

IMMEDIATE RESPONCE ACTION PLAN Status Report 10

Cape Cod Gateway Airport Hyannis, Massachusetts

RTN 4-26347

October 2021



IMMEDIATE RESPONSE ACTION PLAN STATUS REPORT 10 CAPE COD GATEWAY AIRPORT HYANNIS, MASSACHUSETTS RTN 4-26347

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(Not Previously Submitted to MassDEP)

1.0 INTRODUCTION

Barnstable Municipal Airport IRAP RTN 4-26347

The Horsley Witten Group, Inc. (HW) has been retained by the Cape Cod Gateway Airport (the "Airport"), formerly known as the Barnstable Municipal Airport, to develop this tenth Immediate Response Action (IRA) Plan Status Report for its property at 480 Barnstable Road, Hyannis, Massachusetts (Figure 1). HW has prepared this report in accordance with the Massachusetts Contingency Plan 310 CMR 40.0000 (MCP) on behalf of:

Ms. Katie Servis, Airport Manager Cape Cod Gateway Airport Hyannis, Massachusetts 02601 (508) 775-2020

The report describes IRA related activities conducted between April 2021 and October 2021.

2.0 SUMMARY OF IRA PLAN AND IRA MODIFICATION

An IRA was initiated in response to a Notice of Responsibility (NOR) for Release Tracking Number (RTN) 4-26347 dated November 10, 2016, issued to the Airport by the Massachusetts Department of Environmental Protection (MassDEP). The NOR requested that the Airport conduct additional field investigations to evaluate:

- The source(s) of Per- and Poly-Fluoroalkyl Substances (PFAS) including perfluorooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) previously detected in groundwater at the Airport and several adjacent properties;
- The source(s) of 1,4-dioxane, previously detected in a monitoring well downgradient of the Airport on the Maher wellfield property; and
- To identify potential impacts to public water supply wells operated by the Hyannis Water District at the Mary Dunn and Maher wellfields.

A proposed IRA plan was submitted for approval in response to the NOR. Subsequently, a meeting was held by MassDEP at the Airport that included other stakeholders including the Barnstable Department of Public Works, the Hyannis Water District and Barnstable County representatives (representing the Fire Training Academy). At the meeting, IRA plans were coordinated between the Airport and Fire Training Academy including sampling locations, type of analysis, groundwater modeling, goals, and next steps. The IRA plan served as the guide for the soil and groundwater testing conducted since November 2016 to follow up on the results of the previous analyses.

In June 2019, the MassDEP issued a Request for Modified Immediate Response Action Plan/Interim Deadline dated June 18, 2019 (the "Modified IRA Request") to the Airport. The Modified IRA Request asked that the Airport propose response actions to "reduce infiltration of precipitation through PFAS-impacted soil, such as temporarily capping the source areas; excavating and properly disposing of the PFAS-impacted soil; or some equivalent approach". The Airports response is documented in the report titled Final Immediate Response Action Plan

Modification, prepared by HW and dated December 2019 (the "IRA Modification"). The IRA Modification included details for the installation of a cap in two select areas to reduce precipitation infiltration. The two areas are identified as the Deployment Area and the Airport Rescue and Fire Fighting/Snow Removal Equipment (ARFF/SRE) Building Area. The two capped areas total approximately 94,100-square feet and represent a majority of the known PFAS in soil source areas relating to the historic application of aqueous film forming foam (AFFF) by the Airport. Areas of PFAS in soil remaining above the applicable Method 1 soil standard located outside of the caped area are indicated on Figure 2. Evaluation of these areas will be included in future response actions and/or included as part of a future risk assessment.

2.1 Background

Prior to issuance of the NOR, the Airport had conducted investigations on both 1,4-dioxane and PFAS and provided the results to MassDEP. In July 2015, HW sampled groundwater from seven groundwater monitoring wells for 1,4-dioxane. This contaminant was detected in groundwater monitoring well OW-9DD located in the Maher wellfield at a concentration of 0.926 micrograms per liter (ug/L). This concentration is above the applicable Method 1 standard of 0.30 ug/L. This groundwater monitoring well is screened from 77 to 87 feet below the ground surface.

At that time, it was thought that potential sources of 1,4-dioxane at the Airport could be related to a historic release of 1,1,1-trichloroethane (1,1,1-TCA) from an oil/water separator associated with a floor drain in the former Provincetown Boston Airlines hangar (currently leased to Cape Air) and/or from the application of deicing fluid. Given the screen depth of monitoring well OW-9DD, the 1,4-dioxane may also be from an off-Airport source.

On August 4, 2016, MassDEP issued a Request for Information (RFI) to the Airport requiring investigation of PFAS. On July 1 and 5, 2016, HW collected samples from six groundwater monitoring wells and submitted the samples for laboratory analysis of PFOS and PFOA. These compounds were detected in each of the wells tested. At monitoring wells HW-3 and HW-5, the sum of PFOS and PFOA were 0.0931 and 0.151 ug/L respectively, above the EPA health advisory limit and applicable MassDEP standard. PFOS and PFOA were also detected above the EPA health advisory limit and applicable MassDEP standard in monitoring well HW-1, located at the upgradient, western boundary of the Airport. Additional details about 1,4-dioxane and PFAS are included in the Phase II Comprehensive Site Assessment Report submitted to the MassDEP in March 2021 (the "Phase II Report").

2.2 Actions Under the IRA Plan

A summary of the IRA activities conducted between April 2021 and October 2021 include:

- Installation of soil borings and groundwater monitoring wells;
- Soil sampling for PFAS;
- Soil sampling for total organic carbon (TOC);

- Groundwater Sampling for PFAS; and
- Groundwater sampling for 1,4-dioxane.

3.0 APPLICABLE MCP STANDARDS

Pursuant to 310 CMR 40.0900, the characterization of risk of harm to health, safety, public welfare, and the environment must be evaluated at each disposal site. This characterization includes the determination of site-specific soil and groundwater categories based on site location and use, and the comparison of laboratory results to these standards (310 CMR 40.0930).

In accordance with 310 CMR 40.0933, the applicable soil category is selected based upon the frequency, intensity of use, and accessibility of the Airport by adults and children. Based on these criteria, soil at the Airport is category S-1/GW-1 and S-1/GW-3.

Groundwater located within a Current Drinking Water Source Area is considered category GW-1. The Airport is located within several zones of contribution (Zone II) for Barnstable Village, the Hyannis Water District and the Town of Yarmouth. Zone IIs are considered current drinking water sources as defined in 310 CMR 40.0006; thus, category GW-1 is applicable.

Groundwater located within 30 feet of an occupied building that has an average annual depth of less than 15 feet is categorized as GW-2. This is primarily a concern because of the possibility of vapor impacts to indoor air. The average annual depth to groundwater at the Airport is greater than 15 feet; therefore GW-2 Standards do not apply. Also, all disposal sites shall be considered a potential source of discharge to surface water, and therefore categorized as GW-3. Based on these criteria, categories GW-1 and GW-3 are applicable to the Airport.

The soil and groundwater standards applicable to the Airport for PFAS and 1,4-dioxane as described in the document titled Final PFAS – Related Changes to the MCP – 2019-12-13 prepared by the MassDEP and promulgated December 27, 2019 are as follows:

	PFAS Standa	rds		
Analyta	Soil Standa	ard (ug/kg)	Groundwate	r Standard (ug/l)
Analyte	S-1/GW-1	SW-1/GW-3	GW-1	GW-3
Pefluorodecanoic Acid (PFDA)	0.3	300	N/A	40,000
Perfluoroheptanoic Acid (PFHpA)	0.5	300	N/A	40,000
Perfluorohexanesulfonic Acid (PFHxS)	0.3	300	N/A	500
Perfluorononanoic Acid (PFNA)	0.32	300	N/A	40,000
Perfluorooctanesulfonic Acid (PFOS)	2	300	N/A	500

	PFAS Standa	rds		
Analyta	Soil Standa	ard (ug/kg)	Groundwate	r Standard (ug/l)
Analyte	S-1/GW-1	SW-1/GW-3	GW-1	GW-3
Perfluorooctanoic Acid (PFOA)	0.72	300	N/A	40,000
PFAS Sum of Six*	N/A	N/A	0.02	N/A

^{*} PFAS Sum of Six is the sum of PFDA, PFHpA, PFHxS, PFNA, PFOS, and PFOA

	1,4-	dioxane	
Soil Stan	dard (ug/kg)	Groundwate	er Standard (ug/l)
S-1/GW-1	SW-1/GW-3	GW-1	GW-3
200 ug/kg	20,000 ug/kg	0.3	50,000

4.0 HISTORIC FIELD INVESTIGATIONS

Historic field investigations conducted at the Airport since the November 2016 NOR and documented in prior status reports are summarized below:

- An initial round of three soil samples were collected on December 9, 2016. One sample
 was taken from each location where it was determined that AFFF had been used at the
 Airport. The areas included the MCI Drill Area, the Deployment Area, and the 1991 Drill
 Location. Refer to Table 1 for tabulated PFAS in soil results.
- The installation of groundwater monitoring wells at six locations in April 2017: in the vicinity of potential sources of PFAS at the ARFF/SRE Area, at the Deployment Area and at upgradient locations outside of the Airport to evaluate potential off-site sources of PFAS and 1,4-dioxane. Refer to Table 2 and 3 for tabulated groundwater results.
- Groundwater from the new wells was initially sampled for PFAS and 1,4-dioxane in April 2017. Additional groundwater samples and one surface water sample were collected for analysis of PFAS on June 20, 2017. Refer to Table 2 and 3 for tabulated groundwater results.
- A second round of soil samples were collected on June 20, 2017 adjacent to the
 ARFF/SRE Building and within the Deployment Area to begin to determine the extent of
 PFAS within the surface soils. Based on the results of these analyses, a third round of
 samples from these two locations were collected on September 26, 2017. The third
 round of sampling was designed to further delineate the extent of PFAS in soils both
 horizontally and vertically, with samples taken at the ground surface and at two and
 four feet below ground surface (BGS). Refer to Table 1 for tabulated soil results.

- One sample of AFFF concentrate was analyzed for PFAS compounds. The analysis was
 inconclusive (only 225.5 ug/l of total PFAS was detected) and it is assumed that the
 sample was not homogeneous (i.e., had separated in the foam bucket) and that the
 addition of water to the concentrated may affect how precursor PFAS analytes
 transform into various other detectable PFAS compounds. Refer to Table 4 for
 tabulated AFFF concentrate results.
- Six soil samples were analyzed for PFAS leaching potential using a synthetic precipitation leaching procedure (SPLP) test between September and October 2017. The chosen samples included four samples from the Deployment Area and two samples from runway reconstruction soils stockpiled at the Airport. Refer to Table 5 for tabulated SPLP results.
- In October 2017, 20 surface samples were collected both on and off Airport property to determine the concentration of PFAS in the area. Refer to Table 6 for soil results and Figure 3 for the sample locations.
- In October 2017, three composite soil samples were taken from piles of soil associated with the redevelopment of Runway 15/33. These piles were located on Airport property at the site of the former Mildred's Restaurant and were analyzed for PFAS compounds to evaluate if soil removed from the Airport as part of this redevelopment contained PFAS. Refer to Table 6 for tabulated soil results.
- On August 14, 2018, 24 PFAS surface soil samples were collected in proximity to the ARFF/SRE Building Area and the Deployment Area. PFAS compounds were previously detected in these areas and additional samples were collected to determine the vertical extent of PFAS impacts in soil and to refine the soil disposal site boundary at the Airport. Refer to Table 1 for soil results.
- In October 2018, three soil borings (DL11, DL14 and HW-F) were advanced in the Deployment Area. One soil boring (ARFF3) was advanced, and one surface soil sample (HW-3) was collected near the ARFF/SRE Building in order to further delineate the extent of PFAS in soils both horizontally and vertically. All soil borings were advanced using direct push methods. Refer to Table 1 for soil results.
- In October 2018, six monitoring wells were installed at the Airport. A cluster of three wells (HW-G(s), HW-G(m), and HW-G(d)) was installed at an upgradient location to evaluate potential off-site sources of PFAS. Three additional wells (HW-H, HW-I, and HW-J) were installed southeast of the Deployment Area adjacent to the East Ramp. Refer to Table 2 for groundwater results.
- In November 2018, six groundwater samples were collected to evaluate PFAS
 concentrations in the Deployment Area. Four groundwater samples and one surface
 water sample from Mary Dunn Pond were also collected for analysis of oxygen and
 hydrogen isotopes to determine the contribution of pond water from Mary Dunn Pond

to the four downgradient monitoring wells. The analysis was inconclusive in tracing the contribution of pond water in the downgradient monitoring wells. Refer to Tables 3, 7 and 8 for groundwater and surface water results.

- In December 2018, two soil samples were collected from the 1991 Drill Location to determine if PFAS detected in the area are related to background conditions. Refer to Table 1 for soil results.
- In December 2018, 12 groundwater samples were collected for analysis of PFAS and 13 groundwater samples were collected for analysis of oxygen and hydrogen isotopes to determine the contribution of pond water from Mary Dunn Pond to the 13 downgradient wells. Groundwater samples were also collected from four monitoring wells in the Maher Wellfield for analysis of 1,4-dioxane. Refer to Tables 2, 3 and 8 for groundwater water results and Table 7 for surface water results.
- In February 2019, three additional surface soil samples were collected to further delineate the soil Disposal Site boundary around the ARFF/SRE building. Refer to Table 1 for soil results.
- In May and June 2019, HW installed nine groundwater monitoring wells to delineate the vertical and horizontal extent of PFAS and 1,4-dioxane at the Airport and on adjacent hydraulically upgradient properties. Refer to Tables 2 and 3 for groundwater results.
- In June 2019, eight groundwater samples were collected from newly installed groundwater monitoring wells HW-L, HW-K, HW-I (m), HW-I (d), HW-M, HW-D(d), HW-D (dd), and HW-N for PFAS. Refer to Table 2 for groundwater results.
- In July 2019, one groundwater sample was collected from the newly installed groundwater monitoring wells HW-O for PFAS. One groundwater sample was collected from HW-L for 1,4-dioxane. Refer to Tables 2 and 3 for groundwater results.
- In July 2019, two surface water samples were collected from Upper Gate and Lewis Ponds for PFAS analysis. Refer to Table 7 for surface water results.
- In August 2019, four groundwater samples were collected from monitoring wells HW-N, HW-A(d), HW-O, and HW-1 to evaluate potential sources of 1,4-dioxane entering the Airport from unknown upgradient sources(s). One groundwater sample was also collected from groundwater monitoring well HW-E for PFAS. Refer to Tables 2 and 3 for groundwater results.
- In August 2019, soil sample DL 11 (0-1) was collected from the Deployment Area. Refer to Tables 1 for soil results.
- In August 2019, six spray water samples were collected from discharge locations on a fire truck at the Airport. The samples were collected to verify that the valve mechanism that controls the mixing of AFFF with water was working appropriately. PFAS should not

be detected in the spray water. Although the spray water is not considered drinking water, PFAS was detected in each of the six samples collected above the GW-1 standard. Refer to Tables 9 for spray water results.

- On September 27, 2019, HW collected groundwater samples from six monitoring wells located on the Airport for 1,4-dioxane analysis. Refer to Table 3 for groundwater results.
- In November 2019, the Airport replaced the valve mechanism in the fire truck to ensure that AFFF was no longer mixing with the water despite the mechanism not being engaged. In December 2019, HW resampled the six discharge locations from the fire truck at the Airport. PFAS was detected at various concentrations at each location but all were below the GW-1 standard. Refer to Tables 9 for spray water results.
- Between May 5th and May 21st, 2020 HW collected 16 groundwater samples PFAS analysis. Refer to Table 2 for groundwater results.
- Between May 5th and May 13th, 2020 HW collected groundwater samples from four monitoring wells for 1,4-dioxane analysis. Refer to Table 3 for groundwater results.
- Between September 14th and September 24th, 2020 HW and Desmond Well Drilling installed 13 monitoring wells.
- On September 17, 2020 HW collected groundwater samples from the three Maher Wells (ME-1 through ME-3) for PFAS analysis. Refer to Table 2 for groundwater results.
- Between September 14th and September 30th, 2020 HW collected 23 soil samples for PFAS analysis. Refer to Table 1 for soil results.
- Between October 1 and October 7 2020, HW collected groundwater samples from 16 monitoring wells for PFAS. Refer to Table 2 for groundwater results.
- On October 2 and 7, 2020 HW collected groundwater samples from four monitoring wells for 1,4-dioxane analysis. Refer to Table 3 for groundwater results.
- Between November 5 and 6, 2020 HW collected five groundwater samples for PFAS analysis. Refer to Table 2 for groundwater results.
- On November 17, 2020 HW collected two roof samples (rubber membrane and asphalt shingle) from the ARFF/SRE building for SPLP PFAS. The testing was completed to determine if roofing materials were a potential source of PFAS in groundwater through stormwater infiltration. PFAS was detected in each of the samples collected. Although the leachate is not considered drinking water, the concentration of the MassDEP Sum of 6 were below the Method 1 GW-1 and GW-3 standards. Refer to Table 5 for SPLP PFAS results.
- On February 18 and 19th, 2021 HW conducted hydraulic conductivity testing at three monitoring well locations. Refer to the March 2021 Phase II Report for additional details.

• Between March 17th and March 19, 2021 HW collected 21 groundwater samples from the following monitoring wells for PFAS analysis as part of the first round of post-cap semiannual monitoring:

HW-R(s)	HW-I(d)	HW-2	HW-S(m)	RB-1(m)	OW-19(d)
HW-J	HW-E	HW-3	HW-P(s)	HW-K	
HW-I(s)	HW-F	HW-300	HW-P(m)	OW-19(s)	
HW-I(m)	HW-302	HW-S(s)	RB-1(s)	OW-19(m)	

In general, analytical results in the immediate vicinity of the cap area show a substantial reduction in total PFAS. Refer to Table 10 and 11 for a comparison of pre and post analytical results for select wells located within and downgradient of the cap. It is expected that it will take several years for wells downgradient of the caps to show substantial improvement. Analytical data packages are included in Appendix A and tabulated analytical data is included on Table 2.

Soil, surface water and groundwater sampling locations are indicated on Figures 2 through 4. Tabulated analytical data are included on Tables 1 through 12. Laboratory data packages and soil boring logs associated with historic field investigations have previously been submitted to MassDEP and are available in other IRA Status Reports or the March 2021 Phase II Report.

5.0 FIELD INVESTIGATIONS CONDUCTED DURING THE CURRENT REPORTING PERIOD

Details concerning field investigations conducted between April 2021 and October 2021 are summarized below.

- Between April 5th and April 7th, 2021, HW and Desmond Well Drilling installed monitoring wells HW-U(s), HW-U(m), HW-W(m), HW-W(d) and HW-W (dd) at the locations indicated on Figure 3. Soil boring logs are included in Appendix B.
- Between April 6th and 19th, 2021, HW collected 17 soil samples for TOC analysis from the three locations indicated on Figure 2. The TOC samples were collected from various depths between ground surface and 65 feet below grade. The TOC data is included on Table 12 and is being used to determine plume migration.
- On April 19, 2021, HW sampled the recently installed monitoring wells HW-U(s), HW-U(m) HW-W(m), HW-W(d) and HW-W (dd) for further analysis of PFAS compounds in groundwater. Analytical results confirm that PFAS above the applicable Method 1 GW-1 standard is migrating onto the Airport from unknown sources(s). The data also confirms that the Airport's PFAS plume in the vicinity of the Deployment Area has not yet migrated to the Maher Well field and that PFAS from unknown source(s) are migrating towards the Maher Well field. It is estimated that the Airport's PFAS plume in the Deployment Area (which exceeds the applicable Method 1 GW-1 standard) will likely be

- detected at the HW-W cluster within the next year, or sooner. The Deployment Area plume is currently located between monitoring well cluster HW-S and HW-W.
- On September 7, 2021, HW and New England Geotech installed monitoring wells HW-X(s) and HW-X(m) at the locations indicated on Figure 4. Soil boring logs are included in Appendix B. The monitoring wells were installed adjacent to the former ARFF/SRE Building.
- On September 7, 2021, HW collected a soil sample from HW-X (m) at the location indicated on Figure 3 and submitted it for PFAS analysis. None of the MassDEP six regulated PFAS compounds were detected above the laboratory method detection limit. The laboratory report is included in Appendix A and soil boring logs are included in Appendix B. Tabulated analytical data is included on Table 1.
- On September 10, 2021, HW collected groundwater samples from HW-X (s) and HW-X(m) at the location indicated on Figure 4 and submitted them to Con-Test Analytical for PFAS and 1,4-dioxane analysis. The laboratory report is included in Appendix B and tabulated analytical data is included on Tables 2 and 3. 1,4-dioxane was not detected in ether groundwater sample above the laboratory reporting limit. PFAS was detected above the applicable Method 1 GW-1 Standard in both locations.
- Between September 1 and September 11, 2021 HW collected 26 groundwater samples from the following monitoring wells for PFAS analysis as part of the second round of post cap semiannual monitoring:

HW-R(s)	Hw-I(d)	HW-2	HW-S(m)	RB-1(m)	OW-19(d)
HW-J	HW-E	HW-3	HW-P(s)	HW-K	HW-W(m)
HW-I(s)	HW-F	HW-300	HW-P(m)	OW-19(s)	
HW-I(m)	HW-302	HW-S(s)	RB-1(s)	OW-19 (m)	
HW-W(dd)	HW-U (s)	HW-U(m)	HW-U (d)	HW-W(d)	

Analytical results are included on Table 2 and laboratory reports are include in Appendix A. In general, analytical results in the immediate vicinity of the cap area show a substantial reduction in the sum of six PFAS (35 to 96 percent) relating to the Airport's AFFF PFAS plume. Refer to Tables 10 and 11 for additional details.

The deeper plume beneath the Deployment Area (HW-I[m] and HW-I[d]) and ARFF/SRE Building (HW-P[s] and HW-P[m]) relating to non-airport related source(s) continues to generally increase in concentration. Refer to Tables 10 and 11 for a comparison of pre and post analytical results for select wells located within and downgradient of the caps. It is expected that it will take several years for wells downgradient of the cap to show substantial improvement.

 On September 10, 2021, HW collected two groundwater samples from monitoring wells HW-E and HW-J located in the Deployment Area for 1,4-dioxane. 1,4-dioxane was not detected above the laboratory reporting limit. Refer to Figure 4 for the monitoring well locations. Analytical data packages are included in Appendix A and tabulated data is included in Table 3. Groundwater data collected to date for 1,4-dioxane support that the release is entering the Airport from an unknown upgradient source in the vicinity of HW-V(m).

6.0 BI-ANNUAL CAP INSPECTION AND CAP PERFORMANCE MONITORING

HW inspected the asphalt cap on September 7, 2021, in the vicinity of the ARFF/SRE Building. The asphalt cap was free of cracks and significant depressions as indicated in the photos below.



HW inspected the geomembrane cap on September 7, 2021, in the vicinity of the Deployment Area. The sand and loam protective layer over the geomembrane cap were intact with no signs of significant erosion as indicated in the photos below.



As indicated above, HW collected 26 groundwater samples as part of the semi-annual cap inspections to determine the effectiveness of the caps. The first two rounds of post-cap monitoring are extremely promising and show a substantial decrease in PFAS concentrations in the immediate vicinity of the cap as indicated on Tables 10 and 11.

HW will continue to inspect the two cap areas every six months and collect groundwater samples from select existing monitoring wells to document the effectiveness of the caps. The next cap inspection and groundwater sampling event will take place in March 2021.

7.0 GROUNDWATER MODELING AND CONTAMINANT TRANSPORT ANALYSIS

A full evaluation of groundwater contaminant fate and transport characteristics is included in the Phase II Report submitted to MassDEP in March 2021. Additional groundwater testing and forensic techniques will be utilized to further refine the groundwater contaminant fate and transport characteristics.

