



June 28, 2024

via e-mail

Meg Schaeffer-Utter
Wisconsin Department of Natural Resources
101 South Webster Street, Box 792
Madison, WI 53707-7921

**Re: Response to Request for Information
Ahlstrom Rhinelander LLC / Ahlstrom NA Specialty Solutions LLC**

Dear Ms. Schaeffer-Utter:

This letter responds to the Wisconsin Department of Natural Resources (WDNR) correspondence dated April 24, 2024 (the Information Request), received by Ahlstrom Rhinelander LLC and Ahlstrom NA Specialty Solutions LLC (collectively, Ahlstrom) on April 29, 2024. Ahlstrom's response to the Information Request is provided herein.

As background, Ahlstrom acquired the Rhinelander mill located at 515 West Davenport Street, Rhinelander, Wisconsin, by stock acquisition of Expera Specialty Solutions, LLC (Expera) in July 2018. Expera acquired the Rhinelander mill as part of an asset purchase from Wausau Paper Mills, LLC on June 26, 2013. Wausau Paper Mills, LLC and related Wausau Paper entities are now owned by Essity Professional Hygiene North America, LLC.

The Information Request seeks certain information regarding a three-mile radius of the Village of Starks, located in the Town of Stella, defined by the Information Request as "Sites and Facilities." Subject to the below, Ahlstrom offers the following responses to the numbered requests in the Information Request, with the language of each Information Request italicized.

Please provide any information, records, or documents regarding Sites or Facilities within three miles of the Village of Starks in the custody, possession or control of Ahlstrom, as follows:

- 1. The type and quantity of PFAS-containing solid waste that Ahlstrom generated, transported, treated, stored, or disposed of at the Sites or Facilities and the dates of these activities, including, but not limited to, PFAS technical reports, PFAS sampling data, PFAS data and analyses, PFAS emissions estimates or calculations as well as emissions modeling data, PFAS usage estimates per year for any process or function at any of these locations, and any hazardous waste manifests or other waste documents which list PFAS-containing solid waste.*

Fibercake from the Rhinelander mill's wastewater treatment facility is land applied to certain Sites and Facilities pursuant to a Wisconsin Pollutant Discharge Elimination System (WPDES) individual permit issued to the Rhinelander mill, a WDNR-approved fibercake landspreading management plan (LMP), applicable WDNR regulations and any site-specific conditions in WDNR site approvals. WDNR collected fibercake material from the mill's wastewater treatment facility on July 25, 2023. The fibercake was analyzed by the Wisconsin State Laboratory of Hygiene for certain per- and polyfluoroalkyl substances (PFAS). The analytical results were provided by the laboratory to the WDNR and the laboratory report is already available to the WDNR and the public via the WDNR's Town of Stella website at <https://dnr.wisconsin.gov/topic/PFAS/Stella.html>. The results of the fibercake analysis indicated a combined PFOA and PFOS concentration of 2.01 parts per billion (ppb), below the lowest 20 ppb combined level referenced in the Department's *Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS* (March 1, 2024 Revision). Ahlstrom has not conducted additional PFAS analysis of fibercake from the Rhinelander mill.

Ahlstrom has reviewed Annual Land Application Reports from 2013 to 2023 and identified those land application fields within a three-mile radius of the Village of Starks. Exhibit A, Table 1 is a list of those fields included within the definition of "Sites and Facilities" that have received land applied fibercake from July 2013 through 2023. Aside from the WDNR testing described above, Ahlstrom has located no information indicating whether any of the land applied fibercake identified on Exhibit A contained PFAS.

Field application information is also being provided for the Sites and Facilities that received land applied fibercake between 1996 and June 2013, during the Wausau Paper years of mill ownership and operation, according to records made available by the WDNR. To be very clear, by providing this information, Ahlstrom is not assuming any legal obligation to respond to the Information Request on behalf of Wausau Paper or Essity. See Exhibit A, Table 2.

At the time of the 2013 asset purchase referenced above, Wausau Paper Mills, LLC retained ownership of the Pine Lake Landfill, and it is Ahlstrom's understanding that Wausau Paper Mills, LLC c/o Essity Professional Hygiene North America LLC currently is the owner of the Pine Lake Landfill. In accordance with a 2013 agreement between Wausau Paper and Expera, leachate from the Pine Lake Landfill is brought to the Rhinelander mill's wastewater treatment facility where it is treated along with wastewater from the Rhinelander mill.

Leachate from the Pine Lake Landfill was sampled for PFAS by Ahlstrom on March 21, 2024, and April 29, 2024. The laboratory analyses are included in Ahlstrom's response hereto. See Exhibit B. Since Ahlstrom's March and April 2024 sampling of the Pine Lake Landfill leachate, it is Ahlstrom's understanding that a treatment system has been installed at the Pine Lake Landfill to pretreat the landfill leachate for PFAS prior to management at Ahlstrom's wastewater treatment facility.

Pine Lake Landfill leachate represents a small fraction of the total volume of wastewater treated at the Rhinelander wastewater treatment facility. Resulting fibercake from the

wastewater treatment facility is land applied pursuant to the mill's WPDES permit, LMP, applicable WDNR regulations, and any site-specific conditions in WDNR site approvals.

- 2. The identity of persons, as defined in Wis. Stat. § 292.01(13), who generated, transported, treated or stored waste which was disposed of at the Sites or Facilities.*

Although it is understood that other entities may have generated, transported, treated or stored waste at the Sites or Facilities, Ahlstrom has information in its possession, custody or control regarding fibercake from only the Rhinelander mill that was land applied within the area defined as Sites or Facilities. Under Expera and Ahlstrom's period of ownership, fibercake is transported by mill employees from the Rhinelander mill to WDNR-approved land application sites.

- 3. The identity of subsidiary or parent corporations, as defined in Wis. Stat. § 292.31(8)(a)3., of persons who generated, transported, treated, stored, or disposed of PFAS-containing solid waste at the Sites or Facilities.*

Ahlstrom acquired the Rhinelander mill located at 515 West Davenport Street, Rhinelander, Wisconsin, by stock acquisition of Expera Specialty Solutions, LLC (Expera) in July 2018. Expera acquired the Rhinelander mill as part of an asset purchase from Wausau Paper Mills, LLC in June 2013. Wausau Paper Mills, LLC and other related Wausau Paper entities are now owned by Essity Professional Hygiene North America, LLC.

Ahlstrom NA Specialty Solutions LLC generated and transported fibercake, which was spread on fields within the definition of "Sites and Facilities" from 2018 to 2023. From July 2013 until 2018, Expera Specialty Solutions, LLC, generated and transported fibercake, which was spread on fields within the definition of "Sites and Facilities."

It is Ahlstrom's current understanding that the Pine Lake Landfill is owned by Wausau Paper Mills, LLC c/o Essity Professional Hygiene North America LLC.

* * *

Ahlstrom voluntarily provides this response in good faith, based on the nonprivileged information currently known and available to it, and reserves the right to amend this response as appropriate if additional nonprivileged information becomes available or relevant. This response is being provided without any admission of liability by Ahlstrom, or its officers, directors, employees, agents or representatives, nor does this response waive any rights, obligations, privileges or defenses that Ahlstrom may have. Further, this response does not waive, and specifically preserves, Ahlstrom's ability to object to the Information Request and any details therein, including the scope of the Information Request, the definitions and terms utilized therein, and the statutory authority for the Information Request itself. Nothing in this response shall be construed or deemed to be a waiver of these objections, and Ahlstrom reserves the right to object to the use, in whole



or in part, of any document or information submitted with this response in any proceeding for any purpose whatsoever.

Please advise if the Department has any questions regarding this response to the Information Request.

Sincerely,

A handwritten signature in black ink that reads 'Tom Emond'. The signature is written in a cursive style with a large, sweeping flourish at the end.

Tom Emond
Environmental Manager
Ahlstrom

Exhibits A & B

Exhibit A

[Tables 1 & 2]

Table 1. List of fields included within the definition of Sites and Facilities that received land applied fibercake from the Rhinelander Mill from July 2013 through 2023 (Units in Cubic Yards).

DNR ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
355	0	400	0	0	0	450	0	0	0	0	0
357	750	0	0	0	0	0	0	0	0	0	0
362	1075	0	0	425	0	0	0	0	0	0	0
363	0	0	0	0	0	0	0	0	1500	0	0
364	0	0	0	725	0	0	2525	225	0	0	0
365	0	0	0	0	0	0	1800	0	1950	700	0
369	0	625	0	0	1050	0	900	0	0	0	0
370	0	150	0	0	0	0	225	0	0	0	0
371	0	275	0	0	375	0	475	0	0	0	0
372	0	100	0	0	0	0	0	0	0	0	0
373	0	0	0	0	275	300	0	0	0	0	0
374	0	0	0	0	0	0	200	0	0	0	0
48556	550	275	0	0	0	0	0	0	0	0	0
48557	250	175	0	0	0	0	0	0	0	0	0
94234	0	625	0	0	1100	0	0	0	900	0	0
104623	0	600	0	0	0	750	825	0	0	0	0
106173	0	400	1000	0	0	0	0	0	0	0	0
108989	0	0	0	650	0	0	0	0	0	0	0
112285	0	0	0	0	1150	0	0	0	950	0	0
116138	0	0	0	0	0	0	0	0	425	0	0
116394	0	0	0	0	0	0	0	0	150	775	0

Table 2. List of fields included within the definition of “Sites and Facilities” that received land applied fibercake from the Rhinelander Mill from 1996 through July 2013 (Units in Cubic Yards).

