
Brandon Landfill 31 Corona Street Brandon, Vermont

VT DEC Project# RU97-0128
Solid Waste Facility ID# RU080
KAS Job# 609210052

FALL 2024 SEMI-ANNUAL WATER QUALITY MONITORING REPORT

October 31, 2024

Prepared for:

Town of Brandon
49 Center Street
Brandon, VT 05733



589 Avenue D, Suite 10
PO Box 787
Williston, VT 05495

www.kas-consulting.com

802 383.0486 p
802 383.0490 f



Introduction

KAS, Inc. (KAS) conducted a semi-annual groundwater quality monitoring event on October 3, 2024 at the Closed Brandon Landfill (Site Location Map and Site Map in Appendix A) in accordance with the current Solid Waste Management Facility Certification issued by the Vermont Department of Environmental Conservation (VT DEC).

Background

The 5-acre facility operated as a landfill from 1940 until its closure in 1992, and currently operates as a transfer station. Post-closure groundwater monitoring has been conducted consistently since 2016, although select wells have not been sampled for various reasons (i.e., dry, inaccessible, etc.). Manganese, arsenic, and lead remain at levels above Vermont Groundwater Enforceable Standard (VGES). Other metals that have infrequently exceeded VGES in the past include cadmium and nickel. Volatile organic compounds (VOCs) have generally remained below VGES, with the exception of naphthalene, which was found to be slightly above VGES in June 2022. In May 2023, as requested by the VT DEC, groundwater monitoring included per- and polyfluoroalkyl substances (PFAS), an emerging group of contaminants, which have been frequently found in landfill leachate. PFAS, at levels above VGES, was found to be limited to MW-2C and MW-5. As such, in July 2024, the VT DEC amended the facility's certification to reduce PFAS monitoring to these two well locations.

PFAS compounds subject to regulation in Vermont include perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), and perfluorononanoic acid (PFNA). The VGES for PFAS is 20 nanograms per liter (ng/L) for the sum of the five regulated PFAS. There are numerous other PFAS compounds that are not regulated in Vermont, some of which are considered replacements for PFAS that have been historically phased out of production and use.

Groundwater is presumed to flow in a south-southwesterly direction, towards Otter Creek, based on the topography of the area and based on the data collected to date. The current monitoring well network consists of four (4) wells: MW-1 (upgradient), MW-3 (cross-gradient), and MW-2C and MW-5 (both of which are downgradient).

Groundwater Sampling & Results

Field measurements

At the time of sample collection, groundwater was field analyzed for temperature, pH, and specific conductance using a properly calibrated YSI® meter. The depth to groundwater was gauged using a Geotech™ water level indicator. Field measurement data is tabulated in Appendix B.

Laboratory Results

A groundwater sample was collected from all monitoring wells (MW-1, MW-2C, MW-3, and MW-5). Low-flow groundwater purging and sampling techniques were used at MW-2C and MW-5. At MW-1 and MW-3, the sample was collected via a disposable bailer due to the depth of groundwater exceeding the capacity of the peristaltic pump (e.g., >30 feet below top of casing). The groundwater samples were analyzed for:

- Total metals (e.g., arsenic, cadmium, chromium, copper, lead, iron, manganese, mercury, nickel, sodium, and zinc) via EPA Method 6010C/6020B;



- Chemical oxygen demand (COD) via Method 410.4;
- Chloride via Method 300.0;
- VOCs via EPA Method 8260C; and,
- PFAS via isotope dilution.

Total arsenic was reported at 0.0173 mg/L in MW-2C, and 0.119 mg/L in MW-3, both of which exceed the VGES of 0.010 mg/L. Total manganese ranged from 0.38 mg/L (MW-2C) to 8.8 mg/L (MW-3) and exceeds VGES (0.3 mg/L) at all sample locations. Total lead was reported at 0.222 mg/L in MW-3, which exceeds the VGES of 0.015 mg/L. Sodium, for which there is no applicable VGES, ranged from 23 mg/L (MW-1) to 200 mg/L (MW-2C). Iron, for which there is also no applicable VGES, ranged from 3.9 mg/L (MW-1) to 260 mg/L (MW-3). The other metals were either non-detect or at levels below VGES.

Chloride ranged from 37 mg/L to 290 mg/L, the highest concentration being at MW-2C.

COD ranged from 34 mg/L to 300 mg/L, the highest concentration being at MW-3.

No VOCs were detected above laboratory method detection limits in the samples collected, except for select VOCs at MW-2C and at levels below VGES.

Total regulated PFAS was reported at 7.7 ng/L (MW-5) and 202 ng/L (MW-2C), with levels at MW-2C above the VGES of 20 ng/L.

Current and historical analytical data are provided in tables and graphs in Appendix B. A copy of the laboratory reports is provided in Appendix C.

Quality Assurance/Quality Control

Quality assurance and quality control (QA/QC) samples included a duplicate sample that was analyzed for VOCs, metals, chloride, and COD. The results of the laboratory analysis of the duplicate sample were analyzed using a relative percent difference (RPD) analysis. The RPD is defined as 100 times the difference in reported concentration between the sample and duplicate, divided by the mean of the two samples. A small RPD indicates good correlation between sample and duplicate, with 30% being the EPA Region 1 upper guideline value. For all parameters, except for nickel, the absolute RPD values ranged between 0.0 and 19.4%, which indicates good to acceptable correlation/precision. For nickel, the absolute RPD was 53.7% with the duplicate being significantly lower than the sample. The reason for the high RPD is unclear; however, given that nickel remains below VGES and that the concentration is within the range of historical fluctuations, the high RPD is not considered significant. As such, KAS considers the nickel data usable for the purpose of long-term groundwater monitoring.

A QA/QC sample also included a trip blank for VOC analysis. No VOCs were detected in the trip blank, which indicates that potential contamination from transit, sample bottles, or laboratory conditions was not a concern.

For PFAS analysis, a QA/QC sample included an equipment rinsate blank (ERB) sample, which was collected at MW-2C. No PFAS was detected in the ERB sample, which indicates that there was no cross contamination of PFAS from the sampler, equipment, field conditions, and/or laboratory conditions. For the MW-2C sample, there is some uncertainty related to the PFBA detection based on the laboratory's quantifying ion signal to noise ratio. Given that PFBA has been detected



previously without this data qualifier (e.g., October 2023 sampling) and that PFBA is not a regulated PFAS compound, the uncertainty in the PFBA concentration is not considered significant. As such, KAS considers the PFBA data usable for the purpose of PFAS monitoring.

Trends

For field measurement data, the groundwater elevations were very low and were the lowest to date at MW-1, MW-2C, and MW-5. pH levels appear to be exhibiting a slightly increasing trend overall except at MW-2C where the pH remains fairly stable with an average of approximately 6.49. In general, temperature and specific conductivity continue to fluctuate within their respective historical ranges.

Total arsenic continues to exceed VGES at MW-2C and MW-3. However, overall, arsenic levels have decreased and appear to be becoming stable since their respective historical peaks. The exception is at MW-3 where there has been a step increase in arsenic and other metals. It is suspected that these concentration levels are biased high due to the highly turbid sample that was collected from MW-3. The high turbidity is presumed to be due to the low water volume in the monitoring well because of the low groundwater table.

Total manganese continues to exceed VGES at all sample locations. However, overall, manganese levels appear to be stable. The exception is MW-3, where a step increase in the manganese concentration is evident. This increase is suspected to be due to the turbid sample and/or low groundwater table as discussed above.

In general, sodium, chloride, and COD appear to have become more stable and levels are within the range of historical fluctuations. The exception is MW-3 where the COD concentration was the highest to date. This increase is suspected to be due to the turbid sample and/or low groundwater table as discussed above.

PFAS levels continue to be highest at MW-2C. Overall, it appears that PFAS levels are decreasing and becoming more stable. At MW-5, PFAS has decreased to levels below VGES for the first time since monitoring for PFAS began.

Based on non-detect to low levels of VOCs, which are limited to MW-2C, VOCs no longer appear to be a notable contaminant of concern.

Trends/graphs are provided in Appendix B.

Drinking Water Sampling

At this time, it is unknown if PFAS has impacted the deeper aquifer. In general, the surrounding residential area is served by municipal water. As shown on the Site Map (Appendix A), there are no private water supply wells downgradient from the landfill in the nearby vicinity. The nearest cross-gradient supply well is approximately 0.16 miles to the west at 806 Pearl Street (shown as WRN# 51 on the Site Map). Based on the distances and locations, the risk of PFAS contamination in the supply wells is considered low at this time. On November 22, 2023, the VT DEC requested that the Town sample the drinking water at this residence to fully rule out the risk. Due to the property owner denying access to the Town, a drinking water sample at 806 Pearl Street has not been feasible.



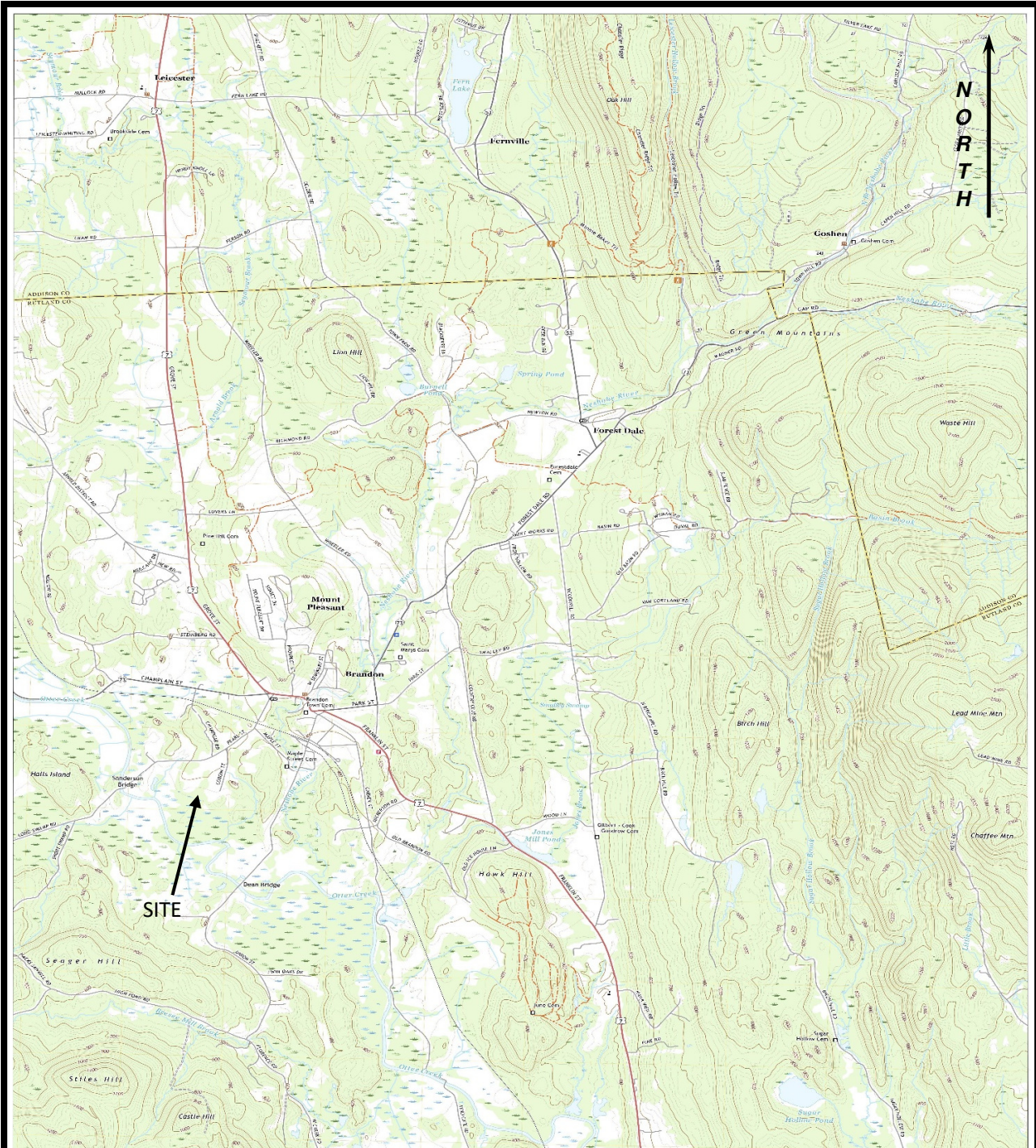
Recommendation

KAS recommends that groundwater monitoring continue in accordance with Brandon Solid Waste Facility Certification – Monitoring Requirements (7), with the next monitoring event to occur in May 2025.



APPENDIX A

Site Location Map and Site Map



KAS Job Number 609210052
 Source: USGS



589 Avenue D, Suite 10
 PO Box 787
 Williston, VT 05495
 www.kas-consulting.com
 802 383.0486 p
 802 383.0490 f

Brandon Town Landfill 31 Corona Street, Brandon, Vermont

Site Location Map
 USGS Mapping

Date: 04/27/22	Drawing No. 0	Scale NTS	By: ML
----------------	---------------	-----------	--------



LEGEND

- Private Wells
- GPS Located
 - Screen Digitized
 - E911 Address Matched
 - Welldriller/Clarion
 - Unknown Location Method
 - Incorrectly Located
- Public Water Sources

Markups by KAS

- - Approx. location of monitoring well
- - Inactive monitoring well

NOTES

Map created using ANR GIS mapping technology.