8.0 UPGRADES TO AFFF TESTING PROTOCOLS AT THE AIRPORT

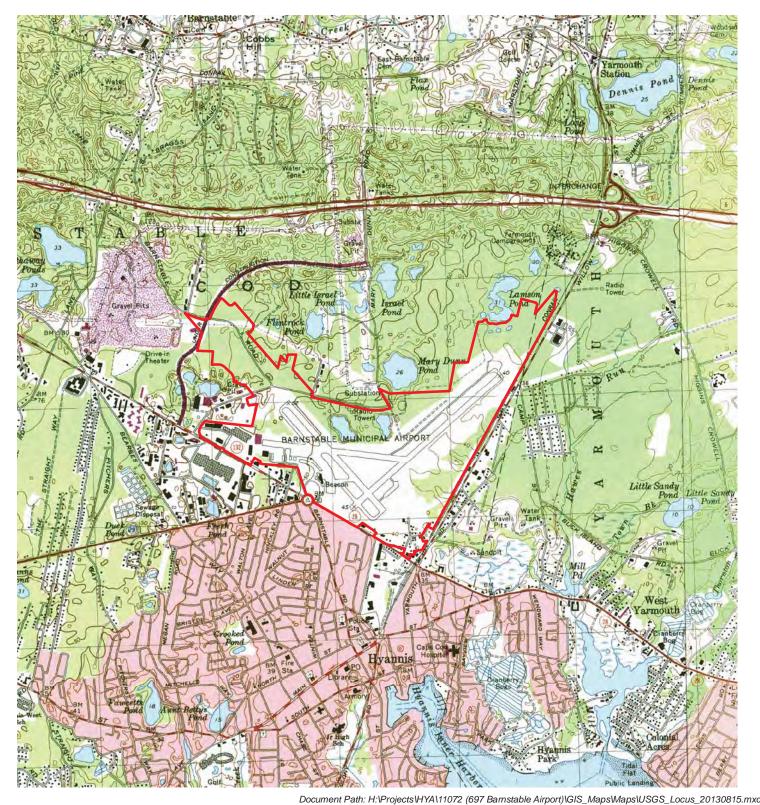
The Airport has purchased an Ecologic Foam Test System to allow the Airport to test the AFFF delivery systems on its current fire trucks without having to discharge the foam into the environment. The use of the new system meets the Federal Aviation Administration requirements for the regular testing of AFFF usage. Therefore, it is anticipated that no further foam will be deployed at the Airport except during an emergency situation when its use is required.

The Airport received a new fire fighting vehicle that deploys AFFF in September 2021 to replace an older fire fighting vehicle in the Airport's fleet. The FAA requires that AFFF be discharged from new equipment at the delivery location before the equipment enters service to verify that the vehicle systems operate normally and produce the appropriate AFFF mixture. The information from the AFFF discharge test will also be used to calibrate the AFFF consistency for future testing using the Ecologic cart so that future AFFF deployment will not be necessary. Appropriate precautions will be initiated to limit the possibility of a release of AFFF to the environment during the required testing. These precautions will include discharging AFFF into a closed vessel such as a fractank or other sealed container, the placement of polyethylene sheeting and visual monitoring by HW. The discharge container will be cleaned, and the contents disposed of by a licensed waste disposal company. Polyethylene sheeting will be placed in a 55-gallon drum for off-site disposal by a licensed waste disposal company. The testing event will be conducted inside an airport facility with floor drains connected to an oil water separator and sanitary sewer to ensure any AFFF that is not contained within the vessel or sheeting is not released into the environment. The testing event will be documented in a status report along with photographical documentation. The testing event is expected to be conducted within during the next reporting period.

9.0 PLANS FOR NEXT REPORTING PERIOD

HW will continue to conduct inspections of the two cap areas and monitor groundwater. Further testing of soil and/or groundwater is planned to refine the disposal site boundaries in the Deployment Area and ARFF Building Area. Future analytical results and boring logs will be included in future status reports.

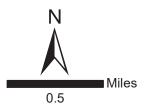
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- 4- Monitoring Well Locations





Airport Property Line

*Hyannis Topographic Quadrangle



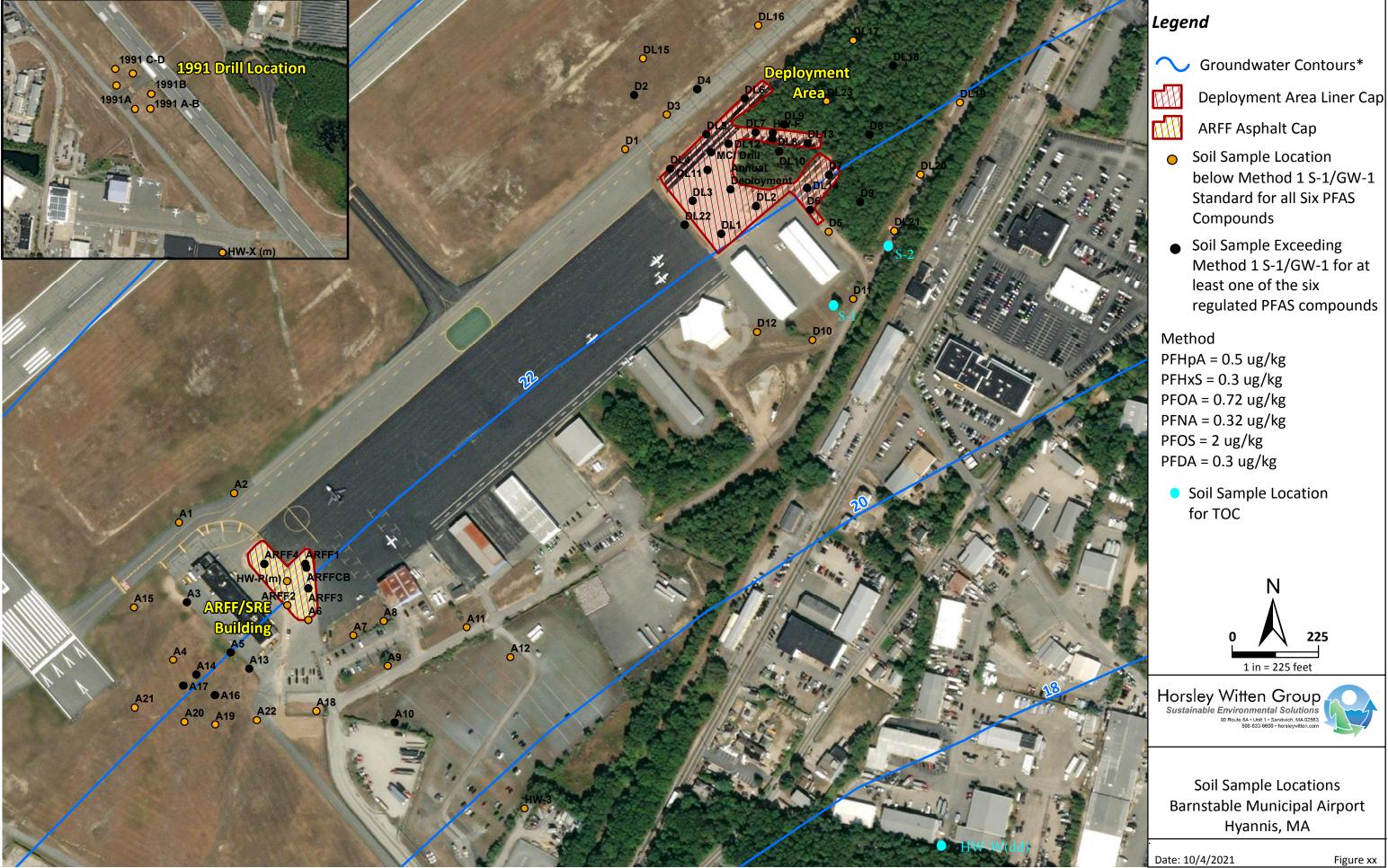


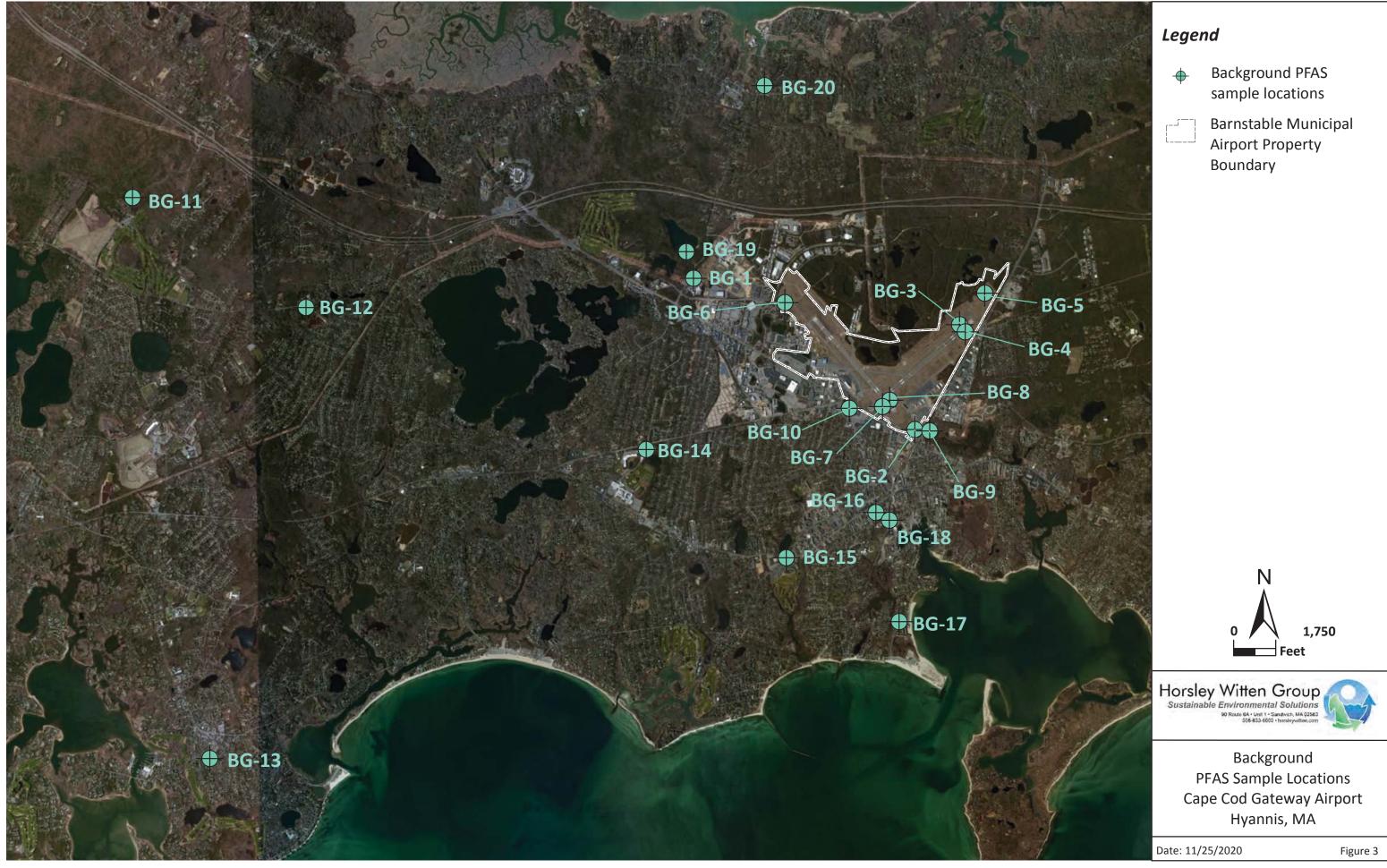


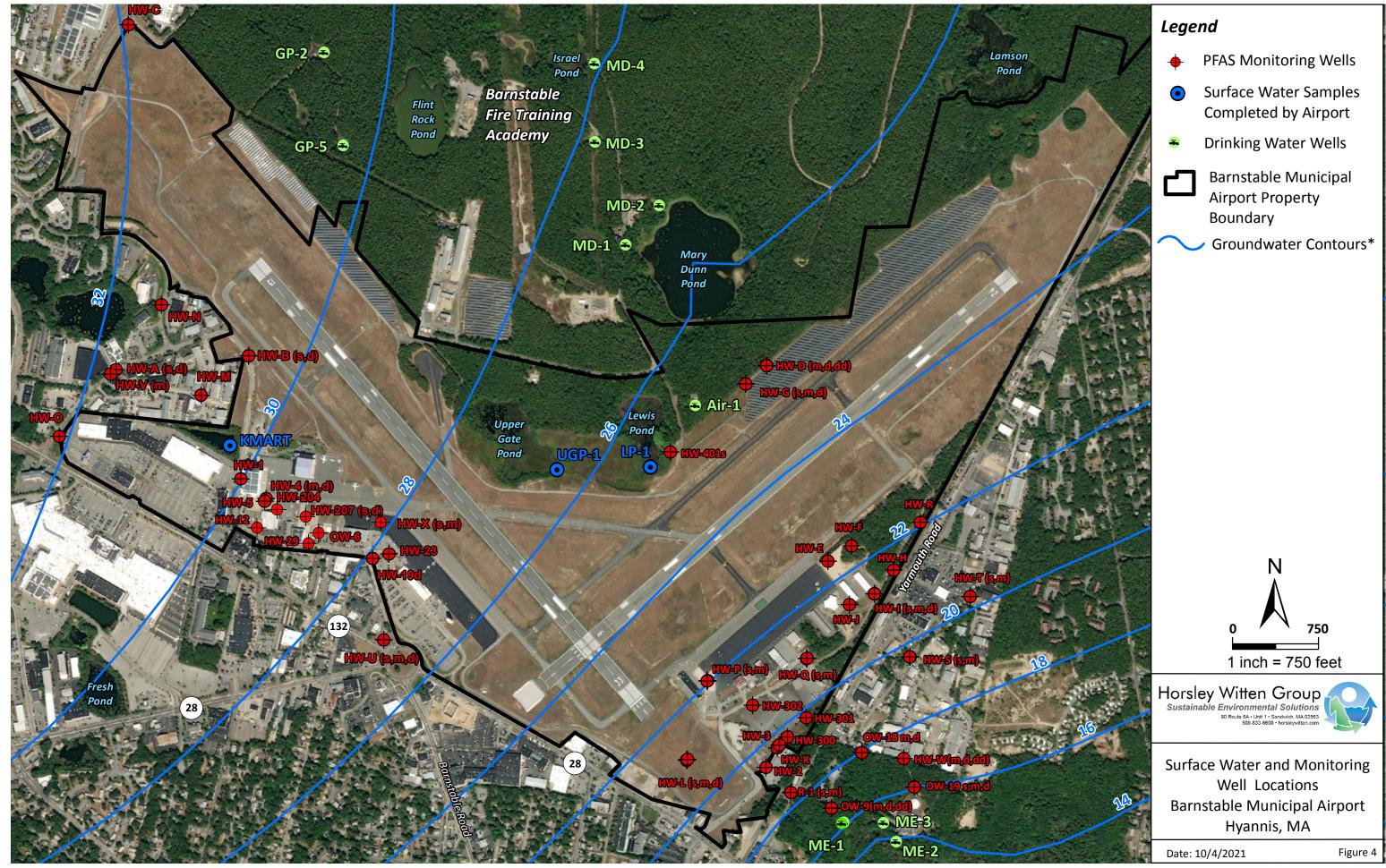
USGS Locus Cape Cod Gateway Airport Hyannis, MA

Date: 4/17/2018

Figure 1







- 1- Soil Results for PFAS
- 2- Groundwater Results for PFAS
- 3-1,4-Dioxane Results in Groundwater
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Table 1. Soil Results for PFAS Compounds ug/kg

Sample Location																					ARFF Build	ling																
Sample ID	Method	1 Standard	ARFF1 (0-1')	ARFF1 (2')	ARFF1 (4')	ARFF2 (0-1')	ARFF3 (0-1')	ARFF3 (10-12)) ARFF4 (0-1')	ARFFCB (0-1)	A1 (0-1')	A2 (0-1')	A3 (0-1')	A4 (0-1')	A5 (0-1')	A5 (2-4')	A6 (0-1')	A7 (0-1')	A8 (0-1')	A9 (0-1')	A10 (0-1')	A11 (0-1')	A12 (0-1')	A13 (0-1')	A13 (0-1')	A14 (0-1')	A14 (0-1')	A15 (0-1')	A15 (0-1')	A16 (0-1')	A17 (0-1')	A18 (0-1)	A19 (0-1)	A20 (0-1)	A20 (2-4) A21 (0	-1) A22 (0-1)		HW-P(M) [18-20] DL1(0-1')
Sample Date	S-1/GW-1	1 S-1/GW-3	6/20/2017	9/26/2017	9/26/2017			10/9/2018	9/26/2017	9/26/2017	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	9/24/2020	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	2/27/2019	9/29/2020	2/27/2019	5/13/2020	2/27/2019	5/13/2020	9/17/2020	9/17/2020	9/29/2020	9/24/2020	9/24/2020	9/24/2020 9/24/2	020 9/29/2020	9/18/2020 9/	/18/2020 6/20/2017
Perfluoroheptanoic acid (PFHpA)		300		1.8	0.66 J	0.17 U		0.32 J		0.60 J	0.19 U	0.19 U	0.38 J	0.19 U	1.1	0.089 U	0.19 U	0.19 U	0.19 U	0.19 U		0.19 U	0.19 U		0.396 J	<1.9	0.51 J	<2.0	0.21 U	0.067 J	1.07	0.076 J	0.101 J	0.09 U				0.043 U 0.30 J
Perfluorohexanesulfonic acid (PFHxS)	0.3	300	0.23 U	0.23 U	0.23 U	0.23 U	0.64 J	0.24 U	0.23 U	0.23 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.12 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	<2.0	0.058 U	<1.9	0.24 U	<2.0		0.085 J	0.058 U	0.054 U	0.059 U	0.121 U				0.058 U 0.23 U
Perfluorooctanoic acid (PFOA)		300		2.6	0.75 J	0.26 U	0.78 J	1.9	0.97 J	0.90 J	0.25 U	0.25 U	0.37 J	0.30 J	1.9	0.228 J	0.25 U	0.25 U	0.25 U	0.34 J	0.25 U	0.25 U	0.25 U	<2.0	0.67 J	<1.9	0.68 J	<2.0	0.14 U	0.088 J	0.989	0.111 J	0.129 J	0.196 J	0.147 J 0.042			0.046 J 0.26 U
Perfluorononanoic acid (PFNA)	0.32	300	2.5	5.7	1.4	0.20 J	0.91 J	3.1	2.9	0.17 U	0.22 U		0.51 J	0.22 U	0.87 J	0.148 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	<2.0	1.2	<1.9	0.54 J	<2.0		0.119 J	0.774 J	0.281 J	0.246 J	0.15 U		U 0.11 J	0.073 U	
Perfluorooctane sulfonate (PFOS)		300	4.5	2.7	1.1	0.29 J	4.4	1.1	1.0	1.1	0.26 U	0.26 U	0.29 J	0.26 U	0.26 U	0.257 U	0.26 U	0.38 J	0.26 U	0.85 J	0.26 U	0.26 U	0.26 U	<2.0	1.3	<1.9	0.32 J	<2.0	0.29 J	2.02	0.573 J	1.15	0.611 J	0.259 U	0.26 U 0.27			0.0124 U 0.40 J
Perfluorodecanoic Acid (PFDA)	0.3	300	4.4	1.2	0.62 J	0.13 U	1.6	0.28 U	0.85 J	0.13 U	0.28 U	0.28 U	0.42 J	0.28 U	1.4	0.133 U	0.28 U	0.28 U	0.28 U	0.28 U	0.33 J	0.28 U	0.28 U	<2.0	0.34 J	<1.9	0.95 J	<2.0	0.15 U	0.074 J	0.147 J	0.146 J	0.066 U	0.134 U	0.134 U 0.067	U 0.119 J	0.065 U	0.064 U 0.63 J
																			Laboratory Reported		and Sum of Six																	
Total PFAS	NA	NA	120.06	41.75	46.85	1.16	23.72	11.03	11.9	95.43	0	0	6.2	1.14	161.07	0.613	1.5	1.35	0.48	1.92	1.1	0.43	0	0.0	5.2	0	13.15	0.0	0.45	3.131	11.267	2.652	1.409	0.316	0.147 0.57	1 1.412	0.411	0.09 11.14
Sum of Six (PFHpA,PFHxS,PFOA, PFOS,	NA.	NA.	12.97	14	4.53	0.49	8.93	6.42	6.47	2.6	0	0	1.97	0.3	5.27	0.228		0.38		1.19	0.33				3.916	0	2	0	0.29	2.453	3,553	1.764	1.087	0.196	0.147 0.27	6 0.953	0.089	0.046 1.33
PFNA, and PFDA)	100	1475	12.57	14	4.33	0.49	0.93	0.42	0.47	2.0			1.57	0.3	3.27	0.228		0.36		1.15	0.33				3.910	Ů	,	0	0.23	2.433	3.333	1.704	1.007	0.190	0.147 0.27	0.933	0.003	0.040 1.33
Sample Location																					Deployment																	
Sample ID	Method	1 Standard	DL2 (0-1')	DL2 2'	DL2 4'	DL3 (0-1')	DL3 2'	DL3 4'	DL4 (0-1')	DL4 2'	DL4 4'	DL5 (0-1')	DL5 2'	DL5 4'	DL6 (0-1')	DL7 (0-1')	DL8 (2')	DL8 (4')	DL9 (0-1')	DL10 (0-1')	DL 11 (0-1')	DL 11 (0-1')	DL11 (4-6')	DL11 (10-12')	DL11 (14-16')	DL12 (0-1')	DL13 (0-1')	DL14 (0-1')	DL14 (4-6')	DL14 (10-12')	DL14 (14-16')	DL15 (0-1)	DL16 (0-1)	DL17 (0-1)	DL18 (0-1) DL19 ()-1) DL20 (0-1)	DL21 (0-1) D	L22 (2-4) DL22 (6-8)
Sample Date			6/20/2017	9/26/2017	9/26/2017	6/20/2017	9/26/2017	9/26/2017	6/20/2017	9/26/2017	9/26/2017	6/20/2017	9/26/2017	9/26/2017	6/20/2017	6/20/2017	6/20/2017	9/26/2017	6/20/2017	6/20/2017	9/26/2017	8/20/2019	10/4/2018	10/4/2018	10/4/2018	9/26/2017	9/26/2017	9/26/2017	10/4/2018	10/4/2018	10/4/2018	9/30/2020	9/30/2020	9/25/2020	9/25/2020 9/25/2	020 9/25/2020	9/25/2020 9/	/25/2020 9/25/2020
Perfluoroheptanoic acid (PFHpA)	0.5	300	1.9	1.2	0.48 J	0.84 J	0.17 U	0.17 U	0.31 J	0.17 U	0.17 U	2.5	0.40 J	0.50 J	5.0	2.5 J	2.9 J	4.7 J	0.66 J	1.3	2.1	1.8	1.3	0.31 J	0.23 J	1.2	1.6	4.9	0.36 J	0.19 U	1.4	0.175 U	0.138 J	0.167 U	0.319 J 0.145	U 0.157 U	0.158 U	0.109 J 0.481 J
Perfluorohexanesulfonic acid (PFHxS)	0.3	300	1.8	1.3	0.59 J	0.34 J	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.49 J	0.49 J	0.23 U	0.23 U	2.3 U	2.3 U	2.3 U	0.35 J	0.94 J	0.82 J	<0.9	0.24 U	0.24 U	0.24 U	0.23 U	0.23 U	0.71 J	0.24 U	0.24 U	0.74 J	0.235 U	0.057 U	0.224 U	0.159 J 0.194	U 0.21 U	0.212 U	0.057 U 0.07 J
Perfluorooctanoic acid (PFOA)	0.72	300	1.6	4.1	0.74 J	0.80 J	0.26 U	0.26 U	0.83 J	0.26 U	0.26 U	3.7	1.6	0.26 U	0.26 U	4.2 J	25	22	0.68 J	1.7	4.7	5.2	2.9	1.9	0.50 J	4.6	2.4	23	0.58 J	0.32 J	2.9	0.334 J	0.223 J	0.166 J	0.979 J 0.135	U 0.146 U	0.159 J	0.447 J 1.32
Perfluorononanoic acid (PFNA)	0.32	300	0.81 J	2.5	0.17 U	0.55 J	0.17 U	0.17 U	2.7	0.17 U	3.7	0.19 J	0.17 U	0.17 U	0.19 J	9.6 J	46	1.7 U	0.22 J	0.17 U	16	2.4	2.5	0.22 U	0.22 U	7.3	1.5	10	0.22 U	0.22 U	10	0.292 U	0.285 J	0.277 U	0.296 J 0.241	U 0.261 U	0.263 U	5.46 2.66
Perfluorooctane sulfonate (PFOS)	2	300	12	1.5	0.21 U	0.51 J	0.21 U	0.21 U	2.0	0.21 U	0.50 J	0.21 U	0.21 U	0.21 U	0.21 U	3.9 J	14	2.1 U	0.38 J	0.26 J	29	1.5	0.26 U	0.26 U	0.26 U	23	0.66 J	7.6	0.26 U	0.26 U	2.3	0.505 U	0.575 J	0.481 U	1.05 J 0.418	U 0.452 U	0.456 U	20.3 8.85
Perfluorodecanoic Acid (PFDA)	0.3	300	0.13 U	0.13 U	0.13 U	1.4	0.13 U	0.13 U	1.3	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	1.3 U	1.3 U	1.3 U	0.13 U	0.13 U	1.8	8.7	0.28 U	0.28 U	0.28 U	0.66 J	7.4	9.6	0.28 U	0.28 U	0.28 U	0.26 U	0.181 J	0.248 U	0.167 J 0.215	U 0.233 U	0.235 U	0.834 J 0.383 J
																			Laboratory Reported	PFAS (Total PFAS)	and Sum of Six																	
Total PFAS	NA	NA	24.41	12.17	2.38	84.86	9.56	13.81	9.6	0.88	5.9	11.03	2.49	0.5	18.59	404.4	1727.2	949.6	6.38	9.1	85.22	91.5	11.07	6.82	7.63	108.56	521.26	598.24	50.11	21.22	116.64	4.523	2.269	0.628	4.84 0	0	0.68	66.813 41.988
Sum of Six (PFHpA,PFHxS,PFOA, PFOS,	NA	NA.	18.11	10.6	1.81	4.44	0	0	7.14	0	4.2	6.88	2.49	0.5	5.19	20.2	87.9	26.7	2.29	4.2	54.42	19.6	6.7	2.21	0.73	36.76	13.56	55.81	0.94	0.32	17.34	0.334	1.402	0.166	2.97 0	0	0.159	27.15 13.764
PFNA, and PFDA)		1						-		-											*				****													
Sample Location	_											Deployment	Area																									
Sample ID	Method	1 Standard	DL22 (18-20	DL23 (0-1)	D1 (0-1')	D2 (0-1')	D3 (0-1')	D4 (0-1')	D5 (0-1')	D6 (0-1')	D7 (0-1')	D8 (0-1')	D9 (0-1')	D10 (0-1')	D11 (0-1')	D12 (0-1')	HW-F (10-12') HW-F (14-16')	HW-3 (0-1')	MCI Drill (0-1)	Annual Deployment (0-1)																
Sample Date	S-1/GW-1	1 S-1/GW-3	9/25/2020	9/29/2020	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	8/14/2018	10/4/2018	10/4/2018	10/9/2018	12/9/2016	12/9/2016																	
Perfluoroheptanoic acid (PFHpA)		300		0.24 J	0.19 U	0.21 J	0.19 U	0.95 J	0.22 J	0.25 J	7.8	1.0	2.7	0.19 U	0.19 U	0.19 U	0.32 J	1.3	0.19 U	8.4	20																	
Perfluorohexanesulfonic acid (PFHxS)		300		0.134 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.31 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.5 J	4 U																	
Perfluorooctanoic acid (PFOA)		300		0.471 J	0.25 U	0.33 J	0.25 U		0.25 U	0.28 J	14	2.2	3	0.25 U	0.25 U	0.25 U	0.25 U	1.4	0.25 U	23	100																	
Perfluorononanoic acid (PFNA)		300		0.176 J	0.22 U	0.67 J	0.22 U	0.98 J	0.22 U	0.22 U	10	0.59 J	0.83 J		0.22 U	0.32 J	0.22 U	0.22 U	0.22 U	14	31	_																
Perfluorooctane sulfonate (PFOS)		300	1.18	0.725 J	0.26 U	0.66 J	0.38 J	2.9	0.26 U	0.26 U	3.4	2.1	0.67 J	0.54 J	0.91 J	0.44 J	0.26 U	0.26 U	0.26 U	24	1.9 J	_																
Perfluorodecanoic Acid (PFDA)	0.3	300	0.065 U	0.266 J	0.28 U	0.28 U	0.28 U	0.40 J	0.28 U	0.66 J	8.6	1.3	1.6	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	20	69	4																
	_	,							m of Laboratory F	- charten (,									4																
Total PFAS	NA	NA	11.352	4.053	0.74	1.87	0.94	11.42	3.01	9.06	151.24	24.61	43.41	0.83	1.62	1.47	25.27	146.5	0	1,524	5,972.9																	
Sum of Six (PFHpA,PFHxS,PFOA, PFOS,	NA	NA	1.905	2.012	0	1.87	0.38	6.33	0.22	1.19	43.8	7.5	8.8	0.54	0.91	0.76	0.32	2.7	0	89.9	221.9																	
PFNA, and PFDA)	IVA	NA	1.905	2.012	U	1.67	0.36			1.19	43.0	7.3	0.0	0.54	0.91	0.76	0.32	2.7		69.9	221.9	_																
Sample Location					1991 D	rill Location			Old ARFF/SRE																													