DNR ID	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
355	0	1047	2824	0	0	0	0	0	1425	0	0	0	0	0	475	0	0	0
356	0	5606	0	0	0	0	7009	2886	0	0	0	0	0	0	0	0	0	0
357	2044	2621	0	0	0	0	5496	2389	0	0	0	0	0	0	1000	0	0	0
358	0	0	0	5826	0	0	0	0	0	0	0	0	0	0	0	0	0	0
359	0	0	0	1711	0	0	0	0	1100	0	0	0	0	0	0	0	0	0
360	0	0	0	0	833	0	0	0	4000	0	0	0	0	0	0	0	0	0
361	799	0	0	5742	0	0	0	0	0	4825	0	0	0	0	0	0	0	0
362	0	0	0	0	6810	1921	0	6717	0	0	1110	1275	1300	1100	1050	725	450	300
363	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	975	0
364	0	0	850	0	136	6937	3891	0	0	0	545	0	0	0	0	0	1050	250
365	0	0	1868	1809	5088	2952	0	1897	3450	0	0	0	0	0	0	0	1700	0
366	0	0	0	5831	0	0	5582	0	3700	0	0	0	0	0	0	0	0	0
367	0	0	0	0	1836	5237	1537	2375	1725	0	2820	0	0	0	0	0	0	0
368	0	350	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
369	0	0	2610	0	0	3308	0	0	1150	0	0	0	0	0	0	0	50	0
370	0	0	0	0	0	1317	0	0	300	0	0	0	0	0	0	0	0	0
371	0	0	1275	0	0	2343	0	0	675	0	0	0	0	0	0	0	0	0
372	0	0	0	0	0	0	0	470	0	0	0	0	0	0	0	0	0	0
373	0	0	2230	0	0	0	0	3075	750	0	0	0	0	0	175	0	0	0
374	0	0	0	0	0	0	0	247	0	0	0	0	0	0	0	0	0	0
375	1173	1462	765	0	2307	1060	0	0	0	0	0	0	0	0	0	0	0	0
34764	0	0	459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34765	306	187	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34766	0	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34767	0	0	493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34768	0	85	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

DNR ID	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
34769	0	221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34770	772	153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34771	0	272	493	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34772	0	0	217	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34773	437	306	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34774	0	0	106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34775	0	255	810	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34776	152	0	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34777	137	68	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34779	0	0	154	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34780	908	527	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34783	0	255	221	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34785	51	51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34786	0	425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34787	442	374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34788	289	0	476	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34789	0	0	1037	0	612	952	0	0	0	0	0	0	0	0	0	0	0	0
34790	0	0	0	1230	0	73	373	0	600	0	0	0	0	0	0	0	0	0
38086	0	1139	0	609	0	1066	0	0	0	0	0	0	0	0	0	0	0	0
48556	0	0	0	4071	2839	2972	2765	1350	1800	620	575	500	500	475	500	325	525	550
48557	0	0	493	1348	1307	1300	1044	575	600	261	95	200	200	300	225	200	200	250
49895	0	0	0	0	3113	0	0	0	0	0	0	0	0	0	0	0	0	0
94234	0	0	0	0	0	0	0	0	0	0	0	0	0	800	0	0	925	0
94434	0	0	0	0	0	0	0	0	0	0	0	0	0	450	0	0	0	0

Exhibit B

[Pine Lake Landfill Leachate Lab Reports]

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Ramey
TRC Environmental Corporation
6737 W. Washington St., Suite 2100
West Allis, Wisconsin 53214

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JOB DESCRIPTION

Leachate Sampling

JOB NUMBER

320-110713-1

Eurofins Sacramento

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Authorization



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Authorized for release by
Micah Smith, Project Manager II
Micah.Smith@et.eurofinsus.com
(916)374-4302



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Isotope Dilution Summary	10
QC Sample Results	12
QC Association Summary	19
Lab Chronicle	20
Certification Summary	21
Method Summary	22
Sample Summary	23
Chain of Custody	24
Receipt Checklists	26

Definitions/Glossary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: TRC Environmental Corporation
Project: Leachate Sampling

Job ID: 320-110713-1

Job ID: 320-110713-1

Eurofins Sacramento

Job Narrative 320-110713-1

Receipt

The samples were received on 3/22/2024 9:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.0° C.

LCMS

Method 537 (modified): The low level laboratory control sample (LLCS) for preparation batch 320-751053 and 320-751053 and analytical batch 320-751550 recovered outside control limits for the following analyte: Perfluorooctanoic acid (PFOA). This analyte was biased high in the LLCS and were not detected in the associated samples; therefore, the data have been reported.

Method 537 (modified): Results for sample Pine Lake Landfill Leachate (320-110713-1) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Method 537 (modified): Internal standard (ISTD) response for 13C2 PFOA for the following continuing calibration blank (CCB) in analytical batch 320-753312 was outside acceptance criteria: (CCB 320-753312/10). The CCB is used to demonstrate the instrument is free of contamination. All affected analytes are non-detect, therefore, there is no impact to the data quality.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method 3535: The following samples in preparation batch 320-751053 were observed to have sediment present in the bottle prior to extraction. Pine Lake Landfill Leachate (320-110713-1).

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-751053.

Method 3535: Due to the matrix, the initial volume used for the following sample deviated from the standard procedure: Pine Lake Landfill Leachate (320-110713-1). The reporting limits (RLs) have been adjusted proportionately.

Method 3535: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-752056.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Detection Summary

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Client Sample ID: Pine Lake Landfill Leachate

Lab Sample ID: 320-110713-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	410		50	24	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	760		20	4.9	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	2000		20	5.8	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2900		20	2.5	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	91		20	2.7	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.9	J	20	3.1	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	22		20	2.0	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	9.2	J	20	3.0	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	93		20	5.7	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	62		20	1.9	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3600		20	5.4	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	140		20	9.8	ng/L	1		537 (modified)	Total/NA
NMeFOSAA	19	J	50	12	ng/L	1		537 (modified)	Total/NA
NEtFOSAA	2100		50	13	ng/L	1		537 (modified)	Total/NA
NEtFOSE	9.3	J	20	8.5	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - RE	9300		100	43	ng/L	5		537 (modified)	Total/NA

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-110713-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Client Sample ID: Pine Lake Landfill Leachate

Lab Sample ID: 320-110713-1

Date Collected: 03/21/24 07:01

Matrix: Water

Date Received: 03/22/24 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	410		50	24	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluoropentanoic acid (PFPeA)	760		20	4.9	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorohexanoic acid (PFHxA)	2000		20	5.8	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluoroheptanoic acid (PFHpA)	2900		20	2.5	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorononanoic acid (PFNA)	91		20	2.7	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorodecanoic acid (PFDA)	3.9	J	20	3.1	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluoroundecanoic acid (PFUnA)	<11		20	11	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorododecanoic acid (PFDoA)	<5.5		20	5.5	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorotridecanoic acid (PFTrDA)	<13		20	13	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorotetradecanoic acid (PFTeA)	<7.3		20	7.3	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorobutanesulfonic acid (PFBS)	22		20	2.0	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluoropentanesulfonic acid (PFPeS)	9.2	J	20	3.0	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorohexanesulfonic acid (PFHxS)	93		20	5.7	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluoroheptanesulfonic acid (PFHpS)	62		20	1.9	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorooctanesulfonic acid (PFOS)	3600		20	5.4	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorononanesulfonic acid (PFNS)	<3.7		20	3.7	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorodecanesulfonic acid (PFDS)	<3.2		20	3.2	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorododecanesulfonic acid (PFDoS)	<9.7		20	9.7	ng/L		03/29/24 08:16	04/01/24 15:43	1
Perfluorooctanesulfonamide (FOSA)	140		20	9.8	ng/L		03/29/24 08:16	04/01/24 15:43	1
NEtFOSA	<8.7		20	8.7	ng/L		03/29/24 08:16	04/01/24 15:43	1
NMeFOSA	<4.3		20	4.3	ng/L		03/29/24 08:16	04/01/24 15:43	1
NMeFOSAA	19	J	50	12	ng/L		03/29/24 08:16	04/01/24 15:43	1
NEtFOSAA	2100		50	13	ng/L		03/29/24 08:16	04/01/24 15:43	1
NMeFOSE	<14		40	14	ng/L		03/29/24 08:16	04/01/24 15:43	1
NEtFOSE	9.3	J	20	8.5	ng/L		03/29/24 08:16	04/01/24 15:43	1
4:2 FTS	<2.4		20	2.4	ng/L		03/29/24 08:16	04/01/24 15:43	1
6:2 FTS	<25		50	25	ng/L		03/29/24 08:16	04/01/24 15:43	1
8:2 FTS	<4.6		20	4.6	ng/L		03/29/24 08:16	04/01/24 15:43	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<4.0		20	4.0	ng/L		03/29/24 08:16	04/01/24 15:43	1
HFPO-DA (GenX)	<15		40	15	ng/L		03/29/24 08:16	04/01/24 15:43	1
9Cl-PF3ONS	<2.4		20	2.4	ng/L		03/29/24 08:16	04/01/24 15:43	1
11Cl-PF3OUdS	<3.2		20	3.2	ng/L		03/29/24 08:16	04/01/24 15:43	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	84		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C5 PFPeA	98		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C2 PFHxA	98		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C4 PFHpA	98		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C5 PFNA	100		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C2 PFDA	100		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C2 PFUnA	89		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C2 PFDoA	88		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C2 PFTeDA	89		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C3 PFBS	105		25 - 150	03/29/24 08:16	04/01/24 15:43	1

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Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Client Sample ID: Pine Lake Landfill Leachate

Lab Sample ID: 320-110713-1

Date Collected: 03/21/24 07:01

Matrix: Water

Date Received: 03/22/24 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	112		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C4 PFOS	104		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C8 FOSA	110		10 - 150	03/29/24 08:16	04/01/24 15:43	1
d3-NMeFOSAA	111		25 - 150	03/29/24 08:16	04/01/24 15:43	1
d5-NEtFOSAA	104		25 - 150	03/29/24 08:16	04/01/24 15:43	1
d-N-MeFOSA-M	81		10 - 150	03/29/24 08:16	04/01/24 15:43	1
d-N-EtFOSA-M	85		10 - 150	03/29/24 08:16	04/01/24 15:43	1
d7-N-MeFOSE-M	103		10 - 150	03/29/24 08:16	04/01/24 15:43	1
d9-N-EtFOSE-M	102		10 - 150	03/29/24 08:16	04/01/24 15:43	1
M2-4:2 FTS	101		25 - 150	03/29/24 08:16	04/01/24 15:43	1
M2-6:2 FTS	96		25 - 150	03/29/24 08:16	04/01/24 15:43	1
M2-8:2 FTS	102		25 - 150	03/29/24 08:16	04/01/24 15:43	1
13C3 HFPO-DA	95		25 - 150	03/29/24 08:16	04/01/24 15:43	1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	9300		100	43	ng/L		04/03/24 11:51	04/09/24 01:09	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	101		25 - 150	04/03/24 11:51	04/09/24 01:09	5