1: 6,916

September 13, 2022





APPENDIX B

Data Summaries

Brandon Closed Landfill
Sampling Date: October 3, 2024

PARAMETER	Monitoring Well ID:	MW-1	MW-2C	MW-3	MW-5	VGES	PAL
VOCs (ug/L)							
1,4-dichlorobenzene		ND	2.5	ND	ND	75	38
Diethyl Ether		ND	15.1	ND	ND	-	-
Benzene		ND	2.3	ND	ND	5	0.5
Chlorobenzene		ND	6.5	ND	ND	100	50
t-Butanol		ND	<20.0	ND	ND	-	-
Toluene		ND	2.3	ND	ND	1,000	500
Total Metals (mg/L)							
Arsenic		0.0019	0.0173	0.119	0.0018	0.010	0.001
Cadmium		<0.0020	<0.0020	<0.0020	<0.0020	0.005	0.001
Chromium		<0.0050	<0.0050	<0.50	<0.0050	0.100	0.050
Copper		<0.020	<0.020	0.31	<0.020	1.300	0.650
Iron		3.9	25	260	5.1	-	-
Lead		0.0019	<0.0010	0.222	<0.0010	0.015	0.002
Manganese		1.1	0.38	8.8	0.56	0.300	0.150
Mercury		<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.0005
Nickel		0.0052	0.0163	0.199	<0.0050	0.100	0.050
Sodium		23	200	26	37	-	-
Zinc		<0.020	<0.020	0.63	<0.020	-	-
Other Analytes (mg/L)							
Chloride		60	290	37	65	-	-
COD		37	170	300	34	-	-
PFAS (ng/L)							
Perfluorohexanesulfonic acid (PFHxS)		-	25	-	2.0	-	-
Perfluoroheptanoic acid (PFHpA)		-	25	-	<1.9	-	-
Perfluorooctanoic acid (PFOA)		-	81	-	2.5	-	-
Perfluorooctanesulfonic acid (PFOS)		-	67	-	3.2	-	-
Perfluorononanoic acid (PFNA)		-	3.7	-	<1.9	-	-
Total Regulated PFAS		-	202	-	7.7	20	2
Total Non-Regulated PFAS		-	98.5	-	3.0	-	-
Field Measurements (units as noted)							
pH (std units)		7.49	6.27	7.76	6.73	-	-
Temperature (deg C)		12.7	12.6	12.8	12.1	-	-
Conductivity (uS)		538	2,303	539	1,032	-	-
Water Level (feet btoc)		31.34	11.55	33.24	6.69	-	-

Only detected or targeted VOCs are depicted

All values reported in units noted above

"-" = Not Analyzed, No Information or No Applicable Standard

ND = None Detected

<X = None Detected above Detection Limit (X)

VGES = Vermont Groundwater Enforcement Standard (GWPRS 07/06/2019)

PAL = Vermont Preventive Action Level (GWPRS 07/06/2019)

Detections are **bolded**

>VGES

Bold (italic) indicates value exceeds PAL

Brandon Closed Landfill

MW-1

PARAMETER	Sample Date:	2012	4/22/2013	10/1/2013	5/29/2014	6/9/2015	10/25/2015	7/24/2016	October 2016	5/7/2017	10/28/2017	5/28/2018	10/20/2018	05/27/2019	10/26/2019	VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		-	-	-	-	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1	<1	70	35
Total Metals (mg/L)																	
Arsenic		Well	Well	Well	Well	Well	Well	Well	Well	0.001	<0.0010	0.0016	<0.0010	<0.0010	<0.0010	0.010	0.001
Cadmium		Not	Not	Not	Not	Not	Not	Not	Not	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.005	0.001
Chromium		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.100	0.050
Copper		-	-	-	-	-	-	-	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.300	0.650
Iron		-	-	-	-	-	-	-	-	0.79	0.51	3.0	0.62	0.091	0.26	-	-
Lead		-	-	-	-	-	-	-	-	<0.001	<0.0010	<0.0021	<0.0010	<0.0010	<0.0010	0.015	0.002
Manganese		-	-	-	-	-	-	-	-	0.18	0.14	0.79	0.21	0.034	0.028	0.300	0.150
Mercury		-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.0005
Nickel		-	-	-	-	-	-	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.100	0.050
Sodium		-	-	-	-	-	-	-	-	40	40	38	42	42	38	-	-
Zinc		-	-	-	-	-	-	-	-	0.046	0.170	0.025	0.025	<0.020	<0.020	-	-
Other Analytes (mg/L)																	
Chloride		-	-	-	-	-	-	-	-	74	72	77	82	86	83	-	-
COD		-	-	-	-	-	-	-	-	21	24	14	12	<10	39	-	-
Field Measurements (units as noted)																	
pH (std units)		-	-	-	-	-	-	-	-	6.5	6.3	6.6	6.6	6.5	6.7	-	-
Temperature (deg C)		-	-	-	-	-	-	-	-	10.7	11.6	11.8	11.9	11.2	12.1	-	-
Conductivity (uS)		-	-	-	-	-	-	-	-	1050	1030	1020	1000	1100	1050	-	-
Water Level (feet btoc)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

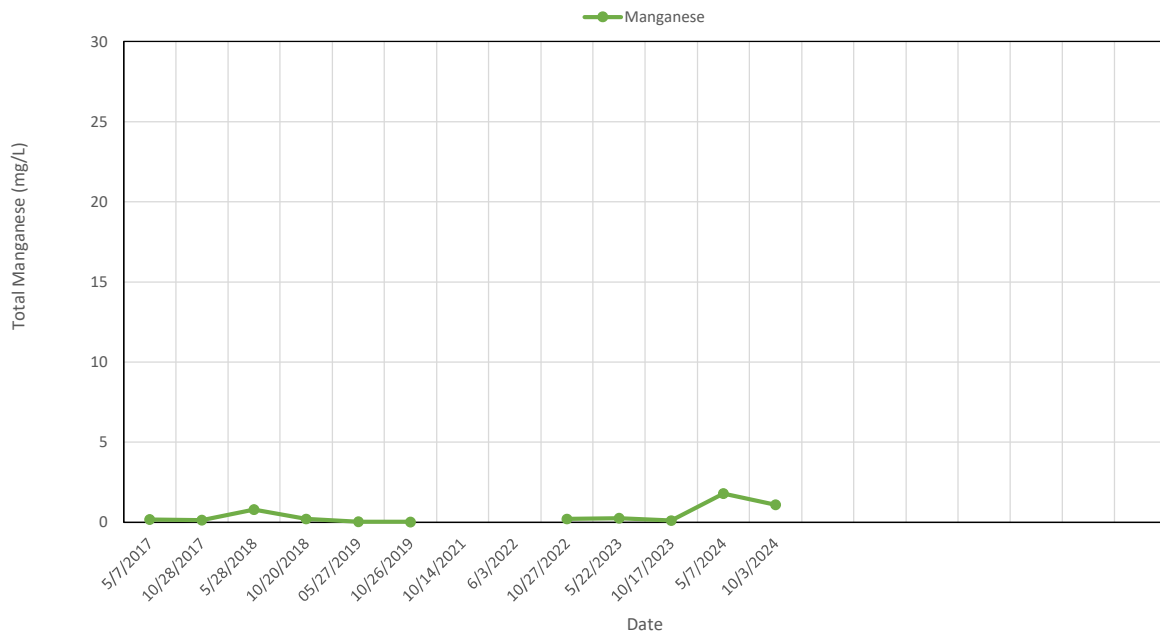
PARAMETER	Sample Date:	10/14/2021	6/3/2022	10/27/2022	5/22/2023	10/17/2023	5/7/2024	10/3/2024								VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		-	-	<1.0	<1.0	<1.0	<1.0	<1.0								70	35
Total Metals (mg/L)																	
Arsenic		No	No	0.0015	0.0014	<0.0010	0.0038	0.0019								0.010	0.001
Cadmium		Sample	Sample	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020								0.005	0.001
Chromium		-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050								0.100	0.050
Copper		Unable	Unable	<0.020	<0.020	<0.020	<0.020	<0.020								1.300	0.650
Iron		To Locate	To Locate	2.4	2.4	2.0	9.0	3.9								-	-
Lead		Well	Well	<0.0010	<0.0010	<0.0010	0.0042	0.0019								0.015	0.002
Manganese		-	-	0.20	0.25	0.11	1.8	1.1								0.300	0.150
Mercury		-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002								0.002	0.0005
Nickel		-	-	<0.0050	<0.0050	<0.0050	0.0080	0.0052								0.100	0.050
Sodium		-	-	39	41	33	29	23								-	-
Zinc		-	-	0.024	<0.020	<0.020	<0.020	<0.020								-	-
Other Analytes (mg/L)																	
Chloride		-	-	78	77	72	55	60								-	-
COD		-	-	59	74	25	40	37								-	-
PFAS (ng/L)																	
Perfluorohexanesulfonic acid (PFHxS)		-	-	-	<1.8	<1.9	<4.0	-									
Perfluoroheptanoic acid (PFHpA)		-	-	-	<1.8	<1.9	<4.0	-									
Perfluorooctanoic acid (PFOA)		-	-	-	<1.8	<1.9	<4.0	-									
Perfluorooctanesulfonic acid (PFOS)		-	-	-	2.4	<1.9	<4.0	-									
Perfluorononanoic acid (PFNA)		-	-	-	<1.8	<1.9	<4.0	-									
Total Regulated PFAS		-	-	-	2.4	ND	ND	-								20	2
Total Non-Regulated PFAS		-	-	-	ND	ND	ND	-								-	-
Field Measurements (units as noted)																	
pH (std units)		-	-	7.21	7.26	7.29	7.67	7.49								-	-
Temperature (deg C)		-	-	10.8	14.5	10.8	13.1	12.7								-	-
Spec. Conductivity (uS/cm)		-	-	1,039	1,008	995	970	538								-	-
Water Level (feet btoc)		-	-	31.17	30.67	30.80	30.74	31.34								-	-

Notes:

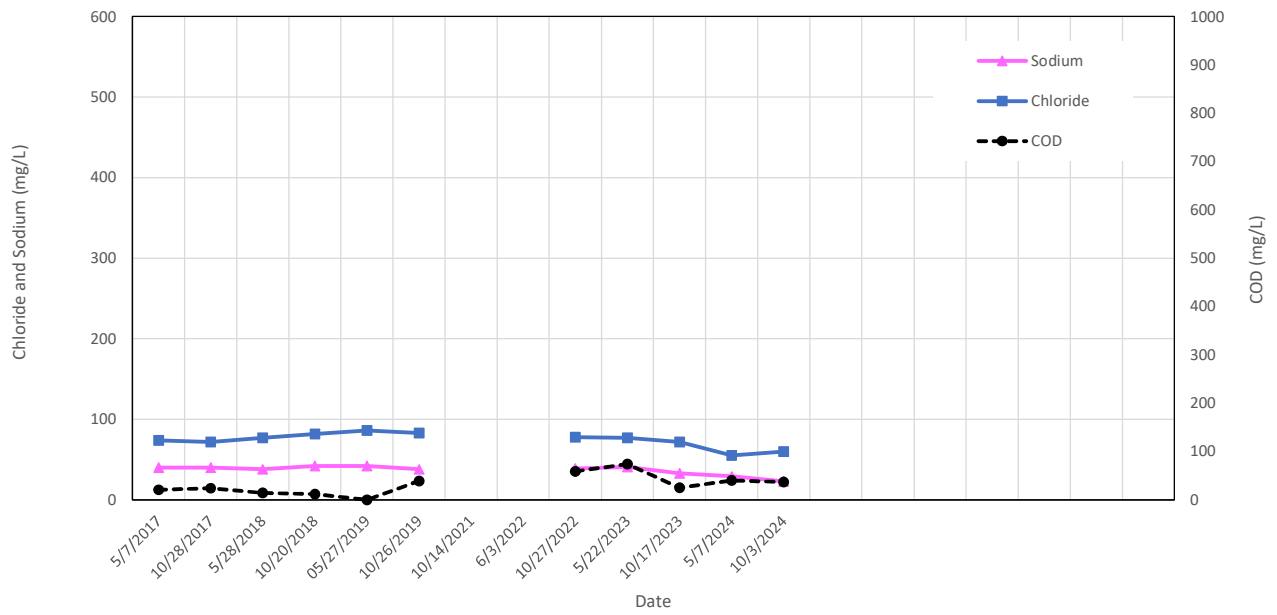
Data prior to 2021 collected by others and obtained from 2019 reports prepared by EIV Technical Services
 Data 2021-present collected by KAS, Inc.
 Only detected or targeted VOCs are depicted
 All values reported in units noted above
 "-" = Not Analyzed, No Information or No Applicable Standard
 ND = None Detected
 <X = None Detected above Detection Limit (X)

VGES = Vermont Groundwater Enforcement Standard (GWPRS 07/06/2019)
 PAL = Vermont Preventive Action Level (GWPRS 07/06/2019)
 Detections are **bolded**
 >VGES
bold (italic) indicates value exceeds PAL

Brandon Landfill MW-1



Brandon Landfill MW-1



**Brandon Closed Landfill
MW-2C**

PARAMETER	Sample Date:	2012	4/22/2013	10/1/2013	5/29/2014	6/9/2015	10/25/2015	7/24/2016	October 2016	5/7/2017	10/28/2017	5/28/2018	10/20/2018	05/27/2019	10/26/2019	VGES	PAL
VOCs (ug/L)																	
Dichlorodifluoromethane	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.2	-	<5.0	<5.0	<5.0	5.0	1.8	<1	-	-
Vinyl Chloride	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	0.7	-	<0.5	<0.5	<0.5	<0.5	-	-	2	0.5
1,4-dichlorobenzene	2.3	2.4	2.5	2.3	2.1	2.0	2.6	<1.0	2.4	2.2	1.7	2.7	-	-	-	75	38
Acetone	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	15.8	<10.0	950	475
Benzene	2.0	2.3	3.3	2.6	2.3	1.9	3.4	<0.5	2.9	2.9	1.3	3.5	1.2	<0.5	5	0.5	
Chlorobenzene	5.4	5.3	4.8	6.6	5.9	5.0	7.6	<1.0	8.3	7.2	4.1	7.4	4.9	<1.0	100	50	
Diethyl Ether	-	22.5	36.2	24.0	23.9	19.5	26.3	-	19.4	25.2	17.5	30.5	-	-	-	-	
Total Metals (mg/L)																	
Arsenic	-	-	-	0.074	0.026	0.025	0.027	Data	0.034	0.0409	0.071	0.0200	0.0213	<0.0010	0.010	0.001	
Cadmium	-	-	-	<0.002	<0.002	<0.002	0.021	Not	0.0027	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.005	0.001
Chromium	-	-	-	0.012	<0.005	<0.005	<0.0050	Available	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.100	0.050
Copper	-	-	-	<0.020	<0.020	<0.020	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.300	0.650	
Iron	-	-	-	56	28	22	33	-	32	33	65	33	28	0.28	-	-	
Lead	-	-	-	0.007	<0.001	<0.001	<0.001	-	<0.001	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	0.015	0.002	
Manganese	-	-	-	0.92	0.54	0.45	0.67	-	0.54	0.58	0.57	0.58	0.53	0.077	0.300	0.150	
Mercury	-	-	-	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.0005	
Nickel	-	-	-	0.022	0.013	0.012	<0.0050	-	0.0088	0.0074	0.0091	0.0095	0.0092	<0.0050	0.100	0.050	
Sodium	-	-	-	170	160	130	230	-	270	230	270	290	240	18	-	-	
Zinc	-	-	-	0.043	<0.02	<0.02	<0.020	-	<0.020	<0.020	0.025	<0.020	<0.020	<0.020	-	-	
Other Analytes (mg/L)																	
Chloride	-	-	-	203	280	290	380	-	480	440	450	500	420	32	-	-	
COD	-	-	-	57	100	63	62	-	52	67	41	53	62	32	-	-	
Field Measurements (units as noted)																	
pH (std units)	-	-	-	-	-	-	-	6.5	-	6.5	6.4	6.4	6.3	6.6	6.5	-	-
Temperature (deg C)	-	-	-	-	-	-	-	13	-	9.8	10.2	10.2	11.2	10.9	11.3	-	-
Spec. Conductivity (uS/cm)	-	-	-	-	-	-	-	3,010	-	2,800	2,900	2,800	2,300	2,100	2,210	-	-
Water Level (feet btoc)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

