	12.45	ND		08/19/2022 13:47
EtFOSE	0.00	0.00	0.00	12.92	ND		08/19/2022 13:47
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/19/2022 13:47
PFTTrDA	0.00	0.16	0.00	10.37	ND		08/19/2022 13:47
PFDoS	0.00	0.47	0.00	11.43	ND		08/19/2022 13:47
PFTDA	0.00	0.25	0.00	11.02	ND		08/19/2022 13:47

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXY
 Lab Sample ID BLANK-100572
 Lab File ID B220817C_004
 Matrix Water
 Collected 08/10/2022 10:19
 Received 08/10/2022 10:19
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 244mL
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Compound	Concentration (ng/L)	QL (ng/L)	RL (ng/L)	MDL (ng/L)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	2.0	0.45	0.45	1	375-22-4		08/18/2022 16:07
PFPeA	ND	2.0	0.45	0.45	1	2706-90-3		08/18/2022 16:07
HFPO-DA	ND	2.0	0.54	0.54	1	13252-13-6		08/18/2022 16:07
PFBS	ND	1.8	0.48	0.48	1	375-73-5		08/18/2022 16:07
PFHxA	ND	2.0	0.45	0.45	1	307-24-4		08/18/2022 16:07
4:2 FTS	ND	1.9	0.57	0.57	1	757124-72-4		08/18/2022 16:07
PFPeS	ND	1.9	0.49	0.49	1	2706-91-4		08/18/2022 16:07
PFHpA	ND	2.0	0.56	0.56	1	375-85-9		08/18/2022 16:07
DONA	ND	1.9	0.53	0.53	1	919005-14-4		08/18/2022 16:07
PFHxS	ND	1.9	0.52	0.52	1	355-46-4		08/18/2022 16:07
PFOA	ND	2.0	0.60	0.60	1	335-67-1		08/18/2022 16:07
6:2 FTS	ND	1.9	0.66	0.66	1	27619-97-2		08/18/2022 16:07
PFHpS	ND	1.9	0.42	0.42	1	375-92-8		08/18/2022 16:07
PFNA	ND	2.0	0.76	0.76	1	375-95-1		08/18/2022 16:07
PFOSAm	ND	2.0	0.84	0.84	1	754-91-6		08/18/2022 16:07
PFOS	ND	1.9	0.56	0.56	1	1763-23-1		08/18/2022 16:07
MeFOSA	ND	2.0	0.52	0.52	1	31506-32-8		08/18/2022 16:07
PFDA	ND	2.0	0.58	0.58	1	335-76-2		08/18/2022 16:07
EtFOSAm	ND	2.0	0.62	0.62	1	4151-50-2		08/18/2022 16:07
8:2 FTS	ND	2.0	0.67	0.67	1	39108-34-4		08/18/2022 16:07
9-CI-PF3ON	ND	1.9	0.31	0.31	1	756426-58-1		08/18/2022 16:07
PFNS	ND	2.0	0.46	0.46	1	68259-12-1		08/18/2022 16:07
PFUnDA	ND	2.0	0.55	0.55	1	2058-94-8		08/18/2022 16:07
NMeFOSAA	ND	2.0	0.44	0.44	1	2355-31-9		08/18/2022 16:07
NEtFOSAA	ND	2.0	0.57	0.57	1	2991-50-6		08/18/2022 16:07
PFDS	ND	2.0	0.46	0.46	1	335-77-3		08/18/2022 16:07
PFDOA	ND	2.0	0.49	0.49	1	307-55-1		08/18/2022 16:07
MeFOSE	ND	2.0	0.34	0.34	1	24448-09-7		08/18/2022 16:07
EtFOSE	ND	2.0	0.51	0.51	1	1691-99-2		08/18/2022 16:07
11-CI-PF3OUdS	ND	1.9	0.45	0.45	1	763051-92-9		08/18/2022 16:07
PFTTrDA	ND	2.0	0.64	0.64	1	72629-94-8		08/18/2022 16:07
PFDoS	ND	2.0	0.47	0.47	1	79780-39-5		08/18/2022 16:07
PFTDA	ND	2.0	0.49	0.49	1	376-06-7		08/18/2022 16:07

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXY
 Lab Sample ID BLANK-100572
 Lab File ID B220817C_004
 Matrix Water
 Collected 08/10/2022 10:19
 Received 08/10/2022 10:19
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 244mL
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Injection Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	20	15	76	50-150		08/18/2022 16:07
13C4 PFOA	20	16	79	50-150		08/18/2022 16:07
13C2 PFDA	20	16	80	50-150		08/18/2022 16:07
13C4 PFOS	20	16	81	50-150		08/18/2022 16:07

Extracted Internal Standards

Compound	Known Conc. (ng/L)	Conc.Found (ng/L)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	20	22	106	50-150		08/18/2022 16:07
13C5 PFPeA	20	19	92	50-150		08/18/2022 16:07
13C3 PFBS	19	18	93	50-150		08/18/2022 16:07
13C2 4:2FTS	19	16	85	50-150		08/18/2022 16:07
13C5 PFHxA	20	18	88	50-150		08/18/2022 16:07
13C4 PFHpA	20	21	104	50-150		08/18/2022 16:07
13C3 PFHxS	19	17	88	50-150		08/18/2022 16:07
13C2 6:2FTS	19	21	106	50-150		08/18/2022 16:07
13C8 PFOA	20	19	93	50-150		08/18/2022 16:07
13C9 PFNA	20	17	81	50-150		08/18/2022 16:07
13C8 PFOS	20	14	69	50-150		08/18/2022 16:07
13C2 8:2FTS	20	12	61	50-150		08/18/2022 16:07
13C6 PFDA	20	13	66	50-150		08/18/2022 16:07
d3-MeFOSAA	20	9.8	48	50-150	R	08/18/2022 16:07
13C8 PFOSA	20	12	59	50-150		08/18/2022 16:07
d5-EtFOSAA	20	10	50	50-150		08/18/2022 16:07
13C7 PFUdA	20	11	56	50-150		08/18/2022 16:07
13C2 PFDoA	20	12	57	50-150		08/18/2022 16:07
13C2 PFTeDA	20	13	61	50-150		08/18/2022 16:07
13C3 HFPO-DA	20	19	92	50-150		08/18/2022 16:07
d7-N-MeFOSE	20	10.0	49	20-150		08/18/2022 16:07
d9-N-EtFOSE	20	8.3	41	20-150		08/18/2022 16:07
d3-N-MeFOSA	20	6.0	29	20-150		08/18/2022 16:07
d5-N-EtFOSA	20	5.2	25	20-150		08/18/2022 16:07

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXY
 Lab Sample ID BLANK-100572
 Lab File ID B220817C_004
 Matrix Water
 Collected 08/10/2022 10:19
 Received 08/10/2022 10:19
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 244mL
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.79	5.77	14		08/18/2022 16:07
13C4 PFOA	N/A	N/A	7.05	7.07	23		08/18/2022 16:07
13C2 PFDA	N/A	N/A	8.40	8.39	15		08/18/2022 16:07
13C4 PFOS	N/A	N/A	8.88	8.88	19		08/18/2022 16:07

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.24	4.23	24		08/18/2022 16:07
13C5 PFPeA	N/A	N/A	5.12	5.10	23		08/18/2022 16:07
13C3 PFBS	N/A	N/A	6.03	6.02	21		08/18/2022 16:07
13C2 4:2FTS	N/A	N/A	5.53	5.51	91		08/18/2022 16:07
13C5 PFHxA	N/A	N/A	5.79	5.78	22		08/18/2022 16:07
13C4 PFHpA	N/A	N/A	6.41	6.42	21		08/18/2022 16:07
13C3 PFHxS	N/A	N/A	7.47	7.47	20		08/18/2022 16:07
13C2 6:2FTS	N/A	N/A	6.72	6.73	55		08/18/2022 16:07
13C8 PFOA	N/A	N/A	7.05	7.06	30		08/18/2022 16:07
13C9 PFNA	N/A	N/A	7.71	7.71	19		08/18/2022 16:07
13C8 PFOS	N/A	N/A	8.88	8.86	21		08/18/2022 16:07
13C2 8:2FTS	N/A	N/A	8.02	8.00	26		08/18/2022 16:07
13C6 PFDA	N/A	N/A	8.40	8.38	15		08/18/2022 16:07
d3-MeFOSAA	N/A	N/A	8.26	8.25	29	R	08/18/2022 16:07
13C8 PFOSA	N/A	N/A	10.49	10.42	10		08/18/2022 16:07
d5-EtFOSAA	N/A	N/A	8.55	8.54	17		08/18/2022 16:07
13C7 PFUdA	N/A	N/A	9.07	9.07	27		08/18/2022 16:07
13C2 PFDoA	N/A	N/A	9.74	9.71	11		08/18/2022 16:07
13C2 PFTeDA	N/A	N/A	11.03	11.02	14		08/18/2022 16:07
13C3 HFPO-DA	N/A	N/A	6.05	6.04	21		08/18/2022 16:07
d7-N-MeFOSE	N/A	N/A	12.45	12.44	47		08/18/2022 16:07
d9-N-EtFOSE	N/A	N/A	12.93	12.88	57		08/18/2022 16:07
d3-N-MeFOSA	N/A	N/A	12.66	12.65	69		08/18/2022 16:07
d5-N-EtFOSA	N/A	N/A	13.09	13.07	64		08/18/2022 16:07

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXY
 Lab Sample ID BLANK-100572
 Lab File ID B220817C_004
 Matrix Water
 Collected 08/10/2022 10:19
 Received 08/10/2022 10:19
 Extraction Date 08/15/2022 10:35