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-110713-2

Date Collected: 03/21/24 06:55

Matrix: Water

Date Received: 03/22/24 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.2		4.5	2.2	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluoropentanoic acid (PFPeA)	<0.44		1.8	0.44	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorohexanoic acid (PFHxA)	<0.52		1.8	0.52	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluoroheptanoic acid (PFHpA)	<0.22		1.8	0.22	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorooctanoic acid (PFOA)	<0.76	+	1.8	0.76	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluoroundecanoic acid (PFUnA)	<0.99		1.8	0.99	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorododecanoic acid (PFDoA)	<0.49		1.8	0.49	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.8	1.2	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorotetradecanoic acid (PFTeA)	<0.66		1.8	0.66	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.51		1.8	0.51	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.17		1.8	0.17	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.48		1.8	0.48	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorononanesulfonic acid (PFNS)	<0.33		1.8	0.33	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorododecanesulfonic acid (PFDoS)	<0.87		1.8	0.87	ng/L		03/29/24 08:16	04/01/24 15:13	1
Perfluorooctanesulfonamide (FOSA)	<0.88		1.8	0.88	ng/L		03/29/24 08:16	04/01/24 15:13	1
NEtFOSA	<0.78		1.8	0.78	ng/L		03/29/24 08:16	04/01/24 15:13	1
NMeFOSA	<0.39		1.8	0.39	ng/L		03/29/24 08:16	04/01/24 15:13	1

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Client Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-110713-2

Date Collected: 03/21/24 06:55

Matrix: Water

Date Received: 03/22/24 09:30

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NMeFOSAA	<1.1		4.5	1.1	ng/L		03/29/24 08:16	04/01/24 15:13	1
NEtFOSAA	<1.2		4.5	1.2	ng/L		03/29/24 08:16	04/01/24 15:13	1
NMeFOSE	<1.3		3.6	1.3	ng/L		03/29/24 08:16	04/01/24 15:13	1
NEtFOSE	<0.76		1.8	0.76	ng/L		03/29/24 08:16	04/01/24 15:13	1
4:2 FTS	<0.22		1.8	0.22	ng/L		03/29/24 08:16	04/01/24 15:13	1
6:2 FTS	<2.2		4.5	2.2	ng/L		03/29/24 08:16	04/01/24 15:13	1
8:2 FTS	<0.41		1.8	0.41	ng/L		03/29/24 08:16	04/01/24 15:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.36		1.8	0.36	ng/L		03/29/24 08:16	04/01/24 15:13	1
HFPO-DA (GenX)	<1.3		3.6	1.3	ng/L		03/29/24 08:16	04/01/24 15:13	1
9CI-PF3ONS	<0.22		1.8	0.22	ng/L		03/29/24 08:16	04/01/24 15:13	1
11CI-PF3OUdS	<0.29		1.8	0.29	ng/L		03/29/24 08:16	04/01/24 15:13	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	104		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C5 PFPeA	97		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C2 PFHxA	98		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C4 PFHpA	102		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C4 PFOA	97		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C5 PFNA	100		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C2 PFDA	104		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C2 PFUnA	98		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C2 PFDoA	99		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C2 PFTeDA	99		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C3 PFBS	107		25 - 150				03/29/24 08:16	04/01/24 15:13	1
18O2 PFHxS	115		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C4 PFOS	108		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C8 FOSA	116		10 - 150				03/29/24 08:16	04/01/24 15:13	1
d3-NMeFOSAA	106		25 - 150				03/29/24 08:16	04/01/24 15:13	1
d5-NEtFOSAA	108		25 - 150				03/29/24 08:16	04/01/24 15:13	1
d-N-MeFOSA-M	97		10 - 150				03/29/24 08:16	04/01/24 15:13	1
d-N-EtFOSA-M	92		10 - 150				03/29/24 08:16	04/01/24 15:13	1
d7-N-MeFOSE-M	112		10 - 150				03/29/24 08:16	04/01/24 15:13	1
d9-N-EtFOSE-M	109		10 - 150				03/29/24 08:16	04/01/24 15:13	1
M2-4:2 FTS	100		25 - 150				03/29/24 08:16	04/01/24 15:13	1
M2-6:2 FTS	102		25 - 150				03/29/24 08:16	04/01/24 15:13	1
M2-8:2 FTS	114		25 - 150				03/29/24 08:16	04/01/24 15:13	1
13C3 HFPO-DA	103		25 - 150				03/29/24 08:16	04/01/24 15:13	1

Isotope Dilution Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-110713-1	Pine Lake Landfill Leachate	84	98	98	98		100	100	89
320-110713-1 - RE	Pine Lake Landfill Leachate					101			
320-110713-2	Pine Lake Landfill Leachate FRB	104	97	98	102	97	100	104	98
LCS 320-751053/3-A	Lab Control Sample	105	98	104	107	94	100	110	94
LCSD 320-751053/4-A	Lab Control Sample Dup	107	96	107	104	103	100	109	99
LLCS 320-751053/2-A	Lab Control Sample	105	98	109	104	101	106	110	92
LLCS 320-752056/2-A	Lab Control Sample					105			
LLCSD 320-752056/3-A	Lab Control Sample Dup					104			
MB 320-751053/1-A	Method Blank	102	97	100	107	101	105	103	97
MB 320-752056/1-A	Method Blank					103			

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-110713-1	Pine Lake Landfill Leachate	88	89	105	112	104	110	111	104
320-110713-1 - RE	Pine Lake Landfill Leachate								
320-110713-2	Pine Lake Landfill Leachate FRB	99	99	107	115	108	116	106	108
LCS 320-751053/3-A	Lab Control Sample	102	102	107	112	106	104	106	108
LCSD 320-751053/4-A	Lab Control Sample Dup	106	94	105	117	114	114	111	107
LLCS 320-751053/2-A	Lab Control Sample	104	100	104	118	107	110	105	103
LLCS 320-752056/2-A	Lab Control Sample								
LLCSD 320-752056/3-A	Lab Control Sample Dup								
MB 320-751053/1-A	Method Blank	105	102	103	107	104	106	107	108
MB 320-752056/1-A	Method Blank								

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NFMF (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
320-110713-1	Pine Lake Landfill Leachate	81	85	103	102	101	96	102	95
320-110713-1 - RE	Pine Lake Landfill Leachate								
320-110713-2	Pine Lake Landfill Leachate FRB	97	92	112	109	100	102	114	103
LCS 320-751053/3-A	Lab Control Sample	86	92	106	109	114	116	116	100
LCSD 320-751053/4-A	Lab Control Sample Dup	85	94	110	106	106	123	117	115
LLCS 320-751053/2-A	Lab Control Sample	97	100	111	107	123	110	122	104
LLCS 320-752056/2-A	Lab Control Sample								
LLCSD 320-752056/3-A	Lab Control Sample Dup								
MB 320-751053/1-A	Method Blank	88	93	103	108	112	100	108	106
MB 320-752056/1-A	Method Blank								

Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA

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Isotope Dilution Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFm = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA

1

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QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-751053/1-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 751053

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		03/29/24 08:13	04/01/24 12:13	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		03/29/24 08:13	04/01/24 12:13	1
NEtFOSA	<0.87		2.0	0.87	ng/L		03/29/24 08:13	04/01/24 12:13	1
NMeFOSA	<0.43		2.0	0.43	ng/L		03/29/24 08:13	04/01/24 12:13	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		03/29/24 08:13	04/01/24 12:13	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		03/29/24 08:13	04/01/24 12:13	1
NMeFOSE	<1.4		4.0	1.4	ng/L		03/29/24 08:13	04/01/24 12:13	1
NEtFOSE	<0.85		2.0	0.85	ng/L		03/29/24 08:13	04/01/24 12:13	1
4:2 FTS	<0.24		2.0	0.24	ng/L		03/29/24 08:13	04/01/24 12:13	1
6:2 FTS	<2.5		5.0	2.5	ng/L		03/29/24 08:13	04/01/24 12:13	1
8:2 FTS	<0.46		2.0	0.46	ng/L		03/29/24 08:13	04/01/24 12:13	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		03/29/24 08:13	04/01/24 12:13	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		03/29/24 08:13	04/01/24 12:13	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		03/29/24 08:13	04/01/24 12:13	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		03/29/24 08:13	04/01/24 12:13	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	102		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C5 PFPeA	97		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C2 PFHxA	100		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C4 PFHpA	107		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C4 PFOA	101		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C5 PFNA	105		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C2 PFDA	103		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C2 PFUnA	97		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C2 PFDoA	105		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C2 PFTeDA	102		25 - 150	03/29/24 08:13	04/01/24 12:13	1

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QC Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-751053/1-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 751053

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C3 PFBS	103		25 - 150	03/29/24 08:13	04/01/24 12:13	1
18O2 PFHxS	107		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C4 PFOS	104		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C8 FOSA	106		10 - 150	03/29/24 08:13	04/01/24 12:13	1
d3-NMeFOSAA	107		25 - 150	03/29/24 08:13	04/01/24 12:13	1
d5-NEtFOSAA	108		25 - 150	03/29/24 08:13	04/01/24 12:13	1
d-N-MeFOSA-M	88		10 - 150	03/29/24 08:13	04/01/24 12:13	1
d-N-EtFOSA-M	93		10 - 150	03/29/24 08:13	04/01/24 12:13	1
d7-N-MeFOSE-M	103		10 - 150	03/29/24 08:13	04/01/24 12:13	1
d9-N-EtFOSE-M	108		10 - 150	03/29/24 08:13	04/01/24 12:13	1
M2-4:2 FTS	112		25 - 150	03/29/24 08:13	04/01/24 12:13	1
M2-6:2 FTS	100		25 - 150	03/29/24 08:13	04/01/24 12:13	1
M2-8:2 FTS	108		25 - 150	03/29/24 08:13	04/01/24 12:13	1
13C3 HFPO-DA	106		25 - 150	03/29/24 08:13	04/01/24 12:13	1