FITIVA, dilu FI DA)									
Sample Location					1991 Dril	II Location			Old ARFF/SRE Building
Sample ID	Method 1	L Standard	1991A (0-1')	1991B (0-1')	1991C (0-1')	1991D (0-1')	1991A-B (3-4')	1991C-D (2-3')	HW-X(m) [7-9]
Sample Date	S-1/GW-1	S-1/GW-3	8/14/2018	8/14/2018	8/14/2018	8/14/2018	12/14/2018	12/14/2018	9/7/2021
Perfluoroheptanoic acid (PFHpA)	0.5	300	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.043 U
Perfluorohexanesulfonic acid (PFHxS)	0.3	300	0.24 U	0.66 J	0.24 U	0.24 U	0.24 U	0.24 U	0.058 U
Perfluorooctanoic acid (PFOA)	0.72	300	0.25 U	0.26 J	0.25 U	0.25 U	0.25 U	0.25 U	0.04 U
Perfluorononanoic acid (PFNA)	0.32	300	0.22 U	0.22 U	0.22 U	0.30 J	0.22 U	0.22 U	0.072 U
Perfluorooctane sulfonate (PFOS)	2	300	0.49 J	1.1	0.55 J	0.36 J	0.30 J	0.42 J	0.124 U
Perfluorodecanoic Acid (PFDA)	0.3	300	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.064 U
		Sum of	Laboratory Rep	orted PFAS (To	otal PFAS) and Sun	n of Six			
Total PFAS	NA	NA	0.49	3.18	0.55	0.66	0.3	0.42	0.139
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	NA	NA	0.49	2.02	0.55	0.66	0.3	0.42	0.124 U

Notes:

< = Not detected by the laboratory above the reporting limit. Reporting limit shown.

J = Estimated concentration between the method detection limit and reporting limit.

Results in ug/Rg, micrograms per Bildgram.

U= Not detected by the Laboratory above the method detection limit. Method detection limit shown.

Bold results above the proposed Method 15-1/GW-1 standard.

Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U or <).

Sum of six includes estimated values and does not include non-detects (U or <).