Total Amount Extracted 244mL
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	4.24	4.23	ND		08/18/2022 16:07
PFPeA	N/A	N/A	5.13	5.15	ND		08/18/2022 16:07
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/18/2022 16:07
PFBS	0.45	0.41	6.04	6.02	ND		08/18/2022 16:07
PFHxA	0.11	0.09	5.80	5.81	ND		08/18/2022 16:07
4:2 FTS	0.00	0.84	0.00	5.54	ND		08/18/2022 16:07
PFPeS	0.00	0.41	0.00	6.79	ND		08/18/2022 16:07
PFHpA	0.36	0.28	6.42	6.44	ND		08/18/2022 16:07
DONA	0.00	0.56	0.00	6.67	ND		08/18/2022 16:07
PFHxS	0.24	0.37	7.48	7.49	ND		08/18/2022 16:07
PFOA	0.35	0.39	7.05	7.08	ND		08/18/2022 16:07
6:2 FTS	0.85	0.76	6.73	6.74	ND		08/18/2022 16:07
PFHpS	0.00	0.35	0.00	8.20	ND		08/18/2022 16:07
PFNA	0.20	0.12	7.72	7.73	ND		08/18/2022 16:07
PFOSAm	N/A	N/A	10.50	10.44	ND		08/18/2022 16:07
PFOS	0.43	0.35	8.89	8.90	ND		08/18/2022 16:07
MeFOSA	0.81	0.59	12.69	12.69	ND		08/18/2022 16:07
PFDA	0.00	0.17	0.00	8.40	ND		08/18/2022 16:07
EtFOSAm	0.00	0.51	0.00	13.10	ND		08/18/2022 16:07
8:2 FTS	0.00	0.84	0.00	8.02	ND		08/18/2022 16:07
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/18/2022 16:07
PFNS	0.00	0.52	0.00	9.58	ND		08/18/2022 16:07
PFUnDA	0.00	0.11	0.00	9.05	ND		08/18/2022 16:07
NMeFOSAA	0.00	0.94	0.00	8.26	ND		08/18/2022 16:07
NEtFOSAA	0.00	0.56	0.00	8.55	ND		08/18/2022 16:07
PFDS	0.00	0.35	0.00	10.19	ND		08/18/2022 16:07
PFDOA	0.00	0.17	0.00	9.72	ND		08/18/2022 16:07
MeFOSE	N/A	N/A	0.00	12.45	ND		08/18/2022 16:07
EtFOSE	0.00	0.00	0.00	12.92	ND		08/18/2022 16:07
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/18/2022 16:07
PFTTrDA	0.00	0.14	0.00	10.37	ND		08/18/2022 16:07
PFDoS	0.00	0.45	0.00	11.43	ND		08/18/2022 16:07
PFTDA	0.00	0.23	0.00	11.02	ND		08/18/2022 16:07

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXC
 Lab Sample ID BLANK-100506
 Lab File ID B220817C_006
 Matrix Soil
 Collected 08/05/2022 12:58
 Received 08/05/2022 12:58
 Extraction Date 08/10/2022 16:12

Total Amount Extracted 5.70g
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Compound	Concentration (ug/Kg)	QL (ug/Kg)	RL (ug/Kg)	MDL (ug/Kg)	Dil.	CAS No.	Qual.	Analyzed
PFBA	ND	0.088	0.025	0.025	1	375-22-4		08/18/2022 16:47
PFPeA	ND	0.088	0.025	0.025	1	2706-90-3		08/18/2022 16:47
HFPO-DA	ND	0.088	0.024	0.024	1	13252-13-6		08/18/2022 16:47
PFBS	ND	0.078	0.023	0.023	1	375-73-5		08/18/2022 16:47
PFHxA	ND	0.088	0.024	0.024	1	307-24-4		08/18/2022 16:47
4:2 FTS	ND	0.082	0.020	0.020	1	757124-72-4		08/18/2022 16:47
PFPeS	ND	0.082	0.021	0.021	1	2706-91-4		08/18/2022 16:47
PFHpA	ND	0.088	0.030	0.030	1	375-85-9		08/18/2022 16:47
DONA	ND	0.083	0.032	0.032	1	919005-14-4		08/18/2022 16:47
PFHxS	ND	0.080	0.019	0.019	1	355-46-4		08/18/2022 16:47
PFOA	ND	0.088	0.027	0.027	1	335-67-1		08/18/2022 16:47
6:2 FTS	ND	0.083	0.036	0.036	1	27619-97-2		08/18/2022 16:47
PFHpS	ND	0.083	0.024	0.024	1	375-92-8		08/18/2022 16:47
PFNA	ND	0.088	0.027	0.027	1	375-95-1		08/18/2022 16:47
PFOSAm	ND	0.088	0.026	0.026	1	754-91-6		08/18/2022 16:47
PFOS	ND	0.081	0.026	0.026	1	1763-23-1		08/18/2022 16:47
MeFOSA	ND	0.088	0.024	0.024	1	31506-32-8		08/18/2022 16:47
PFDA	ND	0.088	0.020	0.020	1	335-76-2		08/18/2022 16:47
EtFOSAm	ND	0.088	0.022	0.022	1	4151-50-2		08/18/2022 16:47
8:2 FTS	ND	0.084	0.039	0.039	1	39108-34-4		08/18/2022 16:47
9-CI-PF3ON	ND	0.082	0.022	0.022	1	756426-58-1		08/18/2022 16:47
PFNS	ND	0.084	0.030	0.030	1	68259-12-1		08/18/2022 16:47
PFUnDA	ND	0.088	0.026	0.026	1	2058-94-8		08/18/2022 16:47
NMeFOSAA	ND	0.088	0.025	0.025	1	2355-31-9		08/18/2022 16:47
NEtFOSAA	ND	0.088	0.035	0.035	1	2991-50-6		08/18/2022 16:47
PFDS	ND	0.085	0.025	0.025	1	335-77-3		08/18/2022 16:47
PFDOA	ND	0.088	0.029	0.029	1	307-55-1		08/18/2022 16:47
MeFOSE	ND	0.088	0.027	0.027	1	24448-09-7		08/18/2022 16:47
EtFOSE	ND	0.088	0.028	0.028	1	1691-99-2		08/18/2022 16:47
11-CI-PF3OUdS	ND	0.083	0.022	0.022	1	763051-92-9		08/18/2022 16:47
PFTTrDA	ND	0.088	0.028	0.028	1	72629-94-8		08/18/2022 16:47
PFDoS	ND	0.085	0.023	0.023	1	79780-39-5		08/18/2022 16:47
PFTDA	ND	0.088	0.030	0.030	1	376-06-7		08/18/2022 16:47

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXC
 Lab Sample ID BLANK-100506
 Lab File ID B220817C_006
 Matrix Soil
 Collected 08/05/2022 12:58
 Received 08/05/2022 12:58
 Extraction Date 08/10/2022 16:12

Total Amount Extracted 5.70g
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C2 PFHxA	0.88	0.83	94	50-150		08/18/2022 16:47
13C4 PFOA	0.88	0.78	89	50-150		08/18/2022 16:47
13C2 PFDA	0.88	0.84	96	50-150		08/18/2022 16:47
13C4 PFOS	0.84	0.73	86	50-150		08/18/2022 16:47

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc.Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	Analyzed
13C4 PFBA	0.88	0.90	103	50-150		08/18/2022 16:47
13C5 PFPeA	0.88	0.89	102	50-150		08/18/2022 16:47
13C3 PFBS	0.81	0.83	102	50-150		08/18/2022 16:47
13C2 4:2FTS	0.82	0.83	101	50-150		08/18/2022 16:47
13C5 PFHxA	0.88	0.99	113	50-150		08/18/2022 16:47
13C4 PFHpA	0.88	0.95	108	50-150		08/18/2022 16:47
13C3 PFHxS	0.83	0.80	96	50-150		08/18/2022 16:47
13C2 6:2FTS	0.83	0.87	105	50-150		08/18/2022 16:47
13C8 PFOA	0.88	0.92	105	50-150		08/18/2022 16:47
13C9 PFNA	0.88	0.88	101	50-150		08/18/2022 16:47
13C8 PFOS	0.84	0.83	99	50-150		08/18/2022 16:47
13C2 8:2FTS	0.84	0.82	98	50-150		08/18/2022 16:47
13C6 PFDA	0.88	0.94	107	50-150		08/18/2022 16:47
d3-MeFOSAA	0.88	0.91	103	50-150		08/18/2022 16:47
13C8 PFOSA	0.88	0.87	99	50-150		08/18/2022 16:47
d5-EtFOSAA	0.88	0.88	100	50-150		08/18/2022 16:47
13C7 PFUdA	0.88	0.95	109	50-150		08/18/2022 16:47
13C2 PFDaA	0.88	1.0	115	50-150		08/18/2022 16:47
13C2 PFTeDA	0.88	0.93	107	50-150		08/18/2022 16:47
13C3 HFPO-DA	0.88	0.89	101	50-150		08/18/2022 16:47
d7-N-MeFOSE	0.88	0.81	92	20-150		08/18/2022 16:47
d9-N-EtFOSE	0.88	0.83	95	20-150		08/18/2022 16:47
d3-N-MeFOSA	0.88	0.78	89	20-150		08/18/2022 16:47
d5-N-EtFOSA	0.88	0.70	80	20-150		08/18/2022 16:47

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXC
 Lab Sample ID BLANK-100506
 Lab File ID B220817C_006
 Matrix Soil
 Collected 08/05/2022 12:58
 Received 08/05/2022 12:58
 Extraction Date 08/10/2022 16:12

Total Amount Extracted 5.70g
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C2 PFHxA	N/A	N/A	5.80	5.77	16		08/18/2022 16:47
13C4 PFOA	N/A	N/A	7.05	7.07	22		08/18/2022 16:47
13C2 PFDA	N/A	N/A	8.40	8.39	19		08/18/2022 16:47
13C4 PFOS	N/A	N/A	8.88	8.88	17		08/18/2022 16:47

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
13C4 PFBA	N/A	N/A	4.24	4.23	23		08/18/2022 16:47
13C5 PFPeA	N/A	N/A	5.12	5.10	22		08/18/2022 16:47
13C3 PFBS	N/A	N/A	6.03	6.02	22		08/18/2022 16:47
13C2 4:2FTS	N/A	N/A	5.53	5.51	61		08/18/2022 16:47
13C5 PFHxA	N/A	N/A	5.80	5.78	22		08/18/2022 16:47
13C4 PFHpA	N/A	N/A	6.42	6.42	18		08/18/2022 16:47
13C3 PFHxS	N/A	N/A	7.47	7.47	26		08/18/2022 16:47
13C2 6:2FTS	N/A	N/A	6.72	6.73	22		08/18/2022 16:47
13C8 PFOA	N/A	N/A	7.05	7.06	25		08/18/2022 16:47
13C9 PFNA	N/A	N/A	7.72	7.71	24		08/18/2022 16:47
13C8 PFOS	N/A	N/A	8.88	8.86	21		08/18/2022 16:47
13C2 8:2FTS	N/A	N/A	8.02	8.00	35		08/18/2022 16:47
13C6 PFDA	N/A	N/A	8.40	8.38	22		08/18/2022 16:47
d3-MeFOSAA	N/A	N/A	8.26	8.25	29		08/18/2022 16:47
13C8 PFOSA	N/A	N/A	10.49	10.42	13		08/18/2022 16:47
d5-EtFOSAA	N/A	N/A	8.55	8.54	15		08/18/2022 16:47
13C7 PFUdA	N/A	N/A	9.07	9.07	20		08/18/2022 16:47
13C2 PFDoA	N/A	N/A	9.73	9.71	17		08/18/2022 16:47
13C2 PFTeDA	N/A	N/A	11.03	11.02	14		08/18/2022 16:47
13C3 HFPO-DA	N/A	N/A	6.05	6.04	16		08/18/2022 16:47
d7-N-MeFOSE	N/A	N/A	12.45	12.44	67		08/18/2022 16:47
d9-N-EtFOSE	N/A	N/A	12.93	12.88	61		08/18/2022 16:47
d3-N-MeFOSA	N/A	N/A	12.66	12.65	12		08/18/2022 16:47
d5-N-EtFOSA	N/A	N/A	13.09	13.07	76		08/18/2022 16:47