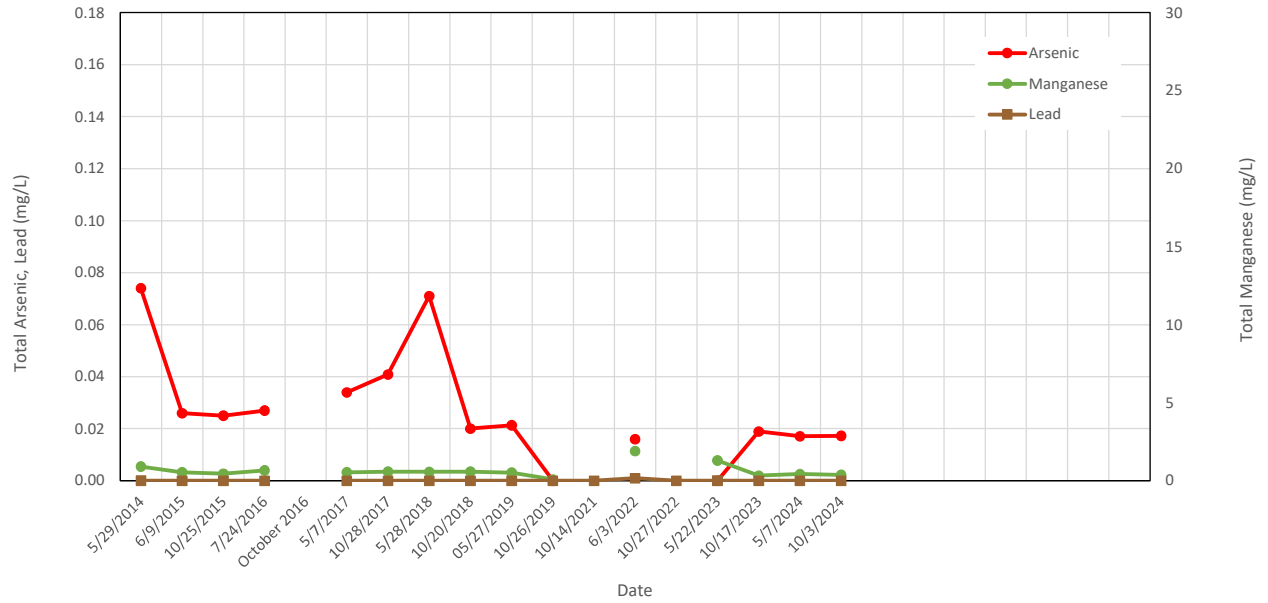
PARAMETER	Sample Date:	10/14/2021	6/3/2022	10/27/2022	5/22/2023	10/17/2023	5/7/2024	10/3/2024								VGES	PAL
VOCs (ug/L)																	
1,4-dichlorobenzene	-	<1	-	<1.0	2.7	2.4	2.5									75	38
Diethyl Ether	-	21	-	14.6	22.6	19.4	15.1									-	-
Acetone	-	67	-	<10.0	<10.0	<10.0	<10.0									950	475
Methyl-t-butyl ether (MTBE)	-	1.4	-	<2.0	<2.0	<2.0	<2.0									11	5
Tetrahydrofuran	-	17	-	<10.0	<10.0	<10.0	<10.0									-	-
Benzene	-	<1	-	<0.5	2.8	2.3	2.3									5	0.5
Chlorobenzene	-	<1	-	<1.0	6.8	5.9	6.5									100	50
Naphthalene	-	0.56	-	<0.5	<0.5	<0.5	<0.5									0.5	0.5
t-Butanol	-	-	-	-	21.9	<20.0	<20.0									-	-
Toluene	-	-	-	-	-	-	2.3									1,000	500
Total Metals (mg/L)																	
Arsenic	No	0.016	No	<0.0010	0.0189	0.0171	0.0173									0.010	0.001
Cadmium	Sample	0.0022	Sample	<0.0020	<0.0020	<0.0020	<0.0020									0.005	0.001
Chromium	-	0.0093	-	<0.0050	<0.0050	<0.0050	<0.0050									0.100	0.050
Copper	Well	0.084	Well	<0.020	<0.020	<0.020	<0.020									1.300	0.650
Iron	Dry	22	Dry	2.4	29	29	25									-	-
Lead	-	0.17	-	0.0036	<0.0010	<0.0010	<0.0010									0.015	0.002
Manganese	-	1.9	-	1.3	0.33	0.42	0.38									0.300	0.150
Mercury	-	<0.0001	-	<0.0002	<0.0002	<0.0002	<0.0002									0.002	0.0005
Nickel	-	0.033	-	0.0081	0.0099	0.0093	0.0163									0.100	0.050
Sodium	-	38	-	28	230	210	200									-	-
Zinc	-	0.094	-	<0.020	<0.020	<0.020	<0.020									-	-
Other Analytes (mg/L)																	
Chloride	-	41	-	24	350	300	290									-	-
COD	-	900	-	77	53	130	170									-	-
PFAS (ng/L)																	
Perfluorohexanesulfonic acid (PFHxS)	-	-	-	36	15	17	25										
Perfluoroheptanoic acid (PFHpA)	-	-	-	18	22	16	25										
Perfluorooctanoic acid (PFOA)	-	-	-	97	55	58	81										
Perfluorooctanesulfonic acid (PFOS)	-	-	-	150	43	54	67										
Perfluorononanoic acid (PFNA)	-	-	-	4.7	<4.1	<4.1	3.7										
Total Regulated PFAS	-	-	-	305.7	135	145	202									20	2
Total Non-Regulated PFAS	-	-	-	68.7	125	61	98.5									-	-
Field Measurements (units as noted)																	
pH (std units)	-	6.51	-	6.96	6.35	6.59	6.27									-	-
Temperature (deg C)	-	18.1	-	11.3	11.4	11.3	12.6									-	-
Spec. Conductivity (uS/cm)	-	1,643	-	1,487	2,319	2,227	2,303									-	-
Water Level (feet btoc)	-	8.20	-	8.36	9.80	7.17	11.55									-	-

Notes:

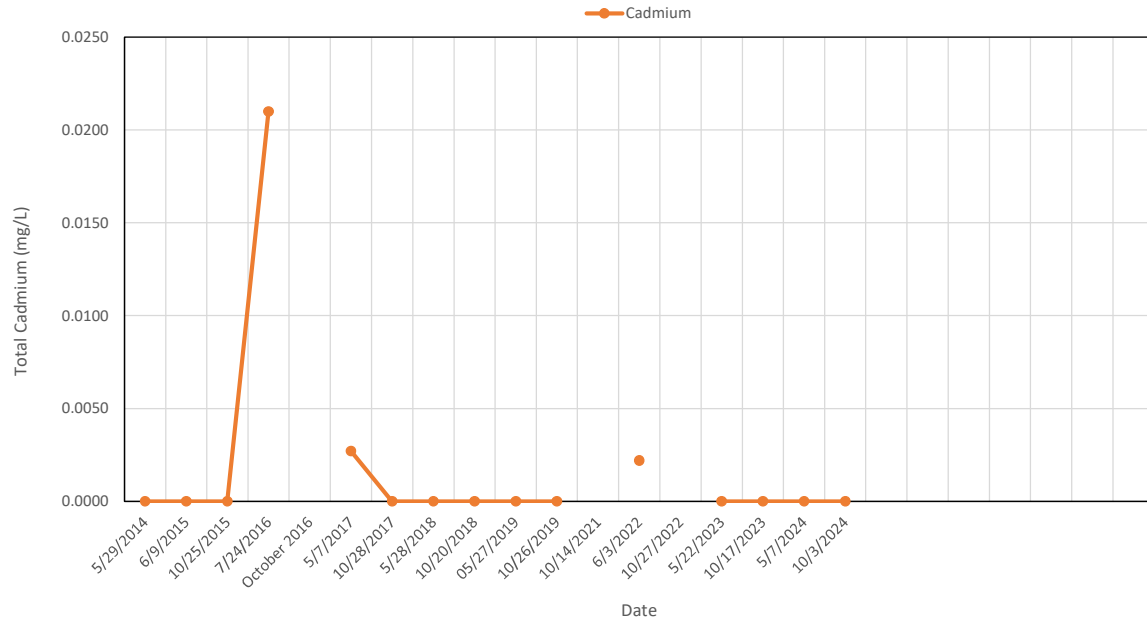
Data prior to 2021 collected by others and obtained from 2019 reports prepared by EIV Technical Services
 Data 2021-present collected by KAS, Inc.
 Only detected or targeted VOCs are depicted
 All values reported in units noted above
 "-" = Not Analyzed, No Information or No Applicable Standard
 ND = None Detected
 <X = None Detected above Detection Limit (X)

VGES = Vermont Groundwater Enforcement Standard (GWPRS 07/06/2019)
 PAL = Vermont Preventive Action Level (GWPRS 07/06/2019)
 Detections are **bolded**
 >VGES
bold (italic) indicates value exceeds PAL

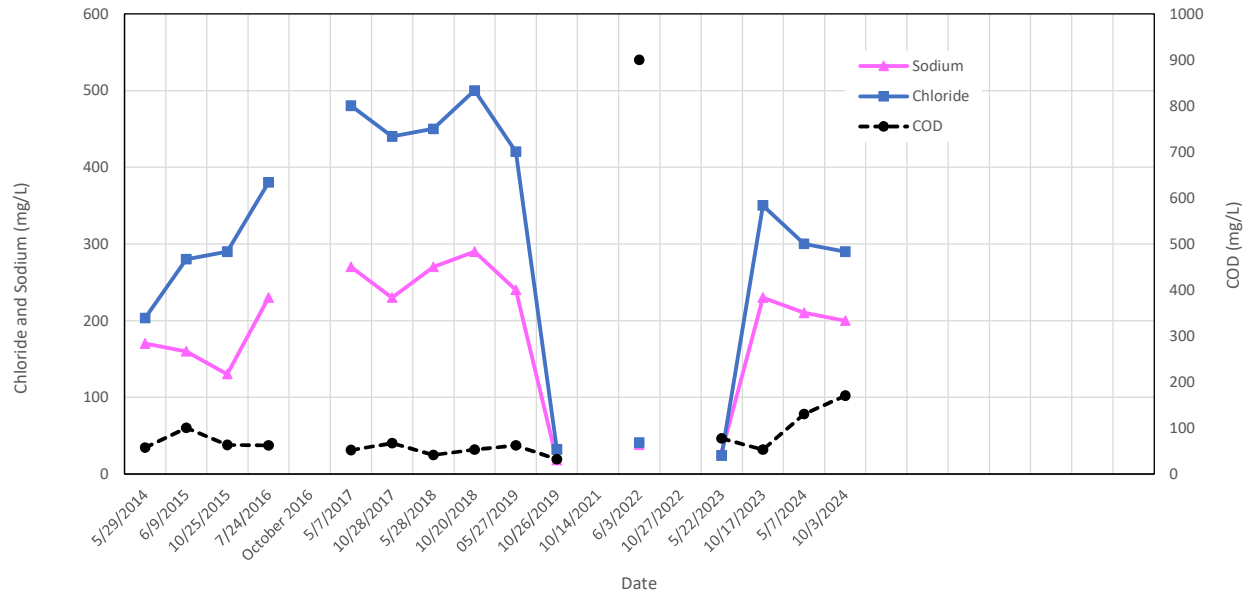
Brandon Landfill
MW-2C



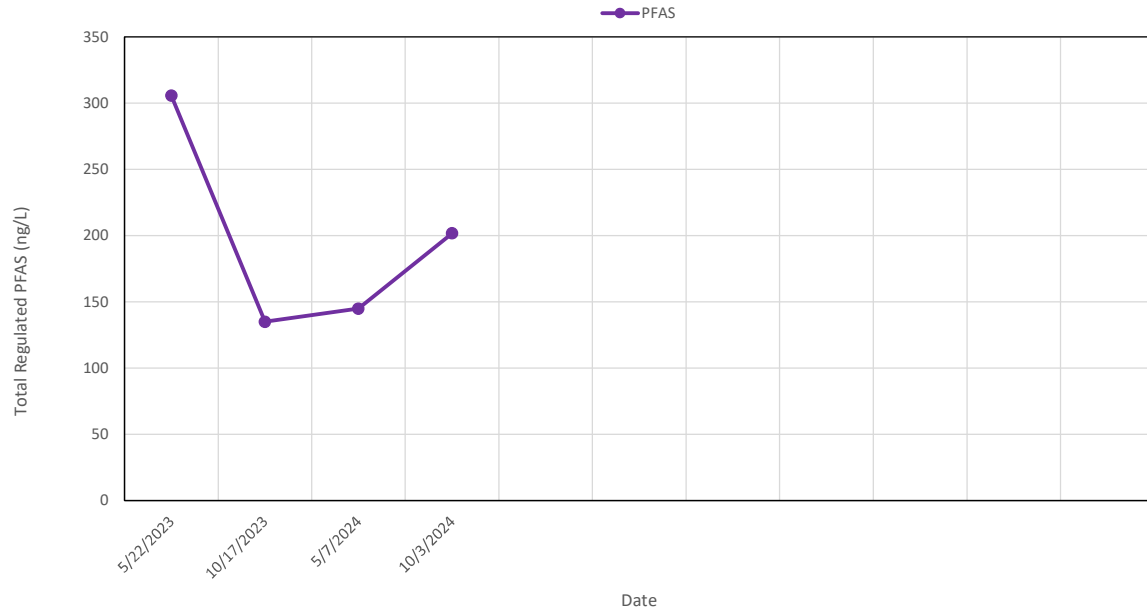
Brandon Landfill
MW-2C



Brandon Landfill
MW-2C



Brandon Landfill
MW-2C



Brandon Closed Landfill

MW-3

PARAMETER	Sample Date:	2012	4/22/2013	10/1/2013	5/29/2014	6/9/2015	10/25/2015	7/24/2016	October 2016	5/7/2017	10/28/2017	5/28/2018	10/20/2018	05/27/2019	10/26/2019	VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	70	35
Total Metals (mg/L)																	
Arsenic		-	-	-	<0.001	0.002	0.009	Well	Well	Well	Well	Well	Well	No	No	0.010	0.001
Cadmium		-	-	-	<0.002	<0.002	<0.002	not	not	not	not	not	not	Sample	Sample	0.005	0.001
Chromium		-	-	-	<0.005	<0.005	<0.0052	sampled	sampled	sampled	sampled	sampled	sampled	-	-	0.100	0.050
Copper		-	-	-	<0.020	<0.020	<0.022	-	-	-	-	-	-	Insufficient	Insufficient	1.300	0.650
Iron		-	-	-	0.41	9.1	29	-	-	-	-	-	-	Amount	Amount	-	-
Lead		-	-	-	<0.001	<0.001	0.008	-	-	-	-	-	-	of Water	of Water	0.015	0.002
Manganese		-	-	-	<0.020	1.1	1.2	-	-	-	-	-	-	in Well	in Well	0.300	0.150
Mercury		-	-	-	<0.0002	<0.0002	<0.0002	-	-	-	-	-	-	Column	Column	0.002	0.0005
Nickel		-	-	-	0.005	<0.005	0.016	-	-	-	-	-	-	-	-	0.100	0.050
Sodium		-	-	-	23	20	15	-	-	-	-	-	-	-	-	-	-
Zinc		-	-	-	0.020	<0.020	0.024	-	-	-	-	-	-	-	-	-	-
Other Analytes (mg/L)																	
Chloride		-	-	-	34	31	30	-	-	-	-	-	-	-	-	-	-
COD		-	-	-	11	34	34	-	-	-	-	-	-	-	-	-	-
Field Measurements (units as noted)																	
pH (std units)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Temperature (deg C)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conductivity (uS)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Water Level (feet btoc)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PARAMETER	Sample Date:	10/14/2021	6/3/2022	10/27/2022	5/22/2023	10/17/2023	5/7/2024	10/3/2024								VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0								70	35
Total Metals (mg/L)																	
Arsenic		0.17	0.015	0.030	0.0075	0.0028	0.0147	0.119								0.010	0.001
Cadmium		<0.005	<0.001	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020								0.005	0.001
Chromium		0.32	0.022	<0.050	0.0110	<0.050	0.0197	<0.50								0.100	0.050
Copper		0.82	0.062	<0.20	0.021	<0.20	0.043	0.31								1.300	0.650
Iron		370	47	57	18	7.4	38	260								-	-
Lead		0.51	0.036	0.0505	0.0151	0.0069	0.0311	0.222								0.015	0.002
Manganese		25	1.5	2.5	0.55	0.21	0.93	8.8								0.300	0.150
Mercury		<0.001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002								0.002	0.0005
Nickel		0.49	0.036	0.0538	0.0140	0.0055	0.0263	0.199								0.100	0.050
Sodium		26	28	23	26	27	28	26								-	-
Zinc		1.4	0.11	<0.20	0.042	<0.020	0.082	0.63								-	-
Other Analytes (mg/L)																	
Chloride		34	56	98	44	48	42	37								-	-
COD		<10	<10	220	79	28	84	300								-	-
PFAS (ng/L)																	
Perfluorohexanesulfonic acid (PFHxS)		-	-	-	<1.8	<4.1	<4.0	-									
Perfluoroheptanoic acid (PFHpA)		-	-	-	<1.8	<4.1	<4.0	-									
Perfluorooctanoic acid (PFOA)		-	-	-	<1.8	<4.1	<4.0	-									
Perfluorooctanesulfonic acid (PFOS)		-	-	-	5.2	<4.1	<4.0	-									
Perfluorononanoic acid (PFNA)		-	-	-	<1.8	<4.1	<4.0	-									
Total Regulated PFAS		-	-	-	5.2	ND	ND	-								20	2
Total Non-Regulated PFAS		-	-	-	ND	ND	ND	-								-	-
Field Measurements (units as noted)																	
pH (std units)		6.8	7.14	7.27	7.57	7.48	7.83	7.76								-	-
Temperature (deg C)		11.9	12.3	10.7	13.0	10.5	12.2	12.8								-	-
Spec. Conductivity (uS/cm)		740	773	378.6	715	759	737	539								-	-
Water Level (feet btoc)		33.69	30.78	33.60	31.50	32.00	31.17	33.24								-	-

Notes:

Data prior to 2021 collected by others and obtained from 2019 reports prepared by EIV Technical Services

Data 2021-present collected by KAS, Inc.