Lab Sample ID: LCS 320-751053/3-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 751053

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Perfluorobutanoic acid (PFBA)	40.0	40.4		ng/L		101	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	47.2		ng/L		118	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	37.7		ng/L		94	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	39.2		ng/L		98	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	40.7		ng/L		102	60 - 135
Perfluorononanoic acid (PFNA)	40.0	37.3		ng/L		93	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	34.6		ng/L		86	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	40.1		ng/L		100	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	42.4		ng/L		106	60 - 135
Perfluorotridecanoic acid (PFTrDA)	40.0	37.0		ng/L		93	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	38.2		ng/L		96	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	32.6		ng/L		92	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.6	36.9		ng/L		98	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	36.5	34.4		ng/L		94	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	38.7		ng/L		101	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	36.7		ng/L		99	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	40.6		ng/L		105	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.1		ng/L		102	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	33.1		ng/L		85	60 - 135

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QC Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCS 320-751053/3-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 751053

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	40.0	40.2		ng/L		101	60 - 135
NEtFOSA	40.0	36.8		ng/L		92	60 - 135
NMeFOSA	40.0	37.4		ng/L		94	60 - 135
NMeFOSAA	40.0	36.4		ng/L		91	60 - 135
NEtFOSAA	40.0	42.9		ng/L		107	60 - 135
NMeFOSE	40.0	41.4		ng/L		103	60 - 135
NEtFOSE	40.0	41.0		ng/L		103	60 - 135
4:2 FTS	37.5	33.0		ng/L		88	60 - 135
6:2 FTS	38.1	33.3		ng/L		88	60 - 135
8:2 FTS	38.4	33.0		ng/L		86	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	37.2		ng/L		98	60 - 135
HFPO-DA (GenX)	40.0	39.0		ng/L		97	60 - 135
9Cl-PF3ONS	37.4	37.0		ng/L		99	60 - 135
11Cl-PF3OUdS	37.8	37.9		ng/L		100	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	105		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	104		25 - 150
13C4 PFHpA	107		25 - 150
13C4 PFOA	94		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	110		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	102		25 - 150
13C2 PFTeDA	102		25 - 150
13C3 PFBS	107		25 - 150
18O2 PFHxS	112		25 - 150
13C4 PFOS	106		25 - 150
13C8 FOSA	104		10 - 150
d3-NMeFOSAA	106		25 - 150
d5-NEtFOSAA	108		25 - 150
d-N-MeFOSA-M	86		10 - 150
d-N-EtFOSA-M	92		10 - 150
d7-N-MeFOSE-M	106		10 - 150
d9-N-EtFOSE-M	109		10 - 150
M2-4:2 FTS	114		25 - 150
M2-6:2 FTS	116		25 - 150
M2-8:2 FTS	116		25 - 150
13C3 HFPO-DA	100		25 - 150

Lab Sample ID: LCSD 320-751053/4-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 751053

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	
								RPD	Limit
Perfluorobutanoic acid (PFBA)	40.0	39.3		ng/L		98	60 - 135	3	30

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QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-751053/4-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 751053

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluoropentanoic acid (PFPeA)	40.0	48.2		ng/L		120	60 - 135	2	30
Perfluorohexanoic acid (PFHxA)	40.0	36.9		ng/L		92	60 - 135	2	30
Perfluoroheptanoic acid (PFHpA)	40.0	39.7		ng/L		99	60 - 135	1	30
Perfluorooctanoic acid (PFOA)	40.0	38.3		ng/L		96	60 - 135	6	30
Perfluorononanoic acid (PFNA)	40.0	38.2		ng/L		96	60 - 135	2	30
Perfluorodecanoic acid (PFDA)	40.0	39.6		ng/L		99	60 - 135	13	30
Perfluoroundecanoic acid (PFUnA)	40.0	40.1		ng/L		100	60 - 135	0	30
Perfluorododecanoic acid (PFDoA)	40.0	41.5		ng/L		104	60 - 135	2	30
Perfluorotridecanoic acid (PFTrDA)	40.0	37.4		ng/L		93	60 - 135	1	30
Perfluorotetradecanoic acid (PFTeA)	40.0	37.6		ng/L		94	60 - 135	2	30
Perfluorobutanesulfonic acid (PFBS)	35.5	34.3		ng/L		97	60 - 135	5	30
Perfluoropentanesulfonic acid (PFPeS)	37.6	37.4		ng/L		99	60 - 135	1	30
Perfluorohexanesulfonic acid (PFHxS)	36.5	33.0		ng/L		91	60 - 135	4	30
Perfluoroheptanesulfonic acid (PFHpS)	38.2	36.6		ng/L		96	60 - 135	5	30
Perfluorooctanesulfonic acid (PFOS)	37.2	35.7		ng/L		96	60 - 135	3	30
Perfluorononanesulfonic acid (PFNS)	38.5	38.1		ng/L		99	60 - 135	6	30
Perfluorodecanesulfonic acid (PFDS)	38.6	36.7		ng/L		95	60 - 135	7	30
Perfluorododecanesulfonic acid (PFDoS)	38.8	32.5		ng/L		84	60 - 135	2	30
Perfluorooctanesulfonamide (FOSA)	40.0	38.4		ng/L		96	60 - 135	5	30
NEtFOSA	40.0	37.6		ng/L		94	60 - 135	2	30
NMeFOSA	40.0	40.7		ng/L		102	60 - 135	8	30
NMeFOSAA	40.0	35.7		ng/L		89	60 - 135	2	30
NEtFOSAA	40.0	43.8		ng/L		109	60 - 135	2	30
NMeFOSE	40.0	39.2		ng/L		98	60 - 135	5	30
NEtFOSE	40.0	42.9		ng/L		107	60 - 135	5	30
4:2 FTS	37.5	42.1		ng/L		112	60 - 135	24	30
6:2 FTS	38.1	32.6		ng/L		86	60 - 135	2	30
8:2 FTS	38.4	34.2		ng/L		89	60 - 135	4	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	34.7		ng/L		92	60 - 135	7	30
HFPO-DA (GenX)	40.0	37.0		ng/L		93	60 - 135	5	30
9Cl-PF3ONS	37.4	35.4		ng/L		95	60 - 135	4	30
11Cl-PF3OUdS	37.8	36.1		ng/L		96	60 - 135	5	30

Isotope Dilution	LCSD		Limits
	%Recovery	Qualifier	
13C4 PFBA	107		25 - 150
13C5 PFPeA	96		25 - 150
13C2 PFHxA	107		25 - 150
13C4 PFHpA	104		25 - 150

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QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LCSD 320-751053/4-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 751053

<i>Isotope Dilution</i>	<i>LCSD %Recovery</i>	<i>LCSD Qualifier</i>	<i>Limits</i>
13C4 PFOA	103		25 - 150
13C5 PFNA	100		25 - 150
13C2 PFDA	109		25 - 150
13C2 PFUnA	99		25 - 150
13C2 PFDoA	106		25 - 150
13C2 PFTeDA	94		25 - 150
13C3 PFBS	105		25 - 150
18O2 PFHxS	117		25 - 150
13C4 PFOS	114		25 - 150
13C8 FOSA	114		10 - 150
d3-NMeFOSAA	111		25 - 150
d5-NEtFOSAA	107		25 - 150
d-N-MeFOSA-M	85		10 - 150
d-N-EtFOSA-M	94		10 - 150
d7-N-MeFOSE-M	110		10 - 150
d9-N-EtFOSE-M	106		10 - 150
M2-4:2 FTS	106		25 - 150
M2-6:2 FTS	123		25 - 150
M2-8:2 FTS	117		25 - 150
13C3 HFPO-DA	115		25 - 150

Lab Sample ID: LLCS 320-751053/2-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 751053

<i>Analyte</i>	<i>Spike Added</i>	<i>LLCS Result</i>	<i>LLCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
Perfluorobutanoic acid (PFBA)	8.00	7.69		ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	9.84		ng/L		123	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	7.51		ng/L		94	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	8.04		ng/L		101	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	26.0	*+	ng/L		325	50 - 150
Perfluorononanoic acid (PFNA)	8.00	7.54		ng/L		94	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	7.94		ng/L		99	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	8.08		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	7.98		ng/L		100	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	8.00	7.59		ng/L		95	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	6.74		ng/L		84	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	7.94		ng/L		112	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	7.42		ng/L		99	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.30	6.60		ng/L		90	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	6.88		ng/L		90	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	7.09		ng/L		95	50 - 150

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QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-751053/2-A
Matrix: Water
Analysis Batch: 751550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 751053

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorononanesulfonic acid (PFNS)	7.70	7.98		ng/L		104	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	6.59		ng/L		85	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	7.76	6.79		ng/L		88	50 - 150
Perfluorooctanesulfonamide (FOSA)	8.00	7.63		ng/L		95	50 - 150
NEtFOSA	8.00	7.10		ng/L		89	50 - 150
NMeFOSA	8.00	7.03		ng/L		88	50 - 150
NMeFOSAA	8.00	7.23		ng/L		90	50 - 150
NEtFOSAA	8.00	8.17		ng/L		102	50 - 150
NMeFOSE	8.00	7.37		ng/L		92	50 - 150
NEtFOSE	8.00	7.56		ng/L		95	50 - 150
4:2 FTS	7.50	6.67		ng/L		89	50 - 150
6:2 FTS	7.62	6.50		ng/L		85	50 - 150
8:2 FTS	7.68	6.40		ng/L		83	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.57	7.02		ng/L		93	50 - 150
HFPO-DA (GenX)	8.00	9.07		ng/L		113	50 - 150
9CI-PF3ONS	7.47	7.72		ng/L		103	50 - 150
11CI-PF3OUdS	7.55	7.27		ng/L		96	50 - 150