REPORT OF LABORATORY ANALYSIS

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Method Blank Analysis Summary
 PFAS by Isotope Dilution

Client Sample ID BLKXC
 Lab Sample ID BLANK-100506
 Lab File ID B220817C_006
 Matrix Soil
 Collected 08/05/2022 12:58
 Received 08/05/2022 12:58
 Extraction Date 08/10/2022 16:12

Total Amount Extracted 5.70g
 Ical ID 220817B02
 CCal File B220817C_002
 Ending CCal File B220817C_013
 Blank File

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers	Analyzed
PFBA	N/A	N/A	0.00	4.23	ND		08/18/2022 16:47
PFPeA	N/A	N/A	5.14	5.15	ND		08/18/2022 16:47
HFPO-DA	0.00	0.27	0.00	6.07	ND		08/18/2022 16:47
PFBS	0.00	0.41	0.00	6.02	ND		08/18/2022 16:47
PFHxA	0.00	0.09	0.00	5.81	ND		08/18/2022 16:47
4:2 FTS	0.00	0.84	0.00	5.54	ND		08/18/2022 16:47
PFPeS	0.00	0.41	0.00	6.79	ND		08/18/2022 16:47
PFHpA	0.00	0.28	0.00	6.44	ND		08/18/2022 16:47
DONA	0.00	0.56	0.00	6.67	ND		08/18/2022 16:47
PFHxS	0.00	0.37	0.00	7.49	ND		08/18/2022 16:47
PFOA	0.00	0.39	0.00	7.08	ND		08/18/2022 16:47
6:2 FTS	0.81	0.76	6.73	6.74	ND		08/18/2022 16:47
PFHpS	0.00	0.35	0.00	8.20	ND		08/18/2022 16:47
PFNA	0.22	0.12	7.73	7.73	ND		08/18/2022 16:47
PFOSAm	N/A	N/A	10.50	10.44	ND		08/18/2022 16:47
PFOS	0.00	0.35	0.00	8.90	ND		08/18/2022 16:47
MeFOSA	0.00	0.59	0.00	12.69	ND		08/18/2022 16:47
PFDA	0.00	0.17	0.00	8.40	ND		08/18/2022 16:47
EtFOSAm	0.00	0.51	0.00	13.10	ND		08/18/2022 16:47
8:2 FTS	0.00	0.84	0.00	8.02	ND		08/18/2022 16:47
9-CI-PF3ON	0.00	0.05	0.00	9.39	ND		08/18/2022 16:47
PFNS	0.00	0.52	0.00	9.58	ND		08/18/2022 16:47
PFUnDA	0.00	0.11	0.00	9.05	ND		08/18/2022 16:47
NMeFOSAA	0.00	0.94	0.00	8.26	ND		08/18/2022 16:47
NEtFOSAA	0.00	0.56	0.00	8.55	ND		08/18/2022 16:47
PFDS	0.00	0.35	0.00	10.19	ND		08/18/2022 16:47
PFDOA	0.00	0.17	0.00	9.72	ND		08/18/2022 16:47
MeFOSE	N/A	N/A	0.00	12.45	ND		08/18/2022 16:47
EtFOSE	0.00	0.00	0.00	12.92	ND		08/18/2022 16:47
11-CI-PF3OUdS	0.00	0.02	0.00	10.66	ND		08/18/2022 16:47
PFTTrDA	0.00	0.14	0.00	10.37	ND		08/18/2022 16:47
PFDoS	0.00	0.45	0.00	11.43	ND		08/18/2022 16:47
PFTDA	0.00	0.23	0.00	11.02	ND		08/18/2022 16:47

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID	LCS-100573	Instrument ID	10LCMS02
Run File Name	B220817C_005	Column ID	118AB10133
Analyzed	08/18/2022 16:27	Ical ID	220817B02
Injected By	QL	Level	L

Injection Internal Standards

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	20	16	80	50-150	
13C4_PFOA	20	18	88	50-150	
13C2_PFDA	20	16	80	50-150	
13C4_PFOS	19	17	89	50-150	

Extracted Internal Standards

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers
13C4_PFBFA	20	21	104	50-150	
13C5_PFPeA	20	19	97	50-150	
13C3_PFBFS	19	19	101	50-150	
13C2_4:2FTS	19	18	98	50-150	
13C5_PFHxA	20	20	99	50-150	
13C4_PFHpA	20	20	98	50-150	
13C3_PFHxS	19	18	96	50-150	
13C2_6:2FTS	19	18	95	50-150	
13C8_PFOA	20	21	103	50-150	
13C9_PFNA	20	18	87	50-150	
13C8_PFOS	19	14	75	50-150	
13C2_8:2FTS	19	12	64	50-150	
13C6_PFDA	20	15	72	50-150	
d3-MeFOSAA	20	11	56	50-150	
13C8_PFOA	20	12	60	50-150	
d5-EtFOSAA	20	13	65	50-150	
13C7_PFUdA	20	14	68	50-150	
13C2_PFDaA	20	14	67	50-150	
13C2_PFTeDA	20	15	76	50-150	
13C3_HFPO-DA	20	19	95	50-150	
d7-N-MeFOSE	20	9.7	48	20-150	
d9-N-EtFOSE	20	8.8	44	20-150	
d3-N-MeFOSA	20	5.2	26	20-150	
d5-N-EtFOSA	20	4.5	22	20-150	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Page 2 of 4

Lab Sample ID LCS-100573
 Run File Name B220817C_005
 Analyzed 08/18/2022 16:27
 Injected By QL

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Native Analytes

Compound	Known Conc. ng/L	Conc. Found ng/L	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	4.0	4.2	104	50-150		375-22-4
PFPeA	4.0	4.2	104	50-150		2706-90-3
HFPO-DA	4.0	3.9	95	50-150		13252-13-6
PFBS	3.6	3.6	100	50-150		375-73-5
PFHxA	4.0	4.2	105	50-150		307-24-4
4:2 FTS	3.8	3.6	94	50-150		757124-72-4
PFPeS	3.8	3.7	97	50-150		2706-91-4
PFHpA	4.0	4.2	104	50-150		375-85-9
DONA	3.8	3.8	100	50-150		919005-14-4
PFHxS	3.7	3.5	96	50-150		355-46-4
PFOA	4.0	4.2	103	50-150		335-67-1
6:2 FTS	3.8	4.0	104	50-150		27619-97-2
PFHpS	3.8	4.3	111	50-150		375-92-8
PFNA	4.0	3.8	94	50-150		375-95-1
PFOSAm	4.0	3.8	94	50-150		754-91-6
PFOS	3.7	3.6	97	50-150		1763-23-1
MeFOSA	4.0	4.0	99	50-150		31506-32-8
PFDA	4.0	3.7	91	50-150		335-76-2
EtFOSAm	4.0	3.4	85	50-150		4151-50-2
8:2 FTS	3.9	4.3	110	50-150		39108-34-4
9-CI-PF3ON	3.8	3.2	84	50-150		756426-58-1
PFNS	3.9	3.0	79	50-150		68259-12-1
PFUnDA	4.0	3.5	88	50-150		2058-94-8
NMeFOSAA	4.0	4.2	103	50-150		2355-31-9
NEtFOSAA	4.0	4.1	101	50-150		2991-50-6
PFDS	3.9	3.2	82	50-150		335-77-3
PFDOA	4.0	3.8	93	50-150		307-55-1
MeFOSE	4.0	3.8	94	50-150		24448-09-7
EtFOSE	4.0	4.1	101	50-150		1691-99-2
11-CI-PF3OUdS	3.8	3.0	79	50-150		763051-92-9
PFTrDA	4.0	3.8	93	50-150		72629-94-8
PFDoS	3.9	3.1	79	50-150		79780-39-5
PFTDA	4.0	3.8	94	50-150		376-06-7

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100573
 Run File Name B220817C_005
 Analyzed 08/18/2022 16:27
 Injected By QL

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.79	5.77	1725	
13C4 PFOA	N/A	N/A	7.05	7.07	2111	
13C2 PFDA	N/A	N/A	8.40	8.39	1392	
13C4 PFOS	N/A	N/A	8.88	8.88	2316	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.24	4.23	2372	
13C5 PFPeA	N/A	N/A	5.12	5.10	2239	
13C3 PFBS	N/A	N/A	6.03	6.02	2419	
13C2 4:2FTS	N/A	N/A	5.53	5.51	796	
13C5 PFHxA	N/A	N/A	5.79	5.78	2326	
13C4 PFHpA	N/A	N/A	6.42	6.42	1810	
13C3 PFHxS	N/A	N/A	7.47	7.47	2181	
13C2 6:2FTS	N/A	N/A	6.72	6.73	2617	
13C8 PFOA	N/A	N/A	7.05	7.06	2858	
13C9 PFNA	N/A	N/A	7.71	7.71	2089	
13C8 PFOS	N/A	N/A	8.88	8.86	7035	
13C2 8:2FTS	N/A	N/A	8.02	8.00	1508	
13C6 PFDA	N/A	N/A	8.41	8.38	1570	
d3-MeFOSAA	N/A	N/A	8.26	8.25	1421	
13C8 PFOSA	N/A	N/A	10.48	10.42	1028	
d5-EtFOSAA	N/A	N/A	8.55	8.54	1407	
13C7 PFUdA	N/A	N/A	9.07	9.07	3254	
13C2 PFDoA	N/A	N/A	9.73	9.71	1685	
13C2 PFTeDA	N/A	N/A	11.03	11.02	1349	
13C3 HFPO-DA	N/A	N/A	6.05	6.04	1730	
d7-N-MeFOSE	N/A	N/A	12.45	12.44	54	
d9-N-EtFOSE	N/A	N/A	12.92	12.88	586	
d3-N-MeFOSA	N/A	N/A	12.66	12.65	645	
d5-N-EtFOSA	N/A	N/A	13.09	13.07	1074	

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100573
 Run File Name B220817C_005
 Analyzed 08/18/2022 16:27
 Injected By QL