Only detected or targeted VOCs are depicted

All values reported in units noted above

"-" = Not Analyzed, No Information or No Applicable Standard

ND = None Detected

<X = None Detected above Detection Limit (X)

VGES = Vermont Groundwater Enforcement Standard (GWPRS 07/06/2019)

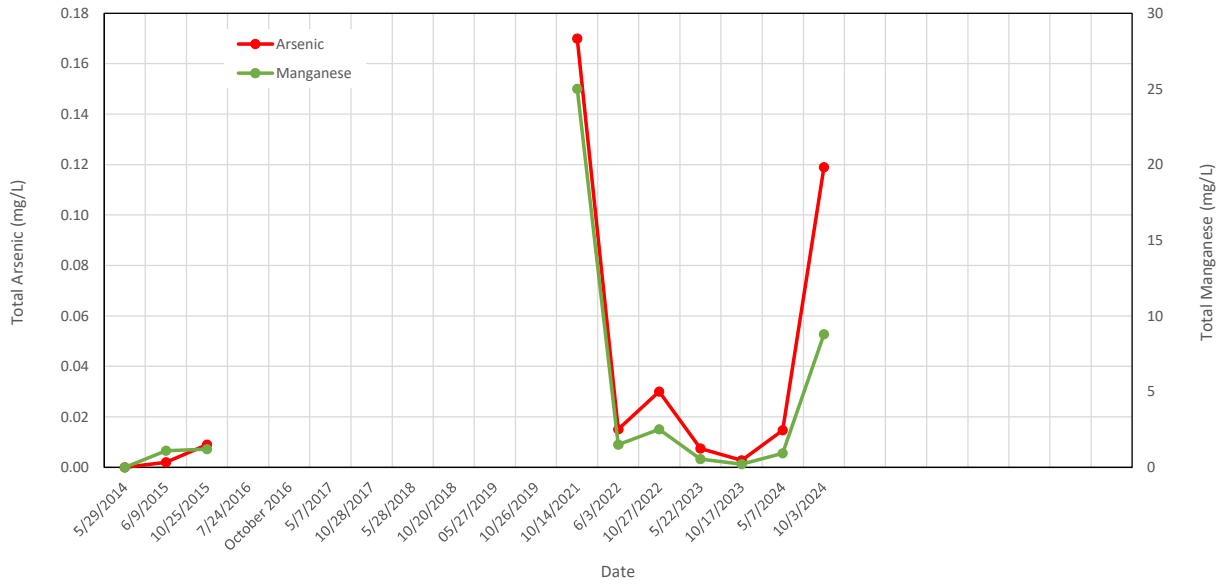
PAL = Vermont Preventive Action Level (GWPRS 07/06/2019)

Detections are **bolded**

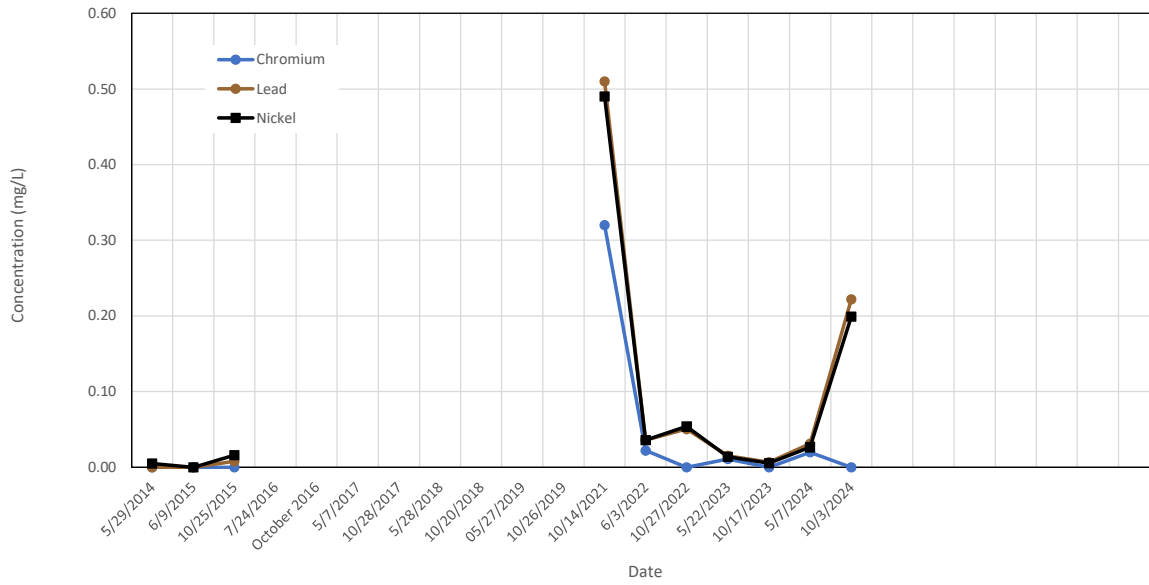
>VGES

Italic indicates value exceeds PAL

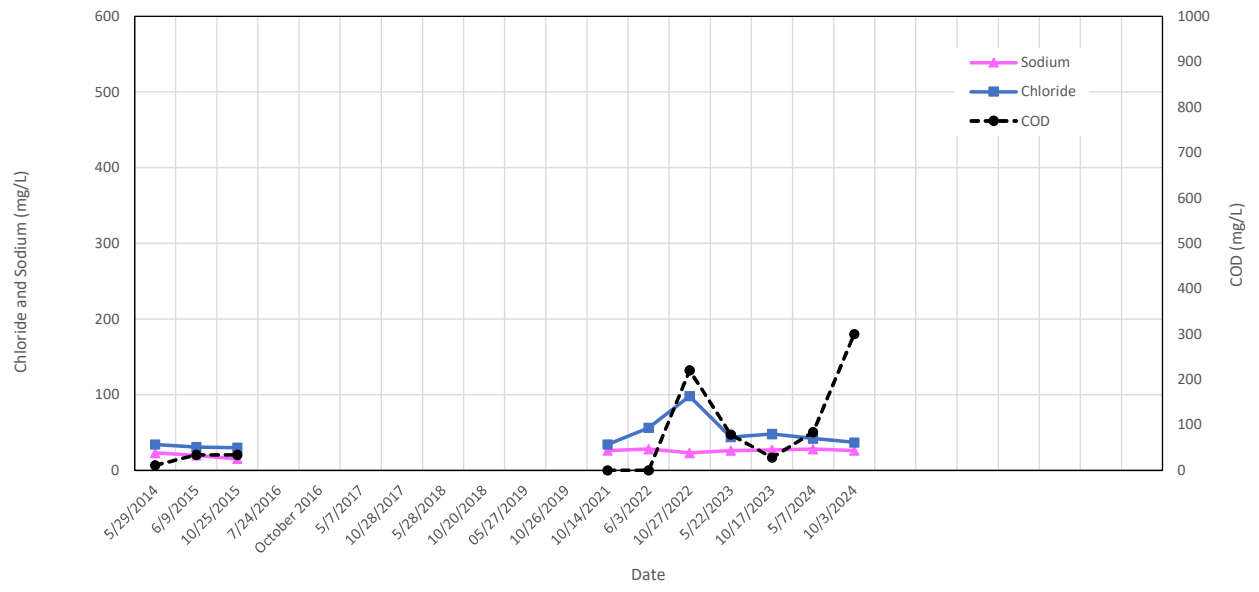
Brandon Landfill MW-3



Brandon Landfill MW-3



Brandon Landfill
MW-3



**Brandon Closed Landfill
MW-5**

PARAMETER	Sample Date:	2012	4/22/2013	10/1/2013	5/29/2014	6/9/2015	10/25/2015	7/24/2016	October 2016	5/7/2017	10/28/2017	5/28/2018	10/20/2018	05/27/2019	10/26/2019	VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		<1.0	-	1.1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	70	35
Diethyl Ether		-	-	6.0	<5.0	<5.0	-	<5.0	-	<5.0	-	-	-	-	-	-	-
Total Metals (mg/L)																	
Arsenic		-	Well	-	0.004	0.003	Well	0.032	Data	0.006	0.006	0.0040	0.0011	<0.0010	0.121	0.010	0.001
Cadmium		-	Not	-	<0.002	<0.002	not	0.010	not	0.0061	0.0061	0.0083	0.0027	<0.0020	<0.0020	0.005	0.001
Chromium		-	Sampled	-	<0.005	<0.005	sampled	0.020	available	0.0056	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	0.100	0.050
Copper		-	-	-	<0.020	<0.020	-	0.076	-	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	1.300	0.650
Iron		-	-	-	31	16	-	120	-	21	21	13	4	0.22	48	-	-
Lead		-	-	-	0.003	0.003	-	0.044	-	0.0080	0.0080	0.0080	0.0022	<0.0010	<0.0010	0.015	0.002
Manganese		-	-	-	1.4	1.3	-	2.6	-	0.78	0.78	1.2	0.38	1.0	0.89	0.300	0.150
Mercury		-	-	-	<0.0002	<0.0002	-	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	0.0005
Nickel		-	-	-	0.007	0.0066	-	0.025	-	0.0084	0.0084	0.0082	<0.0050	<0.0050	0.0077	0.100	0.050
Sodium		-	-	-	26	21	-	18	-	24	24	25	31	33	150	-	-
Zinc		-	-	-	0.020	0.020	-	0.11	-	0.026	0.026	<0.020	<0.020	<0.020	<0.020	-	-
Other Analytes (mg/L)																	
Chloride		-	-	-	38	32	-	33	-	42	43	40	64	64	260	-	-
COD		-	-	-	30	25	-	54	-	31	13	30	<10	<10	45	-	-
Field Measurements (units as noted)																	
pH (std units)		-	-	-	-	-	-	6.4	-	6.0	6.1	6.2	6.2	6.3	6.4	-	-
Temperature (deg C)		-	-	-	-	-	-	15	-	10.7	10.6	10.8	12.0	11.8	11.9	-	-
Conductivity (uS)		-	-	-	-	-	-	-	-	1,160	1,090	1,080	1,120	1,080	1,100	-	-
Water Level (feet btoc)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

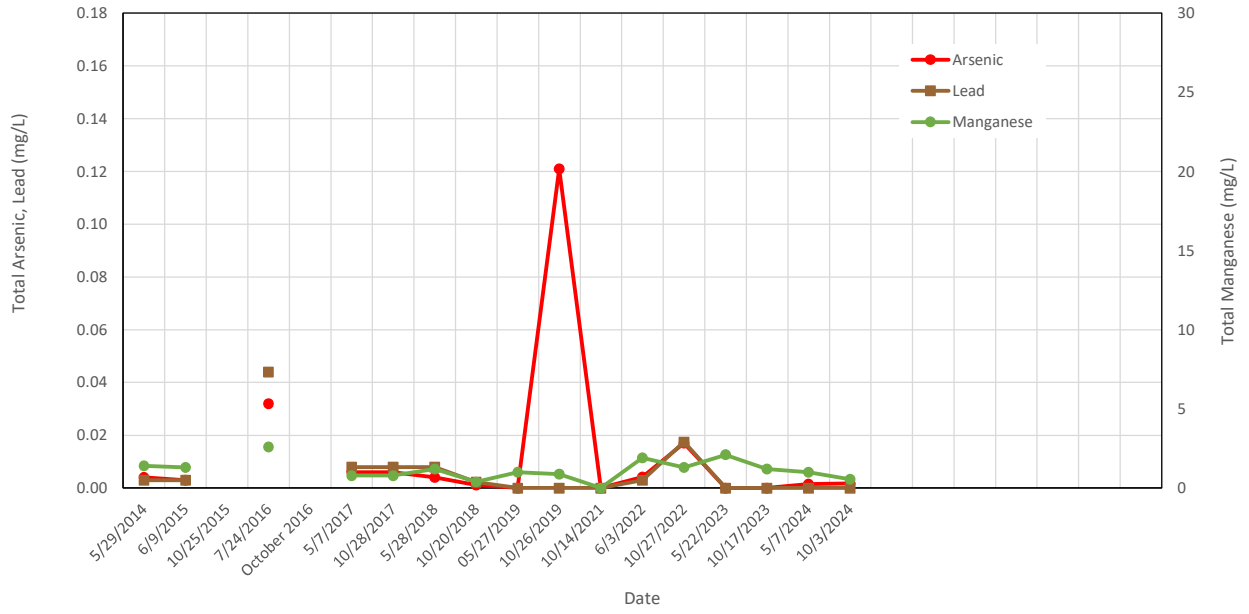
PARAMETER	Sample Date:	10/14/2021	6/3/2022	10/27/2022	5/22/2023	10/17/2023	5/7/2024	10/3/2024								VGES	PAL
VOCs (ug/L)																	
1,1-dichloroethane		-	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0								70	35
Total Metals (mg/L)																	
Arsenic		No	0.0042	0.0170	<0.0010	<0.0010	0.0015	0.0018								0.010	0.001
Cadmium		Sample	0.0016	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020								0.005	0.001
Chromium			0.0013	0.0052	<0.0050	<0.0050	<0.0050	<0.0050								0.100	0.050
Copper		Well	0.0053	0.024	<0.020	<0.020	<0.020	<0.020								1.300	0.650
Iron		Inaccessible	8.0	30	0.52	5.8	11	5.1								-	-
Lead		Due to	0.0029	0.0175	<0.0010	<0.0010	<0.0010	<0.0010								0.015	0.002
Manganese		Lock	1.9	1.3	2.1	1.2	1.0	0.56								0.300	0.150
Mercury			<0.0001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002								0.002	0.0005
Nickel			0.0074	0.0197	<0.0050	<0.0050	<0.0050	<0.0050								0.100	0.050
Sodium			30	34	34	31	37	37								-	-
Zinc			0.014	0.047	<0.020	<0.020	<0.020	<0.020								-	-
Other Analytes (mg/L)																	
Chloride		-	52	59	59	63	64	65								-	-
COD		-	<10	58	35	10	33	34								-	-
PFAS (ng/L)																	
Perfluorohexanesulfonic acid (PFHxS)		-	-	-	17	8.5	13	2.0									
Perfluoroheptanoic acid (PFHpA)		-	-	-	5.1	3.7	<4.0	<1.9									
Perfluorooctanoic acid (PFOA)		-	-	-	30	15	16	2.5									
Perfluorooctanesulfonic acid (PFOS)		-	-	-	14	11	10	3.2									
Perfluorononanoic acid (PFNA)		-	-	-	<1.9	<1.9	<4.0	<1.9									
Total Regulated PFAS		-	-	-	66.1	38.2	39	7.7								20	2
Total Non-Regulated PFAS		-	-	-	14.8	16.5	5.5	3.0								-	-
Field Measurements (units as noted)																	
pH (std units)		-	6.58	7.18	6.69	6.71	6.84	6.73								-	-
Temperature (deg C)		-	13.2	11.7	10.1	10.7	11.6	12.1								-	-
Spec. Conductivity (uS/cm)		-	1,109	-	826	1,098	1,071	1,032								-	-
Water Level (feet btoc)		-	4.79	4.97	4.79	5.10	4.32	6.69								-	-