Table 2. Groundwater Results for PFAS Compounds ug/L

Table 2. Groundwater Results for PFAS Compounds u	ug/L		
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Sample Location			
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Area | | |
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 | ad/Iyannough | Road Area | | | | | | | | | |
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 | Al | RFF Building A | rea | | | | | | | | |
| Sample ID | HW | 1 | V-1 | HW-1
 | H\W-AN | HW/ S | , ри | V-5 | HW-5
 | HW-22 | H/M/_22 | HW.10
 | D HW 1 | 19D µu | N-X(s) | |
 | W-A(S) | N-R(S) | W-B(S) | HW-R(D)
 | HW-C | HW-M | HW-N | HW-O
 | HW-Life) | HW-11/c) | HW-II(m) | HW-LI(m) | HW-U(4)
 | HW-U(4) | HW-V(m) | HW-1 /c) | HW-L (m)
 | HW-L (4) | HW-L(d) | HW-P (c) | HW-D (c) | HW-D (c) | HW-D (m) | HW/-P (m) | HW-P (m) | HM-U (c) | HW-O (s) | HW-O (m) |
| Sample ID Sample Date | 7/1/20 | 116 6/20 | 2017 11 | 1/1/2018
 | 4/5/201 | 7 7/1/20 | 16 4/7/ | 2017 1 | 11/1/2018
 | 6/20/2017 | 11/1/2018 | 8 6/20/20
 | 017 11/7/2 | 2018 9/10 | 0/2021 9/ | 10/2021 4 | /7/2017
 | 7/2017 4/3 | 7/2017 10/2 | 26/2018 10 | 0/26/2018
 | 4/7/2017 | 6/24/2019 | 6/24/2019 | 7/2/2019
 | 4/19/2021 | 9/5/2021 | 4/19/2021 | 9/5/2021 | 10/2/2020
 | 9/5/2021 | 10/2/2020 | 10/7/2020 | 10/7/2020
 | 6/19/2019 | 10/7/2020 | 10/1/2020 | 3/18/2021 | 9/8/2021 | 10/1/2020 | 3/18/2021 | 9/8/2021 | 10/1/2020 | 11/6/2020 | 10/1/2020 |
| Sample Date
TOC Elevation | 51.5 | 1 5: | .51 | 51.51
 | 54.02 | 54.98 | 3 54 | .98 | 54.98
 | 50.65 | 50.65 | 49.10
 | 49.1 | 10 | NA S | NA NA | 41.58
 | 55.34 5 | 51.84 5 | 51.84 | 51.95
 | 69.25 | 53.69 | 49.49 | 43.46
 | NA NA | NA | NA NA | NA NA | 48.80
 | 48.80 | 53.83 | 39.07 | 38.98
 | 39.15 | 39.15 | 40.51 | 40.51 | 40.51 | 40.64 | 40.64 | 40.64 | 37.89 | 37.89 | 37.90 |
| Depth to Groundwater | | | |
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| Groundwater Elevation | | | |
 | 27.82 | | | |
 | 27.95 | |
 | 26.9 | | | NA |
 | 30.72 2 | 29.58 3 | 30.25 | 30.29
 | 30.75 | 33.37 | 34.01 | 39.84
 | | NA | | NA | 24.14
 | 23.56 | 30.93 | 17.11 | 17.10
 | 19.75 | 16.93 | 17.82 | 18.42 | | 17.84 | | | 16.44 | | |
| Total Well Depth | 30.8 | | |
 | 32.32 | | | | 27.80
 | 28.11 | 28.11 | 41.30
 | 41.3 | 30 2: | 19.24 | 36.82 | 23.60
 | 32.00 3 | 30.23 | 30.23 | 57.20
 | 42.15 | 26.92 | 22.33 | 14.10
 | 28.83 | 28.83 | 38.93 | 38.93 | 62.30
 | 62.30 | 36.15 | 27.33 | 37.33
 | 70.55 | 70.55 | 27.60 | 27.60 | 27.60 | 38.30 | 38.30 | | 26.60 | 26.60 | 36.79 |
| Perfluoroheptanoic acid (PFHpA) | 0.01 | 0.0 | 142 J (| 0.013 J
 | 0.007 J
0.02 | 0.004 | 1 0.00 | 084 J | 0.0074 U
 | 0.0045J | 0.0098 J | 0.0052
 | 2 J 0.008 | 80 J 0. | .0061 (| 0.0034 | 0.0043 J
 | .0048 J C | 0.049 0.
0.044 0 |).012 J (| 0.0074 U
 | 0.0033 U | 0.007 | 0.0034 | < 0.002
 | 0.002 J | 0.004
0.0034 | 0.0018 J | 0.0049 | 0.01
 | 0.01 | 0.0033 | 0.00053 U | 0.0064
 | 0.0078 | 0.0065 | 0.026 | | 0.004 | | 0.017 | 0.016 | 0.0018 J | 0.0021 | 0.00053 U |
| Perfluorohexanesulfonic acid (PFHxS) | 0.01 | | |
 | | | | | 0.0056 U
 | 0.021 | 0.023 | 0.046
 | 0.04 | | | | 0.011 J
 | .0079 J | 0.044 0 | 0.047 | 0.0056 U
 | 0.0034 U | 0.016 | 0.033 | 0.0043
 | 0.01 | 0.0034 | 0.0043 | 0.011 | 0.018
 | 0.022 | | 0.0013 | | | | | | | | |
 | 0.033 | 0.015 | 0.0018 | 0.00074 J | | | 0.0015 J | 0.0013 J | 0.013 | 0.0087 | 0.0019 |
| Perfluorononanoic acid (PFNA) | | | |
 | 0.0046 L | | | 146 U | 0.0088 J
 | 0.0038 U | 0.0087 U | 0.0065
 | 5J 0.008 | 37 U 0.0 | 10049 J | 0.002 | .0046 U
 | .0046 U 0.0 | 0.000 0.00 | 0087 U (| 0.0087 U
 | 0.0046 U | <0.002 | <0.002 | <0.002
 | 0.0013 J | 0.0017 J | 0.00083 J | 0.0011 J | 0.0016
 | 0.005 | 0.0017 | 0.00063 U | 0.0025
 | 0.0033 | | | 0.002 | 0.0013 J | 0.0011 | | | 0.00063 U | | 0.00075 |
| Perfluorooctanoic acid (PFOA) | | | |
 | | 0.031 | 1 0.0 | 20 J | 0.011 J
 | 0.0046 U | 0.011 J | 0.017
 | J 0.01 | .4 J 0. | 0.013 | 0.0062 | 1.0046 U
 | .0026 U 0. | 0094 J 0. | 0.020 J | 0.012 J
 | 0.0026 U | 0.027 | 0.0088 | 0.0039
 | 0.0075 | 0.0047 | 0.0055 | 0.0094 | 0.01
 | 0.013 | 0.0063 | 0.00071 U | 0.01
 | 0.025 | 0.018 | | | | | 0.0096 | | | 0.0062 | |
| Perfluorooctane sulfonate (PFOS) | | | |
 | 0.043 | | | 052 | 0.12
 | 0.0079 J | 0.015 J | 0.061
 | 1 0.06 | 59 0 | 0.068 | 0.034 | 0.012 J
 | .0026 U C | 0.026 0. | 0.019 J | 0.010 J
 | 0.0026 U | 0.0074 | 0.004 | 0.017
 | 0.06 | 0.029 | 0.0093 | 0.027 | 0.023
 | 0.051 | 0.0059 | 0.0014 | 0.07
 | 0.049 | 0.039 | 0.00097 | | | | | | | 0.0075 | |
| Perfluorodecanoic Acid (PFDA)
6:2 Fluorotelomer sulfonate (6:2 FTS) | | | |
 | 0.0040 L | | 0.00 | 1400 | 0.0061 U
 | 0.0040 U | 0.0061 0 | 0.0040
 | 0.006 | 51 U U.U. | 0050 0 0 | 0.0042 (| 1.0040 0
 | .0040 U 0.0 | 0.040 U 0.0 | 0061 U U | 0.0061 U
 | 0.0040 0 | <0.002 | <0.002 | 0.0021
 | 0.00064 J | 0.0011 J | 0.00038 U | 0.0010 | 0.00062 U
 | 0.0025 0 | 0.00062 U | 0.00062 U | 0.00062 0
 | <0.002 | 0.0019
0.00078 | 0.00085 | | | | | | | 0.00062 U | |
| 6.2 Fluorotelomer Sullonate (6.2 F15) | NA. | 0.0 | 32 0 0 | J.0066 U
 | 0.0038 | NA. | 0.00 | J3/ J | U.0066 U
 | 0.0032 0 | 0.0066 0 | 0.0032
 | U 0.006 | 56 U U. | .002 1 0.0 | UUU35 U | U.UU4 J
 | .0032 0 0.0 | 0.032 0 0.0 | 0066 U U | 6.0066 U
 | U.UU34 J | 4 DEAC (T-1) | -1 DEAC) | d Sum of Six
 | 0.0011 0 | 0.00034 0 | 0.0011 0 | 0.00075 | 0.0012
 | 0.04 | 0.00039 0 | 0.00039 0 | 0.022
 | 0.0021 | 0.00078 | 0.011 | 0.0034 | 0.0014 J | 0.00092 | 0.0011 0 | 0.00036 U | 0.00039 0 | 0.00039 U | 0.00039 0 |
| Total PEAS | 0.07 | 8 04 | 247 | 0.15
 | 0.1162 | 0.166 | 1 3.0 | 021 | 0.1507
 | 0.0745 | 0.0858 | 0.1758
 | 8 0.1 | 6 01 | 18221 0 | 10025 | 0.0313
 | 0.0779 0 | .4561 0 | | 0.0465
 | 0.0034 | | 0.0727 |
 | 0.09704 | 0.06596 | 0.03622 | 0.0839 | 0.0889
 | 0.1775 | 0.0543 | 0.0027 | 0.18375
 | 0.1823 | 0.12348 | 0.2478 | 0.06294 | 0.05055 | 0.02967 | 0.17311 | 0.15362 | 0.0307 | 0.0346 | 0.00944 |
| Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and | 0.07 | | | 0.09
 | 0.081 | | | | 0.1398
 | 0.0334 | 0.0588 | 0.1357
 | | | | |
 | | | | 0.022
 | <0.0046 | 0.0574 | 0.0492 | 0.0273
 | 0.08144 | 0.0439 | 0.02173 | 0.0534 | 0.0588
 | 0.0987 | 0.0204 | 0.0027 | 0.1119
 | 0.1181 | 0.0826 | 0.04412 | 0.01453 | 0.00756 | | | 0.0402 | 0.0238 | | 0.0085 |
| PFDA) | 0.07 | 8 0.: | 369 | 0.09
 | 0.081 | 0.166 | 1 0.0 | 984 | 0.1398
 | 0.0334 | 0.0588 | 0.1357
 | / 0.1: | 36 0.3 | 13459 | 0.0519 | 0.02/3
 | J.0127 0 | .1284 0 | 0.098 | 0.022
 | <0.0046 | 0.0574 | 0.0492 | 0.02/3
 | 0.08144 | 0.0439 | 0.021/3 | 0.0534 | 0.0588
 | 0.0987 | 0.0204 | 0.0027 | 0.1119
 | 0.1181 | 0.0826 | 0.04412 | 0.01453 | 0.00756 | 0.00785 | 0.0376 | 0.0402 | 0.0238 | 0.0245 | 0.0085 |
| Sample Location | | | |
 | | | | |
 | | |
 | | | | |
 | Deplo | yment Area | |
 | | | |
 | | | | |
 | | | |
 | Yarmouth Road | | | | | | | | | | |
| Sample ID
Sample Date | HW-LI | (s) HW | -I (s) F | HW-I (s)
 | HW-I (s) | HW-I (| m) HW- | I (m) I | HW-I (m)
 | HW-I (m) | HW-I (d) | HW-I (d
 | d) HW-I | (d) HW | V-I (d) | HW-J | HW-J
 | HW-J F | HW-E H | HW-E | HW-E
 | HW-E | HW-E | HW-E | HW-F
 | HW-F | HW-F | HW-F | HW-F | HW-H
 | HW-H | HW-R(s) | HW-R(s) | HW-R(s)
 | HW-S (s) | HW-S (s) | HW-S (s) | HW-S (m) | HW-S (m) | HW-S (m) | HW-T (s) | HW-T (m) | RB-1 (s) | RB-1 (s) | RB-1 (s) |
| Sample Date | 11/7/2 | 018 5/8 | 2020 3/ | /17/2021
 | 9/8/202 | 6/24/20 | 019 5/8/ | 2020 3 | 3/17/2021
 | 9/8/2021 | 6/24/2019 | 5/8/202
 | 20 3/17/2 | 2021 9/1: | 1/2021 11 | 1/7/2018 3, | 17/2021 9
 | 10/2021 4/5 | 5/2017 11/ | /7/2018 8 | 8/19/2019
 | 5/5/2020 | 3/17/2021 | 9/8/2021 | 4/5/2017
 | 11/7/2018 | 5/5/2020 | 3/17/2021 | 9/8/2021 | 11/7/2018
 | 5/8/2020 | 10/1/2020 | 3/17/2021 | 9/8/2021
 | 10/1/2020 | 3/18/2021 | 9/3/2021 | 10/1/2020 | 3/18/2021 | 9/3/2021 | 10/1/2020 | 10/1/2020 | 11/5/2020 | 3/18/2021
NA
16.91 | 9/5/2021 |
| TOC Elevation | 36.0 | 8 36 | .08 | 36.08
 | 36.08 | 36.27 | 36 | .27 | 36.27
 | 36.27 | 36.02 | 36.02
 | 36.0 | 02 30 | 6.02 | 37.10 | 37.10
 | 37.10 3 | 38.45 3 | 38.45 | 38.45
 | 38.45 | 38.45 | 38.45 | 36.32
 | 36.32 | 36.32 | 36.32 | 36.32 | 38.47
 | 38.47 | 35.72 | 35.72 | 35.72
 | 31.60 | 31.60 | 31.60 | 31.59 | 31.59 | 31.59 | 28.97 | 29.11 | NA | NA NA | NA |
| Depth to Groundwater | 18.3 | 5 15 | .39 | 18.42
 | 19.94 | 16.33 | 3 15 | .61 | 18.66
 | 20.17 | 16.20 | 15.49
 | 18.5 | 52 20 | 0.04 | 19.18 | 19.34
 | 20.60 1 | 19.05 1 | 19.38 | 17.82
 | 16.16 | 23.35 | 25.02 | 19.60
 | 20.08 | 16.82 | 20.01 | 21.72 | 20.39
 | 17.37 | 18.33 | 17.37 | 19.00
 | 16.88 | 16.29 | 17.30 | 17.01 | 16.35 | 17.37 | 13.41 | 13.58 | 17.87 | 16.91 | 18.64 |
| Groundwater Elevation | 17.7 | 3 20 | .69 | 17.66
 | 16.14 | 19.94 | 1 20 | .66 | 17.61
 | 16.10 | 19.82 | 20.53
 | 17.5 | 50 1 | .5.98 | 17.92 | 17.76
 | 16.50 | 19.40 1 | 19.07 | 20.63
 | 22.29 | 15.10 | 13.43 | 16.72
 | 16.24 | 19.50 | 16.31 | 14.60 | 18.08
 | 21.10 | 17.39 | 18.35 | 16.72
 | 14.72 | 15.31 | 14.30 | 14.58 | 15.24 | 14.22 | 15.56 | 15.53 | NA | NA NA | NA |
| Total Well Depth | | | |
 | | | 34 | |
 | | 41.67 |
 | 41.6 | | | |
 | | 26.22 2 | |
 | | | |
 | | 26.89 | | 26.89 |
 | 27.09 | 23.67 | |
 | 22.10 | | | | 32.04 | | | | | 27.80 | 27.80 |
| Perfluoroheptanoic acid (PFHpA) | | | |
 | 0.097 | | | |
 | 0.0014 J | |
 | | | .0083 | 0.025 | 0.044
 | 0.02 | 0.15 0.0 | 0074 U | 0.0053
 | 0.044 | 0.014 | 0.0018 J | 0.34
 | 0.0074 U | 0.23 | 0.39 | 0.0051 | 0.077
 | 0.28 | 0.021 | 0.005 | 0.021
 | 0.11 | 0.14 | 0.11 | | 0.0011 J | | | | 0.0042 | 0.0054 | 0.0077 |
| Perfluorohexanesulfonic acid (PFHxS) | 0.18 | | | 0.021
 | 0.036 | 0.019 | 0.0 | | 0.0052
 | 0.0078 | 0.057 | 0.018
 | | | | .0056 U | 0.088
 | 0.01 | 0.042 0.0 | 0056 U | 0.0021
 | 0.011 | 0.0015 J | 0.00088 J | 0.019J
 | 0.0056 U | 0.005 | 0.012 U | 0.00037 U | 0.0056 U
 | 0.0031 | 0.02 | 0.01 | 0.0046
 | 0.055 | 0.083
0.024
0.078
0.03 | 0.064 | 0.0064 | 0.0073 | 0.0053 | 0.17 | 0.019 | 0.0084 | | 0.0051 |
| Perfluorononanoic acid (PFNA) | 0.16 | | 182 | 0.065
 | 0.033 | <0.00 | 2 0.00 | | 0.00048 U
 | | <0.002 |
 | 3 U 0.000 | 75 J 0.0 | 10084 J | 0.028 | 0.035 J
 | 0.015 0. | 0087 J 0.0 | 0087 U | <0.002
 | 0.0052 | 0.00048 U | 0.00037 U | 0.0046 U
 | 0.0087 U | 0.00081 | 0.0097 U | 0.00037 U | 0.0087 U
 | 0.00063 U | 0.0031 | 0.001 J | 0.00034 U
 | 0.1 | 0.024 | 0.1 | 0.00063 U | | 0.00055 J | 0.00074 | 0.0032 | 0.0047 | 0.0025 | 0.0026 |
| Perfluorooctanoic acid (PFOA) | 0.26 | 5 0 | 29 | 0.05
 | 0.063 | 0.006 | 1 0.0 | 018 | 0.0014 J
 | 0.0016 J | 0.0047 | 0.0028
 | 8 0.00 | 143 0.1 | .0053 | 0.026 | 0.061
 | 0.0091 (| 0.053 0.0 | 0033 U | 0.0047
 | 0.027 | 0.00095 J | 0.00094 J | 0.075
 | 0.0033 U | 0.02 | 0.052 | 0.00074 U | 0.0050 J
 | 0.002 | 0.014 | 0.004 | 0.004
 | 0.062 | 0.078 | 0.13 | 0.0013 | 0.0018 J | 0.0014 J | 0.0067 | 0.011 | 0.007 | 0.0087 | 0.0093
0.01 |
| Perfluorooctane sulfonate (PFOS) | 0.06 | 6 0 | 04 | 0.028
 | 0.02 | 0.014 | 1 0.0 | 014 | 0.013
 | 0.016 | 0.012 | 0.02
 | 0.03 | 38 0. | 0.039 | 0.13 | 0.25
 | 0.08 | 0.047 0.0 | 0060 U | <0.002
 | 0.0037 | 0.00082 J | 0.00064 U | 0.0026 U
 | 0.0060 U | 0.00086 | 0.0076 U | 0.00065 U | 0.0060 U
 | 0.00068 U | 0.016 | 0.0023 | 0.0053
 | 0.1 | 0.03 | 0.048 | 0.0058 | 0.006 | 0.0094 | 0.21 | 0.025 | 0.038 | 0.04 | 0.01 |
| Perfluorodecanoic Acid (PFDA) | | | |
 | | | | |
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 | | | | |
 | | | |
 | | | | | | | | | | 0.00038 U | |
| 6:2 Fluorotelomer sulfonate (6:2 FTS) | - 11 | | 3 | 1.7
 | 2.1 | 0.002 | U 0.000 | 039 U | 0.0011 U
 | 0.00037 U | <0.002 | 0.0016
 | 6 0.001 | 11 U 0.0 | 10054 J | 0.68 | 0.44
 | 0.13 | 2 0.0 | |
 | | | | d Sum of Six
 | | 1.5 | 4.8 | 0.0049 | 1.5
 | 0.13 | 0.037 | 0.0048 | 0.003
 | 3.7 | 3.1 | 5.2 | 0.0065 | 0.0067 | 0.0036 | 0.00039 U | 0.00039 U | 0.00039 U | 0.0011 U | 0.00034 U |
| Total PFAS | 13.34 | 16 15. | 383 | 2.082
 | 2.73304 | 0.071 | 8 0.03 | 3308 | 0.02516
 | 0.03254 | 0.1367 | 0.0898
 | 35 0.155 | 585 0.1 | 16687 | 1.074 | 1.217
 | 0.511 3 | .2257 | |
 | | | |
 | | 2.65637 | 8.422 | 0.159 | 4.452
 | 1.26666 | 0.2171 | 0.04878 | 0.2549
 | 4.8958 | 4.3105 | 6.1418 | 0.02471 | 0.03263 | 0.02873 | 0.44114 | 0.3254 | 0.08008 | 0.1175 | 0.06755 |
| Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and | 0.86 | | | 0.196
 | 0.249 | | | | 0.02046
 | 0.02726 | |
 | | | | |
 | | | | 0.0121
 | 0.0909 | 0.01727 | 0.00362 | 0.434
 | 0.0087 U | 0.25667 | 0.442 | 0.0051 | 0.082
 | 0.2851 | 0.0741 | 0.0223 | 0.0349
 | 0.427 | 0.355 | 0.452 | 0.01446 | | | | | | | 0.0347 |
| PFDA) | | | |
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 | | | | | | | | | | | |
| Sample Location | | Yarmo | |
 | | | | |
 | Solar Field | |
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 | | | |
 | | | |
 | amship Parkin | | | |
 | | | |
 | | | | | | | Maher Wells | | 1 | | |
| Sample ID | RB-1 (i | m) RB- | . (m) R | RB-1 (m)
 | HW-D (m |) HW-D (| m) HW- | D (d) I | HW-D (d)
 | HW-D (dd) | HW-D (dd) |) HW-G(5
 | S) HW-G | G(M) HW | V-G(D) | HW-2 | HW-2
 | HW-2 F | HW-3 H | HW-3 | HW-3
 | HW-3 | HW-3 | HW-3 | HW-300
 | HW-300 | HW-300 | HW-301 | HW-302 | HW-302
 | HW-302 | HW-302 | HW-K | HW-K
 | HW-K | HW-K | OW-9S | OW-9S | OW-9S | OW-9M | OW-9M | OW-9D | OW-9D | OW-9D | OW-9DD |
| Sample ID
Sample Date | 11/5/2 | m) RB- | (m) R | /5/2021
 | 4/7/2013 | 7 5/13/20 | 020 6/24 | /2019 5 | 5/13/2020
 | HW-D (dd)
6/24/2019 |) HW-D (dd)
5/13/2020 | 12/3/20
 | 12/3/2 | 2018 12/3 | 3/2018 7/ | /1/2016 5 | /5/2020 9
 | /1/2021 7/3 | 1/2016 4/5 | 5/2017 10 | .0/26/2018
 | 5/5/2020 | 3/17/2021 | 9/1/2021 | HW-300
7/1/2016
 | HW-300
3/17/2021 | HW-300
9/2/2021 | 7/1/2016 | 7/1/2016 | 12/3/2018
 | 3/17/2021 | 9/1/2021 | 6/19/2019 | 5/21/2020
 | 3/18/2021 | 9/2/2021 | 7/5/2016 | 12/3/2018 | 5/8/2020 | 12/3/2018 | OW-9M
5/8/2020 | 7/5/2016 | 12/3/2018 | 5/5/2020 | 4/11/2017 |
| Sample ID
Sample Date
TOC Elevation | 11/5/2 | m) RB-
020 3/18 | (m) R
/2021 9, | /5/2021
NA
 | 4/7/201
45.20 | 7 5/13/20 | 020 6/24 | /2019 5
.08 | 5/13/2020
45.08
 | HW-D (dd)
6/24/2019
45.05 | HW-D (dd)
5/13/2020
45.05 | 12/3/20:
 | 018 12/3/2 | 2018 12/3 | 3/2018 7/ | /1/2016 5
40.41 | /5/2020 9
40.41
 | /1/2021 7/:
40.41 3 | 1/2016 4/5
38.74 3 | 75/2017 10
38.74 | .0/26/2018
38.74
 | 5/5/2020
38.74 | 3/17/2021
38.74 | 9/1/2021
38.74 | HW-300
7/1/2016
36.09
 | HW-300
3/17/2021
36.09 | HW-300
9/2/2021
36.09 | 7/1/2016
39.46 | 7/1/2016
41.17 | 12/3/2018
41.17
 | 3/17/2021
41.17 | 9/1/2021
41.17 | 6/19/2019
37.70 | 5/21/2020
37.70
 | 3/18/2021
37.70 | 9/2/2021
37.70 | 7/5/2016
23.25 | 12/3/2018
23.25 | 5/8/2020
23.25 | 12/3/2018 | OW-9M
5/8/2020
23.53 | 7/5/2016
23.22 | 12/3/2018 | 5/5/2020
23.22 | 4/11/2017
23.81 |
| Sample ID
Sample Date
TOC Elevation
Depth to Groundwater | 11/5/2 | m) RB-
020 3/18 | (m) R
/2021 9, | /5/2021
NA
 | 4/7/201
45.20 | 7 5/13/20 | 020 6/24 | /2019 5
.08 | 5/13/2020
45.08
 | HW-D (dd)
6/24/2019
45.05 | HW-D (dd)
5/13/2020
45.05 | 12/3/20:
 | 018 12/3/2
0 45.1
0 20.7 | 2018 12/3 | 3/2018 7/ | /1/2016 5
40.41 | /5/2020 9
40.41
 | /1/2021 7/:
40.41 3 | 1/2016 4/5
38.74 3 | 75/2017 10
38.74 | .0/26/2018
38.74
 | 5/5/2020
38.74 | 3/17/2021
38.74 | 9/1/2021
38.74 | HW-300
7/1/2016
36.09
 | HW-300
3/17/2021
36.09 | HW-300
9/2/2021
36.09 | 7/1/2016
39.46 | 7/1/2016
41.17 | 12/3/2018
41.17
 | 3/17/2021
41.17 | 9/1/2021
41.17 | 6/19/2019
37.70 | 5/21/2020
37.70
 | 3/18/2021
37.70 | 9/2/2021
37.70 | 7/5/2016
23.25 | 12/3/2018
23.25 | 5/8/2020
23.25 | 12/3/2018 | OW-9M
5/8/2020
23.53 | 7/5/2016
23.22 | 12/3/2018 | 5/5/2020
23.22 | 4/11/2017
23.81 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation | 11/5/2
NA
17.79 | m) RB-
020 3/18
9 16 | (m) R
(2021 9)
A
85 | NA
18.57
NA
 | 4/7/201
45.20
18.83
26.37 | 7 5/13/20
45.20
18.34
26.86 | 020 6/24,
0 45
1 18
5 26 | /2019 5
.08
.99 | 5/13/2020
45.08
18.23
26.85
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45 | HW-D (dd)
5/13/2020
45.05
19.97
25.08 | 12/3/20
44.99
20.69
24.30
 | 018 12/3/2
9 45.1
9 20.7
0 24.3 | 2018 12/3
11 4
75 20
36 20 | 3/2018 7/
14.93
10.71
14.22 | /1/2016 5
40.41
27.48
12.93 | /5/2020 9
40.41
25.33
15.08
 | /1/2021 7/3
40.41 3
30.20 2
10.21 1 | 1/2016 4/5
38.74 3
25.81 2 | 75/2017 10
38.74
25.70
13.04 | 0/26/2018
38.74
26.06
12.68
 | 5/5/2020
38.74
23.64
15.10 | 3/17/2021
38.74
26.19
12.55 | 9/1/2021
38.74
28.35
10.39 | HW-300
7/1/2016
36.09
22.52
13.57
 | HW-300
3/17/2021
36.09
22.86
13.23 | HW-300
9/2/2021
36.09
23.02
13.07 | 7/1/2016
39.46
25.05
14.41 | 7/1/2016
41.17
23.52
17.65 | 12/3/2018
41.17
22.65
18.52
 | 3/17/2021
41.17
24.04
17.13 | 9/1/2021
41.17
26.15
15.02 | 6/19/2019
37.70
20.88
16.82 | 5/21/2020
37.70
20.56
17.14
 | 3/18/2021
37.70
22.87
14.83 | 9/2/2021
37.70
24.24
13.46 | 7/5/2016
23.25
12.23
11.02 | 12/3/2018
23.25
10.80
12.45 | 5/8/2020
23.25
10.14
13.11 | 12/3/2018
23.53
11.11
12.42 | OW-9M
5/8/2020
23.53
10.45
13.08 | 7/5/2016
23.22
12.48
10.74 | 12/3/2018
23.22
10.82
12.40 | 5/5/2020
23.22
10.15
13.07 | 4/11/2017
23.81
12.10
11.71 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth | 11/5/20
NA
17.79
NA
49.89 | m) RB-
020 3/18
9 16
5 49 | (m) R
(2021 9)
A
85
A | NA
18.57
NA
48.85
 | 4/7/201
45.20
18.83
26.37
30.32 | 7 5/13/20
45.20
18.34
26.86
30.32 | 020 6/24,
0 45
1 18
5 26
2 44 | /2019 5
.08
.99
.09 | 5/13/2020
45.08
18.23
26.85
44.94
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05 | HW-D (dd)
5/13/2020
45.05
19.97
25.08
65.05 | 12/3/20
44.99
20.69
24.30
28.45
 | 018 12/3/2
0 45.1
0 20.7
0 24.3
5 38.2 | 2018 12/3
111 4
75 20
36 20
25 43 | 3/2018 7/
14.93
10.71
14.22
18.28 | /1/2016 5
40.41
27.48
12.93
32.80 | /5/2020 9
40.41
25.33
15.08
32.80
 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3 | 1/2016 4/5
38.74 3
25.81 2
12.93 1
33.08 3 | 75/2017 10
38.74
25.70
13.04
33.08 | 0/26/2018
38.74
26.06
12.68
33.08
 | 5/5/2020
38.74
23.64
15.10
33.08 | 3/17/2021
38.74
26.19
12.55
33.12 | 9/1/2021
38.74
28.35
10.39
33.11 | HW-300
7/1/2016
36.09
22.52
13.57
30.33
 | HW-300
3/17/2021
36.09
22.86
13.23
30.30 | HW-300
9/2/2021
36.09
23.02
13.07
30.34 | 7/1/2016
39.46
25.05
14.41
30.42 | 7/1/2016
41.17
23.52
17.65
30.45 | 12/3/2018
41.17
22.65
18.52
30.45
 | 3/17/2021
41.17
24.04
17.13
30.44 | 9/1/2021
41.17
26.15
15.02
30.40 | 6/19/2019
37.70
20.88
16.82
44.18 | 5/21/2020
37.70
20.56
17.14
44.18
 | 3/18/2021
37.70
22.87
14.83
44.17 | 9/2/2021
37.70
24.24
13.46
44.18 | 7/5/2016
23.25
12.23
11.02
21.35 | 12/3/2018
23.25
10.80
12.45
21.35 | 5/8/2020
23.25
10.14
13.11
21.35 | 12/3/2018
23.53
11.11
12.42
56.20 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20 | 7/5/2016
23.22
12.48
10.74
68.63 | 12/3/2018
23.22
10.82
12.40
68.63 | 5/5/2020
23.22
10.15
13.07
68.63 | 4/11/2017
23.81
12.10
11.71
86.75 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoropetpanoic acid (PFHpA) | 11/5/20
NA
17.79
NA
49.80
0.01 | m) RB-
020 3/18
9 16
5 49
1 0.0 | .(m) R
/2021 9)
A
.85
A
.85 | NA
18.57
NA
48.85
0.0073
 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 L | 7 5/13/20
45.20
18.34
26.86
30.32
0.00053 | 020 6/24/
0 45
1 18
5 26
2 44
3 U 0.0 | /2019 5
.08 .99 .09 .94 | 5/13/2020
45.08
18.23
26.85
44.94
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002 | HW-D (dd)
9 5/13/2020
45.05
19.97
25.08
65.05
0.00053 U | 12/3/20
44.99
20.69
24.30
28.45
0.0074
 | 018 12/3/2
0 45.1
0 20.7
0 24.3
0 38.2
0 0.007 | 2018 12/3
11 4
75 20
36 20
25 40
74 U 0.0 | 7/14.93
10.71
14.22
18.28
10.74 U | /1/2016 9
40.41 27.48 12.93 32.80 0.0071 | /5/2020 9
40.41
25.33
15.08
32.80
0.035
 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3
0.046 0 | 1/2016 4/9
38.74 3
25.81 2
12.93 1
33.08 3 | 75/2017 10
38.74
25.70
13.04
33.08
0.1 | 38.74
26.06
12.68
33.08
0.10
 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087 | 3/17/2021
38.74
26.19
12.55
33.12
0.084
0.0064 | 9/1/2021
38.74
28.35
10.39
33.11
0.035 | HW-300
7/1/2016
36.09
22.52
13.57
30.33
0.0096
 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028 | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029 | 7/1/2016
39.46
25.05
14.41
30.42
0.002
0.038 | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063 | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
 | 3/17/2021
41.17
24.04
17.13
30.44
0.0066 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062 | 37.70
20.88
16.82
44.18
0.0051 | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
 | 3/18/2021
37.70
22.87
14.83
44.17
0.0044 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086 | 7/5/2016
23.25
12.23
11.02
21.35
0.014 | 12/3/2018
23.25
10.80
12.45
21.35
0.048 | 5/8/2020
23.25
10.14
13.11
21.35
0.0064 | 12/3/2018
23.53
11.11
12.42
56.20
0.11 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028 | 12/3/2018
23.22
10.82
12.40
68.63
0.033 | 5/5/2020
23.22
10.15
13.07
68.63
0.044 | 4/11/2017
23.81
12.10
11.71
86.75
0.034 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth | 11/5/20
NA
17.79
NA
49.89
0.01: | m) RB-
020 3/18
9 16
5 49
1 0.0 | (m) R
/2021 9/
A
.85
A
.85
13 J | NA
18.57
NA
48.85
0.0073
0.0099
 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 U | 7 5/13/20
45.20
18.34
26.86
30.32
0.00053 | 020 6/24/
0 45
1 18
5 26
2 44
3 U 0.0 | /2019 5
.08 .99 .09 .94 .021 .062 | 5/13/2020
45.08
18.23
26.85
44.94
0.017
0.039
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
0.0092 | HW-D (dd)
9 5/13/2020
45.05
19.97
25.08
65.05
0.00053 U
0.008 | 20.69
24.30
28.45
20.0074
0.0056
 | 018 12/3/2
0 45.1
0 20.5
0 24.5
0 38.2
0 0.007 | 2018 12/3
11 4
775 20
36 20
25 40
74 U 0.0
2 J 0.0 | 3/2018 7/
14.93
10.71
14.22
18.28
1074 U (10056 U (10056 U) | /1/2016 5
40.41
27.48
12.93
32.80
0.0071
0.0035 | /5/2020 9
40.41 25.33 15.08 32.80 0.035 0.0066
 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3
0.046 0
.0056 J 0 | 1/2016 4/5
88.74 3
25.81 2
12.93 1
33.08 3
0.016 | 75/2017 10
38.74
25.70
13.04
33.08
0.1 | 38.74
26.06
12.68
33.08
0.10
 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087 | 3/17/2021
38.74
26.19
12.55
33.12
0.084
0.0064 | 9/1/2021
38.74
28.35
10.39
33.11
0.035 | HW-300
7/1/2016
36.09
22.52
13.57
30.33
0.0096
 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028 | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029 | 7/1/2016
39.46
25.05
14.41
30.42
0.002
0.038 | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063 | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
 | 3/17/2021
41.17
24.04
17.13
30.44
0.0066
0.0022 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004 | 37.70
20.88
16.82
44.18
0.0051
<0.002 | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
0.001
 | 3/18/2021
37.70
22.87
14.83
44.17
0.0044 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086
0.0015 J | 7/5/2016
23.25
12.23
11.02
21.35
0.014 | 12/3/2018
23.25
10.80
12.45
21.35
0.048
0.023 | 5/8/2020
23.25
10.14
13.11
21.35
0.0064
0.011 | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028 | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12 | 5/5/2020
23.22
10.15
13.07
68.63 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheaptonic acid (PPHpA) Perfluoroheaptonic acid (PPHpS) Perfluoroheanosi acid (PPHpS) | 11/5/20
NA
17.79
NA
49.89
0.01
0.01 | m) RB-
020 3/18
9 16
5 49
1 0.0
1 0.0 | (m) R
/2021 9/A
85 A
85 I
13 J (177 J | NA
18.57
NA
48.85
0.0073
0.0099 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 U
0.0089 J
0.0046 U
 | 7 5/13/20
45.20
18.34
26.86
30.32
0.00053
0.00077 | 020 6/24/
0 45
1 18
5 26
2 44
3 U 0.0
7 U 0.0
3 U 0.0 | /2019 5
.08 | 5/13/2020
45.08
18.23
26.85
44.94
0.017
0.039
0.019
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
0.0092 | HW-D (dd)
9 5/13/2020
45.05
19.97
25.08
65.05
0.00053 U
0.008
0.0029 | 20.69
24.30
28.45
20.0074
0.0056 | 018 12/3/2
9 45.1
9 20.7
0 24.3
5 38.2
U 0.007
U 0.01
 | 2018 12/3
111 4
75 20
36 20
25 40
74 U 0.0
2 J 0.0
1 J 0.0 | 3/2018 7/
14.93
10.71
14.22
18.28
1074 U (1056 U (1087 U < | /1/2016 5
40.41 27.48 12.93 32.80 0.0071 0.0035 c0.002 | /5/2020 9
40.41 25.33 15.08 32.80 0.035 0.0066 0.016 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3
0.046 0
0.0056 J 0
0.004 J 0
 | 1/2016 4/5
88.74 3
25.81 2
12.93 1
33.08 3
0.016 | 75/2017 10
38.74
25.70
13.04
33.08
0.1
0.020 J
0.027 | 38.74
26.06
12.68
33.08
0.10
0.012 J
0.023 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087
0.021
 | 3/17/2021
38.74
26.19
12.55
33.12
0.084
0.0064 J
0.019 J | 9/1/2021
38.74
28.35
10.39
33.11
0.035
0.0057 J
0.014 J | HW-300
7/1/2016
36.09
22.52
13.57
30.33
0.0096
0.012
<0.002 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028
0.0099
0.00099 J
 | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029
0.00066 J
0.0028 | 7/1/2016
39.46
25.05
14.41
30.42
0.002
0.038
<0.002 | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063
0.054 | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
0.016 J
0.0097 J | 3/17/2021
41.17
24.04
17.13
30.44
0.0066
0.0022
0.0066
 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004
0.005
0.0065 | 6/19/2019
37.70
20.88
16.82
44.18
0.0051
<0.002
<0.002
0.0041 | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
0.001
0.0012 | 3/18/2021
37.70
22.87
14.83
44.17
0.0044
0.00066 J
0.0037
 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086
0.0015 J
0.003 | 7/5/2016
23.25
12.23
11.02
21.35
0.014
<0.003
0.0077 | 12/3/2018
23.25
10.80
12.45
21.35
0.048
0.023
0.0087 U | 5/8/2020
23.25
10.14
13.11
21.35
0.0064
0.011
0.0033 | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U
0.044 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033
0.0037 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028
0.012
0.0036 | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12 | 5/5/2020
23.22
10.15
13.07
68.63
0.044
0.18 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12
0.059 |
| Sample ID Tipe Clever ID Sept In Groundwater Groundwater Elevation total Well Death Perfluoroheaptanoic acid (PFHA) Perfluoronameauclifonic acid (PFNA) Perfluoronamoic acid (PFNA) Perfluoronamoic acid (PFNA) | 11/5/20
NA
17.79
NA
49.80
0.01
0.01
0.006
0.01 | m) RB-
020 3/18
9 16
5 49
1 0.0
1 0.0
68 0.0
3 0.0 | (m) R
/2021 9/A
85 A
85 I
13 J (177 J (177 J (178 J) | NA
18.57
NA
48.85
0.0073
0.0099
0.0044
0.012
 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 U
0.0089 J
0.0046 U | 7 5/13/20
45.20
18.34
26.86
30.32
0.00053
0.00073
0.00063 | 020 6/24,
0 45
1 18
5 26
2 44
3 U 0.0
7 U 0.0
3 U 0.0 | /2019 5
.08 .99 .09 .94 .021 .062 .015 .088 | 5/13/2020
45.08
18.23
26.85
44.94
0.017
0.039
0.019
0.0076
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
0.0092
0.0041
<0.002 | HW-D (dd) 9 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.008 0.0029 0.00071 U | 20.69
24.30
28.45
20.0074
0.0056
0.0087
 | 018 12/3/2
9 45.1
9 20.7
0 24.3
6 38.2
U 0.007
U 0.01
U 0.01 | 2018 12/3
111 4
75 20
36 20
25 40
74 U 0.0
22 J 0.0
11 J 0.0
33 U 0.0 | 3/2018 7/
14.93
10.71
14.22
18.28
1074 U (1056 U (1087 U <10033 U (10033 U (10033 U) | /1/2016 5
40.41
27.48
12.93
32.80
0.0071
0.0035
0.002
0.0063 | /5/2020 9
40.41 25.33 15.08 32.80 0.035 0.0066 0.016 0.039
 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3
0.046 0
.0056 J 0
0.004 0
0.004 0 | 1/2016 4/5
88.74 3
15.81 2
12.93 1
33.08 3
30.016 | 75/2017 10
38.74
25.70
13.04
33.08
0.1
0.020 J
0.027 | 38.74
26.06
12.68
33.08
0.10
0.012 J
0.023
 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087
0.021 | 3/17/2021
38.74
26.19
12.55
33.12
0.084
0.0064 J
0.019 J | 9/1/2021
38.74
28.35
10.39
33.11
0.035
0.0057 J
0.014 J | HW-300
7/1/2016
36.09
22.52
13.57
30.33
0.0096
0.012
<0.002
 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028
0.0099
0.00099 J | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029
0.00066 J
0.0028 | 7/1/2016
39.46
25.05
14.41
30.42
0.002
0.038
<0.002 | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063
0.054 | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
0.016 J
0.0097 J
 | 3/17/2021
41.17
24.04
17.13
30.44
0.0066
0.0022
0.0066 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004
0.005
0.0065 | 6/19/2019
37.70
20.88
16.82
44.18
0.0051
<0.002
<0.002
0.0041 | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
0.001
0.0012
0.0019
 | 3/18/2021
37.70
22.87
14.83
44.17
0.0044
0.00066 J
0.0037
0.0036 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086
0.0015 J
0.003
0.0038 | 7/5/2016
23.25
12.23
11.02
21.35
0.014
<0.003
0.0077 | 12/3/2018
23.25
10.80
12.45
21.35
0.048
0.023
0.0087 U
0.032 | 5/8/2020
23.25
10.14
13.11
21.35
0.0064
0.011
0.0033
0.0043 | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U
0.044
0.052 | 0W-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033
0.0037
0.0035 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028
0.012
0.0036
0.0052 | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12
0.1 | 5/5/2020
23.22
10.15
13.07
68.63
0.044
0.18
0.15
0.088 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12
0.059
0.055 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheaptonic acid (PPHpA) Perfluoroheaptonic acid (PPHpS) Perfluoroheanosi acid (PPHpS) | 11/5/2:
NA
17.79
NA
49.88
0.01:
0.00
0.000
0.01:
0.04:
0.000 | m) RB-
020 3/18
9 16
5 49
1 0.0
1 0.0
1 0.0
88 0.0
3 0.0
9 0. | (m) R
/2021 9)
A .85
A .85
113 J (172 J (172 J (173 J (175 | NA
18.57
NA
48.85
0.0073
0.0099
0.0044
0.012
0.055
0.0033 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 U
0.0046 U
0.0046 U
0.022
0.0040 U
 | 7 5/13/20
45.20
18.34
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J 0.0005
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0.0007 | 020 6/24,
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5 26
2 44
3 U 0.0
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2 U <0. | /2019 5 .08 .99 .09 .94 .021 .062 .015 .088 .099 .090 .090 .000 .000 .000 .000 | 5/13/2020
45.08
18.23
26.85
44.94
0.017
0.039
0.019
0.0076
0.12
0.00062 U
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
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<0.002 | HW-D (dd) 0 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.0029 0.00071 U 0.013 | 12/3/20:
44.99
20.69
24.30
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J 0.0074
0.0056
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9 45.1
9 20.7
0 24.3
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111 4-75 2:
36 2:
25 4:
44 U 0.0
2.1 0.0
33 U 0.0
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 | 3/2018 7/
14.93 7/
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1074 U (7/
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10060 U (10061 U) | /1/2016 5 40.41 27.48 12.93 32.80 0.0071 0.0035 <0.002 0.0063 0.012 NA 0 | /5/2020 ! 40.41 25.33 15.08 32.80 0.035 0.0066 0.016 0.039 0.053 | /1/2021 7/:
40.41 3
30.20 2
10.21 1
32.80 3
0.046 0
.0056 J 0
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18.74 3