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	LLCS Limits
13C4 PFBA	105		25 - 150
13C5 PFPeA	98		25 - 150
13C2 PFHxA	109		25 - 150
13C4 PFHpA	104		25 - 150
13C4 PFOA	101		25 - 150
13C5 PFNA	106		25 - 150
13C2 PFDA	110		25 - 150
13C2 PFUnA	92		25 - 150
13C2 PFDoA	104		25 - 150
13C2 PFTeDA	100		25 - 150
13C3 PFBS	104		25 - 150
18O2 PFHxS	118		25 - 150
13C4 PFOS	107		25 - 150
13C8 FOSA	110		10 - 150
d3-NMeFOSAA	105		25 - 150
d5-NEtFOSAA	103		25 - 150
d-N-MeFOSA-M	97		10 - 150
d-N-EtFOSA-M	100		10 - 150
d7-N-MeFOSE-M	111		10 - 150
d9-N-EtFOSE-M	107		10 - 150
M2-4:2 FTS	123		25 - 150
M2-6:2 FTS	110		25 - 150
M2-8:2 FTS	122		25 - 150
13C3 HFPO-DA	104		25 - 150

QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-752056/1-A
Matrix: Water
Analysis Batch: 752424

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 752056

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		04/03/24 11:51	04/04/24 14:44	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
¹³ C4 PFOA	103		25 - 150				04/03/24 11:51	04/04/24 14:44	1

Lab Sample ID: LLCS 320-752056/2-A
Matrix: Water
Analysis Batch: 752424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 752056

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid (PFOA)	8.00	9.28		ng/L		116	50 - 150
Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits				
¹³ C4 PFOA	105		25 - 150				

Lab Sample ID: LLCSD 320-752056/3-A
Matrix: Water
Analysis Batch: 752424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 752056

Analyte	Spike Added	LLCSD Result	LLCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perfluorooctanoic acid (PFOA)	8.00	9.89		ng/L		124	50 - 150	6	30
Isotope Dilution	LLCSD %Recovery	LLCSD Qualifier	Limits						
¹³ C4 PFOA	104		25 - 150						

QC Association Summary

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

LCMS

Prep Batch: 751053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-110713-1	Pine Lake Landfill Leachate	Total/NA	Water	3535	
320-110713-2	Pine Lake Landfill Leachate FRB	Total/NA	Water	3535	
MB 320-751053/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-751053/3-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-751053/4-A	Lab Control Sample Dup	Total/NA	Water	3535	
LLCS 320-751053/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 751550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-110713-1	Pine Lake Landfill Leachate	Total/NA	Water	537 (modified)	751053
320-110713-2	Pine Lake Landfill Leachate FRB	Total/NA	Water	537 (modified)	751053
MB 320-751053/1-A	Method Blank	Total/NA	Water	537 (modified)	751053
LCS 320-751053/3-A	Lab Control Sample	Total/NA	Water	537 (modified)	751053
LCSD 320-751053/4-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	751053
LLCS 320-751053/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	751053

Prep Batch: 752056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-110713-1 - RE	Pine Lake Landfill Leachate	Total/NA	Water	3535	
MB 320-752056/1-A	Method Blank	Total/NA	Water	3535	
LLCS 320-752056/2-A	Lab Control Sample	Total/NA	Water	3535	
LLCSD 320-752056/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 752424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-752056/1-A	Method Blank	Total/NA	Water	537 (modified)	752056
LLCS 320-752056/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	752056
LLCSD 320-752056/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	752056

Analysis Batch: 753312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-110713-1 - RE	Pine Lake Landfill Leachate	Total/NA	Water	537 (modified)	752056

Lab Chronicle

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-110713-1

Client Sample ID: Pine Lake Landfill Leachate

Lab Sample ID: 320-110713-1

Date Collected: 03/21/24 07:01

Matrix: Water

Date Received: 03/22/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			25.0 mL	10.0 mL	751053	03/29/24 08:16	VP	EET SAC
Total/NA	Analysis	537 (modified)		1			751550	04/01/24 15:43	P1P	EET SAC
Total/NA	Prep	3535	RE		25 mL	10.0 mL	752056	04/03/24 11:51	AM	EET SAC
Total/NA	Analysis	537 (modified)	RE	5			753312	04/09/24 01:09	RS1	EET SAC

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-110713-2

Date Collected: 03/21/24 06:55

Matrix: Water

Date Received: 03/22/24 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			278.5 mL	10.0 mL	751053	03/29/24 08:16	VP	EET SAC
Total/NA	Analysis	537 (modified)		1			751550	04/01/24 15:13	P1P	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Accreditation/Certification Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-25
Wisconsin	State	998204680	08-31-24

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Sample Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-110713-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-110713-1	Pine Lake Landfill Leachate	Water	03/21/24 07:01	03/22/24 09:30
320-110713-2	Pine Lake Landfill Leachate FRB	Water	03/21/24 06:55	03/22/24 09:30

1

2

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5

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11

12

13

14

15

Loc 320
110713

Tracking # 2724 6534 0906

Job _____

SO (PO) / FO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSL / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations. File in the job folder with the COC.

Therm. ID: LO6 Corr. Factor (+/-) NA °C
Ice Wet Gel _____ Other _____

Cooler Custody Seal 2479873

Cooler ID _____

Temp Observed 1.0 °C Corrected: 1.0 °C
From: Temp Blank Sample

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature is acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frozen samples show signs of thaw?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initials DM Date 03/22/24

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
COC is complete w/o discrepancies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample custody seal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample containers have legible labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample date/times are provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate containers are used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample bottles are completely filled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample preservatives verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the Field Sampler's name on COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples w/o discrepancies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zero headspace?*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alkalinity has no headspace?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Perchlorate has headspace? (Methods 314, 331, 6850)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Multiphasic samples are not present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials DM Date 03/22/24

Notes: _____

Trizma Lot #(s) _____

Ammonium

Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NCM Filed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Log Release checked in TALS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initials DM Date 03/22/24

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 320-110713-1

Login Number: 110713

List Source: Eurofins Sacramento

List Number: 1

Creator: Morazzini, Dominic S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	REFER TO SSRN
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	N/A	
COC is filled out in ink and legible.	N/A	
COC is filled out with all pertinent information.	N/A	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	N/A	
Samples are received within Holding Time (excluding tests with immediate HTs)	N/A	
Sample containers have legible labels.	N/A	
Containers are not broken or leaking.	N/A	
Sample collection date/times are provided.	N/A	
Appropriate sample containers are used.	N/A	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Jeff Ramey
TRC Environmental Corporation
6737 W. Washington St., Suite 2100
West Allis, Wisconsin 53214

Generated 5/13/2024 4:24:59 PM

JOB DESCRIPTION

Leachate Sampling

JOB NUMBER

320-111892-1

Eurofins Sacramento

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northern California, LLC Project Manager.

Authorization



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Authorized for release by
Micah Smith, Project Manager II
Micah.Smith@et.eurofinsus.com
(916)374-4302



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Detection Summary	6
Client Sample Results	7
Isotope Dilution Summary	12
QC Sample Results	14
QC Association Summary	17
Lab Chronicle	18
Certification Summary	19
Method Summary	20
Sample Summary	21
Chain of Custody	22
Receipt Checklists	24

Definitions/Glossary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: TRC Environmental Corporation
Project: Leachate Sampling

Job ID: 320-111892-1

Job ID: 320-111892-1

Eurofins Sacramento

Job Narrative 320-111892-1

Receipt

The samples were received on 4/30/2024 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.8° C.

LCMS

Method 537 (modified): Results for samples Pine Lake Landfill Leachate North (320-111892-1) and Pine Lake Landfill Leachate South (320-111892-2) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

Method 3535: Due to client suggestion, the initial volumes used for the following samples deviated from the standard procedure: Pine Lake Landfill Leachate North (320-111892-1) and Pine Lake Landfill Leachate South (320-111892-2). A 10x dilution was made on the sample, then fortified with IDA and extracted. The reporting limits (RLs) have been adjusted proportionately.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Eurofins Sacramento

Detection Summary

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate North

Lab Sample ID: 320-111892-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	160		50	24	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	300		20	4.9	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	980		20	5.8	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	1600		20	2.5	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	100		20	2.7	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	8.9	J	20	2.0	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	5.2	J	20	3.0	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	68		20	5.7	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	67		20	1.9	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	3500		20	5.4	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	44		20	9.8	ng/L	1		537 (modified)	Total/NA
NEtFOSAA	820		50	13	ng/L	1		537 (modified)	Total/NA
NEtFOSE	14	J	20	8.5	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	10000		200	85	ng/L	10		537 (modified)	Total/NA

Client Sample ID: Pine Lake Landfill Leachate South

Lab Sample ID: 320-111892-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA)	210		50	24	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	410		20	4.9	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1200		20	5.8	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2200		20	2.5	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	240		20	2.7	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	9.0	J	20	3.1	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	23		20	2.0	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	14	J	20	3.0	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	130		20	5.7	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	120		20	1.9	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	640		20	9.8	ng/L	1		537 (modified)	Total/NA
NMeFOSAA	62		50	12	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	14000		200	85	ng/L	10		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	8200		200	54	ng/L	10		537 (modified)	Total/NA
NEtFOSAA - DL	4100		500	130	ng/L	10		537 (modified)	Total/NA