Notes:

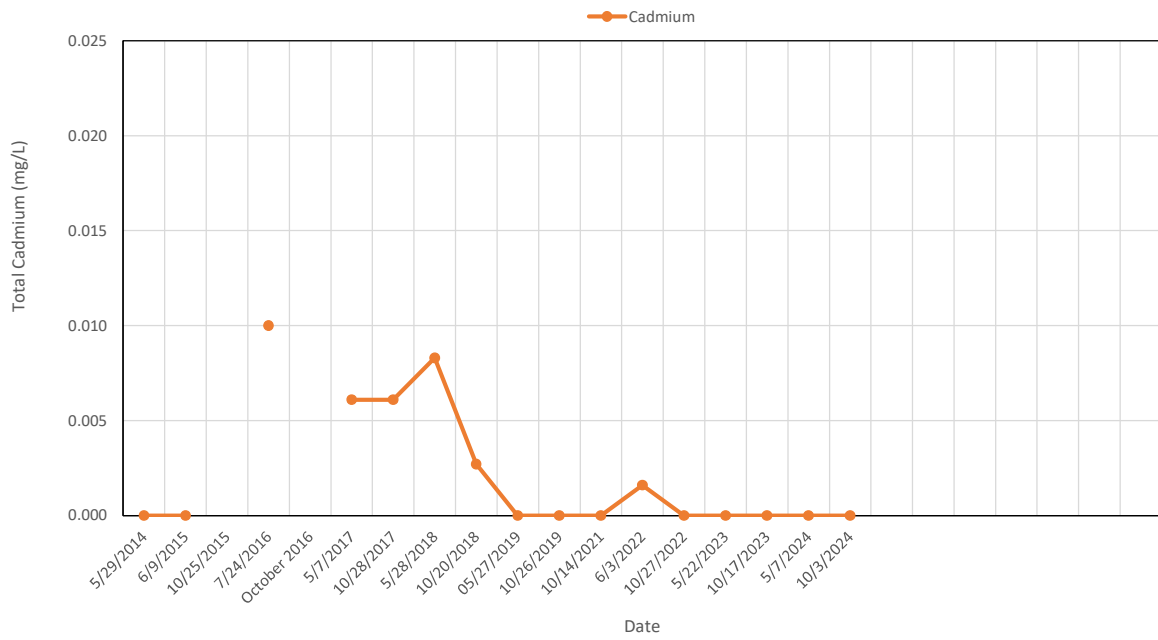
Data prior to 2021 collected by others and obtained from 2019 reports prepared by EIV Technical Services
 Data 2021-present collected by KAS, Inc.
 Only detected or targeted VOCs are depicted
 All values reported in units noted above
 "-" = Not Analyzed, No Information or No Applicable Standard
 ND = None Detected
 <X = None Detected above Detection Limit (X)

VGES = Vermont Groundwater Enforcement Standard (GWPRS 07/06/2019)
 PAL = Vermont Preventive Action Level (GWPRS 07/06/2019)
 Detections are **bolded**
 >VGES
bold (italic) indicates value exceeds PAL

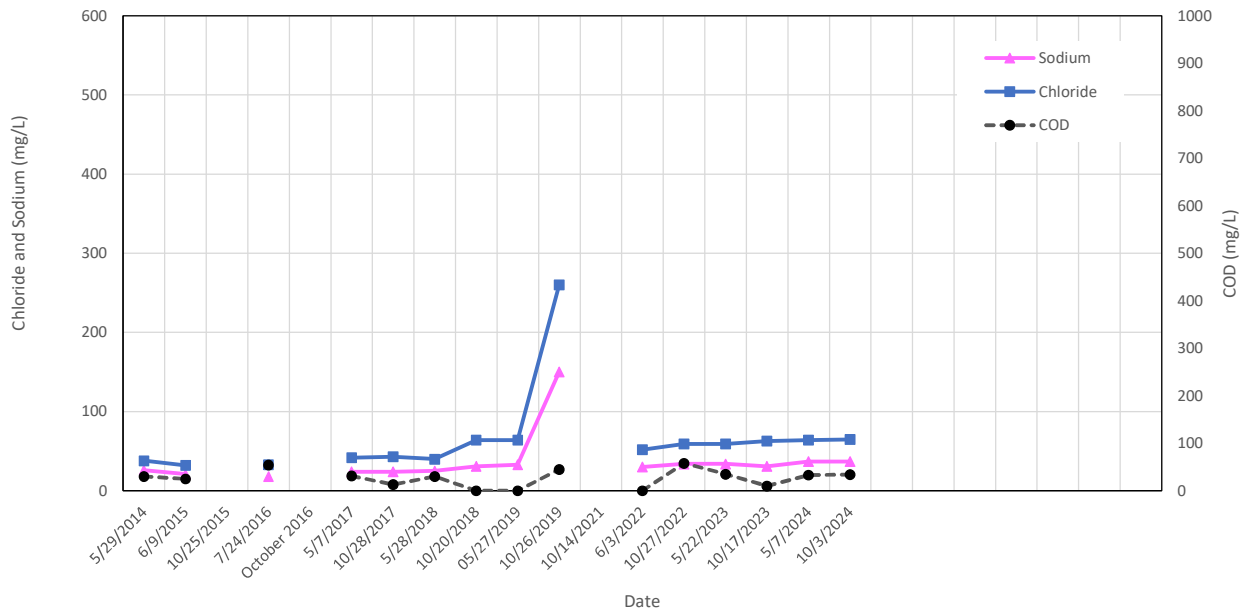
Brandon Landfill MW-5



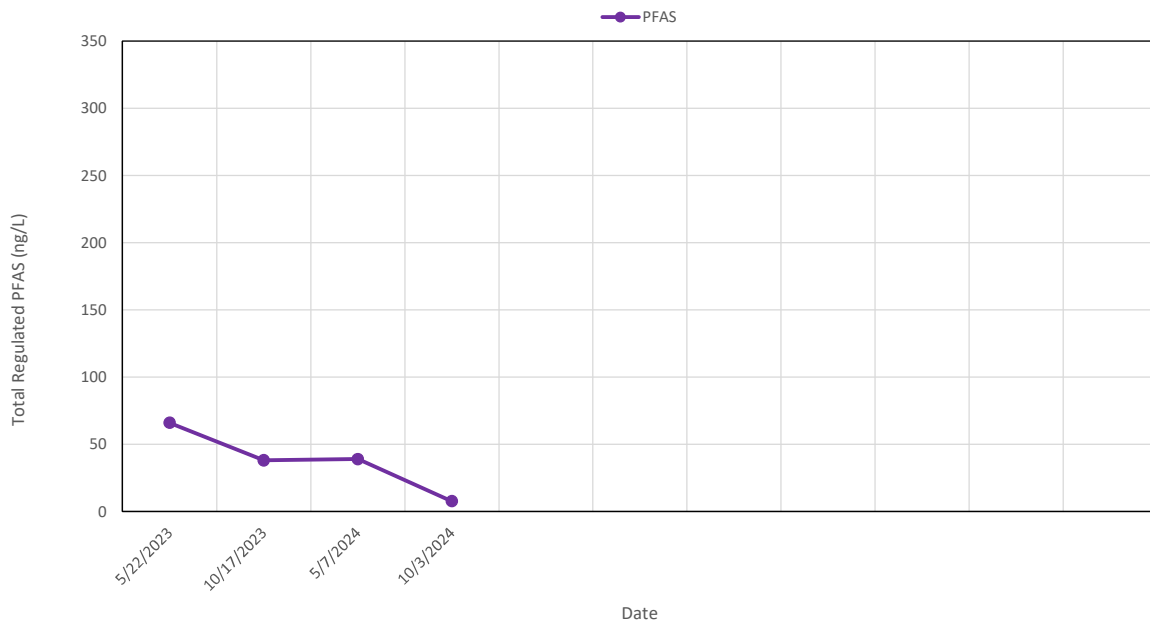
Brandon Landfill MW-5



Brandon Landfill MW-5



Brandon Landfill MW-5



Brandon Closed Landfill
Quality Assurance/Quality Control Samples

Sample ID: Sample Date:	Trip Blank 10/3/2024	Duplicate 10/3/2024	MW-2C 10/3/2024	RPD (%)
PARAMETER				
VOCs (ug/L)				
1,4-dichlorobenzene	ND	2.5	2.5	0.0
Diethyl Ether	ND	15.5	15.1	2.6
Acetone	ND	<10.0	<10.0	-
Methyl-t-butyl ether (MTBE)	ND	<2.0	<2.0	-
Tetrahydrofuran	ND	<10.0	<10.0	-
Benzene	ND	2.4	2.3	4.3
Chlorobenzene	ND	6.5	6.5	0.0
Naphthalene	ND	<0.5	<0.5	-
t-Butanol	ND	<20.0	<20.0	-
Toluene	ND	2.5	2.3	8.3
Total VOCs	ND	29.4	28.7	2.4
Total Metals (mg/L)				
Arsenic	-	0.0169	0.0173	2.3
Cadmium	-	<0.0020	<0.0020	-
Chromium	-	<0.0050	<0.0050	-
Copper	-	<0.020	<0.020	-
Iron	-	25	25	0.0
Lead	-	<0.0010	<0.0010	-
Manganese	-	0.39	0.38	2.6
Mercury	-	<0.0002	<0.0002	-
Nickel	-	0.0094	0.0163	53.7
Sodium	-	200	200	0.0
Zinc	-	<0.020	<0.020	-
Other Analytes (mg/L)				
Chloride	-	290	290	0.0
COD	-	140	170	19.4

Only detected or targeted VOCs are depicted

All values reported in units noted above

"-" = Not Analyzed, RPD could not be calculated due to non-detects or No Applicable Standard

ND = None Detected

<X = None Detected above Detection Limit (X)

RPD = The results of the laboratory analysis of the duplicate sample were analyzed using a relative percent difference (RPD) analysis. The RPD is defined as 100 times the difference in reported concentration between sample and duplicate, divided by the mean of the two samples. A small RPD indicates good correlation between sample and duplicate.



APPENDIX C

Laboratory Reports



Laboratory Report

KAS, Inc	100306
PO Box 787	
Williston, VT 05495	
Atten: Clare Santos	

PROJECT: Brandon Landfill
 WORK ORDER: **2410-33107**
 DATE RECEIVED: October 03, 2024
 DATE REPORTED: October 22, 2024
 SAMPLER: WR

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.
 Laboratory Director

www.endynelabs.com



160 James Brown Dr., Williston, VT 05495
 Ph 802-879-4333 Fax 802-879-7103

56 Etna Road, Lebanon, NH 03755
 Ph 603-678-4891 Fax 603-678-4893



Laboratory Report

REPORT DATE: 10/22/2024

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

001 Site: MW-1 Date Sampled: 10/3/24 Time: 10:22

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Chloride	60	mg/L	EPA 300.0	10/7/24 10:43	W KMB	A	
COD	37	mg/L	EPA 410.4	10/14/24	N WEP	A	
Metals Digestion	Digested		EPA 3015A	10/9/24	W MLR	A	
Arsenic, Total	0.0019	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Cadmium, Total	< 0.0020	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Chromium, Total	< 0.0050	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Copper, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Iron, Total	3.9	mg/L	EPA 6010C	10/9/24 19:43	W MLR	A	
Lead, Total	0.0019	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Manganese, Total	1.1	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Mercury, Total	< 0.0002	mg/L	EPA 6020B	10/16/24 15:42	W RSB	N	
Nickel, Total	0.0052	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	
Sodium, Total	23	mg/L	EPA 6010C	10/9/24 19:43	W MLR	A	
Zinc, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:42	W RSB	A	

002 Site: MW-2C Date Sampled: 10/3/24 Time: 12:03

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Chloride	290	mg/L	EPA 300.0	10/7/24 11:03	W KMB	A	
COD	170	mg/L	EPA 410.4	10/14/24	N WEP	A	
Metals Digestion	Digested		EPA 3015A	10/9/24	W MLR	A	
Arsenic, Total	0.0173	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Cadmium, Total	< 0.0020	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Chromium, Total	< 0.0050	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Copper, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Iron, Total	25	mg/L	EPA 6010C	10/9/24 19:48	W MLR	A	
Lead, Total	< 0.0010	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Manganese, Total	0.38	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Mercury, Total	< 0.0002	mg/L	EPA 6020B	10/16/24 15:47	W RSB	N	
Nickel, Total	0.0163	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	
Sodium, Total	200	mg/L	EPA 6010C	10/17/24 11:22	W MLR	A	
Zinc, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:47	W RSB	A	

003 Site: MW-3 Date Sampled: 10/3/24 Time: 11:07

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Chloride	37	mg/L	EPA 300.0	10/7/24 11:23	W KMB	A	
COD	300	mg/L	EPA 410.4	10/14/24	N WEP	A	
Metals Digestion	Digested		EPA 3015A	10/11/24	W MLR	A	
Arsenic, Total	0.119	mg/L	EPA 6020B	10/18/24 15:39	W MGT	A	
Cadmium, Total	< 0.0020	mg/L	EPA 6020B	10/16/24 20:00	W RSB	A	
Chromium, Total	< 0.50	mg/L	EPA 6020B	10/18/24 15:39	W MGT	A	
Copper, Total	0.31	mg/L	EPA 6020B	10/18/24 18:09	W MGT	A	
Iron, Total	260	mg/L	EPA 6010C	10/18/24 13:49	W MLR	A	
Lead, Total	0.222	mg/L	EPA 6020B	10/16/24 20:00	W RSB	A	
Manganese, Total	8.8	mg/L	EPA 6020B	10/18/24 15:39	W MGT	A	