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.24	4.23	176	
PFPeA	N/A	N/A	5.13	5.15	417	
HFPO-DA	0.30	0.27	6.06	6.07	963	
PFBS	0.44	0.41	6.04	6.02	1338	
PFHxA	0.08	0.09	5.80	5.81	285	
4:2 FTS	0.85	0.84	5.54	5.54	445451	
PFPeS	0.41	0.41	6.76	6.79	1444	
PFHpA	0.30	0.28	6.42	6.44	20	
DONA	0.58	0.56	6.65	6.67	1570	
PFHxS	0.39	0.37	7.47	7.49	1269	
PFOA	0.41	0.39	7.06	7.08	204	
6:2 FTS	0.89	0.76	6.72	6.74	354	
PFHpS	0.42	0.35	8.20	8.20	2630	
PFNA	0.13	0.12	7.72	7.73	616	
PFOSAm	N/A	N/A	10.49	10.44	800	
PFOS	0.38	0.35	8.89	8.90	1406	
MeFOSA	0.56	0.59	12.68	12.69	403	
PFDA	0.19	0.17	8.41	8.40	335	
EtFOSAm	0.64	0.51	13.11	13.10	1158	
8:2 FTS	0.73	0.84	8.02	8.02	2243	
9-CI-PF3ON	0.06	0.05	9.38	9.39	830	
PFNS	0.50	0.52	9.56	9.58	1196	
PFUnDA	0.13	0.11	9.08	9.05	372	
NMeFOSAA	0.78	0.94	8.27	8.26	2381248	
NEtFOSAA	0.60	0.56	8.56	8.55	356	
PFDS	0.33	0.35	10.21	10.19	1443	
PFDOA	0.18	0.17	9.74	9.72	247	
MeFOSE	N/A	N/A	12.49	12.45	285	
EtFOSE	0.00	0.00	12.96	12.92	315	
11-CI-PF3OUdS	0.02	0.02	10.68	10.66	428	
PFTrDA	0.14	0.14	10.39	10.37	233	
PFDoS	0.49	0.45	11.43	11.43	2051	
PFTDA	0.23	0.23	11.03	11.02	216	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100507
 Run File Name B220823B_027
 Analyzed 08/23/2022 21:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Injection Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C2 PFHxA	0.98	0.78	80	50-150	
13C4 PFOA	0.98	0.77	78	50-150	
13C2 PFDA	0.98	0.80	81	50-150	
13C4 PFOS	0.94	0.83	88	50-150	

Extracted Internal Standards

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers
13C4 PFBA	0.98	0.79	81	50-150	
13C5 PFPeA	0.98	0.77	79	50-150	
13C3 PFBS	0.91	0.71	78	50-150	
13C2 4:2FTS	0.92	0.67	73	50-150	
13C5 PFHxA	0.98	0.83	84	50-150	
13C4 PFHpA	0.98	0.76	78	50-150	
13C3 PFHxS	0.93	0.75	81	50-150	
13C2 6:2FTS	0.93	0.78	84	50-150	
13C8 PFOA	0.98	0.78	80	50-150	
13C9 PFNA	0.98	0.77	78	50-150	
13C8 PFOS	0.94	0.74	79	50-150	
13C2 8:2FTS	0.94	0.81	87	50-150	
13C6 PFDA	0.98	0.79	81	50-150	
d3-MeFOSAA	0.98	0.81	82	50-150	
13C8 PFOSA	0.98	0.77	79	50-150	
d5-EtFOSAA	0.98	0.80	82	50-150	
13C7 PFUdA	0.98	0.79	80	50-150	
13C2 PFDoA	0.98	0.77	78	50-150	
13C2 PFTeDA	0.98	0.77	79	50-150	
13C3 HFPO-DA	0.98	0.76	77	50-150	
d7-N-MeFOSE	0.98	0.74	76	20-150	
d9-N-EtFOSE	0.98	0.83	84	20-150	
d3-N-MeFOSA	0.98	0.67	68	20-150	
d5-N-EtFOSA	0.98	0.62	63	20-150	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100507
 Run File Name B220823B_027
 Analyzed 08/23/2022 21:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Native Analytes

Compound	Known Conc. ug/Kg	Conc. Found ug/Kg	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.20	0.22	110	50-150		375-22-4
PFPeA	0.20	0.22	111	50-150		2706-90-3
HFPO-DA	0.20	0.21	108	50-150		13252-13-6
PFBS	0.17	0.20	115	50-150		375-73-5
PFHxA	0.20	0.23	116	50-150		307-24-4
4:2 FTS	0.18	0.20	110	50-150		757124-72-4
PFPeS	0.18	0.21	116	50-150		2706-91-4
PFHpA	0.20	0.23	120	50-150		375-85-9
DONA	0.19	0.24	127	50-150		919005-14-4
PFHxS	0.18	0.19	105	50-150		355-46-4
PFOA	0.20	0.23	116	50-150		335-67-1
6:2 FTS	0.19	0.21	113	50-150		27619-97-2
PFHpS	0.19	0.21	111	50-150		375-92-8
PFNA	0.20	0.22	110	50-150		375-95-1
PFOSAm	0.20	0.21	108	50-150		754-91-6
PFOS	0.18	0.19	106	50-150		1763-23-1
MeFOSA	0.20	0.23	115	50-150		31506-32-8
PFDA	0.20	0.24	120	50-150		335-76-2
EtFOSAm	0.20	0.21	106	50-150		4151-50-2
8:2 FTS	0.19	0.18	93	50-150		39108-34-4
9-CI-PF3ON	0.18	0.21	117	50-150		756426-58-1
PFNS	0.19	0.21	110	50-150		68259-12-1
PFUnDA	0.20	0.21	107	50-150		2058-94-8
NMeFOSAA	0.20	0.22	115	50-150		2355-31-9
NEtFOSAA	0.20	0.21	109	50-150		2991-50-6
PFDS	0.19	0.20	104	50-150		335-77-3
PFDOA	0.20	0.18	91	50-150		307-55-1
MeFOSE	0.20	0.19	96	50-150		24448-09-7
EtFOSE	0.20	0.21	105	50-150		1691-99-2
11-CI-PF3OUdS	0.18	0.19	101	50-150		763051-92-9
PFTrDA	0.20	0.20	103	50-150		72629-94-8
PFDoS	0.19	0.20	108	50-150		79780-39-5
PFTDA	0.20	0.26	135	50-150		376-06-7

REPORT OF LABORATORY ANALYSIS

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100507
 Run File Name B220823B_027
 Analyzed 08/23/2022 21:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.86	5.77	2170	
13C4 PFOA	N/A	N/A	7.10	7.07	1947	
13C2 PFDA	N/A	N/A	8.44	8.39	1462	
13C4 PFOS	N/A	N/A	8.91	8.88	2158	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.25	4.23	2116	
13C5 PFPeA	N/A	N/A	5.18	5.10	2693	
13C3 PFBS	N/A	N/A	6.10	6.09	1945	
13C2 4:2FTS	N/A	N/A	5.60	5.51	650	
13C5 PFHxA	N/A	N/A	5.86	5.78	1979	
13C4 PFHpA	N/A	N/A	6.48	6.42	1675	
13C3 PFHxS	N/A	N/A	7.52	7.47	1617	
13C2 6:2FTS	N/A	N/A	6.78	6.73	1506	
13C8 PFOA	N/A	N/A	7.11	7.06	1915	
13C9 PFNA	N/A	N/A	7.76	7.71	1691	
13C8 PFOS	N/A	N/A	8.91	8.86	2101	
13C2 8:2FTS	N/A	N/A	8.06	8.00	10819	
13C6 PFDA	N/A	N/A	8.44	8.38	1583	
d3-MeFOSAA	N/A	N/A	8.30	8.25	775	
13C8 PFOSA	N/A	N/A	10.46	10.42	1258	
d5-EtFOSAA	N/A	N/A	8.58	8.54	1000	
13C7 PFUdA	N/A	N/A	9.10	9.07	1849	
13C2 PFDoA	N/A	N/A	9.76	9.71	965	
13C2 PFTeDA	N/A	N/A	11.04	11.02	1014	
13C3 HFPO-DA	N/A	N/A	6.12	6.04	1280	
d7-N-MeFOSE	N/A	N/A	12.48	12.44	67	
d9-N-EtFOSE	N/A	N/A	12.95	12.92	449	
d3-N-MeFOSA	N/A	N/A	12.69	12.65	1140	
d5-N-EtFOSA	N/A	N/A	13.11	13.07	770	

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LCS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID LCS-100507
 Run File Name B220823B_027
 Analyzed 08/23/2022 21:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level L

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.26	4.23	173	
PFPeA	N/A	N/A	5.19	5.21	292	
HFPO-DA	0.27	0.33	6.13	6.07	587	
PFBS	0.41	0.46	6.10	6.08	858	
PFHxA	0.08	0.08	5.87	5.85	204	
4:2 FTS	0.83	0.80	5.61	5.54	1919	
PFPeS	0.39	0.43	6.82	6.79	1179	
PFHpA	0.32	0.29	6.49	6.44	21	
DONA	0.59	0.53	6.71	6.67	1125	
PFHxS	0.37	0.37	7.52	7.49	808	
PFOA	0.39	0.37	7.11	7.08	183	
6:2 FTS	0.92	1.00	6.78	6.74	573	
PFHpS	0.39	0.39	8.24	8.20	1011	
PFNA	0.15	0.12	7.77	7.73	453	
PFOSAm	N/A	N/A	10.47	10.44	933	
PFOS	0.39	0.37	8.92	8.90	449	
MeFOSA	0.50	0.48	12.71	12.69	822	
PFDA	0.18	0.18	8.45	8.40	424	
EtFOSAm	0.54	0.62	13.13	13.10	691	
8:2 FTS	1.00	0.73	8.07	8.02	1111	
9-CI-PF3ON	0.06	0.05	9.41	9.39	1089	
PFNS	0.45	0.47	9.59	9.58	1382	
PFUnDA	0.14	0.14	9.11	9.05	367	
NMeFOSAA	0.87	0.93	8.31	8.26	517	
NEtFOSAA	0.67	0.67	8.60	8.55	345	
PFDS	0.33	0.36	10.24	10.19	1229	
PFDOA	0.19	0.16	9.76	9.72	279	
MeFOSE	N/A	N/A	12.52	12.45	307	
EtFOSE	0.00	0.00	12.99	12.92	401	
11-CI-PF3OUdS	0.02	0.02	10.70	10.66	525	
PFTrDA	0.17	0.17	10.42	10.37	300	
PFDoS	0.45	0.44	11.45	11.43	1675	
PFTDA	0.24	0.25	11.05	11.02	307	