15.81 2
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12.93 1
133.08 3
1.0016
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38.74 25.70 13.04 33.08 0.1 0.020 J 0.020 J 0.0027 0.065 0.15 0040 U (6.25 10.20 J 0.040 U (7.25 10.20 U (7.2 | 0/26/2018
38.74
26.06
12.68
33.08
0.10
0.012 J
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38.74
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38.74
26.19
12.55
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0.084
0.0064 J
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38.74
28.35
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33.11
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 | HW-300
7/1/2016
36.09
22.52
13.57
30.33
0.0096
0.012
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3/17/2021
36.09
22.86
13.23
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9/2/2021
36.09
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39.46
25.05
14.41
30.42
0.002
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0.0037
0.011
NA
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41.17
23.52
17.65
30.45
0.019
0.0063
0.054
0.033
0.014
NA | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
0.006 J
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0.03
0.031
0.0061 U | 3/17/2021
41.17
24.04
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0.0066
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0.0066
0.005
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0.0041 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004
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 | 6/19/2019
37.70
20.88
16.82
44.18
0.0051
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37.70
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37.70
22.87
14.83
44.17
0.0044
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0.0015 J
0.00038 U | 9/2/2021
37.70
24.24
13.46
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23.25
12.23
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NA | 12/3/2018
23.25
10.80
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23.25
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23.22
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23.22
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23.22
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13.07
68.63
0.044
0.18
0.15
0.088
0.72 | 4/11/2017
23.81
12.10
11.71
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0.5 |
| Sample ID Sample Date TOC Elevation Dopt In Groundwater Groundwater Elevation Total Well Depth Perfluoroheptanoic acid (PPHAS) Perfluoroheptanoic acid (PPHAS) Perfluoronomolic acid (PPNAS) Perfluoronomolic acid (PPNA) Perfluoronomolic acid (PPOA) Perfluoronomolic acid (PPOA) Perfluoronomolic acid (PPOA) | 11/5/2:
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17.7:
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45.20
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 | HW-D (dd)
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111 4-75 2:
36 2:
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44 U 0.0
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40.41 3
30.20 2
10.21 1
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18.74 3
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36.09
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36.09
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41.17
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41.17
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41.17
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37.70
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23.25
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56.20
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23.53
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23.22
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23.22
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| Sample ID | 11/5/20
NA
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75 2:
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74 U 0.0
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18.74 3
18.74 3
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18.8.74 3
19.8.81 2
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38.74 25.70 11
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DFAS (Total | 9/1/2021
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36.09
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41.17
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11.11
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23.53
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23.22
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10.74
68.63
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NA | 12/3/2018
23.22
10.82
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68.63
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23.22
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13.07
68.63
0.044
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0.72
0.00062 U
0.23 | 4/11/2017
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| Sample ID Sample ID Sample Date For Incondesser Elevation Tatal Well Death Perfluoronia Date Perfluoronia Date Perfluoronia Date Perfluoronia Card (PPHA) Perfluoronia Card (PPGA) Perfluoronia Card (PPGA) Perfluoronia Card (PPGA) | 11/5/2/
NA
17.7:
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49.8:
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18.57
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48.85
0.0073
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45.20
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 | 7 5/13/20
45.20
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45.08
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 | HW-D (dd)
6/24/2019
45.05
20.60
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<0.002
0.002
0.002 U | HW-D (dd) 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.008 0.0029 0.00071 0.00062 U 0.00039 U | 12/3/20
44.99
20.699
24.30
28.45
0.0074
0.0056
0.0087
0.0060
0.0060
0.0066 | 018 12/3/2 9 45.1 9 20.7 0 24.3 6 38.2 U 0.007 U 0.01 U 0.01 U 0.03 U 0.006 U 0.006
 | 2018 12/3
111 4.
775 2.
336 2.
25 4.
14 U 0.0
2. 2 J 0.0
1. J 0.0
33 U 0.0
35 0.0
36 U 0.0
36 U 0.0 | 3/2018 7/
4.93 14 | /1/2016 5 40.41 27.48 12.93 32.80 0.0071 0.0035 60.002 0.0063 0.012 NA 0 NA | /5/2020 | /1/2021 7/3 40.41 3 30.20 2 10.21 1 32.80 3 0.046 0 0.0056 0 0.004 0 0.012
0 0.012 0 0 | 1/2016 4/5 18.74 3 18.74 3 18.74 3 19. | 15/2017 10
38.74 25.70 13.04 33.08 0.1 0.020 J 0.020 J 0.020 J 0.027 0.065 0.15 0.040 U 0.47 Sum of 1.603 | 0/26/2018 38.74 26.06 12.68 33.08 0.10 0.012 J 0.023 0.057 0.053 0.0061 U 0.12 of Laborator 0.952 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087
0.021
0.054
0.1
0.0014
0.13
y Reported
0.96981
 | 3/17/2021 38.74 26.19 12.55 33.12 0.084 0.0064 J 0.019 J 0.064 0.056 0.0038 U 0.47 J PFAS (Total 1.1394 | 9/1/2021
38.74
28.35
10.39
33.11
0.035
0.0057 J
0.016 J
0.044
0.0052 U
0.2
al PFAS) an | HW-300 7/1/2016 36.09 22.52 13.57 30.33 0.0096 0.012 <0.002 0.0052 0.017 NA NA d Sum of Si 0.0438 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028
0.0099
0.00099 J
0.0044
0.015
0.00038 U
0.0011 U
 | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029
0.00066 J
0.0028
0.0004
0.017
0.0006 J
0.00034 U | 7/1/2016
39,46
25.05
14.41
30.42
0.002
0.003
<0.002
0.0037
0.011
NA
NA | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063
0.054
0.033
0.014
NA
NA | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
0.0097 J
0.03
0.031
0.0061 U
0.13 | 3/17/2021
41.17
24.04
17.13
30.44
0.0066
0.0022
0.0066
0.005
0.0041
0.00086 J
0.012
 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004
0.005
0.0065
0.015
0.001 J
0.0062 | 6/19/2019 37.70 20.88 16.82 44.18 0.0051 <-0.002 <-0.002 0.0041 <-0.002 -0.002 0.002 U | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
0.001
0.0012
0.0019
0.0016
0.00062 U
0.00039 U | 3/18/2021
37.70
22.87
14.83
44.17
0.0044
0.00066 J
0.0037
0.0035
0.0015 J
0.00038 U
0.0011 U
 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086
0.0015 J
0.003
0.0019
0.00046 U
0.00034 U | 7/5/2016
23.25
12.23
11.02
21.35
0.014
<0.003
0.0077
0.007
NA
NA | 12/3/2018
23.25
10.80
12.45
21.35
0.048
0.023
0.0087 U
0.032
0.024
0.0061 U
0.0066 U | 5/8/2020
23.25
10.14
13.11
21.35
0.0064
0.011
0.0033
0.0043
0.0058
0.00062 U
0.00039 U | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U
0.044
0.052
0.0081 J
0.0061 U
0.64 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033
0.0037
0.0035
0.01
0.00062 U
0.0049 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028
0.012
0.0036
0.0052
0.041
NA
NA | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12
0.1
0.057
0.52
0.0061 U
0.19 | 5/5/2020
23.22
10.15
13.07
68.63
0.044
0.18
0.15
0.088
0.72
0.0062 U
0.23 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12
0.059
0.055
0.5
0.040 U
0.13 |
| Sample ID Sample Dte TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheptanol: acid (PFHpA) Perfluoroheptanol: acid (PFHpA) Perfluoronomolic acid (PFHpA) Perfluoronomolic acid (PFHpA) Perfluorocationic acid (PFHpA) Perfluorocationic acid (PFDA) Perfluorocationic acid (PFDA) Perfluorocationic acid (PFDA) Expluorocationic acid (PFDA) Expluorocationic Acid (PFDA) Expluorocationic Monthly (PFDS) Perfluorocationic Monthly (PFDS) Perfluorocationic Monthly (PFDS) Expluorocationic Monthly (PFDS) Expluorocation | 11/5/2/
NA
17.7:
NA
49.8:
0.01
0.000
0.01:
0.04:
0.000
0.03: | m) RB-020 3/1882020 1 9 16 1 1 0.0 1 1 0.0 1 1 1 0.0 1 1 1 1 1 1 1 | (m) R (2021 9) A (85 A (8)))))))))))))))))) | NA
18.57
NA
48.85
0.0073
0.0099
0.0044
0.012
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0.0033
0.013 | 4/7/201
45.20
18.83
26.37
30.32
0.0033 L
0.0046 L
0.0046 L
0.022
0.0040 L | 7 5/13/20
45.20
18.34
26.86
30.32
J 0.0005:
0.0007:
J 0.0006:
J 0.0006:
J 0.0006:
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J 0.0006:
 | 020 6/24, 1 18 5 26 2 44 3 U 0.0 7 U 0.0 3 U 0.0 1 U 0.0 1 U 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 | /2019 5 .08 | 5/13/2020
45.08
18.23
26.85
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0.017
0.039
0.019
0.0076
0.12
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0.00039 U | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
0.0092
0.0041
<0.002
0.002
0.002
0.002 U
 | HW-D (dd) 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.008 0.0029 0.00071 0.00062 U 0.00039 U | 12/3/20
44.99
20.699
24.30
28.45
0.0074
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0.0087
0.0060
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0.0066 | 018 12/3/2 9 45.1 9 20.7 0 24.3 6 38.2 U 0.007 U 0.01 U 0.01 U 0.03 U 0.006 U 0.006 | 2018 12/3
111 4.
775 2.
336 2.
25 4.
14 U 0.0
2. 2 J 0.0
1. J 0.0
33 U 0.0
35 0.0
36 U 0.0
36 U 0.0
 | 3/2018 7/ 44.93 14.93 14.93 14.93 14.93 14.92 14 | /1/2016 5 40.41 27.48 12.93 32.80 0.0071 0.0035 60.002 0.0063 0.012 NA 0 NA | /5/2020 | /1/2021 7/3 40.41 3 30.20 2 10.21 1 32.80 3 0.046 0 0.0056 0 0.004 0 0.012 0 0 | 1/2016 4/5 18.74 3 18.74 3 18.74 3 19.74 3
19.74 3 19. | 15/2017 10
38.74 25.70 13.04 33.08 0.1 0.020 J 0.020 J 0.020 J 0.027 0.065 0.15 0.040 U 0.47 Sum of 1.603 | 0/26/2018
38.74
26.06
12.68
33.08
0.10
0.012 J
0.023
0.057
0.053
0.0061 U
0.12 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
0.0087
0.021
0.054
0.1
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0.13
y Reported | 3/17/2021
38.74
26.19
12.55
33.12
0.084
0.0064 J
0.019 J
0.064
0.056
0.038 U
0.47
DFAS (Total
 | 9/1/2021
38.74
28.35
10.39
33.11
0.035
0.0057 J
0.014 J
0.016 J
0.0052 U
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al PFAS) an | HW-300 7/1/2016 36.09 22.52 13.57 30.33 0.0096 0.012 <0.002 0.0052 0.017 NA NA d Sum of Si 0.0438 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
0.0028
0.0099
0.00099 J
0.00044
0.015
0.00038 U | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029
0.00066 J
0.0028
0.0004
0.017
0.0006 J
0.00034 U
 | 7/1/2016
39.46
25.05
14.41
30.42
0.002
0.003
0.038
<0.002
0.0037
0.011
NA | 7/1/2016
41.17
23.52
17.65
30.45
0.019
0.0063
0.054
0.033
0.014
NA | 12/3/2018
41.17
22.65
18.52
30.45
0.015 J
0.0097 J
0.03
0.031
0.0061 U
0.13 | 3/17/2021
41.17
24.04
17.13
30.44
0.0066
0.0022
0.0066
0.005
0.0041
0.00086 J
 | 9/1/2021
41.17
26.15
15.02
30.40
0.0062
0.004
0.005
0.0065
0.015
0.001 J
0.0062 | 6/19/2019
37.70
20.88
16.82
44.18
0.0051
<0.002
<0.002
0.0041
<0.002
<0.002
0.002 U | 5/21/2020
37.70
20.56
17.14
44.18
0.0028
0.001
0.0012
0.0019
0.0016
0.00062 U
0.00039 U | 3/18/2021
37.70
22.87
14.83
44.17
0.0066 J
0.0037
0.0036
0.0015 J
0.0038 U
0.0011 U
 | 9/2/2021
37.70
24.24
13.46
44.18
0.0086
0.0015 J
0.003
0.0038
0.0019
0.00046 U
0.00034 U | 7/5/2016
23.25
12.23
11.02
21.35
0.014
<0.003
0.0077
0.007
0.007
NA | 12/3/2018
23.25
10.80
12.45
21.35
0.048
0.023
0.0087 U
0.032
0.024
0.0061 U | 5/8/2020
23.25
10.14
13.11
21.35
0.0064
0.0011
0.0033
0.0043
0.0058
0.00062 U
0.00039 U | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U
0.044
0.052
0.0081 J
0.0061 U
0.64 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033
0.0037
0.0035
0.01
0.00062 U
0.0049 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028
0.012
0.0036
0.0052
0.041
NA
NA | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12
0.1
0.057
0.52
0.0061 U
0.19 | 5/5/2020
23.22
10.15
13.07
68.63
0.044
0.18
0.15
0.088
0.72
0.0062 U
0.23 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12
0.059
0.055
0.5
0.0040 U |
| Sample ID Sample Dte TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheptanol: acid (PFHpA) Perfluoroheptanol: acid (PFHpA) Perfluoronomolic acid (PFHpA) Perfluoronomolic acid (PFHpA) Perfluorocationic acid (PFHpA) Perfluorocationic acid (PFDA) Perfluorocationic acid (PFDA) Perfluorocationic acid (PFDA) Expluorocationic acid (PFDA) Expluorocationic Acid (PFDA) Expluorocationic Monthly (PFDS) Perfluorocationic Monthly (PFDS) Perfluorocationic Monthly (PFDS) Expluorocationic Monthly (PFDS) Expluorocation | 11/5/2/
NA
17.7:
NA
49.8:
0.01
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0.000
0.03: | m) RB-020 3/18 99 16 1 0.0.0 1 | (m) R (2021 9) A (85 A (8)))))))))))))))))) | NA
18.57
NA
48.85
0.0073
0.0099
0.0044
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0.013 | 4/7/201
45.20
18.83
26.37
30.32
0.0089 J
0.0046 L
0.022
0.0040 L
0.0032 L | 7 5/13/20
45.20
18.34
26.86
30.32
J 0.0005:
0.0007:
J 0.0006:
J 0.0006:
J 0.0006:
J 0.0006:
J 0.0006:
J 0.0006:
 | 020 6/24, 1 18 5 26 2 44 3 U 0.0 7 U 0.0 3 U 0.0 1 U 0.0 1 U 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 1 0.0 | /2019 5 .08 | 5/13/2020
45.08
18.23
26.85
44.94
0.017
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0.019
0.0076
0.12
0.00062 U
0.00039 U | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
<0.002
0.0092
0.0041
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 | HW-D (dd) 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.008 0.0029 0.00071 0.00062 U 0.00039 U | 12/3/20
44.99
20.699
24.30
28.45
0.0074
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0.0087
0.0060
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0.0066 | 018 12/3/2 9 45.1 9 20.7 0 24.3 6 38.2 U 0.007 U 0.01 U 0.01 U 0.03 U 0.006 U 0.006 | 2018 12/3
111 4.
775 2.
336 2.
25 4.
14 U 0.0
2. 2 J 0.0
1. J 0.0
33 U 0.0
35 0.0
36 U 0.0
36 U 0.0
 | 3/2018 7/
4.93 14 | /1/2016 5 40.41 27.48 12.93 32.80 0.0071 0.0035 60.002 0.0063 0.012 NA 0 NA | /5/2020 | /1/2021 7/3 40.41 3 30.20 2 10.21 1 32.80 3 0.046 0 0.0056 0 0.004 0 0.012 0 0 | 1/2016 4/5 18.74 3 18.74 3 18.74 3 19.74 3
19.74 3 19. | 15/2017 10
38.74 25.70 13.8.74 25.70 13.04 33.08 0.1 0.1 0.020 J 0.027 0.065 0.15 0040 U 0.47 25.00 0.47 25.00 0.47 25.00 0.47 25.00 0.47 0.47 0.47 0.47 0.47 0.47 0.47 0 | 0/26/2018 38.74 26.06 12.68 33.08 0.10 0.012 J 0.023 0.057 0.053 0.0061 U 0.12 of Laborator 0.952 | 5/5/2020
38.74
23.64
15.10
33.08
0.1
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0.021
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y Reported
0.96981 | 3/17/2021 38.74 26.19 12.55 33.12 0.084 0.0064 J 0.019 J 0.064 0.056 0.0038 U 0.47 J PFAS (Total 1.1394
 | 9/1/2021
38.74
28.35
10.39
33.11
0.035
0.0057 J
0.016 J
0.044
0.0052 U
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al PFAS) an | HW-300 7/1/2016 36.09 22.52 13.57 30.33 0.0096 0.012 <0.002 0.0052 0.017 NA NA d Sum of Si 0.0438 | HW-300
3/17/2021
36.09
22.86
13.23
30.30
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0.00099 J
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0.00038 U
0.0011 U | HW-300
9/2/2021
36.09
23.02
13.07
30.34
0.0029
0.00066 J
0.0028
0.0004
0.017
0.0006 J
0.00034 U
 | 7/1/2016
39,46
25.05
14.41
30.42
0.002
0.003
<0.002
0.0037
0.011
NA
NA | 7/1/2016
41.17
23.52
17.65
30.45
0.019
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0.054
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0.014
NA | 12/3/2018
41.17
22.65
18.52
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0.0097 J
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0.0061 U
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41.17
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30.44
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0.0041
0.00086 J
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 | 9/1/2021
41.17
26.15
15.02
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37.70
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37.70
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37.70
24.24
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23.25
12.23
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0.014
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NA
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23.25
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0.048
0.023
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0.032
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23.25
10.14
13.11
21.35
0.0064
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0.0043
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0.00062 U
0.00039 U | 12/3/2018
23.53
11.11
12.42
56.20
0.11
0.0056 U
0.044
0.052
0.0081 J
0.0061 U
0.64 | OW-9M
5/8/2020
23.53
10.45
13.08
56.20
0.0061
0.0033
0.0037
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0.01
0.00062 U
0.0049 | 7/5/2016
23.22
12.48
10.74
68.63
0.0028
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0.0036
0.0052
0.041
NA
NA | 12/3/2018
23.22
10.82
12.40
68.63
0.033
0.12
0.1
0.057
0.52
0.0061 U
0.19 | 5/5/2020
23.22
10.15
13.07
68.63
0.044
0.18
0.15
0.088
0.72
0.0062 U
0.23 | 4/11/2017
23.81
12.10
11.71
86.75
0.034
0.12
0.059
0.055
0.5
0.040 U
0.13 |
| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Sample Date For Sample Date Serfluoroheapanoic acid (PFHA) Serfluoroheapanoic acid (PFHA) Serfluoronapanoic acid (PFHA) Sample Date Serfluoronapanoic acid (PFHA) Sample Date | 11/5/2/ NA 17.79 NA 49.89 0.01 0.006 0.01 0.040 0.038 0.201 0.091 | m) RB-020 3/18/2000 3/18/2 | (m) R (2021 9) A A 85 A A 85 13 J (1772 J 13 J 1775 133 B U (155 642 (6252 4 | NA 18.57 NA 48.85 0.0073 0.0099 0.0044 0.012 0.055 0.0033 0.013 0.1561 0.0919 | 4/7/201
45.20
45.20
18.83
26.37
30.32
0.0083 U
0.0084 U
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 | 7 5/13/2(2
45.2(2
18.34) 26.8(3
30.32) 0.00055
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0.00067 | 020 6/24/20 6/24/20 45 1 18 18 18 18 18 18 18 18 18 18 18 18 18 1 | /2019 5 .08 | \$/13/2020
45.08
18.23
26.85
44.94
0.017
0.039
0.019
0.0076
0.12
0.00062 U
0.00039 U
 | HW-D (dd)
6/24/2019
45.05
20.60
24.45
65.05
-<0.002
0.0092
0.0004
-<0.002
0.003
-<0.002
0.002 U | HW-D (dd) 5/13/2020 45.05 19.97 25.08 65.05 0.00053 U 0.008 0.00071 U 0.013 0.00062 U 0.00039 0.00039 0.00039 | 12/3/202
44.99
20.69
24.30
28.45
0.0056
0.0087
0.0061
0.0060
0.0060
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0.0067 | 118 12/3/2 45.1 19 45.1 19 20.5 19
20.5 19 20. | 2018 12/3 2018 12/3 2018 12/3 25 25 42 25 44/4 U 0.00 21.11 0.00 336 0.00 336 0.00 366 0.00 366 U 0.00 569 0.00 | 3/2018 7/ 3/2018 7/ 3/2018 7/ 44.93 14.93 | /J/2016 5 40.41 40.41 27.48 12.93 32.80 0.0071 0.0035 0.0012 NA 0 NA 0.0289 | /5/2020 4 /5/202 | (1/2021 7/3
(1/2021 7/3 (1/202 | 1/2016 4/5 18.74 3 15.81 2 12.93 1 13.08 3 0.016 0.0043 0 0.0053 0 0.0051 0 0.0084 (0 0 NA 0 NA 0 1197 1 1.1197 0 Maher Wel | (5/2017 10/2018 10/201 | 0/26/2018 38.74 26.06 12.68 33.08 0.10 0.012 J 0.023 0.057 0.053 0.0061 U 0.12 of Laborator 0.952 0.245 | 5/5/2020
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0.00066 J
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0.00084 U | 7/1/2016
39.46
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0.002
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0.0037
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NA
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41.17
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41.17
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| Sample ID Sample Dte TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheptanol cad (PPHpA) Perfluoroheptanol cad (PPHpA) Perfluoroheptanol cad (PPHpA) Perfluoronomico cad (PPNA) Perfluoroctanol cad (PPNA) Total PFAS Sum of Six (PPHpA, PPHS, PFOA, PFOS, PFNA, and PPDA) Sample Location Sample ID | 11/5/2/ NA 17.79 NA 49.89 0.01 0.006 0.01 0.040 0.038 0.201 0.091 | m) RB- 020 3/18 020 3 | (m) R (2021 9) A A 85 A A 85 13 J (172 J (17 | NA
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14.93 10.71 14.93 10.71 14.22 18.28 10.74 U (0.70 10.70 | /1/2016 5 40.41 127.48 12.93 32.80 0.0071 0.0035 0.0002 0.0003 0.012 NA 0.00289 | /5/2020 4 40.41 40.41 25.33 15.08 32.80 0.035 0.0066 0.016 0.039 0.053 0.053 0.053 0.053 0.053 0.054 0.059 0.059 0.059 0.059 0.059 | (1/2021 7/3 (4)041 3 30.20 2 10.21 1 33.80 3 32.80 6 0.046 0 0.0056 0 0.0054 0 0.012 0 0.012 0 0.012 0 0.014 0 0.015 0 0.016 0 0.017 0 0.017 0 0.018 0 0.018 0 0.019 0 | 1/2016 4/5 18.74 3 125.81 2 12.93 1 13.30.8 3 10.016 10.0043 0 10.0063 0 10.0091 0 10.084 0 10.084 0 1197 1 1 1197 1 Maher Wel
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| Sample ID Sample ID Sample Date 10 Chro Groundwater Groundwater Elevation Total Well Death Perfluoroheapsanclionic add (PPHA) Perfluoroheapsanclionic add (PPHA) Perfluoronancia add (PPAA) Perfluoronancia add (PPAA) Fortuneronancia add (PPAA) Serfluoronancia (PGOS) Fortuneronancia (PGOS) Fortuneronancia (PGOS) Fortuneronancia (PGOS) Sample ID Sample ID Sample ID Sample ID Sample ID Sample ID Sample IDE | 11/5/2/ NA 49.8: 49.8: 0.011 0.006 0.012 0.0091 0.0091 | m) RB-020 3/18 10/2 11 10/2 10/2 11 10 | (m) R (2021 9) A A 85 A A 85 133 J (1772 J (1772 J (1775 388 U (1772 J | /5/2021
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| Sample ID Sample Date TOC Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheaptanoic acid (PFHpA) Perfluoroheaptanoic acid (PFHpA) Perfluoronanaeus(Inolic acid (PFHpA) Perfluoronanaeus(Inolic acid (PFHA) Perfluoronanaeus(Inolic acid (PFHA) Perfluoronanaeus(Inolic acid (PFHA) Perfluoronancic acid (PFHA) Perfluoronancic acid (PFHA) Perfluoronancic acid (PFHA) Perfluoronancic Acid (PFHA) C. F Tuoronancic Acid (PFHA) Sample ID Sample ID Sample ID Sample Date IOC Elevation Depth to Groundwater Groundwater Elevation | 11/5/22 NA 17.7: NA 49.8: 49.8: 0.01 0.01 0.006 0.01 0.04 0.003 0.201 0.091 0.091 12/3/22 23.8: 11.3i | m) RB- 020 3/18 9 11 5 44 1 0.0.0 1 0. | (m) R (2021 9) A (2021 | /5/2021
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NA | 4/7/201 45.20 45.20 18.83 26.37 30.32 0.00331 0.00891 0.00461 0.00461 0.00461 0.00401 0.00321 0.00309 0.0309 ME-2**
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HW-W(dd)
9/5/2021
NA
29.89 | 9/2/2021
37.70
24.24
13.46
44.18
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0.00034 U | 7/5/2016
23.25
12.23
11.02
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0.0077
0.007
NA
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23.25
10.80
12.45
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0.023
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0.032
0.024
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0.0066 U | 5/8/2020
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0.0043
0.0058
0.00062 U
0.00039 U | 12/3/2018
23.53
11.11
12.42
56.20
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0.0056 U
0.044
0.052
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0.64 | OW-9M
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0.0049 | 7/5/2016
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68.63
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0.041
NA
NA | 12/3/2018
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10.82
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| Sample ID Sample Date TICE Elevation Depth to Groundwater Groundwater Elevation Total Well Depth by Groundwater Groundwater Elevation Total Well Depth by Groundwater Perfluoroheapsanoic acid (PFHA) Perfluoronanseus/Inonic acid (PFHA) Perfluoronanseus/Inonic acid (PFHA) Perfluoronancic acid (PFHA) Perfluoronancic acid (PFHA) Perfluoronancic Acid (PFDA) Perfluoronancic Acid (PFDA) Fortunancia (PA) Fortunancia (PA) Fortunancia (PA) Fortunancia (PA) Fortunancia (PFHA) Fortunancia (PFHA) Fortunancia (PFHA) Sample Location Sample ID Sample Date TICE Elevation Depth to Groundwater Groundwater Elevation Total Well Depth Perfluoroheaptonic acid (PFHA) | 11/5/22 NA 17.7: NA 49.8: 0.01 0.01 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.001 0.001 0.001 12/3/2 12/3/2 11.33 12.5. | m) RB-m2 RB- | (m) R (2021 9) A (2021 | /5/2021
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NA
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0.011 | 4/7/201 45.20 45.20 18.83 26.37 30.32 0.0033 L 0.0046 L 0.0046 L 0.0040 0.0030 0.0030 ME-2** 9/17/202 NA 6.50 NA 54.20 | 7 5/13/2C 7 5/13/2C 18.34 18.34 18.34 18.34 3.33 3.33 3.33 10.0005 10.0007
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14/93 7/0.71 14/93 7/0 | /1/2016 5 40.41 27.48 12.93 32.80 0.0071 0.0035 0.0071 0.0035 0.002 0.0063 0.012 NA 0 0.0289 0.0289 0.0289 0.0289 0.0289 | /5/2020 1 /5/202 | 1/1/2021 7// 1// 1/ | 1/2016 4/9/1/2016 4/9/1/2016 4/9/1/2017 4/9/ | 15/2017 10/2017
10/2017 10/2 | 0/26/2018 38.74 26.06 12.68 33.08 0.10 0.012 j 0.023 0.023 0.0057 0.0051 0.021 0.12 0.12 0.061 U 0.12 0.054 0.055 0.0651 0.057 0.0653 0.061 U 0.12 0.061 U 0.12 0.12 0.061 U 0.12 0.12 0.12 0.061 U 0.12 0.12 0.12 0.12 0.12 0.12 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 | 5/5/2020
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| Sample ID Sample ID Groundwater Elevation Depth to Groundwater Groundwater Elevation Total Well Beach Perfluoroheaptanoic acid (PFHA) Perfluoroheaptanoic acid (PFHA) Perfluoronamoic acid (PFHA) Fortunorotame sulfonate (PFOS) Total PFAS Sum of Six (PFHA, PFHA, PFHA, PFOA, PFOS, PFNA, and PFDA) Sample Date Total Elevation Depth to Groundwater Depth to Groundwater Depth to Groundwater Total Well Depth Perfluoroheaptanoic acid (PFHA) Perfluoroheamoic acid (PFHA) Perfluoroheamoic acid (PFHA) Perfluoronamoic acid (PFHA) | 11/5/22 NA 17.72 NA 17.72 NA 49.8: 0.01 0.006 0.01 0.006 0.01 0.009 0.009 0.201 0.091 12/3/22 23.8: 12.5: 86.72 0.015 0.044 0.036 | m) RB- m) | (m) R | //s/2021 NA 18-57 NA 18-57 NA 48-85 0.0073 0.0099 0.0094 0.013 0.1561 0.0919 ME-1* /17/2020 0.0919 ME-1* 0.0010 0.0010 0.011 | 4/7/201 45.20 18.83 26.37 30.32 0.0033 t 0.0089 0.0046 t 0.022 0.0040 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 0.0030 | 7 5/13/2C
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 | 0/26/2018 38.74 26.06 12.68 33.08 0.10 0.012 0.023 0.0057 0.0553 0.0061 0.022 0.245 0W-19(S) 3/18/2021 NA 26.27 NA 26.27 NA 34.56 0.0044 0.0064 | 5/5/2020
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HW-W(m)
9/5/2021
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30.17
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52.04
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41.17
26.15
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HW-W(d)
4/19/2021
NA
28.73
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61.78
0.0028
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 | 6/19/2019 37.70 20.88 116.82 44.18 0.0051 40.002 40.002 40.002 40.002 0.0021 40.002 0.0021 HW-W(d) 9/5/2021 NA 21.93 NA 61.78 61.78 0.001 | \$/21/2020
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HW-W(dd)
3/5/2021
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29.89
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37.70
24.24
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23.25
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23.25
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| Sample ID Sample Total COC Elevation Depth to Groundwater Conventional Elevation Serfund Service Service Perfund Service Service Sample Location Sample Location Sample Date TOC Elevation Septh to Groundwater Groundwater Elevation Total Well Death Perfund Service Service Perfund Service Service Service Service Perfund Service Service Service Service Service Perfund Service Ser | 11/5/21
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| Sample ID Sample ID Groundwater Elevation Depth to Groundwater Groundwater Elevation Total Well Beach Perfluoroheaptanoic acid (PFHA) Perfluoroheaptanoic acid (PFHA) Perfluoronamoic acid (PFHA) Fortunorotame sulfonate (PFOS) Total PFAS Sum of Six (PFHA, PFHA, PFHA, PFOA, PFOS, PFNA, and PFDA) Sample Date Total Elevation Depth to Groundwater Depth to Groundwater Depth to Groundwater Total Well Depth Perfluoroheaptanoic acid (PFHA) Perfluoroheamoic acid (PFHA) Perfluoroheamoic acid (PFHA) Perfluoronamoic acid (PFHA) | 11/5/21
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 | 3/18/2021 37.70 22.87 14.83 44.17 0.0004 0.00066 J 0.0037 0.0038 U 0.0015 J 0.0038 U 0.0015 J NA 29.89 NA 72.10 0.003 U | 9/2/2021
37.70
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0.00034 U | 7/5/2016
23.25
12.23
11.02
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23.25
10.14
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0.00062 U
0.00039 U | 12/3/2018
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11.11
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0.0049 | 7/5/2016
23.22
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NA
NA | 12/3/2018
23.22
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23.22
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0.15
0.088
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Notes:

< Not detected by the laboratory above the reporting limit. Reporting limit shown.

Je Estimated concentration between the method detection limit and reporting limit.

Use Not detected by the Laboratory above the method detection limit and reporting limit.

Use Not detected by the Laboratory above the method detection limit. Method detection limit shown.

Bold results above thereof a CMP-3 standing flow a GMT.

Som or for includes estimated values and does not include mon-detects (I/or of).

Som of or includes estimated values and does not include mon-detects (I/or of).

Note = Note Application of the CMP of APP of APP of TO to 10 feet below grade.

**- MLC 1 is screened from all 70 of APP of TO to 10 feet below grade.

**- MLC 2 is screened from 42 to 46 feet below grade.

The Method 1 GWT 3 Standard for the individual analytes in the Sum of 5k ranges from 500 to 40,000 ug/l.

Table 3 - 1,4 Dioxane Groundwater Results ug/L

Sample Location											North	Ramp								Airport Roa	id/Iyannou	gh Road Ar	ea			ARFF Bu	uilding	
Sample ID	HW-1	HW-1	HW-5	HW-12	OW-6	OW-6	HW-4M	HW-4D	HW-204	HW-29	HW-207S	HW-207D	HW-207D	HW-19D	HW-19D	HW-X(s)	HW-X(m)	HW-A(D)	HW-A(D)	HW-B(D)	HW-N	HW-O	HW-U(d)	HW-V(m)	HW-L(s)	HW-L(m)	HW-L(d)	HW-L(d)
Sample Date	5/7/2015	8/5/2019	5/7/2015	5/7/2015	5/7/2015	9/27/2019	4/5/2017	4/5/2017	9/27/2019	9/27/2019	9/27/2019	4/5/2017	9/27/2019	4/5/2017	9/27/2019	9/10/2021	9/10/2021	4/5/2017	8/5/2019	4/5/2017	8/5/2019	8/5/2019	10/2/2020	10/2/2020	10/7/2020	10/7/2020	7/2/2019	5/13/2020
1,4-Dioxane	<0.152	<0.25	<0.150	<0.150	<0.150	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.19	<0.22	<0.25	<0.25	<0.25	<0.25	<0.25	0.73	0.8	<0.2	<0.2	0.727	0.75
Sample Location								Maher Well F	ield							Deploym	nent Area											
Sample ID	OW-9M	OW-9D	OW-9D	OW-9D	OW-9DD	OW-9DD	OW-9DD	OW-18M	OW-18D	OW-18D	OW-18D	OW-19M	OW-19D	OW-19D	OW-19D	HW-E	HW-J											
Sample Date	5/28/2015	5/28/2015	12/3/2018	5/5/2020	5/28/2015	4/11/2017	12/3/2018	4/11/2017	4/11/2017	12/7/2018	5/13/2020	4/11/2017	4/11/2017	12/7/2018	5/13/2020	9/10/2021	9/10/2021											
1,4-Dioxane	<0.141	<0.141	<0.25	<0.19	0.926	0.838	0.732	<0.25	0.552	<0.25	0.35	<0.25	0.800	<0.25	0.3	<0.20	<0.20											

Results in ug/L, micrograms per liter.

< = Not detected by the laboratory above the reporting limit. Reporting limit shown. Bold results above Method 1 GW-1 standard (0.3 ug/L).

The Method 1 GW-2 standard for 1,4-dioxane is 6,000 ug/l.

The Method 1 GW-3 standard for 1,4-dioxane is 50,000 ug/l.

Table 4. ARFF Concentrate Analytical Results ug/L

Sample ID	Foam Mix
Sample Date	12/9/2016
Perfluoroheptanoic acid (PFHpA)	3.4 J
Perfluorohexanesulfonic acid (PFHxS)	2.1 J
Perfluorononanoic acid (PFNA)	93
Perfluorooctanoic acid (PFOA)	19
Perfluorooctane sulfonate (PFOS)	5 U
Perfluorodecanoic Acid (PFDA)	2.8 J
6:2 FTS	33
Total PFAS	222.5
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	120.3

- 1. U = Not detected by the laboratory above the Method Detection Limit. Method Detection Limit shown.
- 2. Results in ug/L, micrograms per liter.
- 3. Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U).
- 4. Sample is AFFF concentrate.
- 5. J = Estimated concentration between the Method Detection Limit and the Laboratory Reporting Limit.

Table 5. SPLP Results ug/L

Sample ID	DL4 4'	DL5 2'	DL8 (4')	DL14(0-1')	Stockpile West	Stockpile East	ARFF Rubber Roof	ARFF Asphalt Roof
Sample Date	9/26/2017	9/26/2017	9/26/2017	9/26/2017	10/10/2017	10/10/2017	11/17/2020	11/17/2020
Perfluoroheptanoic acid (PFHpA)	0.011 U	0.011 U	0.065 J	0.17	0.011 U	0.011 U	0.00279	0.0002 U
Perfluorohexanesulfonic acid (PFHxS)	0.0072 U	0.0072 U	0.036 U	0.01 J	0.0072 U	0.0072 U	0.00034 U	0.00036 U
Perfluorononanoic acid (PFNA)	0.16	0.0032 U	0.052 J	0.37	0.0032 U	0.0032 U	0.00068 J	0.00028 U
Perfluorooctanoic acid (PFOA)	0.012 J	0.042	0.6	0.87	0.0037 U	0.0037 U	0.0073	0.00021 U
Perfluorooctane sulfonate (PFOS)	0.013 J	0.0072 U	0.036 U	0.19	0.0072 U	0.0072 U	0.00045 U	0.00202
Perfluorodecanoic Acid (PFDA)	0.0052 U	0.0052 U	0.026 U	0.34	0.0052 U	0.0052 U	0.000364 J	0.000271 U
6:2 FTS	0.067	0.0072 U	25	7.13	0.034 J	0.024 J	0.0154 J	0.0017 J
Total PFAS	0.195	0.042	26.25	20.195	0.034	0.024	0.072723	0.07957
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.185	0.042	0.717	1.95	0.011 U	0.011 U	0.011133	0.00202

- 1. U = Not detected by the laboratory above the Method Detection Limit. Method Detection Limit shown.
- 2. Results in ug/L, micrograms per liter.
- 3. Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U).

Table 6: Background PFAS Levels in Soil and Soil Stock Pile Samples

										E	Background Sa	mple Location	S												
Sample ID	Method 1	Standard	Stockpile West	Stockpile East	Loam Pile	BG-1 0-1'	BG-2 0-1'	BG-3 0-1'	BG-4 0-1'	BG-5 0-1'	BG-6 0-1'	BG-7 0-1'	BG-8 0-1'	BG-9 0-1'	BG-10 0-1'	BG-11 0-1'	BG-12 0-1'	BG-13 0-1'	BG-14 0-1'	BG-15 0-1'	BG-16 0-1'	BG-17 0-1'	BG-18 0-1'	BG-19 0-1'	BG-20 0-1'
Sample Date	S-1/GW-1	S-1/GW-3	10/10/2017	10/10/2017	10/10/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	10/26/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017	12/14/2017
Sample Location			On-Airport	On-Airport	On-Airport	Off-Airport	On-Airport	On-Airport	On-Airport	On-Airport	On-Airport	On-Airport	On-Airport	Off-Airport											
Perfluoroheptanoic acid (PFHpA)	0.5	300	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.18 J	0.17 U	0.18 J	0.17 U	0.17 U	0.23 J	0.17 U	0.17 U	0.19 U	0.19 U	0.19 U	0.19 U	0.44 J	0.19 U	0.19 U	0.35 J	0.19 U	0.46 J
Perfluorohexanesulfonic acid (PFHxS)	0.3	300	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.24 U	0.39 J	0.24 U	0.24 U	0.57 J	0.47 J	0.24 U	0.49 J	0.24 U	0.24 U
Perfluorooctanoic acid (PFOA)	0.72	300	0.26 U	0.26 U	0.26 U	0.58 J	0.26 U	0.26 U	0.16 U	0.47 J	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.75 J	0.67 J	0.33 J	0.25 U	0.46 J	0.37 J	0.36 J	0.5 J	0.25 U	0.86 J
Perfluorononanoic acid (PFNA)	0.32	300	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.22 U	0.29 J	0.22 U	0.22 U	0.53 J	0.22	0.67 J	0.41 J	0.22 U	0.22 U
Perfluorooctane sulfonate (PFOS)	2	300	0.38 J	0.39 J	0.81 J	0.21 U	0.7 J	0.38 J	2.3	0.41 J	0.32 J	0.33 J	0.31 J	1.3	0.62 J	0.41 J	0.76 J	0.99	0.26 U	3.1	2	0.36 J	2.3	0.41 J	0.44 J
Perfluorodecanoic Acid (PFDA)	0.3	300	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.28 U	0.28 U	0.36 J	0.28 U	0.31 J	0.41 J	0.28 U	0.41 J	0.28 U	0.28 U
									Su	m of Laborato	ry Reported P	FAS (Total PFA	S) and Sum of	Six											
Total PFAS	NA	NA	1.78	0.91	0.81	1.47	0.7	0.56	3.21	1.31	0.32	0.3	0.84	1.3	0.62	1.16	2.73	1.68	0	6.79	3.77	5.09	5.45	0.41	2.43
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	NA	NA	0.38	0.39	0.81	0.58	0.7	0.56	2.3	1.06	0.32	0.33	0.54	1.3	0.62	1.16	2.11	1.68	0	5.41	3.47	1.39	4.46	0.41	1.76

J = Estimated concentration between the method detection limit and reporting limit.

Results in ug/kg, micrograms per kilogram.

U= Not detected by the Laboratory above the method detection limit. Method detection limit shown. Bold results above the proposed Method 1 S-1/GW-1 standard.

Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U or <).

Sum of six includes estimated values and does not include non-detects (U or <).

Table 7. Surface Water Results for PFAS ug/L

	Su	rface Wate	er
Sample ID	Kmart	LP-1	UGP-1
Sample Date	6/20/2017	7/11/19	7/11/19
Perfluoroheptanoic acid (PFHpA)	0.0033 U	<0.01	<0.02
Perfluorohexanesulfonic acid (PFHxS)	0.0034 U	<0.01	<0.02
Perfluorononanoic acid (PFNA)	0.0043 J	<0.01	<0.02
Perfluorooctanoic acid (PFOA)	0.0026 U	<0.01	<0.02
Perfluorooctane sulfonate (PFOS)	0.0046 U	<0.01	<0.02
Perfluorodecanoic Acid (PFDA)	0.0040 U	<0.01	<0.02
Sum of Laboratory Reported PFAS	(Total PFAS)	and Sum o	f Six
Total PFAS	0.0174	0.018	0.047
Sum of Six (PFHpA,PFHxS,PFOA, PFOS,			
PFNA, and PFDA)	0.0043	< 0.01	<0.02

< = Not detected by the laboratory above the reporting limit. Reporting limit shown.

J = Estimated concentration between the method detection limit and reporting limit.

Results in ug/L, micrograms per liter.

U= Not detected by the laboratory above the method detection limit. Method detection limit shown.

Sum of six includes estimated values and does not include non-detects (U or <).

Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U or <).

Currently MassDEP has not issued a surface water standard for PFAS.

The Method 1 GW-1 Standard for the Sum of Six is 0.02 ug/l.

The Method 1 GW-3 Standard for the individual analytes in the Sum of Six range from 500 to 40,000 ug/l.