Laboratory Report

REPORT DATE: 10/22/2024

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

003 Site: MW-3 Date Sampled: 10/3/24 Time: 11:07

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Mercury, Total	< 0.0020	mg/L	EPA 6020B	10/18/24 18:09	W MGT	N	
Nickel, Total	0.199	mg/L	EPA 6020B	10/18/24 18:09	W MGT	A	
Sodium, Total	26	mg/L	EPA 6010C	10/17/24 19:52	W MLR	A	
Zinc, Total	0.63	mg/L	EPA 6020B	10/18/24 18:09	W MGT	A	

004 Site: MW-5 Date Sampled: 10/3/24 Time: 13:02

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Chloride	65	mg/L	EPA 300.0	10/7/24 11:43	W KMB	A	
COD	34	mg/L	EPA 410.4	10/14/24	N WEP	A	
Metals Digestion	Digested		EPA 3015A	10/9/24	W MLR	A	
Arsenic, Total	0.0018	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Cadmium, Total	< 0.0020	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Chromium, Total	< 0.0050	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Copper, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Iron, Total	5.1	mg/L	EPA 6010C	10/9/24 19:54	W MLR	A	
Lead, Total	< 0.0010	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Manganese, Total	0.56	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Mercury, Total	< 0.0002	mg/L	EPA 6020B	10/16/24 15:52	W RSB	N	
Nickel, Total	< 0.0050	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	
Sodium, Total	37	mg/L	EPA 6010C	10/9/24 19:54	W MLR	A	
Zinc, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:52	W RSB	A	

005 Site: Duplicate Date Sampled: 10/3/24 Time: 12:03

Parameter	Result	Units	Method	Analysis Date	Lab/Tech	NELAC	Qual.
Chloride	290	mg/L	EPA 300.0	10/7/24 12:02	W KMB	A	
COD	140	mg/L	EPA 410.4	10/14/24	N WEP	A	
Metals Digestion	Digested		EPA 3015A	10/9/24	W MLR	A	
Arsenic, Total	0.0169	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Cadmium, Total	< 0.0020	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Chromium, Total	< 0.0050	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Copper, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Iron, Total	25	mg/L	EPA 6010C	10/9/24 19:59	W MLR	A	
Lead, Total	< 0.0010	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Manganese, Total	0.39	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Mercury, Total	< 0.0002	mg/L	EPA 6020B	10/16/24 15:57	W RSB	N	
Nickel, Total	0.0094	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	
Sodium, Total	200	mg/L	EPA 6010C	10/17/24 11:27	W MLR	A	
Zinc, Total	< 0.020	mg/L	EPA 6020B	10/16/24 15:57	W RSB	A	

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

001	Site: MW-1	Sampled: 10/3/24		10:22	Test Date: 10/16/24		W	TRP	
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 0.5	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	97	%	A		Surr. 2 (Toluene d8)	100	%	A	
Surr. 3 (4-Bromofluorobenzene)	99	%	A		Unidentified Peaks	0		U	

Laboratory Report

REPORT DATE: 10/22/2024

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

002 Site: MW-2C		Sampled: 10/3/24		12:03		Test Date: 10/16/24		W	TRP
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	15.1	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	2.3	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	2.3	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	6.5	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	2.5	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	97	%	A		Surr. 2 (Toluene d8)	100	%	A	
Surr. 3 (4-Bromofluorobenzene)	98	%	A		Unidentified Peaks	3		U	

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

003 Site: MW-3		Sampled: 10/3/24 11:07		Test Date: 10/16/24		W	TRP		
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 0.5	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	100	%	A		Surr. 2 (Toluene d8)	100	%	A	
Surr. 3 (4-Bromofluorobenzene)	99	%	A		Unidentified Peaks	0		U	

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

004 Site: MW-5		Sampled: 10/3/24		13:02		Test Date: 10/16/24		W	TRP
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 0.5	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	99	%	A		Surr. 2 (Toluene d8)	98	%	A	
Surr. 3 (4-Bromofluorobenzene)	98	%	A		Unidentified Peaks	0		U	

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

005 Site: Duplicate		Sampled: 10/3/24		12:03		Test Date: 10/17/24		W	TRP
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	15.5	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	2.4	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	2.5	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	6.5	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	2.5	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	98	%	A		Surr. 2 (Toluene d8)	99	%	A	
Surr. 3 (4-Bromofluorobenzene)	97	%	A		Unidentified Peaks	3		U	

CLIENT: KAS, Inc
PROJECT: Brandon Landfill

WORK ORDER: 2410-33107
DATE RECEIVED: 10/03/2024

TEST METHOD: EPA 8260C

006 Site: Trip Blank		Sampled: 9/13/24 14:57		Test Date: 10/17/24		W	TRP		
Parameter	Result	Unit	Nelac	Qual	Parameter	Result	Unit	Nelac	Qual
Dichlorodifluoromethane	< 5.0	ug/L	A		Chloromethane	< 3.0	ug/L	A	
Vinyl chloride	< 0.5	ug/L	A		Bromomethane	< 0.5	ug/L	A	
Chloroethane	< 5.0	ug/L	A		Trichlorofluoromethane	< 2.0	ug/L	A	
Diethyl ether	< 5.0	ug/L	N		1,1-Dichloroethene	< 0.7	ug/L	A	
Acetone	< 10.0	ug/L	A		Carbon disulfide	< 5.0	ug/L	A	
Methylene chloride	< 5.0	ug/L	A		t-Butanol	< 20.0	ug/L	N	
Methyl-t-butyl ether (MTBE)	< 2.0	ug/L	A		trans-1,2-Dichloroethene	< 1.0	ug/L	A	
Di-isopropyl ether (DIPE)	< 2.0	ug/L	N		1,1-Dichloroethane	< 1.0	ug/L	A	
Ethyl-t-butyl ether (ETBE)	< 2.0	ug/L	N		2-Butanone	< 10.0	ug/L	A	
2,2-Dichloropropane	< 1.0	ug/L	N		cis-1,2-Dichloroethene	< 1.0	ug/L	A	
Bromochloromethane	< 0.8	ug/L	A		Chloroform	< 1.0	ug/L	A	
Tetrahydrofuran	< 10.0	ug/L	N		1,1,1-Trichloroethane	< 1.0	ug/L	A	
Carbon tetrachloride	< 0.5	ug/L	A		1,1-Dichloropropene	< 1.0	ug/L	N	
Benzene	< 0.5	ug/L	A		t-Amylmethyl ether (TAME)	< 2.0	ug/L	N	
1,2-Dichloroethane	< 0.5	ug/L	A		Trichloroethene	< 0.5	ug/L	A	
1,2-Dichloropropane	< 0.5	ug/L	A		Dibromomethane	< 2.0	ug/L	A	
Bromodichloromethane	< 0.5	ug/L	A		cis-1,3-Dichloropropene	< 1.0	ug/L	A	
4-Methyl-2-pentanone (MIBK)	< 10.0	ug/L	A		Toluene	< 1.0	ug/L	A	
trans-1,3-Dichloropropene	< 1.0	ug/L	A		1,1,2-Trichloroethane	< 1.0	ug/L	A	
Tetrachloroethene	< 0.5	ug/L	A		1,3-Dichloropropane	< 1.0	ug/L	N	
2-Hexanone	< 10.0	ug/L	A		Dibromochloromethane	< 1.0	ug/L	A	
1,2-Dibromoethane	< 2.0	ug/L	A		Chlorobenzene	< 1.0	ug/L	A	
Ethylbenzene	< 1.0	ug/L	A		1,1,1,2-Tetrachloroethane	< 2.0	ug/L	A	
Xylenes, Total	< 2.0	ug/L	A		Styrene	< 1.0	ug/L	A	
Bromoform	< 2.0	ug/L	A		Isopropylbenzene	< 1.0	ug/L	A	
1,1,2,2-Tetrachloroethane	< 2.0	ug/L	A		Bromobenzene	< 1.0	ug/L	A	
n-Propylbenzene	< 1.0	ug/L	A		1,2,3-Trichloropropane	< 2.0	ug/L	A	
2-Chlorotoluene	< 1.0	ug/L	A		1,3,5-Trimethylbenzene	< 1.0	ug/L	A	
4-Chlorotoluene	< 1.0	ug/L	A		t-Butylbenzene	< 1.0	ug/L	A	
1,2,4-Trimethylbenzene	< 1.0	ug/L	A		s-Butylbenzene	< 1.0	ug/L	A	
4-Isopropyltoluene	< 1.0	ug/L	A		1,3-Dichlorobenzene	< 1.0	ug/L	A	
1,4-Dichlorobenzene	< 1.0	ug/L	A		1,2,3-Trimethylbenzene	< 1.0	ug/L	U	
n-Butylbenzene	< 1.0	ug/L	A		1,2-Dichlorobenzene	< 1.0	ug/L	A	
1,2-Dibromo-3-Chloropropane	< 2.0	ug/L	A		1,2,4-Trichlorobenzene	< 2.0	ug/L	A	
1,3,5-Trichlorobenzene	< 2.0	ug/L	N		Hexachlorobutadiene	< 0.5	ug/L	A	
Naphthalene	< 0.5	ug/L	A		1,2,3-Trichlorobenzene	< 2.0	ug/L	A	
Surr. 1 (Dibromofluoromethane)	99	%	A		Surr. 2 (Toluene d8)	98	%	A	
Surr. 3 (4-Bromofluorobenzene)	99	%	A		Unidentified Peaks	0		U	

MW-5

Sampled Date/Time:

10/3/24 @ 3:02

Sampler:

NR

COD	1 - 40mL Vial	H2SO4 pH<2
Chloride	1 -2 oz-Plastics Anion	<6C
Arsenic, Total	1 - 16 oz Plastic Total Metal:	HNO3 pH< 2
Cadmium, Total		
Chromium, Total		
Copper, Total		
Iron, Total		
Lead, Total		
Manganese, Total		
Mercury, Total		
Nickel, Total		
Sodium, Total		
Zinc, Total		
VOC w/Oxygenates,Water 8260	2 - 40ml vials	<6C, HCl

Duplicate

Sampled Date/Time:

10/3/24 @ 2:03

Sampler:

NR

COD	1 - 40mL Vial	H2SO4 pH<2
Chloride	1 -2 oz-Plastics Anion	<6C
Arsenic, Total	1 - 16 oz Plastic Total Metal:	HNO3 pH< 2
Cadmium, Total		
Chromium, Total		
Copper, Total		
Iron, Total		
Lead, Total		
Manganese, Total		
Mercury, Total		
Nickel, Total		
Sodium, Total		
Zinc, Total		
VOC w/Oxygenates,Water 8260	2 - 40ml vials	<6C, HCl

Trip Blank

Sampled Date/Time:

10/3/24 @ 2:57pm

Sampler:

TR

VOC w/Oxygenates,Water 8260	2 - 40ml vials	<6C, HCl
-----------------------------	----------------	----------

One or more sample bottles in this project must be kept refrigerated or on ice until delivery at the laboratory.

Initial here allow Endyne to proceed with analysis if the temperature preservation requirements are not satisfied.

INITIAL

Samples were received in the lab on ice. Y / N

Relinquished by:

[Signature] 10/3/2024
Date Time

Accepted by:

[Signature]
Date Time

Relinquished by:

[Signature] NR
Date Time

Received by:

[Signature] 10/3/24 9:03
Date Time

Sites/Parameters correct as listed. Client Initials NR

Client Authorization to use Subcontract lab Client Initials NR

Sample origin: VT NH NY Other

Special reporting instructions: (PO#) _____

Requested Turnaround Time: Routine: Rush Due Date _____

Delv: 6	Temp C: 9.5	Comment:	Trmpl Ck	Lab use Only
			Log by	



160 James Brown Dr.
Williston, VT 05495
Ph 802-879-4333
Fax 802-879-7103

56 Etna Road
Lebanon, NH 03766
Ph 603-678-4891
Fax 603-678-4893

315 New York Rd.
Plattsburgh, NY 12903
Ph 518-563-1720
Fax 518-563-0052

October 24, 2024

Clare Santos
KAS Environmental
589 Avenue D
Williston, VT 05495

Project Location: Brandon, VT
Client Job Number:
Project Number: 609210052
Laboratory Work Order Number: 24J0729

Enclosed are results of analyses for samples as received by the laboratory on October 4, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Kaitlyn A. Feliciano
Project Manager

Table of Contents

Sample Summary	3
Case Narrative	4
Sample Results	6
24J0729-01	6
24J0729-02	7
24J0729-03	8
Sample Preparation Information	9
QC Data	10
Semivolatile Organic Compounds by - LC/MS-MS	10
B389890	10
Flag/Qualifier Summary	13
Internal standard Area & RT Summary	14
Certifications	20
Chain of Custody/Sample Receipt	21

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

KAS Environmental
589 Avenue D
Williston, VT 05495
ATTN: Clare Santos

REPORT DATE: 10/24/2024

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 609210052

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24J0729

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: Brandon, VT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
ERB	24J0729-01	Field Blank		SOP-454 PFAS	
MW-2C	24J0729-02	Ground Water		SOP-454 PFAS	
MW-5	24J0729-03	Ground Water		SOP-454 PFAS	

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SOP-454 PFAS**Qualifications:****PF-17**

Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.

Analyte & Samples(s) Qualified:**M2-4:2FTS**

24J0729-02[MW-2C]

M2-6:2FTS

24J0729-01[ERB], 24J0729-02[MW-2C]

M2-8:2FTS

24J0729-01[ERB]

PF-20

Quantifying ion signal to noise ratio is <10. Detection is suspect.