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-111892-3

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Sacramento

Client Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate North

Lab Sample ID: 320-111892-1

Date Collected: 04/29/24 09:06

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	160		50	24	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluoropentanoic acid (PFPeA)	300		20	4.9	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorohexanoic acid (PFHxA)	980		20	5.8	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluoroheptanoic acid (PFHpA)	1600		20	2.5	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorononanoic acid (PFNA)	100		20	2.7	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorodecanoic acid (PFDA)	<3.1		20	3.1	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluoroundecanoic acid (PFUnA)	<11		20	11	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorododecanoic acid (PFDoA)	<5.5		20	5.5	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorotridecanoic acid (PFTrDA)	<13		20	13	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorotetradecanoic acid (PFTeA)	<7.3		20	7.3	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorobutanesulfonic acid (PFBS)	8.9	J	20	2.0	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluoropentanesulfonic acid (PFPeS)	5.2	J	20	3.0	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorohexanesulfonic acid (PFHxS)	68		20	5.7	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluoroheptanesulfonic acid (PFHpS)	67		20	1.9	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorooctanesulfonic acid (PFOS)	3500		20	5.4	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorononanesulfonic acid (PFNS)	<3.7		20	3.7	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorodecanesulfonic acid (PFDS)	<3.2		20	3.2	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorododecanesulfonic acid (PFDoS)	<9.7		20	9.7	ng/L		05/02/24 13:23	05/04/24 07:37	1
Perfluorooctanesulfonamide (FOSA)	44		20	9.8	ng/L		05/02/24 13:23	05/04/24 07:37	1
NEtFOSA	<8.7		20	8.7	ng/L		05/02/24 13:23	05/04/24 07:37	1
NMeFOSA	<4.3		20	4.3	ng/L		05/02/24 13:23	05/04/24 07:37	1
NMeFOSAA	<12		50	12	ng/L		05/02/24 13:23	05/04/24 07:37	1
NEtFOSAA	820		50	13	ng/L		05/02/24 13:23	05/04/24 07:37	1
NMeFOSE	<14		40	14	ng/L		05/02/24 13:23	05/04/24 07:37	1
NEtFOSE	14	J	20	8.5	ng/L		05/02/24 13:23	05/04/24 07:37	1
4:2 FTS	<2.4		20	2.4	ng/L		05/02/24 13:23	05/04/24 07:37	1
6:2 FTS	<25		50	25	ng/L		05/02/24 13:23	05/04/24 07:37	1
8:2 FTS	<4.6		20	4.6	ng/L		05/02/24 13:23	05/04/24 07:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<4.0		20	4.0	ng/L		05/02/24 13:23	05/04/24 07:37	1
HFPO-DA (GenX)	<15		40	15	ng/L		05/02/24 13:23	05/04/24 07:37	1
9Cl-PF3ONS	<2.4		20	2.4	ng/L		05/02/24 13:23	05/04/24 07:37	1
11Cl-PF3OUdS	<3.2		20	3.2	ng/L		05/02/24 13:23	05/04/24 07:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C5 PFPeA	102		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C2 PFHxA	103		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C4 PFHpA	110		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C5 PFNA	102		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C2 PFDA	104		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C2 PFUnA	114		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C2 PFDoA	103		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C2 PFTeDA	98		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C3 PFBS	99		25 - 150	05/02/24 13:23	05/04/24 07:37	1

Eurofins Sacramento

Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate North

Lab Sample ID: 320-111892-1

Date Collected: 04/29/24 09:06

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	102		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C4 PFOS	100		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C8 FOSA	108		10 - 150	05/02/24 13:23	05/04/24 07:37	1
d3-NMeFOSAA	104		25 - 150	05/02/24 13:23	05/04/24 07:37	1
d5-NEtFOSAA	111		25 - 150	05/02/24 13:23	05/04/24 07:37	1
d-N-MeFOSA-M	104		10 - 150	05/02/24 13:23	05/04/24 07:37	1
d-N-EtFOSA-M	99		10 - 150	05/02/24 13:23	05/04/24 07:37	1
d7-N-MeFOSE-M	100		10 - 150	05/02/24 13:23	05/04/24 07:37	1
d9-N-EtFOSE-M	99		10 - 150	05/02/24 13:23	05/04/24 07:37	1
M2-4:2 FTS	97		25 - 150	05/02/24 13:23	05/04/24 07:37	1
M2-6:2 FTS	92		25 - 150	05/02/24 13:23	05/04/24 07:37	1
M2-8:2 FTS	109		25 - 150	05/02/24 13:23	05/04/24 07:37	1
13C3 HFPO-DA	104		25 - 150	05/02/24 13:23	05/04/24 07:37	1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	10000		200	85	ng/L		05/02/24 13:23	05/07/24 23:23	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	99		25 - 150	05/02/24 13:23	05/07/24 23:23	10

Client Sample ID: Pine Lake Landfill Leachate South

Lab Sample ID: 320-111892-2

Date Collected: 04/29/24 09:25

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	210		50	24	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluoropentanoic acid (PFPeA)	410		20	4.9	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorohexanoic acid (PFHxA)	1200		20	5.8	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluoroheptanoic acid (PFHpA)	2200		20	2.5	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorononanoic acid (PFNA)	240		20	2.7	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorodecanoic acid (PFDA)	9.0	J	20	3.1	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluoroundecanoic acid (PFUnA)	<11		20	11	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorododecanoic acid (PFDoA)	<5.5		20	5.5	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorotridecanoic acid (PFTrDA)	<13		20	13	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorotetradecanoic acid (PFTeA)	<7.3		20	7.3	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorobutanesulfonic acid (PFBS)	23		20	2.0	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluoropentanesulfonic acid (PFPeS)	14	J	20	3.0	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorohexanesulfonic acid (PFHxS)	130		20	5.7	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluoroheptanesulfonic acid (PFHpS)	120		20	1.9	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorononanesulfonic acid (PFNS)	<3.7		20	3.7	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorodecanesulfonic acid (PFDS)	<3.2		20	3.2	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorododecanesulfonic acid (PFDoS)	<9.7		20	9.7	ng/L		05/02/24 13:23	05/04/24 07:48	1
Perfluorooctanesulfonamide (FOSA)	640		20	9.8	ng/L		05/02/24 13:23	05/04/24 07:48	1
NEtFOSA	<8.7		20	8.7	ng/L		05/02/24 13:23	05/04/24 07:48	1

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Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate South

Lab Sample ID: 320-111892-2

Date Collected: 04/29/24 09:25

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NMeFOSA	<4.3		20	4.3	ng/L		05/02/24 13:23	05/04/24 07:48	1
NMeFOSAA	62		50	12	ng/L		05/02/24 13:23	05/04/24 07:48	1
NMeFOSE	<14		40	14	ng/L		05/02/24 13:23	05/04/24 07:48	1
NEtFOSE	<8.5		20	8.5	ng/L		05/02/24 13:23	05/04/24 07:48	1
4:2 FTS	<2.4		20	2.4	ng/L		05/02/24 13:23	05/04/24 07:48	1
6:2 FTS	<25		50	25	ng/L		05/02/24 13:23	05/04/24 07:48	1
8:2 FTS	<4.6		20	4.6	ng/L		05/02/24 13:23	05/04/24 07:48	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<4.0		20	4.0	ng/L		05/02/24 13:23	05/04/24 07:48	1
HFPO-DA (GenX)	<15		40	15	ng/L		05/02/24 13:23	05/04/24 07:48	1
9CI-PF3ONS	<2.4		20	2.4	ng/L		05/02/24 13:23	05/04/24 07:48	1
11CI-PF3OUdS	<3.2		20	3.2	ng/L		05/02/24 13:23	05/04/24 07:48	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C5 PFPeA	100		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C2 PFHxA	106		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C4 PFHpA	103		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C5 PFNA	100		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C2 PFDA	105		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C2 PFUnA	111		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C2 PFDoA	101		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C2 PFTeDA	102		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C3 PFBS	103		25 - 150	05/02/24 13:23	05/04/24 07:48	1
18O2 PFHxS	101		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C4 PFOS	97		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C8 FOSA	109		10 - 150	05/02/24 13:23	05/04/24 07:48	1
d3-NMeFOSAA	102		25 - 150	05/02/24 13:23	05/04/24 07:48	1
d-N-MeFOSA-M	100		10 - 150	05/02/24 13:23	05/04/24 07:48	1
d-N-EtFOSA-M	98		10 - 150	05/02/24 13:23	05/04/24 07:48	1
d7-N-MeFOSE-M	92		10 - 150	05/02/24 13:23	05/04/24 07:48	1
d9-N-EtFOSE-M	90		10 - 150	05/02/24 13:23	05/04/24 07:48	1
M2-4:2 FTS	91		25 - 150	05/02/24 13:23	05/04/24 07:48	1
M2-6:2 FTS	97		25 - 150	05/02/24 13:23	05/04/24 07:48	1
M2-8:2 FTS	107		25 - 150	05/02/24 13:23	05/04/24 07:48	1
13C3 HFPO-DA	102		25 - 150	05/02/24 13:23	05/04/24 07:48	1

Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	14000		200	85	ng/L		05/02/24 13:23	05/07/24 23:33	10
Perfluorooctanesulfonic acid (PFOS)	8200		200	54	ng/L		05/02/24 13:23	05/07/24 23:33	10
NEtFOSAA	4100		500	130	ng/L		05/02/24 13:23	05/07/24 23:33	10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	103		25 - 150	05/02/24 13:23	05/07/24 23:33	10
13C4 PFOS	104		25 - 150	05/02/24 13:23	05/07/24 23:33	10
d5-NEtFOSAA	111		25 - 150	05/02/24 13:23	05/07/24 23:33	10

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Client Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-111892-3