Table 8: Ratio of Stable Isotopes Oxygen-18 and Hydrogen-2 Laboratory Results

Sample Date	Lab Sample ID	HW Sample ID	Stak	le Isotope Oxyger	1-18	Stab	le Isotope Hydrogen-Z	2
Sample Date	Lab Sample ID	nw Sample ID	δ180 (V-SMOW)	Atm %	Expected Values	δ180 (V-SMOW)	Atm %	Expected Values
	1811299-2	HW-I	-6.92	0.20	-	-40.41	0.01494	-
	1011299-2	L1 AA-1	-6.77	0.20	-	-40.17	0.01495	-
	1811299-4	HW-E	-6.79	0.20	-	-38.56	0.01497	-
	1011299-4	HVV-E	-6.85	0.20	-	-38.87	0.01497	-
11/7/2018	1811299-5	HW-F	-6.9	0.20	-	-38.28	0.01498	-
	1011233-3	1100-1	-6.88	0.20	-	-38.15	0.01498	-
			-2.67	0.20	-	-18.65	0.01528	-
	1811299-7	SW-2	-2.61	0.20	_	-20.42	0.01526	-
			-2.01	0.20		-23.04	0.01521	-
	1812198-1	HW-G(S)	-6.74	0.20	-	-38.19	0.01498	-
	1812198-1	1100-0(3)	-6.93	0.20	-	-37.87	0.01498	-
	1812198-2	HW-G(M)	-7.53	0.20	-	-44.34	0.01498	-
	1812198-2	1100-0(101)	-7.57	0.20	-	-44.39	0.01498	-
	2/3/2018	HW-G(D)	-7.18	0.20	-	-44.15	0.01489	-
		11W-G(D)	-7.45	0.20	-	-44.56	0.01488	-
		OW-9S	-7.29	0.20	-	-41.86	0.01492	-
12/3/2018		OW-55	-7.41	0.20	-	-42.94	0.0149	-
			-7.76	0.20	-	-47.91	0.01483	-
	1812198-5	OW-9D	-7.71	0.20	-	-46.82	0.01484	-
			7.71	0.20	-	-47.20	0.01484	-
	1812198-6	OW-9DD	-7.52	0.20	-	-45.58	0.01486	-
	1012130 0	OW 355	-7.57	0.20	-	-45.48	0.01487	-
	1812198-7	OW-9M	-7.13	0.20	-	-41.44	0.01493	-
	1012130 7	OW SIVI	-7.24	0.20	-	-43.40	0.0149	-
	1812232-1	OW-18S	-7.58	0.20	-	-49.29	0.01481	-
	1012232 1	OW 103	-7.54	0.20	-	-49.66	0.0148	-
12/7/2018	1812232-2	OW-18M	-6.95	0.20	-	-42.64	0.01491	-
12/7/2010	1012232 2	OW 101V1	-6.89	0.20	-	-42.57	0.01491	-
	1812232-2	OW-18D	-7.28	0.20	-	-44.76	0.01488	*
		0 10 10 10 10 10 10 10 10 10 10 10 10 10	-7.36	0.20	-	-41.61	0.01493	*
	IAEA OH-14	-	-5.64	0.20	-5.6	-37.45	0.01499	-37.70
QA/QC	IAEA OH-15	-	-9.59	0.20	-9.41	-77.89	0.01436	-78
ربم برد	IAEA OH-16	-	-15.72	0.20	-15.41	-	-	-113.8
	1812232-3 IAEA OH-14 IAEA OH-15	-	-29.83	0.19	-30	-	-	-239.69

Table 9. Fire Truck Spray Water PFAS Results ug/L

					F	ire Truck Spra	y Water Spra	ıy				
Sample ID	Но	ose	Ro	oof	Bun	nper	Officer Sid	e Handline	Driver s	ide-Rear	Officer s	side-Rear
Sample Date	8/22/2019	11/12/2019	8/22/2019	11/12/2019	8/22/2019	11/12/2019	8/22/2019	11/12/2019	8/22/2019	11/12/2019	8/22/2019	11/12/2019
Perfluoroheptanoic acid (PFHpA)	0.073	<0.002	0.0045	<0.002	0.0039	<0.002	0.027	<0.002	0.0055	<0.002	0.081	0.0021
Perfluorohexanesulfonic acid (PFHxS)	0.0059	<0.002	0.0033	<0.002	0.0039	<0.002	0.004	<0.002	0.0048	<0.002	0.0043	<0.002
Perfluorononanoic acid (PFNA)	0.011	<0.002	0.0026	<0.002	0.0031	<0.002	0.013	<0.002	0.003	<0.002	0.016	<0.002
Perfluorooctanoic acid (PFOA)	0.088	0.0062	0.0087	<0.002	0.01	<0.002	0.039	<0.002	0.011	<0.002	0.076	0.0041
Perfluorooctane sulfonate (PFOS)	0.009	0.0021	0.0068	<0.002	0.006	<0.002	0.0087	<0.002	0.0093	<0.002	0.0086	<0.002
Perfluorodecanoic Acid (PFDA)	0.014	<0.002	0.004	<0.002	0.0045	<0.002	0.032	<0.002	0.0049	<0.002	0.032	<0.002
Total PFAS	5.7017	0.3391	0.9195	0.0205	0.7817	0.0167	4.1098	0.0481	0.8302	0.0087	5.4701	0.086
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.2009	0.0083	0.0299	<0.002	0.0314	<0.002	0.1237	<0.002	0.0385	<0.002	0.2179	0.0041

 $\,$ < = Not detected by the laboratory above the reporting limit. Reporting limit shown.

Results in ug/L, micrograms per liter.

Bold results above proposed MassDEP GW-1 standard (0.02 ug/L)

Total PFAS is the sum of all laboratory detected PFAS analytes including estimated values and does not include non-detects (U or <).

Table 10. Pre and Post Cap Groundwater Results for PFAS Compounds in Deployment Area (ug/L)

Sample Location										D	ployment Area	1									
Sample ID		HW-E			HW-F			HW-J			HW-I (s)			HW-I (m)			HW-I (d)			HW-R(s)	
Sample Type	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap
Sample Date	5/5/2020	3/17/2021	9/8/2021	5/5/2020	3/17/2021	9/8/2021	11/7/2018	3/17/2021	9/10/2021	5/8/2020	3/17/2021	9/8/2021	5/8/2020	3/17/2021	9/8/2021	5/8/2020	3/17/2021	9/11/2021	10/1/2020	3/17/2021	9/8/2021
Depth to Groundwater	16.16	23.35	25.02	16.82	20.01	21.72	19.18	19.34	20.60	15.39	18.42	19.94	15.61	18.66	20.17	15.49	18.52	20.04	18.33	17.37	19.00
Groundwater Elevation	22.29	15.10	13.43	19.50	16.31	14.60	17.92	17.76	16.50	20.69	17.66	16.14	20.66	17.61	16.10	20.53	17.50	15.98	17.39	18.35	16.72
Perfluoroheptanoic acid (PFHpA)	0.044	0.014	0.0018 J	0.23	0.39	0.0051	0.025	0.044	0.02	0.54	0.032	0.097	0.0012	0.00086 J	0.0014 J	0.0046	0.0065	0.0083	0.021	0.005	0.021
Perfluorohexanesulfonic acid (PFHxS)	0.011	0.0015 J	0.00088 J	0.005	0.012 U	0.00037 U	0.0056 U	0.088	0.01	0.22	0.021	0.036	0.0091	0.0052	0.0078	0.018	0.031	0.05	0.02	0.01	0.0046
Perfluorononanoic acid (PFNA)	0.0052	0.00048 U	0.00037 U	0.00081	0.0097 U	0.00037 U	0.028	0.035 J	0.015	0.082	0.065	0.033	0.00078	0.00048 U	0.00046 J	< 0.002	0.00075 J	0.00084 J	0.0031	0.001 J	0.00034 U
Perfluorooctanoic acid (PFOA)	0.027	0.00095 J	0.00094 J	0.02	0.052	0.00074 U	0.026	0.061	0.0091	0.29	0.05	0.063	0.0018	0.0014 J	0.0016 J	0.0028	0.0043	0.0053	0.014	0.004	0.004
Perfluorooctane sulfonate (PFOS)	0.0037	0.00082 J	0.00064 U	0.00086	0.0076 U	0.00065 U	0.13	0.25	0.08	0.04	0.028	0.02	0.014	0.013	0.016	0.02	0.038	0.039	0.016	0.0023	0.0053
Perfluorodecanoic Acid (PFDA)	< 0.002	0.00038 U	0.00052 U	< 0.002	0.0076 U	0.00053 U	0.0061 U	0.0076 U	0.00050 U	< 0.002	0.0038 U	0.00047 U	< 0.002	0.00038 U	0.00050 U	< 0.002	0.00038 U	0.00048 U	< 0.002	0.00038 U	0.00049 U
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.86	0.0035	0.00039 U	1.5	4.8	0.0049	0.68	0.44	0.13	13	1.7	2.1	0.00039 U	0.0011 U	0.00037 U	0.0016	0.0011 U	0.00054 J	0.037	0.0048	0.003
							Sum of La	boratory Re	ported PFAS	(Total PFAS) and Sum o	f Six									
Total PFAS	1.04526	0.04812	0.01342	2.65637	8.422	0.159	1.074	1.217	0.51107	15.5383	2.082	2.73304	0.03308	0.02516	0.03254	0.08985	0.15585	0.16687	0.2171	0.04878	0.2549
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.0909	0.01727	0.00362	0.25667	0.442	0.0051	0.209	0.478	0.1341	1.172	0.196	0.249	0.02688	0.02046	0.02726	0.0454	0.08055	0.10344	0.0741	0.0223	0.0349
									Statistic	:S											
Percent Total PFAS Increase or Decrease (most recent event)		-98.72%			-94.01%			-52.41%			-82.41%			-1.63%			85.72%			17.41%	
Percent Sum of 6 Increase or Decrease (most recent event)		-96.02%			-98.01%			-35.84%			-78.75%			1.41%			127.84%			-52.90%	

Sample Location							Downgradien	t of Deploymen	t Area (off-Airpo	ort)					
Sample ID		HW-S (s)			HW-S (m)			OW-19(S)			OW-19(M)			OW-19D	
Sample Type	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap
Sample Date	10/1/2020	3/18/2021	9/3/2021	10/1/2020	3/18/2021	9/3/2021	11/6/2020	3/18/2021	9/2/2021	11/6/2020	3/19/2021	9/3/2021	5/13/2020	3/19/2021	9/11/2021
Depth to Groundwater	16.88	16.29	17.30	17.01	16.35	17.37	27.38	26.27	28.47	27.57	27.15	28.65	25.64	27.52	28.90
Groundwater Elevation	14.72	15.31	14.30	14.58	15.24	14.22	NA	NA	NA	NA	NA	NA	13.42	11.54	10.16
Perfluoroheptanoic acid (PFHpA)	0.11	0.14	0.11	0.00096 J	0.0011 J	0.0012 J	0.0042	0.0044	0.0056	0.03	0.044	0.014	0.011	0.018	0.022
Perfluorohexanesulfonic acid (PFHxS)	0.055	0.083	0.064	0.0064	0.0073	0.0053	0.0031	0.0064	0.0027	0.027	0.014 J	0.015	0.12	0.026	0.028
Perfluorononanoic acid (PFNA)	0.1	0.024	0.1	< 0.002	0.00057 J	0.00055 J	0.0024	0.0012 J	0.0025	0.002	0.0048 U	0.0021	0.0017	0.0029	0.00088 J
Perfluorooctanoic acid (PFOA)	0.062	0.078	0.13	0.0013 J	0.0018 J	0.0014 J	0.011	0.007	0.0066	0.011	0.0094 J	0.0037	0.023	0.0097	0.007
Perfluorooctane sulfonate (PFOS)	0.1	0.03	0.048	0.0058	0.006	0.0094	0.025	0.015	0.031	0.047	0.027	0.029	0.31	0.047	0.053
Perfluorodecanoic Acid (PFDA)	< 0.002	0.0038 U	0.012 U	< 0.002	0.00038 U	0.00047 U	0.0027	0.001 J	0.00048 U	< 0.002	0.0038 U	0.00046 U	< 0.002	0.00038 U	0.00048 U
6:2 Fluorotelomer sulfonate (6:2 FTS)	3.7	3.1	5.2	0.0065	0.0067	0.0036	0.00039 U	0.0011 U	0.00036 U	0.00095	0.011 U	0.00035 U	0.00039 U	0.0011 U	0.00036 U
			Su	m of Labor	atory Repo	rted PFAS (T	otal PFAS) a	nd Sum of S	ix						
Total PFAS	4.8958	4.3105	6.1418	0.02471	0.03263	0.02873	0.0707	0.0634	0.07307	0.37335	0.3974	0.16133	0.5463	0.3127	0.31489
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.427	0.355	0.452	0.01446	0.02667	0.01785	0.0484	0.035	0.0484	0.117	0.0944	0.0638	0.4657	0.1036	0.11088
						Statistics									
Percent Total PFAS Increase or Decrease	nt Total PFAS Increase or Decrease 25.45%			· ·	16.27%	·		3.35%			-56.79%	·		-42.36%	
Percent Sum of 6 Increase or Decrease	5.85% 23.44% 0.00% -45.47% -76.19%														

Results in ug/L, micrograms per liter.

U= Not detected by the Laboratory above the method detection limit. Method detection limit shown Bold results above Method 1 GW-1 standard (0.02 ug/L).

sum of six includes estimated values and does not include non-detects (U or <) Total PFA's is the sum of all laboratory detected PFA's analytes including estimated values and does not include non-detects (U or <) The Method 1 GW-3 Standard for the individual analytes in the Sum of six ranges from 800 to 40,000 ug/l)

Percent increase or decrease is calculated using the most recient post cap sampling event as follows: [(Post Cap- Pre Cap)]/ (Pre Cap)/ (Pre Cap)]/ (Pre Cap)]/ (Pre Cap)/ (Pre Cap)]/ (Pre Cap)/ (Pre Cap)/ (Pre Cap)/ (Pre Cap))/ (Pre Cap)/ (Pre C

Table 11. Pre and Post Cap Groundwater Results for PFAS Compounds in ARFF/SRE Area (ug/L)

Sample Location			ARFFF	/SRE Area						
Sample ID		HW-P (s)			HW-P (m)					
Sample Type	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap				
Sample Date	10/1/2020	3/18/2021	9/8/2021	10/1/2020	3/18/2021	9/8/2021				
Depth to Groundwater	22.69	22.09	23.54	22.80	22.20	23.67				
Groundwater Elevation	17.82	18.42	16.97	17.84	18.44	16.97				
Perfluoroheptanoic acid (PFHpA)	0.026	0.0067	0.004	0.003	0.017	0.016				
Perfluorohexanesulfonic acid (PFHxS)	0.0018 J	0.00074 J	0.00056 J	0.00085	0.0015 J	0.0013 J				
Perfluorononanoic acid (PFNA)	0.0061	0.002	0.0013 J	0.0011 J	0.006	0.0099				
Perfluorooctanoic acid (PFOA)	0.0084	0.0042	0.0017 J	0.0018 J	0.0096	0.01				
Perfluorooctane sulfonate (PFOS)	0.00097	0.00049 J	0.00054 U	0.0011 J	0.0035	0.003				
Perfluorodecanoic Acid (PFDA)	0.00085	0.0004 J	0.00048 U	< 0.002	0.00038 U	0.00048 U				
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.011	0.0034	0.0014 J	0.00092	0.0011 U	0.00036 U				
Sum of Laborator	Reported	PFAS (Total	al PFAS) ar	d Sum of S	Six					
Total PFAS	0.2478	0.06294	0.05055	0.02967	0.17311	0.15362				
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.04412	0.01453	0.00756	0.00785	0.0376	0.0402				
Statistics										
Percent Total PFAS Increase or Decrease		-79.60%			417.76%					
Percent Sum of 6 Increase or Decrease		-82.86%			412.10%					

l -																					
Sample Location									Dow	ngradient of Dep	oloyment Area	(on and off-Airp	ort)								
Sample ID		HW-302			HW-3			HW-2			HW-K			HW-300			RB-1 (s)			RB-1 (m)	
Sample Type	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Post-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap	Pre-Cap	Post-Cap	Post-Cap
Sample Date	12/3/2018	3/17/2021	9/1/2021	5/5/2020	3/17/2021	9/1/2021	5/5/2020	3/17/2021	9/1/2021	5/21/2020	3/18/2021	9/2/2021	7/1/2016	3/17/2021	9/2/2021	11/5/2020	3/18/2021	9/5/2021	11/5/2020	3/18/2021	9/5/2021
Depth to Groundwater	22.65	24.04	26.15	23.64	26.19	28.35	25.33	22.85	30.20	20.56	22.87	24.24	22.52	22.86	23.02	17.87	16.91	18.64	17.79	16.85	18.57
Groundwater Elevation	18.52	17.13	15.02	15.10	12.55	10.39	15.08	17.56	10.21	17.14	14.83	13.46	13.57	13.23	13.07	NA	NA	NA	NA	NA	NA
Perfluoroheptanoic acid (PFHpA)	0.015 J	0.0066	0.0062	0.1	0.084	0.035	0.035	0.02	0.046	0.0028	0.0044	0.0086	0.0096	0.0028	0.0029	0.0042	0.0054	0.0077	0.011	0.013 J	0.0073
Perfluorohexanesulfonic acid (PFHxS)	0.016 J	0.0022	0.004	0.0087	0.0064 J	0.0057 J	0.0066	0.0023	0.0056 J	0.001	0.00066 J	0.0015 J	0.012	0.0099	0.00066 J	0.0084	0.03	0.0051	0.01	0.017 J	0.0099
Perfluorononanoic acid (PFNA)	0.0097 J	0.0066	0.005	0.021	0.019 J	0.014 J	0.016	0.01	0.004 J	0.0012	0.0037	0.003	< 0.002	0.00099 J	0.0028	0.0047	0.0025	0.0026	0.0068	0.0072 J	0.0044
Perfluorooctanoic acid (PFOA)	0.03	0.005	0.0065	0.054	0.064	0.016 J	0.039	0.017	0.012	0.0019	0.0036	0.0038	0.017	0.0044	0.0044	0.007	0.0087	0.0093	0.013	0.013 J	0.012
Perfluorooctane sulfonate (PFOS)	0.031	0.0041	0.015	0.1	0.056	0.044	0.053	0.021	0.026	0.0016	0.0015 J	0.0019	0.0052	0.015	0.017	0.038	0.04	0.01	0.049	0.075	0.055
Perfluorodecanoic Acid (PFDA)	0.0061 U	0.00086 J	0.001 J	0.0014	0.0038 U	0.0052 U	< 0.002	0.0014 J	0.0025 U	< 0.002	0.00038 U	0.00046 U	NA	0.00038 U	0.0006 J	<0.002	0.00038 U	0.00045 U	0.00075 J	0.0038 U	0.0033
6:2 Fluorotelomer sulfonate (6:2 FTS)	0.13	0.012	0.0062	0.13	0.47	0.2	0.15	0.064	0.071	0.00039 U	0.0011 U	0.00034 U	NA	0.0011 U	0.00034 U	0.00039 U	0.0011 U	0.00034 U	0.038	0.055	0.013
							Sum of La	boratory Re	ported PFAS	(Total PFAS) and Sum o	of Six									
Total PFAS	0.3427	0.08304	0.09793	0.96981	1.1394	0.6867	0.42678	0.24854	0.4136	0.0275	0.04486	0.09217	0.0438	0.05509	0.03812	0.08008	0.1175	0.06755	0.2015	0.2642	0.1561
Sum of Six (PFHpA,PFHxS,PFOA, PFOS, PFNA, and PFDA)	0.1017	0.02536	0.0377	0.2851	0.2294	0.1147	0.1496	0.0717	0.0936	0.0085	0.0138	0.0188	0.0438	0.03309	0.02832	0.0623	0.0866	0.0347	0.09055	0.1252	0.0919
	•							•	Statisti	cs						•					
Percent Total PFAS Increase or Decrease		-71.42%			-29.19%			-3.09%			235.16%			-12.97%			-15.65%			-22.53%	
Percent Sum of 6 Increase or Decrease		-62.93%			-59.77%			-37.43%			121.18%			-35.34%	-35.34% -44.30%			1.49%			

Results in ug/L, micrograms per liter.

U= Not detected by the Laboratory above the method detection limit. Method detection limit shown Bold results above Method 1 GW+1 standard (0.02 ug/L).

Sum of six includes estimated values and does not include non-detects (U or <)

TOLAI PMS is the sum of all biobarotory detected PMS analytes including estimated values and does not include non-detects (U or <) The Nethod 2 GW-3 Standard for the individual analytes in the Sum of Six arranges from 300 to 0,000 ug/l

Percent increase or deterests is facilitated using the most recent port cap sampling event as follows: [Post Cap- Pre Cap]/[Pre

Table 2: Total Organic Carbon Levels (mg/kg)

	Total Organic Carbon Concentration																
Sample ID	HW-W dd 3-5 ft	HW-W dd 8-10 ft	HW-W dd 18-20 ft	HW-W dd 23-25 ft	HW-W dd 28-30 ft	HW-W dd 33-35 ft	HW-W dd 38-40 ft	HW-W dd 43-45 ft	HW-W dd 48-50 ft	HW-W dd 58-60 ft	HW-W dd 63-65 ft	S1 0-2ft	S1 2-4ft	S1 4-6ft	S2 0-2ft	S2 2-4ft	S2 4-6ft
Sample Date	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021	4/19/2021	4/19/2021	4/19/2021	4/19/2021	4/19/2021	4/19/2021
Sample Depth (ft below grade)	3-5	8-10	18-20	23-25	28-30	33-35	38-40	43-45	48-50	58-60	63-65	0-2	2-4	4-6	0-2	2-4	4-6
Sample Location	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Water Department Property	Deployment Area	Deployment Area	Deployment Area	Deployment Area	Deployment Area	Deployment Area
Total Organic Carbon	94.8 U	94.3 U	96.5 U	93.9 U	95.7 U	93.5 U	96.9 U	95.7 U	95.7 U	95.7 U	95.7 U	28,900	1,150	180	1,550	95.1 U	3,500

Results in mg/kg, milligrams per kilogram.

U= Not detected by the Laboratory above the method detection limit. Method detection limit shown.

APPENDIX A

Laboratory Analysis Report

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

April 19, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21C1176

Enclosed are results of analyses for samples received by the laboratory on March 23, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MCorthy

Raymond J. McCarthy Project Manager

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

Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

PURCHASE ORDER NUMBER:

REPORT DATE: 4/19/2021

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21C1176

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HW-R(S)	21C1176-01	Ground Water		SOP-454 PFAS	
HW-J	21C1176-02	Ground Water		SOP-454 PFAS	
HW-I (S)	21C1176-03	Ground Water		SOP-454 PFAS	
HW-I (M)	21C1176-04	Ground Water		SOP-454 PFAS	
HW-I (D)	21C1176-05	Ground Water		SOP-454 PFAS	
HW-E	21C1176-06	Ground Water		SOP-454 PFAS	
HW-F	21C1176-07	Ground Water		SOP-454 PFAS	
HW-302	21C1176-08	Ground Water		SOP-454 PFAS	
HW-2	21C1176-09	Ground Water		SOP-454 PFAS	
HW-3	21C1176-10	Ground Water		SOP-454 PFAS	
HW-300	21C1176-11	Ground Water		SOP-454 PFAS	
HW-S (S)	21C1176-12	Ground Water		SOP-454 PFAS	
HW-S (M)	21C1176-13	Ground Water		SOP-454 PFAS	
HW-P (S)	21C1176-14	Ground Water		SOP-454 PFAS	
HW-P (M)	21C1176-15	Ground Water		SOP-454 PFAS	
RB-1(S)	21C1176-16	Ground Water		SOP-454 PFAS	
RB-1 (M)	21C1176-17	Ground Water		SOP-454 PFAS	
HW-K	21C1176-18	Ground Water		SOP-454 PFAS	
OW-19 (S)	21C1176-19	Ground Water		SOP-454 PFAS	
OW-19(M)	21C1176-20	Ground Water		SOP-454 PFAS	
OW-19(D)	21C1176-21	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-02A

Surrogate recovery is outside of control limits. Re-analysis yielded similar surrogate non-conformance.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA

21C1176-14RE1[HW-P(S)]

d5-NEtFOSAA

21C1176-04RE1[HW-I (M)], 21C1176-12RE1[HW-S (S)], 21C1176-14RE1[HW-P (S)], 21C1176-17RE1[RB-1 (M)]

_ ___ .