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MS
 Run File Name B220823B_009
 Analyzed 08/23/2022 15:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers
13C2_PFHxA	1.4	1.2	90	50-150	
13C4_PFOA	1.4	1.2	91	50-150	
13C2_PFDA	1.4	1.0	77	50-150	
13C4_PFOS	1.3	1.1	81	50-150	

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers
13C4_PFBA	1.4	0.95	69	25-150	
13C5_PFPeA	1.4	0.92	68	25-150	
13C3_PFBs	1.3	0.85	67	25-150	
13C2_4:2FTS	1.3	0.85	66	25-150	
13C5_PFHxA	1.4	0.98	72	25-150	
13C4_PFHpA	1.4	0.96	70	25-150	
13C3_PFHxS	1.3	0.85	65	25-150	
13C2_6:2FTS	1.3	0.85	66	25-150	
13C8_PFOA	1.4	0.88	64	25-150	
13C9_PFNA	1.4	0.80	58	25-150	
13C8_PFOS	1.3	0.87	66	25-150	
13C2_8:2FTS	1.3	0.81	62	25-150	
13C6_PFDA	1.4	0.99	72	25-150	
d3-MeFOSAA	1.4	0.97	71	25-150	
13C8_PFOSA	1.4	0.67	49	25-150	
d5-EtFOSAA	1.4	0.81	59	25-150	
13C7_PFUdA	1.4	0.89	65	25-150	
13C2_PFDaA	1.4	0.88	64	25-150	
13C2_PFTeDA	1.4	0.84	62	25-150	
13C3_HFPO-DA	1.4	0.92	67	25-150	
d7-N-MeFOSE	1.4	0.015	1	10-150	R
d9-N-EtFOSE	1.4	0.016	1	10-150	R
d3-N-MeFOSA	1.4	0.0029	0	10-150	R
d5-N-EtFOSA	1.4	0.0027	0	10-150	R

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MS
 Run File Name B220823B_009
 Analyzed 08/23/2022 15:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Native Analytes

Compound	Sample Conc. (ug/Kg)	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	Qualifiers	CAS No.
PFBA	0.00	0.27	0.28	103	50-150		375-22-4
PFPeA	0.00	0.27	0.31	114	50-150		2706-90-3
HFPO-DA	0.00	0.27	0.30	109	50-150		13252-13-6
PFBS	0.00	0.24	0.25	103	50-150		375-73-5
PFHxA	0.00	0.27	0.29	106	50-150		307-24-4
4:2 FTS	0.00	0.26	0.25	98	50-150		757124-72-4
PFPeS	0.00	0.26	0.29	113	50-150		2706-91-4
PFHpA	0.00	0.27	0.28	104	50-150		375-85-9
DONA	0.00	0.26	0.30	118	50-150		919005-14-4
PFHxS	0.00	0.25	0.27	109	50-150		355-46-4
PFOA	0.00	0.27	0.31	113	50-150		335-67-1
6:2 FTS	0.00	0.26	0.35	134	50-150		27619-97-2
PFHpS	0.00	0.26	0.26	100	50-150		375-92-8
PFNA	0.00	0.27	0.35	126	50-150		375-95-1
PFOSAm	0.00	0.27	0.30	109	50-150		754-91-6
PFOS	0.00	0.25	0.25	97	50-150		1763-23-1
MeFOSA	0.00	0.27	0.083	30	50-150	IJR	31506-32-8
PFDA	0.00	0.27	0.26	94	50-150		335-76-2
EtFOSAm	0.00	0.27	0.30	109	50-150	I	4151-50-2
8:2 FTS	0.00	0.26	0.25	96	50-150		39108-34-4
9-CI-PF3ON	0.00	0.25	0.26	104	50-150		756426-58-1
PFNS	0.00	0.25	0.27	106	50-150		68259-12-1
PFUnDA	0.00	0.27	0.30	110	50-150		2058-94-8
NMeFOSAA	0.00	0.27	0.28	104	50-150		2355-31-9
NEtFOSAA	0.00	0.27	0.28	103	50-150		2991-50-6
PFDS	0.00	0.26	0.25	95	50-150		335-77-3
PFDOA	0.00	0.27	0.32	116	50-150		307-55-1
MeFOSE	0.00	0.27	0.34	124	50-150		24448-09-7
EtFOSE	0.00	0.27	0.47	170	50-150	R	1691-99-2
11-CI-PF3OUdS	0.00	0.26	0.24	95	50-150		763051-92-9
PFTTrDA	0.00	0.27	0.27	100	50-150		72629-94-8
PFDoS	0.00	0.26	0.23	88	50-150		79780-39-5
PFTDA	0.00	0.27	0.26	94	50-150		376-06-7

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MS
 Run File Name B220823B_009
 Analyzed 08/23/2022 15:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.87	5.77	2146	
13C4 PFOA	N/A	N/A	7.09	7.07	1797	
13C2 PFDA	N/A	N/A	8.42	8.39	1336	
13C4 PFOS	N/A	N/A	8.88	8.88	1365	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.29	4.23	2071	
13C5 PFPeA	N/A	N/A	5.21	5.10	2437	
13C3 PFBS	N/A	N/A	6.09	6.09	1239	
13C2 4:2FTS	N/A	N/A	5.61	5.51	769	
13C5 PFHxA	N/A	N/A	5.87	5.78	1368	
13C4 PFHpA	N/A	N/A	6.47	6.42	1477	
13C3 PFHxS	N/A	N/A	7.50	7.47	1279	
13C2 6:2FTS	N/A	N/A	6.76	6.73	654	
13C8 PFOA	N/A	N/A	7.09	7.06	1435	
13C9 PFNA	N/A	N/A	7.74	7.71	1591	
13C8 PFOS	N/A	N/A	8.89	8.86	1351	
13C2 8:2FTS	N/A	N/A	8.04	8.00	4481	
13C6 PFDA	N/A	N/A	8.42	8.38	1414	
d3-MeFOSAA	N/A	N/A	8.28	8.25	1735	
13C8 PFOSA	N/A	N/A	10.53	10.42	1458	
d5-EtFOSAA	N/A	N/A	8.56	8.54	1049	
13C7 PFUdA	N/A	N/A	9.08	9.07	1596	
13C2 PFDoA	N/A	N/A	9.74	9.71	1137	
13C2 PFTeDA	N/A	N/A	11.03	11.02	1194	
13C3 HFPO-DA	N/A	N/A	6.12	6.04	1159	
d7-N-MeFOSE	N/A	N/A	12.46	12.44	30	R
d9-N-EtFOSE	N/A	N/A	12.94	12.92	105	R
d3-N-MeFOSA	N/A	N/A	12.68	12.65	49	R
d5-N-EtFOSA	N/A	N/A	13.10	13.07	48	R

REPORT OF LABORATORY ANALYSIS

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MS Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MS
 Run File Name B220823B_009
 Analyzed 08/23/2022 15:56
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.29	4.23	146	
PFPeA	N/A	N/A	5.21	5.21	267	
HFPO-DA	0.28	0.26	6.13	6.07	530	
PFBS	0.42	0.43	6.10	6.08	475	
PFHxA	0.07	0.09	5.88	5.85	259	
4:2 FTS	0.84	0.81	5.62	5.54	2135	
PFPeS	0.38	0.42	6.80	6.79	599	
PFHpA	0.28	0.32	6.48	6.44	21	
DONA	0.57	0.56	6.70	6.67	756	
PFHxS	0.37	0.37	7.50	7.49	482	
PFOA	0.42	0.39	7.10	7.08	204	
6:2 FTS	0.82	0.93	6.77	6.74	398	
PFHpS	0.39	0.41	8.21	8.20	833	
PFNA	0.13	0.12	7.75	7.73	404	
PFOSAm	N/A	N/A	10.54	10.44	1147	
PFOS	0.37	0.35	8.90	8.90	541	
MeFOSA	3.00	0.47	12.73	12.69	174	IJR
PFDA	0.19	0.18	8.42	8.40	241	
EtFOSAm	0.19	0.50	13.13	13.10	115	I
8:2 FTS	0.92	0.96	8.04	8.02	233177	
9-Cl-PF3ON	0.05	0.06	9.38	9.39	931	
PFNS	0.49	0.47	9.56	9.58	1200	
PFUnDA	0.13	0.14	9.09	9.05	312	
NMeFOSAA	0.81	0.82	8.29	8.26	17547	
NEtFOSAA	0.67	0.68	8.58	8.55	343	
PFDS	0.34	0.32	10.22	10.19	1220	
PFDOA	0.18	0.15	9.74	9.72	285	
MeFOSE	N/A	N/A	12.51	12.45	36	
EtFOSE	0.00	0.00	12.98	12.92	44	R
11-Cl-PF3OUdS	0.02	0.03	10.68	10.66	522	
PFTrDA	0.16	0.16	10.40	10.37	220	
PFDoS	0.44	0.46	11.43	11.43	2055	
PFTDA	0.23	0.26	11.04	11.02	206	

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MSD
 Run File Name B220823B_010
 Analyzed 08/23/2022 16:16
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Injection Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers
13C2_PFHxA	1.5	1.3	88	50-150	2.9	
13C4_PFOA	1.5	1.4	91	50-150	0.3	
13C2_PFDA	1.5	1.1	71	50-150	7.3	
13C4_PFOS	1.4	1.2	82	50-150	0.6	

Extracted Internal Standards

Compound	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers
13C4_PFBFA	1.5	1.1	74	25-150	6.4	
13C5_PFPeA	1.5	1.1	73	25-150	8.0	
13C3_PFBFS	1.4	0.94	68	25-150	1.8	
13C2_4:2FTS	1.4	0.93	67	25-150	1.2	
13C5_PFHxA	1.5	1.1	75	25-150	4.4	
13C4_PFHpA	1.5	1.1	72	25-150	2.7	
13C3_PFHxS	1.4	0.96	68	25-150	4.5	
13C2_6:2FTS	1.4	1.0	72	25-150	8.7	
13C8_PFOA	1.5	1.1	76	25-150	17.3	
13C9_PFNA	1.5	1.0	69	25-150	16.5	
13C8_PFOS	1.4	0.98	69	25-150	3.3	
13C2_8:2FTS	1.4	0.99	70	25-150	12.4	
13C6_PFDA	1.5	1.2	78	25-150	8.0	
d3-MeFOSAA	1.5	1.1	77	25-150	8.3	
13C8_PFOSA	1.5	0.80	54	25-150	9.6	
d5-EtFOSAA	1.5	0.97	65	25-150	9.5	
13C7_PFUdA	1.5	1.1	71	25-150	9.2	
13C2_PFDaA	1.5	1.2	82	25-150	23.8	
13C2_PFTeDA	1.5	0.89	60	25-150	2.4	
13C3_HFPO-DA	1.5	1.1	71	25-150	5.5	
d7-N-MeFOSE	1.5	0.011	1	10-150	38.3	R
d9-N-EtFOSE	1.5	0.016	1	10-150	6.0	R
d3-N-MeFOSA	1.5	0.0017	0	10-150	62.2	R
d5-N-EtFOSA	1.5	0.0016	0	10-150	56.5	R