Date Collected: 04/29/24 09:00

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.1		4.4	2.1	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluoropentanoic acid (PFPeA)	<0.43		1.8	0.43	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorohexanoic acid (PFHxA)	<0.51		1.8	0.51	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluoroheptanoic acid (PFHpA)	<0.22		1.8	0.22	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorooctanoic acid (PFOA)	<0.74		1.8	0.74	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorononanoic acid (PFNA)	<0.24		1.8	0.24	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorodecanoic acid (PFDA)	<0.27		1.8	0.27	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluoroundecanoic acid (PFUnA)	<0.96		1.8	0.96	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorododecanoic acid (PFDoA)	<0.48		1.8	0.48	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorotridecanoic acid (PFTrDA)	<1.1		1.8	1.1	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorotetradecanoic acid (PFTeA)	<0.64		1.8	0.64	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluoropentanesulfonic acid (PFPeS)	<0.26		1.8	0.26	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorohexanesulfonic acid (PFHxS)	<0.50		1.8	0.50	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.17		1.8	0.17	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorooctanesulfonic acid (PFOS)	<0.47		1.8	0.47	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorononanesulfonic acid (PFNS)	<0.32		1.8	0.32	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorodecanesulfonic acid (PFDS)	<0.28		1.8	0.28	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorododecanesulfonic acid (PFDoS)	<0.85		1.8	0.85	ng/L		05/02/24 13:23	05/04/24 07:59	1
Perfluorooctanesulfonamide (FOSA)	<0.86		1.8	0.86	ng/L		05/02/24 13:23	05/04/24 07:59	1
NEtFOSA	<0.76		1.8	0.76	ng/L		05/02/24 13:23	05/04/24 07:59	1
NMeFOSA	<0.38		1.8	0.38	ng/L		05/02/24 13:23	05/04/24 07:59	1
NMeFOSAA	<1.1		4.4	1.1	ng/L		05/02/24 13:23	05/04/24 07:59	1
NEtFOSAA	<1.1		4.4	1.1	ng/L		05/02/24 13:23	05/04/24 07:59	1
NMeFOSE	<1.2		3.5	1.2	ng/L		05/02/24 13:23	05/04/24 07:59	1
NEtFOSE	<0.74		1.8	0.74	ng/L		05/02/24 13:23	05/04/24 07:59	1
4:2 FTS	<0.21		1.8	0.21	ng/L		05/02/24 13:23	05/04/24 07:59	1
6:2 FTS	<2.2		4.4	2.2	ng/L		05/02/24 13:23	05/04/24 07:59	1
8:2 FTS	<0.40		1.8	0.40	ng/L		05/02/24 13:23	05/04/24 07:59	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.35		1.8	0.35	ng/L		05/02/24 13:23	05/04/24 07:59	1
HFPO-DA (GenX)	<1.3		3.5	1.3	ng/L		05/02/24 13:23	05/04/24 07:59	1
9Cl-PF3ONS	<0.21		1.8	0.21	ng/L		05/02/24 13:23	05/04/24 07:59	1
11Cl-PF3OUdS	<0.28		1.8	0.28	ng/L		05/02/24 13:23	05/04/24 07:59	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	97		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C5 PFPeA	89		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C2 PFHxA	95		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C4 PFHpA	101		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C4 PFOA	98		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C5 PFNA	96		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C2 PFDA	98		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C2 PFUnA	104		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C2 PFDoA	90		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C2 PFTeDA	89		25 - 150				05/02/24 13:23	05/04/24 07:59	1
13C3 PFBS	90		25 - 150				05/02/24 13:23	05/04/24 07:59	1
18O2 PFHxS	93		25 - 150				05/02/24 13:23	05/04/24 07:59	1

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Client Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-111892-3

Date Collected: 04/29/24 09:00

Matrix: Water

Date Received: 04/30/24 09:40

Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	90		25 - 150	05/02/24 13:23	05/04/24 07:59	1
13C8 FOSA	94		10 - 150	05/02/24 13:23	05/04/24 07:59	1
d3-NMeFOSAA	95		25 - 150	05/02/24 13:23	05/04/24 07:59	1
d5-NEtFOSAA	100		25 - 150	05/02/24 13:23	05/04/24 07:59	1
d-N-MeFOSA-M	89		10 - 150	05/02/24 13:23	05/04/24 07:59	1
d-N-EtFOSA-M	90		10 - 150	05/02/24 13:23	05/04/24 07:59	1
d7-N-MeFOSE-M	86		10 - 150	05/02/24 13:23	05/04/24 07:59	1
d9-N-EtFOSE-M	86		10 - 150	05/02/24 13:23	05/04/24 07:59	1
M2-4:2 FTS	91		25 - 150	05/02/24 13:23	05/04/24 07:59	1
M2-6:2 FTS	90		25 - 150	05/02/24 13:23	05/04/24 07:59	1
M2-8:2 FTS	100		25 - 150	05/02/24 13:23	05/04/24 07:59	1
13C3 HFPO-DA	99		25 - 150	05/02/24 13:23	05/04/24 07:59	1

Isotope Dilution Summary

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-111892-1	Pine Lake Landfill Leachate North	98	102	103	110		102	104	114
320-111892-1 - DL	Pine Lake Landfill Leachate North					99			
320-111892-2	Pine Lake Landfill Leachate South	98	100	106	103		100	105	111
320-111892-2 - DL	Pine Lake Landfill Leachate South					103			
320-111892-3	Pine Lake Landfill Leachate FRB	97	89	95	101	98	96	98	104
LLCS 320-759347/2-A	Lab Control Sample	98	95	98	103	100	95	102	108
MB 320-759347/1-A	Method Blank	104	101	103	106	101	98	102	107

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	PFDaA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-111892-1	Pine Lake Landfill Leachate North	103	98	99	102	100	108	104	111
320-111892-1 - DL	Pine Lake Landfill Leachate North								
320-111892-2	Pine Lake Landfill Leachate South	101	102	103	101	97	109	102	
320-111892-2 - DL	Pine Lake Landfill Leachate South					104			111
320-111892-3	Pine Lake Landfill Leachate FRB	90	89	90	93	90	94	95	100
LLCS 320-759347/2-A	Lab Control Sample	102	98	96	95	93	99	105	106
MB 320-759347/1-A	Method Blank	100	99	96	100	97	103	101	110

Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
320-111892-1	Pine Lake Landfill Leachate North	104	99	100	99	97	92	109	104
320-111892-1 - DL	Pine Lake Landfill Leachate North								
320-111892-2	Pine Lake Landfill Leachate South	100	98	92	90	91	97	107	102
320-111892-2 - DL	Pine Lake Landfill Leachate South								
320-111892-3	Pine Lake Landfill Leachate FRB	89	90	86	86	91	90	100	99
LLCS 320-759347/2-A	Lab Control Sample	100	101	99	89	89	88	102	101
MB 320-759347/1-A	Method Blank	107	105	97	97	97	91	103	101

Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS

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Isotope Dilution Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
dMeFOSA = d-N-MeFOSA-M
dEtFOSA = d-N-EtFOSA-M
NMFm = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA

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QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-759347/1-A
Matrix: Water
Analysis Batch: 760218

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 759347

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		05/02/24 13:23	05/04/24 05:23	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		05/02/24 13:23	05/04/24 05:23	1
NEtFOSA	<0.87		2.0	0.87	ng/L		05/02/24 13:23	05/04/24 05:23	1
NMeFOSA	<0.43		2.0	0.43	ng/L		05/02/24 13:23	05/04/24 05:23	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		05/02/24 13:23	05/04/24 05:23	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		05/02/24 13:23	05/04/24 05:23	1
NMeFOSE	<1.4		4.0	1.4	ng/L		05/02/24 13:23	05/04/24 05:23	1
NEtFOSE	<0.85		2.0	0.85	ng/L		05/02/24 13:23	05/04/24 05:23	1
4:2 FTS	<0.24		2.0	0.24	ng/L		05/02/24 13:23	05/04/24 05:23	1
6:2 FTS	<2.5		5.0	2.5	ng/L		05/02/24 13:23	05/04/24 05:23	1
8:2 FTS	<0.46		2.0	0.46	ng/L		05/02/24 13:23	05/04/24 05:23	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		05/02/24 13:23	05/04/24 05:23	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		05/02/24 13:23	05/04/24 05:23	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		05/02/24 13:23	05/04/24 05:23	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		05/02/24 13:23	05/04/24 05:23	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	104		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C5 PFPeA	101		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C2 PFHxA	103		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C4 PFHpA	106		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C4 PFOA	101		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C5 PFNA	98		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C2 PFDA	102		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C2 PFUnA	107		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C2 PFDoA	100		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C2 PFTeDA	99		25 - 150	05/02/24 13:23	05/04/24 05:23	1

Eurofins Sacramento

QC Sample Results

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: MB 320-759347/1-A
Matrix: Water
Analysis Batch: 760218

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 759347

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C3 PFBS	96		25 - 150	05/02/24 13:23	05/04/24 05:23	1
18O2 PFHxS	100		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C4 PFOS	97		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C8 FOSA	103		10 - 150	05/02/24 13:23	05/04/24 05:23	1
d3-NMeFOSAA	101		25 - 150	05/02/24 13:23	05/04/24 05:23	1
d5-NEtFOSAA	110		25 - 150	05/02/24 13:23	05/04/24 05:23	1
d-N-MeFOSA-M	107		10 - 150	05/02/24 13:23	05/04/24 05:23	1
d-N-EtFOSA-M	105		10 - 150	05/02/24 13:23	05/04/24 05:23	1
d7-N-MeFOSE-M	97		10 - 150	05/02/24 13:23	05/04/24 05:23	1
d9-N-EtFOSE-M	97		10 - 150	05/02/24 13:23	05/04/24 05:23	1
M2-4:2 FTS	97		25 - 150	05/02/24 13:23	05/04/24 05:23	1
M2-6:2 FTS	91		25 - 150	05/02/24 13:23	05/04/24 05:23	1
M2-8:2 FTS	103		25 - 150	05/02/24 13:23	05/04/24 05:23	1
13C3 HFPO-DA	101		25 - 150	05/02/24 13:23	05/04/24 05:23	1

Lab Sample ID: LLCS 320-759347/2-A
Matrix: Water
Analysis Batch: 760218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 759347

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Perfluorobutanoic acid (PFBA)	8.00	7.60		ng/L		95	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	7.67		ng/L		96	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	8.13		ng/L		102	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	8.35		ng/L		104	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	8.04		ng/L		101	50 - 150
Perfluorononanoic acid (PFNA)	8.00	8.27		ng/L		103	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	7.83		ng/L		98	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	8.07		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	7.90		ng/L		99	50 - 150
Perfluorotridecanoic acid (PFTrDA)	8.00	7.78		ng/L		97	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	7.64		ng/L		95	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	6.46		ng/L		91	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	6.82		ng/L		91	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.30	6.46		ng/L		89	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	7.42		ng/L		97	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	7.22		ng/L		97	50 - 150
Perfluorononanesulfonic acid (PFNS)	7.70	7.07		ng/L		92	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	7.29		ng/L		95	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	7.76	7.45		ng/L		96	50 - 150

Eurofins Sacramento

QC Sample Results

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Lab Sample ID: LLCS 320-759347/2-A
Matrix: Water
Analysis Batch: 760218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 759347