Analyte & Samples(s) Qualified:**Perfluorobutanoic acid (PFBA)**

24J0729-02[MW-2C]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:**D3-NMeFOSAA**

24J0729-02[MW-2C]

M2PFTA

24J0729-02[MW-2C]

M5PFPeA

24J0729-02[MW-2C]

M8FOSA

24J0729-02[MW-2C]

M8PFOA

24J0729-02[MW-2C]

MPFBA

24J0729-02[MW-2C]

V-20

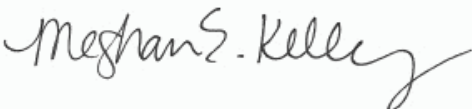
Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

Analyte & Samples(s) Qualified:**6:2 Fluorotelomersulfonic acid (6:2FTS A)**

S112744-CCV5

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Meghan E. Kelley
Reporting Specialist

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Brandon, VT

Sample Description:

Work Order: 24J0729

Date Received: 10/4/2024

Field Sample #: ERB

Sampled: 10/3/2024 11:43

Sample ID: 24J0729-01

Sample Matrix: Field Blank

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
N-EtFOSAA (NEtFOSAA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:51	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Brandon, VT

Sample Description:

Work Order: 24J0729

Date Received: 10/4/2024

Field Sample #: MW-2C

Sampled: 10/3/2024 12:03

Sample ID: 24J0729-02

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	12	1.9	ng/L	1	PF-20	SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorobutanesulfonic acid (PFBS)	4.9	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoropentanoic acid (PFPeA)	23	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorohexanoic acid (PFHxA)	41	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoroheptanesulfonic acid (PFHpS)	5.4	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
N-EtFOSAA (NEtFOSAA)	7.7	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoro-1-butanefulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorohexanesulfonic acid (PFHxS)	25	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoropentanesulfonic acid (PFPeS)	4.5	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluoroheptanoic acid (PFHpA)	25	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorooctanoic acid (PFOA)	81	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorooctanesulfonic acid (PFOS)	67	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW
Perfluorononanoic acid (PFNA)	3.7	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 14:58	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Brandon, VT

Sample Description:

Work Order: 24J0729

Date Received: 10/4/2024

Field Sample #: MW-5

Sampled: 10/3/2024 13:02

Sample ID: 24J0729-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.0	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
N-EtFOSAA (NEtFOSAA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoro-1-butanefulfonamide (FBSA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorohexanesulfonic acid (PFHxS)	2.0	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorooctanoic acid (PFOA)	2.5	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorooctanesulfonic acid (PFOS)	3.2	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L	1		SOP-454 PFAS	10/22/24	10/23/24 15:05	QNW

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Sample Extraction Data

Prep Method:SOP 454-PFAAS Analytical Method:SOP-454 PFAS

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24J0729-01 [ERB]	B389890	267	1.00	10/22/24
24J0729-02 [MW-2C]	B389890	264	1.00	10/22/24
24J0729-03 [MW-5]	B389890	261	1.00	10/22/24

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B389890 - SOP 454-PFAAS
Blank (B389890-BLK1)

Prepared: 10/22/24 Analyzed: 10/23/24

Perfluorobutanoic acid (PFBA)	ND	1.9	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	1.9	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	1.9	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	1.9	ng/L							
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	ng/L							
Perfluorodecanoic acid (PFDA)	ND	1.9	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	1.9	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	1.9	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	1.9	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	1.9	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L							
Perfluoropentanesulfonic acid (PFPeS)	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
Perfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
Perfluorononanoic acid (PFNA)	ND	1.9	ng/L							

LCS (B389890-BS1)

Prepared: 10/22/24 Analyzed: 10/23/24

Perfluorobutanoic acid (PFBA)	10.5	2.0	ng/L	9.808	107	73-129
Perfluorobutanesulfonic acid (PFBS)	10.6	2.0	ng/L	9.808	108	72-130
Perfluoropentanoic acid (PFPeA)	10.1	2.0	ng/L	9.808	103	72-129
Perfluorohexanoic acid (PFHxA)	9.83	2.0	ng/L	9.808	100	72-129
11Cl-PF3OUdS (F53B Major)	8.03	2.0	ng/L	9.808	81.8	35.6-144
9Cl-PF3ONS (F53B Minor)	8.29	2.0	ng/L	9.808	84.5	51-130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.63	2.0	ng/L	9.808	98.2	57.1-131
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.85	2.0	ng/L	9.808	80.1	47.6-152
8:2 Fluorotelomersulfonic acid (8:2FTS A)	12.4	2.0	ng/L	9.808	126	67-138
Perfluorodecanoic acid (PFDA)	9.91	2.0	ng/L	9.808	101	71-129
Perfluorododecanoic acid (PFDoA)	9.45	2.0	ng/L	9.808	96.3	72-134
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	10.4	2.0	ng/L	9.808	106	62.3-144

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B389890 - SOP 454-PFAAS										
LCS (B389890-BS1)										
				Prepared: 10/22/24 Analyzed: 10/23/24						
Perfluoroheptanesulfonic acid (PFHpS)	10.3	2.0	ng/L	9.808		105	69-134			
N-EtFOSAA (NEtFOSAA)	9.23	2.0	ng/L	9.808		94.1	61-135			
N-MeFOSAA (NMeFOSAA)	10.5	2.0	ng/L	9.808		107	65-136			
Perfluorotetradecanoic acid (PFTA)	11.4	2.0	ng/L	9.808		116	71-132			
Perfluorotridecanoic acid (PFTTrDA)	10.2	2.0	ng/L	9.808		104	65-144			
4:2 Fluorotelomersulfonic acid (4:2FTS A)	11.6	2.0	ng/L	9.808		119	63-143			
Perfluorodecanesulfonic acid (PFDS)	9.52	2.0	ng/L	9.808		97.1	53-142			
Perfluorooctanesulfonamide (FOSA)	10.2	2.0	ng/L	9.808		104	67-137			
Perfluorononanesulfonic acid (PFNS)	8.98	2.0	ng/L	9.808		91.6	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	9.12	2.0	ng/L	9.808		93.0	35-131			
Perfluoro-1-butanefulfonamide (FBSA)	10.7	2.0	ng/L	9.808		109	53.1-125			
Perfluorohexanesulfonic acid (PFHxS)	10.8	2.0	ng/L	9.808		110	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	11.9	2.0	ng/L	9.808		121	62.3-138			
Perfluoro-5-oxahexanoic acid (PFMBA)	11.2	2.0	ng/L	9.808		114	60.1-138			
6:2 Fluorotelomersulfonic acid (6:2FTS A)	11.1	2.0	ng/L	9.808		113	64-140			
Perfluoropentanesulfonic acid (PFPeS)	10.5	2.0	ng/L	9.808		107	71-127			
Perfluoroundecanoic acid (PFUnA)	9.96	2.0	ng/L	9.808		102	69-133			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	11.5	2.0	ng/L	9.808		118	58.2-144			
Perfluoroheptanoic acid (PFHpA)	9.40	2.0	ng/L	9.808		95.8	72-130			
Perfluorooctanoic acid (PFOA)	9.16	2.0	ng/L	9.808		93.4	71-133			
Perfluorooctanesulfonic acid (PFOS)	9.40	2.0	ng/L	9.808		95.9	65-140			
Perfluorononanoic acid (PFNA)	10.9	2.0	ng/L	9.808		112	69-130			
LCS Dup (B389890-BS1)										
				Prepared: 10/22/24 Analyzed: 10/23/24						
Perfluorobutanoic acid (PFBA)	10.9	1.9	ng/L	9.607		113	73-129	3.85	30	
Perfluorobutanesulfonic acid (PFBS)	11.0	1.9	ng/L	9.607		115	72-130	4.42	30	
Perfluoropentanoic acid (PFPeA)	10.8	1.9	ng/L	9.607		112	72-129	6.22	30	
Perfluorohexanoic acid (PFHxA)	10.3	1.9	ng/L	9.607		107	72-129	4.25	30	
11Cl-PF3OUdS (F53B Major)	9.18	1.9	ng/L	9.607		95.6	35.6-144	13.4	30.4	
9Cl-PF3ONS (F53B Minor)	8.60	1.9	ng/L	9.607		89.5	51-130	3.65	27.1	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	10.5	1.9	ng/L	9.607		110	57.1-131	8.88	20.6	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.92	1.9	ng/L	9.607		82.4	47.6-152	0.825	30.8	
8:2 Fluorotelomersulfonic acid (8:2FTS A)	12.7	1.9	ng/L	9.607		132	67-138	2.26	30	
Perfluorodecanoic acid (PFDA)	9.81	1.9	ng/L	9.607		102	71-129	1.02	30	
Perfluorododecanoic acid (PFDoA)	10.0	1.9	ng/L	9.607		104	72-134	5.70	30	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	10.9	1.9	ng/L	9.607		113	62.3-144	5.11	19.9	
Perfluoroheptanesulfonic acid (PFHpS)	10.7	1.9	ng/L	9.607		112	69-134	3.70	30	
N-EtFOSAA (NEtFOSAA)	10.4	1.9	ng/L	9.607		108	61-135	11.7	30	
N-MeFOSAA (NMeFOSAA)	9.76	1.9	ng/L	9.607		102	65-136	7.16	30	
Perfluorotetradecanoic acid (PFTA)	11.4	1.9	ng/L	9.607		119	71-132	0.541	30	
Perfluorotridecanoic acid (PFTTrDA)	10.7	1.9	ng/L	9.607		111	65-144	4.97	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	12.2	1.9	ng/L	9.607		127	63-143	4.40	30	
Perfluorodecanesulfonic acid (PFDS)	9.59	1.9	ng/L	9.607		99.9	53-142	0.736	30	
Perfluorooctanesulfonamide (FOSA)	10.7	1.9	ng/L	9.607		111	67-137	4.79	30	
Perfluorononanesulfonic acid (PFNS)	9.31	1.9	ng/L	9.607		96.9	69-127	3.53	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	9.66	1.9	ng/L	9.607		101	35-131	5.76	25.1	
Perfluoro-1-butanefulfonamide (FBSA)	11.0	1.9	ng/L	9.607		114	53.1-125	2.44	22.5	
Perfluorohexanesulfonic acid (PFHxS)	11.8	1.9	ng/L	9.607		123	68-131	9.27	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	12.2	1.9	ng/L	9.607		127	62.3-138	2.66	20.6	
Perfluoro-5-oxahexanoic acid (PFMBA)	11.9	1.9	ng/L	9.607		123	60.1-138	5.63	20.4	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

QUALITY CONTROL
Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch B389890 - SOP 454-PFAAS
LCS Dup (B389890-BSD1)

Prepared: 10/22/24 Analyzed: 10/23/24

6:2 Fluorotelomersulfonic acid (6:2FTS A)	10.8	1.9	ng/L	9.607		112	64-140	2.73	30	
Perfluoropentanesulfonic acid (PFPeS)	11.0	1.9	ng/L	9.607		114	71-127	4.08	30	
Perfluoroundecanoic acid (PFUnA)	10.4	1.9	ng/L	9.607		108	69-133	4.12	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	12.3	1.9	ng/L	9.607		128	58.2-144	5.99	21.9	
Perfluoroheptanoic acid (PFHpA)	10.3	1.9	ng/L	9.607		107	72-130	9.23	30	
Perfluorooctanoic acid (PFOA)	9.58	1.9	ng/L	9.607		99.7	71-133	4.51	30	
Perfluorooctanesulfonic acid (PFOS)	9.29	1.9	ng/L	9.607		96.7	65-140	1.20	30	
Perfluorononanoic acid (PFNA)	10.3	1.9	ng/L	9.607		107	69-130	6.14	30	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
PF-17	Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated analyte is not detected and bias is on the high side.
PF-20	Quantifying ion signal to noise ratio is <10. Detection is suspect.
S-29	Extracted Internal Standard is outside of control limits.
V-20	Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
ERB (24J0729-01)									
			Lab File ID: 24J0729-01.d			Analyzed: 10/23/24 14:51			
M8FOSA	512426.2	4.088817	635,375.00	4.088817	81	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	226309.7	2.738617	251,781.00	2.738617	90	50 - 150	0.0000	+/-0.50	
M2PF _{TA}	1648558	4.446417	1,787,069.00	4.446434	92	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	460473.5	3.9192	261,984.00	3.91125	176	50 - 150	0.0080	+/-0.50	*
MPF _{BA}	875715.8	1.1844	919,022.00	1.1761	95	50 - 150	0.0083	+/-0.50	
M3HF _{PO-DA}	183953.5	3.03145	160,139.00	3.023317	115	50 - 150	0.0081	+/-0.50	
M6PF _{DA}	1329959	3.911733	1,230,743.00	3.911733	108	50 - 150	0.0000	+/-0.50	
M3PF _{BS}	325681.8	2.1053	319,465.00	2.097017	102	50 - 150	0.0083	+/-0.50	
M7PF _{UnA}	1324911	4.06215	1,349,633.00	4.062167	98	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	315012.4	3.562	156,656.00	3.562	201	50 - 150	0.0000	+/-0.50	*
M5PF _{PeA}	818713.1	1.917817	820,438.00	1.909517	100	50 - 150	0.0083	+/-0.50	
M5PF _{HxA}	1660041	2.823833	1,609,682.00	2.823833	103	50 - 150	0.0000	+/-0.50	
M3PF _{HxS}	249467.3	3.344167	232,864.00	3.344183	107	50 - 150	0.0000	+/-0.50	
M4PF _{HpA}	1704315	3.321133	1,682,800.00	3.313067	101	50 - 150	0.0081	+/-0.50	
M8PF _{OA}	1532573	3.5705	1,388,062.00	3.5705	110	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	251204	3.75235	220,623.00	3.752367	114	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	1213218	3.7534	1,083,864.00	3.7534	112	50 - 150	0.0000	+/-0.50	
MPF _{DoA}	1134096	4.205033	1,611,762.00	4.20505	70	50 - 150	0.0000	+/-0.50	
D5-NEtF _{OSAA}	249613.9	4.069617	257,578.00	4.069617	97	50 - 150	0.0000	+/-0.50	
D3-NMeF _{OSAA}	203914.7	3.989783	267,656.00	3.997767	76	50 - 150	-0.0080	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-2C (24J0729-02)			Lab File ID: 24J0729-02.d			Analyzed: 10/23/24 14:58			
M8FOSA	142296.2	4.088833	635,375.00	4.088817	22	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	496681.5	2.713983	251,781.00	2.738617	197	50 - 150	-0.0246	+/-0.50	*
M2PF _{TA}	541391.5	4.446434	1,787,069.00	4.446434	30	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	309745.6	3.91125	261,984.00	3.91125	118	50 - 150	0.0000	+/-0.50	
MPF _{BA}	119833.2	1.159467	919,022.00	1.1761	13	50 - 150	-0.0166	+/-0.50	*
M3HF _{PO-DA}	98501.45	3.0152	160,139.00	3.023317	62	50 - 150	-0.0081	+/-0.50	
M6PF _{DA}	788154.8	3.911733	1,230,743.00	3.911733	64	50 - 150	0.0000	+/-0.50	
M3PF _B S	195366.9	2.080183	319,465.00	2.097017	61	50 - 150	-0.0168	+/-0.50	
M7PF _{Un} A	982106.3	4.062167	1,349,633.00	4.062167	73	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	242926.8	3.55355	156,656.00	3.562	155	50 - 150	-0.0084	+/-0.50	*
M5PF _{Pe} A	376973	1.89295	820,438.00	1.909517	46	50 - 150	-0.0166	+/-0.50	*
M5PF _{Hx} A	957432.9	2.807517	1,609,682.00	2.823833	59	50 - 150	-0.0163	+/-0.50	
M3PF _{Hx} S	160767.9	3.336117	232,864.00	3.344183	69	50 - 150	-0.0081	+/-0.50	
M4PF _{Hp} A	984648.8	3.313083	1,682,800.00	3.313067	59	50 - 150	0.0000	+/-0.50	
M8PF _{OA}	692017.6	3.5705	1,388,062.00	3.5705	50	50 - 150	0.0000	+/-0.50	
M8PF _{OS}	133895.3	3.752367	220,623.00	3.752367	61	50 - 150	0.0000	+/-0.50	
M9PF _{NA}	593940.8	3.7534	1,083,864.00	3.7534	55	50 - 150	0.0000	+/-0.50	
MPF _{Do} A	1050163	4.20505	1,611,762.00	4.20505	65	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	228164.6	4.069617	257,578.00	4.069617	89	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	133108.6	3.989783	267,656.00	3.997767	50	50 - 150	-0.0080	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
MW-5 (24J0729-03)			Lab File ID: 24J0729-03.d			Analyzed: 10/23/24 15:05			
M8FOSA	462012.5	4.088817	635,375.00	4.088817	73	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	229598	2.730417	251,781.00	2.738617	91	50 - 150	-0.0082	+/-0.50	
M2PFTA	927512	4.446434	1,787,069.00	4.446434	52	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	225142.1	3.91125	261,984.00	3.91125	86	50 - 150	0.0000	+/-0.50	
MPFBA	504333.3	1.1761	919,022.00	1.1761	55	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	134850.2	3.023317	160,139.00	3.023317	84	50 - 150	0.0000	+/-0.50	
M6PFDA	982613.2	3.911733	1,230,743.00	3.911733	80	50 - 150	0.0000	+/-0.50	
M3PFBS	270945.1	2.097017	319,465.00	2.097017	85	50 - 150	0.0000	+/-0.50	
M7PFUnA	1007572	4.062167	1,349,633.00	4.062167	75	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	227688.5	3.562	156,656.00	3.562	145	50 - 150	0.0000	+/-0.50	
M5PFPeA	654823.2	1.909517	820,438.00	1.909517	80	50 - 150	0.0000	+/-0.50	
M5PFHxA	1371651	2.815683	1,609,682.00	2.823833	85	50 - 150	-0.0082	+/-0.50	
M3PFHxS	205371.9	3.344183	232,864.00	3.344183	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	1540014	3.313067	1,682,800.00	3.313067	92	50 - 150	0.0000	+/-0.50	
M8PFOA	1331135	3.5705	1,388,062.00	3.5705	96	50 - 150	0.0000	+/-0.50	
M8PFOS	170953.1	3.752367	220,623.00	3.752367	77	50 - 150	0.0000	+/-0.50	
M9PFNA	1002601	3.7534	1,083,864.00	3.7534	93	50 - 150	0.0000	+/-0.50	
MPFDoA	1171206	4.20505	1,611,762.00	4.20505	73	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	174112.3	4.069617	257,578.00	4.069617	68	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	194621.8	3.989783	267,656.00	3.997767	73	50 - 150	-0.0080	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY

SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B389890-BLK1)			Lab File ID: B389890-BLK1.d			Analyzed: 10/23/24 13:39			
M8FOSA	397730.7	4.088817	635,375.00	4.088817	63	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	187917.3	2.738617	251,781.00	2.738617	75	50 - 150	0.0000	+/-0.50	
M2PFTA	1337191	4.446434	1,787,069.00	4.446434	75	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	156093	3.91125	261,984.00	3.91125	60	50 - 150	0.0000	+/-0.50	
MPFBA	744372.8	1.1761	919,022.00	1.1761	81	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	143316	3.023317	160,139.00	3.023317	89	50 - 150	0.0000	+/-0.50	
M6PFDA	987653.6	3.911733	1,230,743.00	3.911733	80	50 - 150	0.0000	+/-0.50	
M3PFBS	271760.2	2.1053	319,465.00	2.1053	85	50 - 150	0.0000	+/-0.50	
M7PFUnA	1007659	4.06215	1,349,633.00	4.06215	75	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	116154.5	3.562	156,656.00	3.562	74	50 - 150	0.0000	+/-0.50	
M5PFPeA	660673.2	1.917817	820,438.00	1.917817	81	50 - 150	0.0000	+/-0.50	
M5PFHxA	1296101	2.823833	1,609,682.00	2.823833	81	50 - 150	0.0000	+/-0.50	
M3PFHxS	210507.5	3.344167	232,864.00	3.344183	90	50 - 150	0.0000	+/-0.50	
M4PFHpA	1345292	3.313067	1,682,800.00	3.313067	80	50 - 150	0.0000	+/-0.50	
M8PFOA	1132177	3.5705	1,388,062.00	3.5705	82	50 - 150	0.0000	+/-0.50	
M8PFOS	188964.8	3.75235	220,623.00	3.75235	86	50 - 150	0.0000	+/-0.50	
M9PFNA	869137.4	3.7534	1,083,864.00	3.7534	80	50 - 150	0.0000	+/-0.50	
MPFDoA	1246713	4.205033	1,611,762.00	4.205033	77	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	190343	4.069617	257,578.00	4.069617	74	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	182321.2	3.989783	267,656.00	3.989783	68	50 - 150	0.0000	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B389890-BS1)			Lab File ID: B389890-BS1.d			Analyzed: 10/23/24 13:25			
M8FOSA	394562.3	4.088817	635,375.00	4.088817	62	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	209049.7	2.738617	251,781.00	2.738617	83	50 - 150	0.0000	+/-0.50	
M2PFTA	1338473	4.446434	1,787,069.00	4.446434	75	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	182136	3.91125	261,984.00	3.91125	70	50 - 150	0.0000	+/-0.50	
MPFBA	770511.7	1.1761	919,022.00	1.1761	84	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	164431.5	3.03145	160,139.00	3.023317	103	50 - 150	0.0081	+/-0.50	
M6PFDA	1039173	3.911733	1,230,743.00	3.911733	84	50 - 150	0.0000	+/-0.50	
M3PFBS	285311.4	2.1053	319,465.00	2.1053	89	50 - 150	0.0000	+/-0.50	
M7PFUnA	1118268	4.06215	1,349,633.00	4.06215	83	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	166821.7	3.562	156,656.00	3.562	106	50 - 150	0.0000	+/-0.50	
M5PFPeA	701595.4	1.917817	820,438.00	1.917817	86	50 - 150	0.0000	+/-0.50	
M5PFHxA	1371341	2.823833	1,609,682.00	2.823833	85	50 - 150	0.0000	+/-0.50	
M3PFHxS	214426.5	3.344167	232,864.00	3.344183	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	1437376	3.313067	1,682,800.00	3.313067	85	50 - 150	0.0000	+/-0.50	
M8PFOA	1216525	3.5705	1,388,062.00	3.5705	88	50 - 150	0.0000	+/-0.50	
M8PFOS	193429.9	3.75235	220,623.00	3.75235	88	50 - 150	0.0000	+/-0.50	
M9PFNA	872345.6	3.7534	1,083,864.00	3.7534	80	50 - 150	0.0000	+/-0.50	
MPFDoA	1353114	4.205033	1,611,762.00	4.205033	84	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	195644.4	4.069617	257,578.00	4.069617	76	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	201370.3	3.989783	267,656.00	3.989783	75	50 - 150	0.0000	+/-0.50	

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

INTERNAL STANDARD AREA AND RT SUMMARY
SOP-454 PFAS

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B389890-BSD1)			Lab File ID: B389890-BSD1.d		Analyzed: 10/23/24 13:32				
M8FOSA	383679.3	4.080817	635,375.00	4.088817	60	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	190645.5	2.738617	251,781.00	2.738617	76	50 - 150	0.0000	+/-0.50	
M2PFTA	1253054	4.446434	1,787,069.00	4.446434	70	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	161538.3	3.91125	261,984.00	3.91125	62	50 - 150	0.0000	+/-0.50	
MPFBA	714482.9	1.1761	919,022.00	1.1761	78	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	158419.6	3.023317	160,139.00	3.023317	99	50 - 150	0.0000	+/-0.50	
M6PFDA	948440.4	3.911733	1,230,743.00	3.911733	77	50 - 150	0.0000	+/-0.50	
M3PFBS	262807.8	2.097017	319,465.00	2.1053	82	50 - 150	-0.0083	+/-0.50	
M7PFUnA	1013255	4.062167	1,349,633.00	4.06215	75	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	159699.7	3.55355	156,656.00	3.562	102	50 - 150	-0.0084	+/-0.50	
M5PFPeA	637847.7	1.909517	820,438.00	1.917817	78	50 - 150	-0.0083	+/-0.50	
M5PFHxA	1265093	2.823833	1,609,682.00	2.823833	79	50 - 150	0.0000	+/-0.50	
M3PFHxS	192986.9	3.344183	232,864.00	3.344183	83	50 - 150	0.0000	+/-0.50	
M4PFHpA	1288828	3.313067	1,682,800.00	3.313067	77	50 - 150	0.0000	+/-0.50	
M8PFOA	1138365	3.5705	1,388,062.00	3.5705	82	50 - 150	0.0000	+/-0.50	
M8PFOS	184332.4	3.75235	220,623.00	3.75235	84	50 - 150	0.0000	+/-0.50	
M9PFNA	840957.6	3.7534	1,083,864.00	3.7534	78	50 - 150	0.0000	+/-0.50	
MPFDoA	1220211	4.205033	1,611,762.00	4.205033	76	50 - 150	0.0000	+/-0.50	
D5-NEtFOSAA	188458	4.069617	257,578.00	4.069617	73	50 - 150	0.0000	+/-0.50	
D3-NMeFOSAA	181807.6	3.989783	267,656.00	3.989783	68	50 - 150	0.0000	+/-0.50	

CERTIFICATIONS
Certified Analyses included in this Report

Analyte	Certifications
<i>SOP-454 PFAS in Water</i>	
Perfluorobutanoic acid (PFBA)	NH-P,PA,NY
Perfluorobutanesulfonic acid (PFBS)	NH-P,PA,NY
Perfluoropentanoic acid (PFPeA)	NH-P,PA,NY
Perfluorohexanoic acid (PFHxA)	NH-P,PA,NY
11Cl-PF3OUdS (F53B Major)	NH-P,PA,NY
9Cl-PF3ONS (F53B Minor)	NH-P,PA
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,PA,NY
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,PA,NY
8:2 Fluorotelomersulfonic acid (8:2FTS A)	NH-P,PA
Perfluorodecanoic acid (PFDA)	NH-P,PA,NY
Perfluorododecanoic acid (PFDoA)	NH-P,PA,NY
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	NH-P,PA,NY
Perfluoroheptanesulfonic acid (PFHpS)	NH-P,PA,NY
N-EtFOSAA (NEtFOSAA)	NH-P,PA,NY
N-MeFOSAA (NMeFOSAA)	NH-P,PA,NY
Perfluorotetradecanoic acid (PFTA)	NH-P,PA,NY
Perfluorotridecanoic acid (PFTrDA)	NH-P,PA,NY
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P,PA,NY
Perfluorodecanesulfonic acid (PFDS)	NH-P,PA
Perfluorooctanesulfonamide (FOSA)	NH-P,PA
Perfluorononanesulfonic acid (PFNS)	NH-P,PA
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P,PA
Perfluoro-1-butanesulfonamide (FBSA)	NH-P,PA
Perfluorohexanesulfonic acid (PFHxS)	NH-P,PA,NY
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P,PA,NY
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P,PA,NY
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P,PA,NY
Perfluoropentanesulfonic acid (PFPeS)	NH-P,PA,NY
Perfluoroundecanoic acid (PFUnA)	NH-P,PA,NY
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P,PA
Perfluoroheptanoic acid (PFHpA)	NH-P,PA,NY
Perfluorooctanoic acid (PFOA)	NH-P,PA,NY
Perfluorooctanesulfonic acid (PFOS)	NH-P,PA,NY
Perfluorononanoic acid (PFNA)	NH-P,PA,NY

Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
NY	New York State Department of Health	10899 NELAP	04/1/2025
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2025
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2025

2450729 KAF
 39 Spruce Street
 East Longmeadow, MA 01028
 Doc # 381 Rev 2_06262019



Phone: 413-525-2332
 Fax: 413-525-6405

Company Name: KAS, Inc.
Address: 589 Avenue D, Suite 10
Phone: 802-383-0486
Project Name: Brandon Landfill
Project Location: Brandon, VT
Project Number: 609210052
Project Manager: C. Santos

Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: Wyatt Rollins, Zoe Rappaport

Requested Turnaround Time: 7-Day 10-Day
PFAS 15-Day (std): Due Date:
Rush-Approval Required: 1-Day 3-Day
 2-Day 4-Day
Format: PDF EXCEL
Other: SOXHLET
CLP Like Data Pkg Required:
Email To: clariss@kas-consulting.com
Fax To #: NON SOXHLET

Con-Test Work Order#	Client Sample ID / Description	Date	Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE
1	ERB	10/15/2024	11:43	Grab	FB					2	
2	MW-2C	10/15/2024	12:03	Grab	GW					2	
3	MW-5	10/15/2024	13:02	Grab	GW					2	

Client Comments:

Relinquished by: (signature) Date/Time: 10/15/24 13:10
 Received by: (signature) Date/Time: 10/14/24 10:20
 Relinquished by: (signature) Date/Time: 10/14/24 17:15
 Received by: (signature) Date/Time: 10/14/24 17:15
 Relinquished by: (signature) Date/Time: 10/14/24 17:15
 Received by: (signature) Date/Time: 10/14/24 17:15
 Relinquished by: (signature) Date/Time: 10/14/24 17:15
 Received by: (signature) Date/Time: 10/14/24 17:15

ANALYSIS REQUESTED

None	Field Filtered Lab to Filter	Orthophosphate Samples Field Filtered Lab to Filter	PFAS Isotope Dilution
	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	X
	<input type="checkbox"/>	<input type="checkbox"/>	X
	<input type="checkbox"/>	<input type="checkbox"/>	X

1 Matrix Codes:
 GW = Ground Water
 WW = Waste Water
 DW = Drinking Water
 A = Air
 S = Soil
 SL = Sludge
 SOL = Solid
 O = Other (please define)
 _field blank
2 Preservation Codes:
 I = Iced
 H = HCL
 M = Methanol
 N = Nitric Acid
 S = Sulfuric Acid
 B = Sodium Bisulfate
 X = Sodium Hydroxide
 T = Sodium Thiosulfate
 O = Other (please define)
 Trizma

Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSID #

Project Entity
 Government Municipality
 Federal 21 J
 City Brownfield
 MWRA
 School
 MBTA
 WRTA
 Other
 Chromatogram
 AIHA-LAP, LLC

Preservation Code
 Courier Use Only
 Total Number Of:
 VIALS _____
 GLASS _____
 PLASTIC _____
 BACTERIA _____
 ENCORE _____

Glassware in the fridge? Y / N
 Glassware in freezer? Y / N
 Prepackaged Cooler? Y / N
 *Contest is not responsible for missing samples from prepaccek coolers

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
 H - High; M - Medium; L - Low; C - Clean; U - Unknown
Special Requirements
 MA MCP Required
 MCP Certification Form Required
 CT RCP Required
 RCP Certification Form Required
 MA State DW Required
 PWSID #
Project Entity
 Government Municipality
 Federal 21 J
 City Brownfield
 MWRA
 School
 MBTA
 WRTA
 Other
 Chromatogram
 AIHA-LAP, LLC

Comments:
 Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Chain of Custody is a legal document that must be complete and accurate and is used to determine what analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con-Test values your partnership on each project and will try to assist with missing information, but will not be held accountable.

Sample	Soils (Circle Amb/Clear)				Ambers				Plastics							VOA Vials					Other/Fill in									
					1 Liter		250ml		100ml		500mL			250mL																
	16oz Amb/Clear	8oz Amb/Clear	4oz Amb/Clear	2oz Amb/Clear	Unpreserved	HCL	Sulfuric	Sulfuric	Phosphoric	HCl	Unpreserved	Unpreserved	Sulfuric	Unpreserved	Sulfuric	Unpreserved	Trizma	Sulfuric	Nitric	NaOH	Ammonium Acetate	NaOH/Zinc	Unpreserved	HCl	MeOH	D.I. Water	Bisulfate	Col/Bact		
1																1														
2																2														
3																2														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														
13																														
14																														
15																														
16																														
17																														
18																														
19																														
20																														

DC#_Title: ENV-FRM-ELON-001 v08_Sample Receiving Checklist

Effective Date: 06/11/2024

Pace