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MSD
 Run File Name B220823B_010
 Analyzed 08/23/2022 16:16
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Native Analytes

Compound	Sample Conc. (ug/Kg)	Known Conc. (ug/Kg)	Conc. Found (ug/Kg)	%Recovery	Recovery Limits	RPD	Qualifiers	CAS No.
PFBA	0.00	0.30	0.32	107	50-150	3.9		375-22-4
PFPeA	0.00	0.30	0.35	118	50-150	3.2		2706-90-3
HFPO-DA	0.00	0.30	0.33	110	50-150	1.0		13252-13-6
PFBS	0.00	0.26	0.29	109	50-150	5.1		375-73-5
PFHxA	0.00	0.30	0.34	116	50-150	9.2		307-24-4
4:2 FTS	0.00	0.28	0.31	113	50-150	13.7		757124-72-4
PFPeS	0.00	0.28	0.31	111	50-150	1.7		2706-91-4
PFHpA	0.00	0.30	0.34	114	50-150	8.8		375-85-9
DONA	0.00	0.28	0.30	109	50-150	8.2		919005-14-4
PFHxS	0.00	0.27	0.30	109	50-150	0.2		355-46-4
PFOA	0.00	0.30	0.29	98	50-150	14.2		335-67-1
6:2 FTS	0.00	0.28	0.31	109	50-150	20.1		27619-97-2
PFHpS	0.00	0.28	0.29	104	50-150	4.0		375-92-8
PFNA	0.00	0.30	0.33	113	50-150	11.6		375-95-1
PFOSAm	0.00	0.30	0.33	110	50-150	1.0		754-91-6
PFOS	0.00	0.27	0.30	108	50-150	11.0		1763-23-1
MeFOSA	0.00	0.30	0.17	59	50-150	63.5	I	31506-32-8
PFDA	0.00	0.30	0.29	96	50-150	2.2		335-76-2
EtFOSAm	0.00	0.30	0.49	163	50-150	39.9	R	4151-50-2
8:2 FTS	0.00	0.29	0.28	99	50-150	4.0		39108-34-4
9-CI-PF3ON	0.00	0.28	0.31	112	50-150	8.0		756426-58-1
PFNS	0.00	0.28	0.32	115	50-150	8.2		68259-12-1
PFUnDA	0.00	0.30	0.34	114	50-150	3.4		2058-94-8
NMeFOSAA	0.00	0.30	0.32	107	50-150	2.9		2355-31-9
NEtFOSAA	0.00	0.30	0.31	103	50-150	0.4		2991-50-6
PFDS	0.00	0.29	0.29	101	50-150	6.1		335-77-3
PFDOA	0.00	0.30	0.30	102	50-150	12.5		307-55-1
MeFOSE	0.00	0.30	0.29	97	50-150	24.9		24448-09-7
EtFOSE	0.00	0.30	0.29	98	50-150	53.9		1691-99-2
11-CI-PF3OUdS	0.00	0.28	0.28	102	50-150	6.6		763051-92-9
PFTTrDA	0.00	0.30	0.26	89	50-150	12.2		72629-94-8
PFDoS	0.00	0.29	0.26	92	50-150	4.2		79780-39-5
PFTDA	0.00	0.30	0.32	108	50-150	13.1		376-06-7

REPORT OF LABORATORY ANALYSIS

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MSD
 Run File Name B220823B_010
 Analyzed 08/23/2022 16:16
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Injection Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C2 PFHxA	N/A	N/A	5.86	5.77	1500	
13C4 PFOA	N/A	N/A	7.10	7.07	1751	
13C2 PFDA	N/A	N/A	8.43	8.39	1553	
13C4 PFOS	N/A	N/A	8.90	8.88	1620	

Extracted Internal Standards

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
13C4 PFBA	N/A	N/A	4.28	4.23	1684	
13C5 PFPeA	N/A	N/A	5.20	5.10	2159	
13C3 PFBS	N/A	N/A	6.08	6.09	1422	
13C2 4:2FTS	N/A	N/A	5.60	5.51	516	
13C5 PFHxA	N/A	N/A	5.86	5.78	1218	
13C4 PFHpA	N/A	N/A	6.47	6.42	1615	
13C3 PFHxS	N/A	N/A	7.50	7.47	1359	
13C2 6:2FTS	N/A	N/A	6.77	6.73	1003	
13C8 PFOA	N/A	N/A	7.10	7.06	1918	
13C9 PFNA	N/A	N/A	7.75	7.71	1437	
13C8 PFOS	N/A	N/A	8.90	8.86	2216	
13C2 8:2FTS	N/A	N/A	8.05	8.00	2631	
13C6 PFDA	N/A	N/A	8.43	8.38	1310	
d3-MeFOSAA	N/A	N/A	8.29	8.25	1090	
13C8 PFOSA	N/A	N/A	10.54	10.42	1141	
d5-EtFOSAA	N/A	N/A	8.58	8.54	2589	
13C7 PFUdA	N/A	N/A	9.10	9.07	1884	
13C2 PFDoA	N/A	N/A	9.75	9.71	1110	
13C2 PFTeDA	N/A	N/A	11.04	11.02	1146	
13C3 HFPO-DA	N/A	N/A	6.11	6.04	1467	
d7-N-MeFOSE	N/A	N/A	12.47	12.44	24	R
d9-N-EtFOSE	N/A	N/A	12.95	12.92	95	R
d3-N-MeFOSA	N/A	N/A	12.67	12.65	148	R
d5-N-EtFOSA	N/A	N/A	13.10	13.07	38	R

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MSD Analysis Summary
 PFAS by Isotope Dilution

Lab Sample ID 10620121001-MSD
 Run File Name B220823B_010
 Analyzed 08/23/2022 16:16
 Injected By NH

Instrument ID 10LCMS02
 Column ID 118AB10133
 Ical ID 220817B02
 Level

Native Analytes

Compound	Ion Abund. Ratio	Reference Ratio	Retention Time	Reference Time	Signal to Noise	Qualifiers
PFBA	N/A	N/A	4.29	4.23	192	
PFPeA	N/A	N/A	5.20	5.21	254	
HFPO-DA	0.26	0.26	6.12	6.07	532	
PFBS	0.46	0.43	6.09	6.08	592	
PFHxA	0.07	0.09	5.86	5.85	228	
4:2 FTS	0.80	0.81	5.61	5.54	6202	
PFPeS	0.43	0.42	6.80	6.79	624	
PFHpA	0.31	0.32	6.47	6.44	20	
DONA	0.59	0.56	6.70	6.67	811	
PFHxS	0.37	0.37	7.51	7.49	590	
PFOA	0.37	0.39	7.10	7.08	186	
6:2 FTS	0.86	0.93	6.77	6.74	328	
PFHpS	0.40	0.41	8.23	8.20	874	
PFNA	0.13	0.12	7.76	7.73	485	
PFOSAm	N/A	N/A	10.54	10.44	845	
PFOS	0.34	0.35	8.91	8.90	428	
MeFOSA	2.10	0.47	12.71	12.69	27	I
PFDA	0.20	0.18	8.44	8.40	350	
EtFOSAm	0.34	0.50	13.11	13.10	32	R
8:2 FTS	0.76	0.96	8.06	8.02	11973	
9-CI-PF3ON	0.06	0.06	9.40	9.39	959	
PFNS	0.48	0.47	9.58	9.58	810	
PFUnDA	0.15	0.14	9.10	9.05	370	
NMeFOSAA	0.78	0.82	8.30	8.26	74293	
NEtFOSAA	0.71	0.68	8.59	8.55	270	
PFDS	0.36	0.32	10.23	10.19	1599	
PFDOA	0.14	0.15	9.76	9.72	270	
MeFOSE	N/A	N/A	12.51	12.45	25	
EtFOSE	0.00	0.00	12.98	12.92	32	
11-CI-PF3OUdS	0.02	0.03	10.69	10.66	460	
PFTrDA	0.15	0.16	10.42	10.37	263	
PFDoS	0.45	0.46	11.44	11.43	2989	
PFTDA	0.27	0.26	11.04	11.02	210	

REPORT OF LABORATORY ANALYSIS

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Appendix D

Data Validation Reports



AECOM
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Data Validation Report

Project: Superior Terminal
Laboratory: Pace Analytical
Work Order (WO): 10616212
Analyses/Method: Per- and Polyfluorinated Alkyl Substances (PFAS) / PFAS Isotope Dilution Method
Validation Level: Level 2A
Prepared by: Lisa Smith (CEAC) Completed on: 8/23/2022

The soil samples listed below, and the associated field QC blanks, were collected by AECOM on July 8, 2022.

Sample ID	Quality Control	Sample Date/Time	Laboratory ID
Soil Samples:			
PR-BUILDING A-HA01(0-6)		7/6/2022	10616212030
PR-BUILDING B-HA01(0-6)		7/6/2022	10616212031
PR-TK01-HA01(0-6)		7/6/2022	10616212001
PR-TK02-HA01(0-6)		7/6/2022	10616212002
PR-TK03-HA01(0-6)		7/6/2022	10616212003
PR-TK04-HA01(0-6)		7/6/2022	10616212004
PR-TK05-HA01(0-6)		7/6/2022	10616212005
PR-TK06-HA01(0-6)		7/6/2022	10616212006
PR-TK07-HA01(0-6)		7/6/2022	10616212007
PR-TK08-HA01(0-6)		7/6/2022	10616212008
PR-TK09-HA01(0-6)		7/6/2022	10616212009
PR-TK10-HA01(0-6)		7/6/2022	10616212010
PR-TK11-HA01(0-6)		7/6/2022	10616212011
PR-TK12-HA01(0-6)		7/6/2022	10616212012
PR-TK13-HA01(0-6)		7/5/2022	10616212013
PR-TK14-HA01(0-6)		7/5/2022	10616212014
PR-TK15-HA01(0-6)		7/5/2022	10616212015
PR-TK16-HA01(0-6)		7/5/2022	10616212016
PR-TK17-HA01(0-6)		7/5/2022	10616212017
PR-TK18-HA01(0-6)		7/5/2022	10616212018
PR-TK19-HA01(0-6)		7/5/2022	10616212019
PR-TK20-HA01(0-6)		7/5/2022	10616212020
PR-TK21-HA01(0-6)		7/6/2022	10616212021
PR-TK22-HA01(0-6)		7/5/2022	10616212022
PR-TK23-HA01(0-6)		7/5/2022	10616212023
PR-TK24-HA01(0-6)		7/5/2022	10616212024
PR-TK25-HA01(0-6)		7/6/2022	10616212025

Sample ID	Quality Control	Sample Date/Time	Laboratory ID
PR-TK26-HA01(0-6)		7/6/2022	10616212026
PR-TK27-HA01(0-6)	MS/MSD	7/6/2022	10616212027
PR-TK28-HA01(0-6)		7/6/2022	10616212028
PR-TK29-HA01(0-6)		7/6/2022	10616212029
Field QC Blanks:			
PR-DECON-01	Equipment Blank	7/6/2022	10616212033
PR-ERB-01	Equipment Blank	7/6/2022	10616212032
PR-ERB-02	Equipment Blank	7/7/2022	10616212035
PR-FB-01	Field Blank	7/6/2022	10616212034

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 sample / Laboratory Control Sample Duplicates (LCS/LCSDs)
- ✓ Matrix Spikes / Matrix Spike Duplicates (MS / MSDs)
- ✗ Ion ratios
- 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 106 results that were rejected (R) due to severely low EIS

recoveries. In addition, two results were qualified as estimated (J) due to ion ratios. A detailed data validation discussion is provided below.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and met 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.