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	8.00	7.95		ng/L		99	50 - 150
NEtFOSA	8.00	6.65		ng/L		83	50 - 150
NMeFOSA	8.00	6.25		ng/L		78	50 - 150
NMeFOSAA	8.00	7.81		ng/L		98	50 - 150
NEtFOSAA	8.00	7.22		ng/L		90	50 - 150
NMeFOSE	8.00	7.73		ng/L		97	50 - 150
NEtFOSE	8.00	8.62		ng/L		108	50 - 150
4:2 FTS	7.50	8.11		ng/L		108	50 - 150
6:2 FTS	7.62	8.17		ng/L		107	50 - 150
8:2 FTS	7.68	7.39		ng/L		96	50 - 150
4,8-Dioxa-3H-perfluoronanoic acid (ADONA)	7.57	8.33		ng/L		110	50 - 150
HFPO-DA (GenX)	8.00	8.35		ng/L		104	50 - 150
9Cl-PF3ONS	7.47	7.78		ng/L		104	50 - 150
11Cl-PF3OUdS	7.55	7.06		ng/L		93	50 - 150

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C4 PFBA	98		25 - 150
13C5 PFPeA	95		25 - 150
13C2 PFHxA	98		25 - 150
13C4 PFHpA	103		25 - 150
13C4 PFOA	100		25 - 150
13C5 PFNA	95		25 - 150
13C2 PFDA	102		25 - 150
13C2 PFUnA	108		25 - 150
13C2 PFDa	102		25 - 150
13C2 PFTeDA	98		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	95		25 - 150
13C4 PFOS	93		25 - 150
13C8 FOSA	99		10 - 150
d3-NMeFOSAA	105		25 - 150
d5-NEtFOSAA	106		25 - 150
d-N-MeFOSA-M	100		10 - 150
d-N-EtFOSA-M	101		10 - 150
d7-N-MeFOSE-M	99		10 - 150
d9-N-EtFOSE-M	89		10 - 150
M2-4:2 FTS	89		25 - 150
M2-6:2 FTS	88		25 - 150
M2-8:2 FTS	102		25 - 150
13C3 HFPO-DA	101		25 - 150

QC Association Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

LCMS

Prep Batch: 759347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-111892-1	Pine Lake Landfill Leachate North	Total/NA	Water	3535	
320-111892-1 - DL	Pine Lake Landfill Leachate North	Total/NA	Water	3535	
320-111892-2	Pine Lake Landfill Leachate South	Total/NA	Water	3535	
320-111892-2 - DL	Pine Lake Landfill Leachate South	Total/NA	Water	3535	
320-111892-3	Pine Lake Landfill Leachate FRB	Total/NA	Water	3535	
MB 320-759347/1-A	Method Blank	Total/NA	Water	3535	
LLCS 320-759347/2-A	Lab Control Sample	Total/NA	Water	3535	

Analysis Batch: 760218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-111892-1	Pine Lake Landfill Leachate North	Total/NA	Water	537 (modified)	759347
320-111892-2	Pine Lake Landfill Leachate South	Total/NA	Water	537 (modified)	759347
320-111892-3	Pine Lake Landfill Leachate FRB	Total/NA	Water	537 (modified)	759347
MB 320-759347/1-A	Method Blank	Total/NA	Water	537 (modified)	759347
LLCS 320-759347/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	759347

Analysis Batch: 761110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-111892-1 - DL	Pine Lake Landfill Leachate North	Total/NA	Water	537 (modified)	759347
320-111892-2 - DL	Pine Lake Landfill Leachate South	Total/NA	Water	537 (modified)	759347

Lab Chronicle

Client: TRC Environmental Corporation
 Project/Site: Leachate Sampling

Job ID: 320-111892-1

Client Sample ID: Pine Lake Landfill Leachate North

Lab Sample ID: 320-111892-1

Date Collected: 04/29/24 09:06

Matrix: Water

Date Received: 04/30/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			25.0 mL	10.0 mL	759347	05/02/24 13:23	ERR	EET SAC
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	760218	05/04/24 07:37	K1S	EET SAC
Total/NA	Prep	3535	DL		25.0 mL	10.0 mL	759347	05/02/24 13:23	ERR	EET SAC
Total/NA	Analysis	537 (modified)	DL	10	1 mL	1 mL	761110	05/07/24 23:23	K1S	EET SAC

Client Sample ID: Pine Lake Landfill Leachate South

Lab Sample ID: 320-111892-2

Date Collected: 04/29/24 09:25

Matrix: Water

Date Received: 04/30/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			25.0 mL	10.0 mL	759347	05/02/24 13:23	ERR	EET SAC
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	760218	05/04/24 07:48	K1S	EET SAC
Total/NA	Prep	3535	DL		25.0 mL	10.0 mL	759347	05/02/24 13:23	ERR	EET SAC
Total/NA	Analysis	537 (modified)	DL	10	1 mL	1 mL	761110	05/07/24 23:33	K1S	EET SAC

Client Sample ID: Pine Lake Landfill Leachate FRB

Lab Sample ID: 320-111892-3

Date Collected: 04/29/24 09:00

Matrix: Water

Date Received: 04/30/24 09:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			285.3 mL	10.0 mL	759347	05/02/24 13:23	ERR	EET SAC
Total/NA	Analysis	537 (modified)		1	1 mL	1 mL	760218	05/04/24 07:59	K1S	EET SAC

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Oregon	NELAP	4040	01-29-25
Wisconsin	State	998204680	08-31-25

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Method Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Sample Summary

Client: TRC Environmental Corporation
Project/Site: Leachate Sampling

Job ID: 320-111892-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
320-111892-1	Pine Lake Landfill Leachate North	Water	04/29/24 09:06	04/30/24 09:40
320-111892-2	Pine Lake Landfill Leachate South	Water	04/29/24 09:25	04/30/24 09:40
320-111892-3	Pine Lake Landfill Leachate FRB	Water	04/29/24 09:00	04/30/24 09:40

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Address _____

Regulatory Program: DW NPDES RCRA Other:

TAL-8210

Client Contact		Project Manager <u>Lucas Berg</u>		Site Contact:		Date: <u>4/29/24</u>		COC No							
Company Name <u>TRC</u>		Tel/Email:		Lab Contact: <u>Mirah Smith</u>		Carrier: <u>FedEx</u>		1 of 1 COCs							
Address <u>999 Fanner Dr., Suite 101</u>		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____		Filtered Sample (Y/N) Perform MS / MSD (Y/N) <u>WE PFAS 33 Analytes</u>				Sampler							
City/State/Zip <u>Madison, WI 53717</u>								For Lab Use Only							
Phone _____								Walk-in Client: <input type="checkbox"/>							
Fax _____								Lab Sampling: <input type="checkbox"/>							
Project Name <u>Leachate Sampling</u>								Job / SDG No							
Site _____															
PO# <u>533701.6003</u>															
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix		# of Cont.		Sample Specific Notes			
Pine Lake Landfill Leachate North		4/29/24		0906		G W		2		NW X					
Pine Lake Landfill Leachate South		4/29/24		0925		G W		2		NN X					
Pine Lake Landfill Leachate FRB		4/29/24		0900		G W		2		NN X				Field Blank	
Temp Blank		4/29/24		-		-		W		1					
<div style="text-align: center;"> 320-111892 Chain of Custody </div>															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other															
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample								Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input checked="" type="checkbox"/> Unknown								<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months							
Special Instructions/QC Requirements & Comments:															
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Custody Seal No <u>2A78467</u>				Cooler Temp (°C) Obs'd <u>0.8</u> Corr'd <u>0.8</u>				Therm ID No <u>106</u>			
Relinquished by <u>Lucas Berg</u>		Company: <u>TRC</u>		Date/Time: <u>4/29/24/1230</u>		Received by <u>JSM</u>		Company: <u>EETSAE</u>		Date/Time: <u>04/30/24 0940</u>					
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:					
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:					

Page 22 of 24

5/13/2024





Environment Testing

Sacramento Sample Receiving Notes (SSRN)

Loc 320
111892

Tracking # 6570 6550 7593

Job _____

SO / PO / SAT / 2-Day / Ground / UPS / CDO / Courier
GSL / OnTrac / Goldstreak / USPS / Other _____

Use this form to record Sample Custody Seal, Cooler Custody Seal, Temperature & corrected Temperature & other observations
File in the job folder with the COC

Therm. ID: L06 Corr. Factor (+/-) N/A °C

Ice Wet Gel _____ Other _____

Cooler Custody Seal: 2478467

Cooler ID: _____

Temp Observed: 0.8 °C Corrected: 0.8 °C
From. Temp Blank Sample

Opening/Processing The Shipment	Yes	No	NA
Cooler compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooler Temperature is acceptable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Frozen samples show signs of thaw?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initials DM Date 04/30/24

Unpacking/Labeling The Samples	Yes	No	NA
Containers are not broken or leaking?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples compromised/tampered with?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
COC is complete w/o discrepancies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample custody seal?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample containers have legible labels?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample date/times are provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Appropriate containers are used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample bottles are completely filled?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample preservatives verified?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the Field Sampler's name on COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples w/o discrepancies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Zero headspace?*	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Alkalinity has no headspace?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Perchlorate has headspace? (Methods 314, 331, 6850)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Multiphasic samples are not present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Containers requiring zero headspace have no headspace, or bubble < 6 mm (1/4")

Initials DM Date 04/30/24

Notes: _____

Trizma Lot #(s) _____

Ammonium

Acetate Lot #(s) _____

Login Completion	Yes	No	NA
Receipt Temperature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NCM Filed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples received within hold time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Log Release checked in TALS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Initials DM Date 04/30/24

Login Sample Receipt Checklist

Client: TRC Environmental Corporation

Job Number: 320-111892-1

Login Number: 111892

List Source: Eurofins Sacramento

List Number: 1

Creator: Morazzini, Dominic S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	REFER TO SSRN
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
COC is present.	N/A	
COC is filled out in ink and legible.	N/A	
COC is filled out with all pertinent information.	N/A	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	N/A	
Samples are received within Holding Time (excluding tests with immediate HTs)	N/A	
Sample containers have legible labels.	N/A	
Containers are not broken or leaking.	N/A	
Sample collection date/times are provided.	N/A	
Appropriate sample containers are used.	N/A	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	N/A	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	