The following items are noted for informational purposes (and do not affect data usability):

- A cooler temperature of 4.4 °C was recorded by the Pace Duluth service center on the CoCs. In addition, cooler temperatures were recorded upon receipt at the Pace-Minneapolis laboratory and two of the four coolers were at 7.5 and 6.3 °C, and above 6 °C. Results were not qualified as the average temperature was 5.6 °C, and all temperatures were less the 10 °C.

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.

Field Quality Control Blanks

Three equipment blanks and one field blank were associated with this data set. Analytes were detected in the PR-DECON-01 as summarized below. Results were not qualified as the soil sample concentrations were great than five times the trace level blank concentrations.

Analyte	Units	Result
PR-DECON-01 (7/6/2022):		
Perfluorobutanoic acid	ng/L	9.2
Perfluorobutanesulfonic acid	ng/L	0.98 J
Perfluoropentanoic acid	ng/L	1.3 J
Perfluorohexanoic acid	ng/L	1.4 J
Perfluoroheptanoic acid	ng/L	0.97 J
Perfluorooctanoic acid	ng/L	1.2 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. Results associated with low recoveries were qualified as estimated (UJ and J+), and detects associated with high recoveries were qualified as J-, as these labeled analogs are used to quantitate the analyte of interest and an inverse relationship exists. 106 results 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-TK01-HA01(0-6)	10616212001	D3-NMEPFOSA	0	10-150	R
PR-TK01-HA01(0-6)	10616212001	D5-ETFOSA	0	10-150	R
PR-TK01-HA01(0-6)	10616212001	D7-MEFOSE	1	10-150	R
PR-TK01-HA01(0-6)	10616212001	D9-ETFOSE	2	10-150	R
PR-TK02-HA01(0-6)	10616212002	D3-NMEPFOSA	0	10-150	R
PR-TK02-HA01(0-6)	10616212002	D5-ETFOSA	1	10-150	R
PR-TK02-HA01(0-6)	10616212002	D7-MEFOSE	9	10-150	R
PR-TK02-HA01(0-6)	10616212002	D9-ETFOSE	4	10-150	R
PR-TK03-HA01(0-6)	10616212003	D3-NMEPFOSA	0	10-150	R
PR-TK03-HA01(0-6)	10616212003	D5-ETFOSA	0	10-150	R
PR-TK03-HA01(0-6)	10616212003	D7-MEFOSE	2	10-150	R
PR-TK03-HA01(0-6)	10616212003	D9-ETFOSE	2	10-150	R
PR-TK04-HA01(0-6)	10616212004	D3-NMEPFOSA	1	10-150	R
PR-TK04-HA01(0-6)	10616212004	D5-ETFOSA	2	10-150	R
PR-TK04-HA01(0-6)	10616212004	D7-MEFOSE	6	10-150	R
PR-TK04-HA01(0-6)	10616212004	D9-ETFOSE	8	10-150	R
PR-TK05-HA01(0-6)	10616212005	D3-NMEPFOSA	0	10-150	R
PR-TK05-HA01(0-6)	10616212005	D5-ETFOSA	0	10-150	R
PR-TK05-HA01(0-6)	10616212005	D7-MEFOSE	1	10-150	R
PR-TK05-HA01(0-6)	10616212005	D9-ETFOSE	1	10-150	R
PR-TK06-HA01(0-6)	10616212006	D3-NMEPFOSA	0	10-150	R
PR-TK06-HA01(0-6)	10616212006	D5-ETFOSA	0	10-150	R
PR-TK06-HA01(0-6)	10616212006	D7-MEFOSE	1	10-150	R
PR-TK06-HA01(0-6)	10616212006	D9-ETFOSE	1	10-150	R
PR-TK07-HA01(0-6)	10616212007	D3-NMEPFOSA	0	10-150	R
PR-TK07-HA01(0-6)	10616212007	D5-ETFOSA	0	10-150	R
PR-TK07-HA01(0-6)	10616212007	D7-MEFOSE	2	10-150	R
PR-TK07-HA01(0-6)	10616212007	D9-ETFOSE	3	10-150	R
PR-TK08-HA01(0-6)	10616212008	D3-NMEPFOSA	0	10-150	R
PR-TK08-HA01(0-6)	10616212008	D5-ETFOSA	0	10-150	R
PR-TK08-HA01(0-6)	10616212008	D7-MEFOSE	2	10-150	R
PR-TK08-HA01(0-6)	10616212008	D9-ETFOSE	3	10-150	R
PR-TK09-HA01(0-6)	10616212009	D3-NMEPFOSA	0	10-150	R
PR-TK09-HA01(0-6)	10616212009	D5-ETFOSA	0	10-150	R
PR-TK09-HA01(0-6)	10616212009	D7-MEFOSE	1	10-150	R
PR-TK09-HA01(0-6)	10616212009	D9-ETFOSE	2	10-150	R
PR-TK10-HA01(0-6)	10616212010	D3-NMEPFOSA	0	10-150	R
PR-TK10-HA01(0-6)	10616212010	D5-ETFOSA	0	10-150	R
PR-TK10-HA01(0-6)	10616212010	D7-MEFOSE	1	10-150	R
PR-TK10-HA01(0-6)	10616212010	D9-ETFOSE	2	10-150	R
PR-TK11-HA01(0-6)	10616212011	D3-NMEPFOSA	8	10-150	R
PR-TK11-HA01(0-6)	10616212011	D5-ETFOSA	6	10-150	R
PR-TK12-HA01(0-6)	10616212012	D3-NMEPFOSA	1	10-150	R

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-TK12-HA01(0-6)	10616212012	D5-ETFOSA	1	10-150	R
PR-TK12-HA01(0-6)	10616212012	D7-MEFOSE	3	10-150	R
PR-TK12-HA01(0-6)	10616212012	D9-ETFOSE	4	10-150	R
PR-TK13-HA01(0-6)	10616212013	D3-NMEPFOSA	1	10-150	R
PR-TK13-HA01(0-6)	10616212013	D5-ETFOSA	1	10-150	R
PR-TK13-HA01(0-6)	10616212013	D9-ETFOSE	7	10-150	R
PR-TK14-HA01(0-6)	10616212014	D3-NMEPFOSA	1	10-150	R
PR-TK14-HA01(0-6)	10616212014	D5-ETFOSA	1	10-150	R
PR-TK14-HA01(0-6)	10616212014	D7-MEFOSE	2	10-150	R
PR-TK14-HA01(0-6)	10616212014	D9-ETFOSE	3	10-150	R
PR-TK15-HA01(0-6)	10616212015	D3-NMEPFOSA	1	10-150	R
PR-TK15-HA01(0-6)	10616212015	D5-ETFOSA	1	10-150	R
PR-TK15-HA01(0-6)	10616212015	D9-ETFOSE	6	10-150	R
PR-TK16-HA01(0-6)	10616212016	D3-NMEPFOSA	0	10-150	R
PR-TK16-HA01(0-6)	10616212016	D5-ETFOSA	0	10-150	R
PR-TK16-HA01(0-6)	10616212016	D7-MEFOSE	2	10-150	R
PR-TK16-HA01(0-6)	10616212016	D9-ETFOSE	2	10-150	R
PR-TK17-HA01(0-6)	10616212017	D3-NMEPFOSA	1	10-150	R
PR-TK17-HA01(0-6)	10616212017	D5-ETFOSA	1	10-150	R
PR-TK17-HA01(0-6)	10616212017	D7-MEFOSE	5	10-150	R
PR-TK17-HA01(0-6)	10616212017	D9-ETFOSE	7	10-150	R
PR-TK18-HA01(0-6)	10616212018	D3-NMEPFOSA	0	10-150	R
PR-TK18-HA01(0-6)	10616212018	D5-ETFOSA	0	10-150	R
PR-TK18-HA01(0-6)	10616212018	D7-MEFOSE	2	10-150	R
PR-TK18-HA01(0-6)	10616212018	D9-ETFOSE	3	10-150	R
PR-TK19-HA01(0-6)	10616212019	D3-NMEPFOSA	0	10-150	R
PR-TK19-HA01(0-6)	10616212019	D5-ETFOSA	1	10-150	R
PR-TK19-HA01(0-6)	10616212019	D7-MEFOSE	2	10-150	R
PR-TK19-HA01(0-6)	10616212019	D9-ETFOSE	3	10-150	R
PR-TK20-HA01(0-6)	10616212020	D3-NMEPFOSA	1	10-150	R
PR-TK20-HA01(0-6)	10616212020	D5-ETFOSA	1	10-150	R
PR-TK20-HA01(0-6)	10616212020	D7-MEFOSE	4	10-150	R
PR-TK20-HA01(0-6)	10616212020	D9-ETFOSE	5	10-150	R
PR-TK21-HA01(0-6)	10616212021	D3-NMEPFOSA	5	10-150	R
PR-TK21-HA01(0-6)	10616212021	D5-ETFOSA	7	10-150	R
PR-TK22-HA01(0-6)	10616212022	D3-NMEPFOSA	3	10-150	R
PR-TK22-HA01(0-6)	10616212022	D5-ETFOSA	5	10-150	R
PR-TK23-HA01(0-6)	10616212023	13C2-8:2 FTS	181	25-150	J-
PR-TK23-HA01(0-6)	10616212023	13C7-PFUDa	152	25-150	J-
PR-TK24-HA01(0-6)	10616212024	D3-NMEPFOSA	2	10-150	R
PR-TK24-HA01(0-6)	10616212024	D5-ETFOSA	3	10-150	R
PR-TK25-HA01(0-6)	10616212025	D3-NMEPFOSA	5	10-150	R
PR-TK25-HA01(0-6)	10616212025	D5-ETFOSA	3	10-150	R
PR-TK26-HA01(0-6)	10616212026	D3-NMEPFOSA	1	10-150	R
PR-TK26-HA01(0-6)	10616212026	D5-ETFOSA	1	10-150	R
PR-TK26-HA01(0-6)	10616212026	D7-MEFOSE	3	10-150	R
PR-TK26-HA01(0-6)	10616212026	D9-ETFOSE	6	10-150	R
PR-TK27-HA01(0-6)	10616212027	D3-NMEPFOSA	6	10-150	R

Sample ID	Lab ID	Labeled Analog	% Recovery	% Recovery Limits	Qualification of Associated non-Labeled Analyte
PR-TK27-HA01(0-6)	10616212027	D5-ETFOSA	7	10-150	R
PR-TK28-HA01(0-6)	10616212028	D3-NMEPFOSA	1	10-150	R
PR-TK28-HA01(0-6)	10616212028	D5-ETFOSA	1	10-150	R
PR-TK28-HA01(0-6)	10616212028	D7-MEFOSE	7	10-150	R
PR-TK28-HA01(0-6)	10616212028	D9-ETFOSE	9	10-150	R
PR-TK29-HA01(0-6)	10616212029	D3-NMEPFOSA	1	10-150	R
PR-TK29-HA01(0-6)	10616212029	D5-ETFOSA	1	10-150	R
PR-TK29-HA01(0-6)	10616212029	D7-MEFOSE	4	10-150	R
PR-TK29-HA01(0-6)	10616212029	D9-ETFOSE	5	10-150	R
PR-BUILDING A-HA01(0-6)	10616212030	13C2-8:2 FTS	152	25-150	No Qualifier
PR-BUILDING A-HA01(0-6)	10616212030	D3-NMEPFOSA	8	10-150	R
PR-BUILDING A-HA01(0-6)	10616212030	D5-ETFOSA	9	10-150	R
PR-BUILDING B-HA01(0-6)	10616212031	D3-NMEPFOSA	7	10-150	R
PR-BUILDING B-HA01(0-6)	10616212031	D5-ETFOSA	9	10-150	R
PR-DECON-01	10616212033	13C2-4:2 FTS	260	25-150	No Qualifier
PR-DECON-01	10616212033	13C2-6:2 FTS	167	25-150	No Qualifier
PR-DECON-01	10616212033	D3-NMEPFOSA	0	10-150	R
PR-DECON-01	10616212033	D5-ETFOSA	0	10-150	R
PR-FB-01	10616212034	D3-NMEPFOSA	8	10-150	R
PR-FB-01	10616212034	D5-ETFOSA	5	10-150	R

LCS/LCSD Results

LCS and LCSD recoveries are analyzed to monitor the accuracy of the analytical method independent of matrix effects, while LCS/LCSD relative percent differences (RPDs) are used to assess laboratory precision. Recoveries (%Rs) were within the WI limits of 50% to 150% limit for low range LCSs, and RPDs were within 30%.

MS/MSD Results

Matrix spikes are analyzed to determine the effects of sample matrix on the measurement methodology. An MS/MSD was analyzed for sample PR-TK27-HA01(0-6). MS/MSD recoveries were within the WI limits of 50% to 150% limit and RPDs were within 30% for target analytes.

Ion Transition Ratios

Laboratory qualifiers indicate that the analytes listed below did not meet the ion transition ratio criteria. These results were qualified as estimated (J) and are considered as estimated maximum concentrations.

Field Sample ID	Lab ID	Analyte
PR-TK12-HA01(0-6)	10616212012	PFTTrDA
PR-TK29-HA01(0-6)	10616212029	PFBS

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Field duplicates were not associated with this data set.

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes. A revised laboratory report and EDD were requested and received from the laboratory. The request was to show the full values on the laboratory reports for the quantitation limit (QL), reporting limit (RL), and method detection limit (MDL) columns; to show the units for the LCS, LCSD, MS, and MSD; and to correctly report the QL in the EDD.

MDLs were below the Non-Industrial Direct Contact and Industrial Direct Contact NR 720 Residual Contaminant Levels soil screening limits.

Qualified Analytical Results

Results reported below the QL were qualified as estimated (J) by the laboratory; qualifications of these results were accepted by the Validator; however, are not listed in the table below.

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Analyte	Validation Qualifier ⁽¹⁾	Reason Code ⁽²⁾
PR-TK01-HA01(0-6) PR-TK02-HA01(0-6) 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-TK12-HA01(0-6) PR-TK14-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-TK26-HA01(0-6) PR-TK28-HA01(0-6) PR-TK29-HA01(0-6)	EtFOSA EtFOSE MeFOSA MeFOSE	R	eis
PR-TK13-HA01(0-6) PR-TK15-HA01(0-6)	EtFOSA MeFOSA MeFOSE	R	eis
PR-TK11-HA01(0-6) PR-TK21-HA01(0-6) PR-TK22-HA01(0-6) PR-TK24-HA01(0-6) PR-TK25-HA01(0-6) PR-TK27-HA01(0-6) PR-BUILDING A-HA01(0-6) PR-BUILDING B-HA01(0-6) PR-DECON-01 PR-FB-01	EtFOSA MeFOSA	R	eis

Sample ID	Analyte	Validation Qualifier ⁽¹⁾	Reason Code ⁽²⁾
PR-TK23-HA01(0-6)	8:2 FTS PFUnDA	J-	eis
PR-TK12-HA01(0-6)	PFTTrDA	J	ir
PR-TK29-HA01(0-6)	PFBS	J	ir

(1): Data Validation Qualifiers:

- J Estimated, +/- indicate the direction of bias
- R Rejected due to serious deficiencies in meeting QC criteria.

(2): Reason Codes:

- eis Extracted internal standard
- ir Ion ratios



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Data Validation Report

Project: Superior Terminal

Laboratory: Pace Analytical

Work Order (WO): 10620121

Analyses/Method: Per- and Polyfluorinated Alkyl Substances (PFAS) / PFAS Isotope Dilution Method

Validation Level: Level 2A

Prepared by: Lisa Smith (CEAC) Completed on: 9/6/2022

The soil samples listed below, and the associated field QC blanks, were collected by AECOM on August 3, 2022.

Sample ID	Quality Control	Sample Date	Laboratory ID
Soil Samples:			
PR-AFFEXCAVATION-SB01(14-15)	MS/MSD	8/3/2022	10620121001
PR-AFFEXCAVATION-SB01(17-17.5)		8/3/2022	10620121002
Field QC Blanks:			
PR-DECON-02	Equipment Blank	8/3/2022	10620121005
PR-ERB-03	Equipment Blank	8/3/2022	10620121003
PR-FB-02	Field Blank	8/3/2022	10620121004

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, AECOM's 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)
- ✗ Matrix Spikes / Matrix Spike Duplicates (MS / MSDs)
- NA Ion ratios (results were nondetect)

NA	Field duplicates
✓	Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. The symbol (X) 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 12 results that were rejected (R) due to severely low EIS recoveries. One of the rejected results also had a low MS recovery. Detailed data validation discussions are provided below.

DETAILED REVIEW

Data Completeness

The data packages were reviewed and met 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.

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.

Field Quality Control Blanks

Two equipment blanks and one field blank were associated with this data set. Analytes were not detected in the field QC blanks.

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. 12 results 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-AFFEXCAVATION-SB01(14-15)	10620121001	D3-NMEPFOSA	0	10 - 150	R
		D5-ETFOSA	0	10 - 150	R
		D7-MEFOSE	0	10 - 150	R
		D9-ETFOSE	1	10 - 150	R
PR-AFFEXCAVATION-SB01(17-17.5)	10620121002	D3-NMEPFOSA	0	10 - 150	R
		D5-ETFOSA	0	10 - 150	R
		D7-MEFOSE	1	10 - 150	R
		D9-ETFOSE	2	10 - 150	R
PR-DECON-02	10620121005	D3-NMEPFOSA	0	10 - 150	R
		D5-ETFOSA	0	10 - 150	R
		D7-MEFOSE	7	10 - 150	R
		D9-ETFOSE	5	10 - 150	R

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.

MS/MSD Results

Matrix spikes are analyzed to determine the effects of sample matrix on the measurement methodology. An MS/MSD was analyzed for sample PR-AFFEXCAVATION-SB01(14-15). MS/MSD recoveries were within the WI limits of 50% to 150% limit and relative percent differences (RPDs) were within 50% for the sediment matrix, with the exception listed in the table below.

Analyte	% Recovery	Recovery Limits	RPD	RPD Limit	Qualifiers
PR-AFFEXCAVATION-SB01(14-15):					
MeFOSA	30/59	50 - 150	64	50	The result for sample PR-AFFEXCAVATION-SB01(14-15) was previously rejected due a severely low EIS recovery.
EtFOSA	109/163	50 - 150	40	50	The results for sample PR-AFFEXCAVATION-SB01(14-15) were nondetect, and were acceptable without qualification.
EtFOSE	170/98	50 - 150	54	50	

Bold indicates as exceedance

Field Duplicate Results

Field duplicates are collected to assess the overall precision of field sampling and laboratory analysis. Field duplicates were not associated with this data set.

Sample Results and Quantitation

Sample results were reviewed for correct methods, units, and reported analytes, and no issues were found.

MDLs for the soil samples were below the Non-Industrial Direct Contact and Industrial Direct Contact NR 720 Residual Contaminant Levels soil screening limits.

Qualified Analytical Results

Results reported by the laboratory were nondetect. Sample results qualified due to validation actions are summarized in Table 1. All actions are described above.

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Analyte	Validation Qualifier ⁽¹⁾	Reason Code ⁽²⁾
PR-AFFFEXCAVATION-SB01(14-15)	EtFOSA EtFOSE MeFOSE	R	eis
PR-AFFFEXCAVATION-SB01(14-15)	MeFOSA	R	eis,m
PR-AFFFEXCAVATION-SB01(17-17.5) PR-DECON-02	EtFOSA EtFOSE MeFOSA MeFOSE	R	eis

(1): Data Validation Qualifiers:

R Rejected due to serious deficiencies in meeting QC criteria.

(2): Reason Codes:

eis Extracted internal standard

m Matrix spike