 $21C1176-04RE1[HW-I\ (M)], 21C1176-05RE1[HW-I\ (D)], 21C1176-06RE1[HW-E], 21C1176-07RE1[HW-F], 21C1176-08RE1[HW-302], 21C1176-09RE1[HW-2], \\ 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1\ (S)], 21C1176-17RE1[RB-1\ (M)], 21C1176-19RE1[OW-19\ (S)], 21C1176-20RE1[OW-19\ (M)], B279944-BLK1$

M7DEIIn A

21C1176-04RE1[HW-I (M)], 21C1176-12RE1[HW-S (S)], 21C1176-14RE1[HW-P (S)], 21C1176-17RE1[RB-I (M)]

M8FOSA

 $21C1176-04RE1[HW-I\ (M)], 21C1176-09RE1[HW-2], 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1(S)], 21C1176-17RE1[RB-1\ (M)]$

MPFDoA

 $21C1176-04RE1[HW-I\ (M)], 21C1176-05RE1[HW-I\ (D)], 21C1176-08RE1[HW-302], 21C1176-09RE1[HW-2], 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1(S)], 21C1176-17RE1[RB-1\ (M)], 21C1176-19RE1[OW-19\ (S)]$

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.

Lisa A. Worthington Technical Representative

na Warrlington



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-R(S)

Sampled: 3/17/2021 11:55

Sample ID: 21C1176-01
Sample Matrix: Ground Water

MPFBA

M6PFDA

M3PFBS

M3HFPO-DA

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.1	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorobutanesulfonic acid (PFBS)	0.85	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoropentanoic acid (PFPeA)	10	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorohexanoic acid (PFHxA)	6.1	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorohexanesulfonic acid (PFHxS)	10	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	4.8	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.63	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoroheptanoic acid (PFHpA)	5.0	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanoic acid (PFOA)	4.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanesulfonic acid (PFOS)	2.3	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorononanoic acid (PFNA)	1.0	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		75.2		50-150					4/17/21 1:05	
M2-4:2FTS		128		50-150					4/17/21 1:05	
M2PFTA		66.4		50-150					4/17/21 1:05	
M2-8:2FTS		80.0		50-150					4/17/21 1:05	

50-150

50-150

50-150

50-150

90.0

83.1

87.2

79.4

4/17/21 1:05

4/17/21 1:05

4/17/21 1:05

4/17/21 1:05



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-R(S)

Sampled: 3/17/2021 11:55

Sample ID: 21C1176-01
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		83.0		50-150					4/17/21 1:05	
M2-6:2FTS		87.5		50-150					4/17/21 1:05	
M5PFPeA		87.0		50-150					4/17/21 1:05	
M5PFHxA		81.6		50-150					4/17/21 1:05	
M3PFHxS		84.7		50-150					4/17/21 1:05	
M4PFHpA		76.6		50-150					4/17/21 1:05	
M8PFOA		91.4		50-150					4/17/21 1:05	
M8PFOS		86.8		50-150					4/17/21 1:05	
M9PFNA		86.5		50-150					4/17/21 1:05	
MPFDoA		74.0		50-150					4/17/21 1:05	
d5-NEtFOSAA		75.6		50-150					4/17/21 1:05	
d3-NMeFOSAA		71.2		50-150					4/17/21 1:05	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-J

Sampled: 3/17/2021 12:50

Sample ID: 21C1176-02
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	59	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	40	6.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoropentanoic acid (PFPeA)	150	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorohexanoic acid (PFHxA)	75	40	15	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
11Cl-PF3OUdS (F53B Major)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
9Cl-PF3ONS (F53B Minor)	ND	40	7.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	40	32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	40	29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorodecanoic acid (PFDA)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorododecanoic acid (PFDoA)	ND	40	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	40	7.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	40	26	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
N-EtFOSAA	ND	40	19	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
N-MeFOSAA	ND	40	19	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorotetradecanoic acid (PFTA)	ND	40	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	40	23	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	40	21	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanesulfonamide (FOSA)	ND	40	8.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorononanesulfonic acid (PFNS)	ND	40	18	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	15	40	14	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorohexanesulfonic acid (PFHxS)	88	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	40	7.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	440	40	22	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	40	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroundecanoic acid (PFUnA)	ND	40	9.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroheptanoic acid (PFHpA)	44	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanoic acid (PFOA)	61	40	7.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanesulfonic acid (PFOS)	250	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorononanoic acid (PFNA)	35	40	9.7	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		92.7		50-150					4/17/21 1:35	
M2-4:2FTS		78.3		50-150					4/17/21 1:35	
M2PFTA		88.2		50-150					4/17/21 1:35	
M2-8:2FTS		79.1		50-150					4/17/21 1:35	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-J

Sampled: 3/17/2021 12:50

Sample ID: 21C1176-02

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recove	ery	Recovery Limits	s	Flag/Qual				
M7PFUnA		98.4		50-150					4/17/21 1:35	
M2-6:2FTS		71.5		50-150					4/17/21 1:35	
M5PFPeA		105		50-150					4/17/21 1:35	
M5PFHxA		94.3		50-150					4/17/21 1:35	
M3PFHxS		104		50-150					4/17/21 1:35	
M4PFHpA		97.9		50-150					4/17/21 1:35	
M8PFOA		104		50-150					4/17/21 1:35	
M8PFOS		104		50-150					4/17/21 1:35	
M9PFNA		98.8		50-150					4/17/21 1:35	
MPFDoA		90.4		50-150					4/17/21 1:35	
d5-NEtFOSAA		88.6		50-150					4/17/21 1:35	
d3-NMeFOSAA		83.9		50-150					4/17/21 1:35	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (S)

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-03

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	32	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoropentanoic acid (PFPeA)	98	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorohexanoic acid (PFHxA)	56	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorohexanesulfonic acid (PFHxS)	21	20	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1700	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroheptanoic acid (PFHpA)	32	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanoic acid (PFOA)	50	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanesulfonic acid (PFOS)	28	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorononanoic acid (PFNA)	65	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		87.0		50-150					4/17/21 2:04	
M2-4:2FTS		76.0		50-150					4/17/21 2:04	
M2PFTA		79.7		50-150					4/17/21 2:04	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (S)

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-03

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA		91.9		50-150					4/17/21 2:04	
M2-6:2FTS		79.3		50-150					4/17/21 2:04	
M5PFPeA		101		50-150					4/17/21 2:04	
M5PFHxA		91.2		50-150					4/17/21 2:04	
M3PFHxS		99.0		50-150					4/17/21 2:04	
M4PFHpA		97.6		50-150					4/17/21 2:04	
M8PFOA		100		50-150					4/17/21 2:04	
M8PFOS		101		50-150					4/17/21 2:04	
M9PFNA		94.0		50-150					4/17/21 2:04	
MPFDoA		84.5		50-150					4/17/21 2:04	
d5-NEtFOSAA		85.0		50-150					4/17/21 2:04	
d3-NMeFOSAA		80.4		50-150					4/17/21 2:04	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (M)

Sampled: 3/17/2021 14:10

Sample ID: 21C1176-04

Sample Matrix: Ground Water

Semivolatile	Organic	Compounds by	v - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.0	2.0	0.57	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoropentanoic acid (PFPeA)	1.9	2.0	0.66	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorohexanoic acid (PFHxA)	1.8	2.0	0.75	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorohexanesulfonic acid (PFHxS)	5.2	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroheptanoic acid (PFHpA)	0.86	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanoic acid (PFOA)	1.4	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanesulfonic acid (PFOS)	13	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Surrogates		% Rec	overy	Recovery Limits		Flag/Qual				
M8FOSA		16.9	*	50-150		PF-02A			4/17/21 2:34	
M2-4:2FTS		90.7		50-150					4/17/21 2:34	

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	16.9 *	50-150	PF-02A	4/17/21 2:34
M2-4:2FTS	90.7	50-150		4/17/21 2:34
M2PFTA	0.898 *	50-150	PF-02A	4/17/21 2:34
M2-8:2FTS	71.0	50-150		4/17/21 2:34
MPFBA	95.2	50-150		4/17/21 2:34
M3HFPO-DA	92.6	50-150		4/17/21 2:34
M6PFDA	71.9	50-150		4/17/21 2:34
M3PFBS	110	50-150		4/17/21 2:34



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (M)

Sampled: 3/17/2021 14:10

Sample ID: 21C1176-04
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		35.5	*	50-150		PF-02A			4/17/21 2:34	
M2-6:2FTS		77.8		50-150					4/17/21 2:34	
M5PFPeA		93.6		50-150					4/17/21 2:34	
M5PFHxA		90.1		50-150					4/17/21 2:34	
M3PFHxS		111		50-150					4/17/21 2:34	
M4PFHpA		85.7		50-150					4/17/21 2:34	
M8PFOA		96.5		50-150					4/17/21 2:34	
M8PFOS		97.6		50-150					4/17/21 2:34	
M9PFNA		86.1		50-150					4/17/21 2:34	
MPFDoA		11.1	*	50-150		PF-02A			4/17/21 2:34	
d5-NEtFOSAA		41.6	*	50-150		PF-02A			4/17/21 2:34	
d3-NMeFOSAA		51.5		50-150					4/17/21 2:34	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (D)

Sampled: 3/17/2021 14:35

69.4

91.2

93.1

84.9

93.0

50-150

50-150

50-150

50-150

50-150

Sample ID: 21C1176-05
Sample Matrix: Ground Water

M2-8:2FTS

M3HFPO-DA

MPFBA

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	9.9	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorobutanesulfonic acid (PFBS)	1.7	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoropentanoic acid (PFPeA)	37	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorohexanoic acid (PFHxA)	25	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorohexanesulfonic acid (PFHxS)	31	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.7	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroheptanoic acid (PFHpA)	6.5	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanoic acid (PFOA)	4.3	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanesulfonic acid (PFOS)	38	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorononanoic acid (PFNA)	0.75	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Surrogates		% Reco	overy	Recovery Limits	3	Flag/Qual				
M8FOSA		60.0		50-150					4/17/21 3:04	
M2-4:2FTS		79.0	4	50-150		DE 024			4/17/21 3:04	
M2PFTA		11.9	*	50-150		PF-02A			4/17/21 3:04	

4/17/21 3:04

4/17/21 3:04

4/17/21 3:04

4/17/21 3:04

4/17/21 3:04



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (D)

Sampled: 3/17/2021 14:35

Sample ID: 21C1176-05
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% R	ecovery	Recovery Limits	s	Flag/Qual				
M7PFUnA	67.1		50-150					4/17/21 3:04	
M2-6:2FTS	66.3		50-150					4/17/21 3:04	
M5PFPeA	91.8		50-150					4/17/21 3:04	
M5PFHxA	85.7		50-150					4/17/21 3:04	
M3PFHxS	96.5		50-150					4/17/21 3:04	
M4PFHpA	85.5		50-150					4/17/21 3:04	
M8PFOA	95.0		50-150					4/17/21 3:04	
M8PFOS	91.1		50-150					4/17/21 3:04	
M9PFNA	88.6		50-150					4/17/21 3:04	
MPFD ₀ A	46.9	*	50-150		PF-02A			4/17/21 3:04	
d5-NEtFOSAA	63.0		50-150					4/17/21 3:04	
d3-NMeFOSAA	66.4		50-150					4/17/21 3:04	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-E

Sampled: 3/17/2021 15:10

77.7

95.1

92.0

94.4

92.1

50-150

50-150

50-150

50-150

50-150

Sample ID: 21C1176-06
Sample Matrix: Ground Water

M2-8:2FTS

M3HFPO-DA

MPFBA

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	5.5	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorobutanesulfonic acid (PFBS)	0.35	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoropentanoic acid (PFPeA)	16	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorohexanoic acid (PFHxA)	5.5	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorohexanesulfonic acid (PFHxS)	1.5	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.5	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroheptanoic acid (PFHpA)	14	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanoic acid (PFOA)	0.95	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanesulfonic acid (PFOS)	0.82	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Surrogates		% Reco	overy	Recovery Limits		Flag/Qual				
M8FOSA		79.8		50-150					4/17/21 3:33	
M2-4:2FTS M2PFTA		79.8 36.4	*	50-150 50-150		PF-02A			4/17/21 3:33 4/17/21 3:33	
MALE IA		50.4		50-150		11-02A			7/1//21 3.33	

4/17/21 3:33

4/17/21 3:33

4/17/21 3:33

4/17/21 3:33

4/17/21 3:33



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-E

Sampled: 3/17/2021 15:10

Sample ID: 21C1176-06

Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL D	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recovery	Recovery Limits	1	Flag/Qual				
M7PFUnA	85.0	50-150					4/17/21 3:33	
M2-6:2FTS	72.7	50-150					4/17/21 3:33	
M5PFPeA	93.3	50-150					4/17/21 3:33	
M5PFHxA	89.8	50-150					4/17/21 3:33	
M3PFHxS	100	50-150					4/17/21 3:33	
M4PFHpA	87.4	50-150					4/17/21 3:33	
M8PFOA	101	50-150					4/17/21 3:33	
M8PFOS	95.5	50-150					4/17/21 3:33	
M9PFNA	95.5	50-150					4/17/21 3:33	
MPFDoA	73.7	50-150					4/17/21 3:33	
d5-NEtFOSAA	77.4	50-150					4/17/21 3:33	
d3-NMeFOSAA	75.6	50-150					4/17/21 3:33	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-F

Sampled: 3/17/2021 15:35

Sample ID: 21C1176-07
Sample Matrix: Ground Water

Semivolatile	Organic Com	pounds by -	LC/MS-MS

Perfluorobatamenic acid (PFBA)	Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluonophatanesial (PFPeA) ND 40 6.4 Ng N 1 Ng N 40 13 Ng N 1 Ng N 45 47 147	Perfluorobutanoic acid (PFBA)	420	40	11	ng/L	1	<u> </u>	SOP-454 PFAS		4/17/21 4:03	JFC
Perfluorodecamoic acid (PFHA) 960 40 15 ng/L 1 SOP-454 PFAS 4/142 4/1721 4/03 4/05 1/14 1/14 1/14 1/14 4/1721 4/03 4/14 4/14	Perfluorobutanesulfonic acid (PFBS)	ND	40	6.4		1		SOP-454 PFAS	4/14/21		JFC
Incl-PFSOUds (FS3B Major) ND	Perfluoropentanoic acid (PFPeA)	1800	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
SCEPTSONS (FS3B Minor) ND 40 7.1 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4/3-dioa-3-H-perfluoronomonic acid ND 40 12 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4/00NA) Resultation proper plene oxide dimer acid ND 40 32 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4	Perfluorohexanoic acid (PFHxA)	960	40	15	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
A-B-dioxa-3H-perfluoronomonic acid (ADONA) 12	11Cl-PF3OUdS (F53B Major)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
ADDINA Hexalluoropropriene oxide dimer acid (HEVADO) ND 40 29 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Refribuorodeomesulfonic acid (RESETSA) ND 40 7.6 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 26 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 21 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 12 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 12 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21	9Cl-PF3ONS (F53B Minor)	ND	40	7.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
CHFOLAD See Purpose	- ·	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanoic acid (PFDA) ND 40 7,6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFDA) ND 40 5,8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFDA) ND 40 7,3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFHBS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecanic acid (PFTDA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecsulfonic acid (4/2FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecanic acid (PFDS) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03		ND	40	32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanoic acid (PFDoA) ND 40 5.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro(2-ethoxyethane)sulfonic acid ND 40 7.3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotephanesulfonic acid (PFHpS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-45	8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	40	29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFILPS) ND 40 7.3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanoic acid (PFTDA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanesulfonic acid (4/2FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanesulfonic acid (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/17/21 4/17/21 4/03 4/17/21	Perfluorodecanoic acid (PFDA)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoroheptanesulfonic acid (PFHpS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-BetFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotedecanesulfonic acid (4/2FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (4/2FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (PFDS) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotenomanesulfonic acid (PFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotenomanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonia (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfon	Perfluorododecanoic acid (PFDoA)	ND	40	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (FFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorooctanesulfonamide (FOSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-octanesulfonic acid (FFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-octanesulfonic acid (FFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-butanesulfonic acid (FFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (FFNS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (FFNSA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (FFNSA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetaneoic acid (FFNSA) ND 40 ND	(PFEESA)				-						JFC
N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotedecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (42FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (42FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoroctanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoroctanesulfonic acid (PFDS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-bexanesulfonamide (FDSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-bexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFNS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFNBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 12 ng/L 1 SOP-454 PF	• • • • • • • • • • • • • • • • • • • •				_						JFC
Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTrDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorocatanesulfonamide (FOSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-hexanesulfonamide (FDSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-butanesulfonia acid (PFHXS) ND 40 <			40		ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorotridecanoic acid (PFTrDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoron-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMRA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPRS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFOS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFOS) ND 40 7.			40	19	ng/L			SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
4.2 Fluorotelomersulfonic acid (4.2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorononanesulfonic acid (PFDS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMPA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFMBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanoic acid (PFURA) SOP	` '	ND	40	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoronanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonic acid (PFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFNA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorotridecanoic acid (PFTrDA)	ND	40	23	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FHxSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFMS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-3-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-3-o-6-dioxaheptanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (PFDA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFDA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	40	21	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoronanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorotelomersulfonic acid (6:2FTSA) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	` ,	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorooctanesulfonamide (FOSA)	ND	40	8.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanosulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorononanesulfonic acid (PFNS)	ND	40	18	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobeptanoic acid (PFDA) 390 40	Perfluoro-1-hexanesulfonamide (FHxSA)	ND	40	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40	Perfluoro-1-butanesulfonamide (FBSA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 NOFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorohexanesulfonic acid (PFHxS)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoro-4-oxapentanoic acid (PFMPA)	ND	40	7.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoro-5-oxahexanoic acid (PFMBA)	ND	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	6:2 Fluorotelomersulfonic acid (6:2FTS A)	4800	40	22	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoropetanesulfonic acid (PFPeS)	ND	40	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
(NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoroundecanoic acid (PFUnA)	ND	40	9.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	•	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoroheptanoic acid (PFHpA)	390	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
	Perfluorooctanoic acid (PFOA)	52	40	7.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorononanoic acid (PFNA) ND 40 9.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorooctanesulfonic acid (PFOS)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
•	Perfluorononanoic acid (PFNA)	ND	40	9.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	69.3	50-150		4/17/21 4:03
M2-4:2FTS	78.0	50-150		4/17/21 4:03
M2PFTA	21.1 *	50-150	PF-02A	4/17/21 4:03
M2-8:2FTS	73.8	50-150		4/17/21 4:03
MPFBA	93.8	50-150		4/17/21 4:03
M3HFPO-DA	90.9	50-150		4/17/21 4:03
M6PFDA	88.8	50-150		4/17/21 4:03
M3PFBS	96.4	50-150		4/17/21 4:03



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-F

Sampled: 3/17/2021 15:35

Sample ID: 21C1176-07

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		76.9		50-150					4/17/21 4:03	
M2-6:2FTS		93.0		50-150					4/17/21 4:03	
M5PFPeA		96.9		50-150					4/17/21 4:03	
M5PFHxA		88.8		50-150					4/17/21 4:03	
M3PFHxS		101		50-150					4/17/21 4:03	
M4PFHpA		94.4		50-150					4/17/21 4:03	
M8PFOA		96.9		50-150					4/17/21 4:03	
M8PFOS		96.8		50-150					4/17/21 4:03	
M9PFNA		90.9		50-150					4/17/21 4:03	
MPFDoA		60.6		50-150					4/17/21 4:03	
d5-NEtFOSAA		74.7		50-150					4/17/21 4:03	
d3-NMeFOSAA		71.4		50-150					4/17/21 4:03	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-302

Sampled: 3/17/2021 16:30

Sample ID: 21C1176-08
Sample Matrix: Ground Water

Semivolatile	Organic Com	pounds by -	LC/MS-MS

Perfluorobananoic acid (PFDA) 6.9 2.0 0.57 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorobananos línic acid (PFBS) 1.6 2.0 0.32 mg/L 1 J SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) 11 2.0 0.75 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) 11 2.0 0.75 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) 11 2.0 0.75 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorohexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 J SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 J SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 J SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 J SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.36 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.32 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.52 mg/L 1 SOP-444 PFAS 4/1421 4/1721 5.02 JPC Perfluorodexanoic acid (PFBA) ND 2.0 0.52 mg/L 1 SOP-444 PFAS 4/1421 4/1721	Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorophameaufforic acid (PFBA)	Perfluorobutanoic acid (PFBA)	6.9	2.0	0.57	ng/L	1	<u> </u>	SOP-454 PFAS		4/17/21 5:02	JFC
Perfluorodecanoic acid (PFIsA)	Perfluorobutanesulfonic acid (PFBS)	1.6	2.0	0.32		1	J	SOP-454 PFAS	4/14/21		JFC
Include (PFSDIMS) (PSSB Minor)	Perfluoropentanoic acid (PFPeA)	18	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
SCI-FF3ONS (F53B Minor)	Perfluorohexanoic acid (PFHxA)	11	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Age-dioxa-3H-perfluorononanoia caid (ADONA) Alta Alt	11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
ADDINA	9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
## S2 Pluorotelomersulfonic acid (8-EFTSA)	· ·	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorodecanoic acid (PFDA)		ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorododecanoic acid (PFDoA) ND 20 0.29 0.36 0.71 1 SOP-454 PFAS 4/14/21 4/17/21 5/02 JFC Perfluoro(2-ethoxyethane)sulfonic acid (PFIBS) ND 20 0.36 0.37 0.38	8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.1	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro(2-ethoxyethan)sulfonia acid (PFHpS) ND 2.0 0.36 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC (PFEESA)	Perfluorodecanoic acid (PFDA)	0.86	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorobeptanesulfonic acid (PFHpS)	Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
N-EIFOSAA ND 2.0 0.93 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC N-MeFOSAA ND 2.0 0.96 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorotetradecanoic acid (PFTA) ND 2.0 0.82 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorotetradecanoic acid (PFTDA) ND 2.0 0.82 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC 4/2 Fluorotelomersulfonic acid (4/2FTS A) ND 2.0 1.0 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorodecanesulfonic acid (4/2FTS A) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorooctanesulfonic acid (PFDS) ND 2.0 0.60 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorooctanesulfonic acid (PFNS) ND 2.0 0.88 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorooctanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-I-butanesulfonamide (FBSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-Housensulfonic acid (PFHSS) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-Housensulfonic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-Housensulfonic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-Housensulfonic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoroe-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoroe-S-oxahexanoic acid (PFMPA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC PERfluoroe-S-oxahexanoi	(PFEESA)				-					4/17/21 5:02	JFC
N-MeFOSAA ND 2.0 0.96 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorotetradecanoic acid (PFTA) ND 2.0 0.82 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorotedeanoic acid (PFTA) ND 2.0 1.2 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorotedeanoic acid (PFTA) ND 2.0 1.0 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorodecanesulfonic acid (42FTSA) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluorooctanesulfonic acid (PFOS) ND 2.0 0.60 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoroonanaesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoroo-1-hexanesulfonamide (FHxSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-1-hexanesulfonamide (FHXSA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-4-oxapentanoic acid (PFNS) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-4-oxapentanoic acid (PFNSA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-4-oxapentanoic acid (PFNSA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMPA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5.02 JFC Perfluoro-6-oxahexanoic acid (PFMBA) ND 3.0 SOP-454 PFAS 4/14/21 4/17/21 5.02	• • • • • • • • • • • • • • • • • • • •	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorotetradecanoic acid (PFTA) ND 2.0 0.82 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotridecanoic acid (PFTrDA) ND 2.0 1.2 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotedeanoic acid (PFTrDA) ND 2.0 1.0 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorodecanesulfonic acid (4:2FTS A) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorodecanesulfonic acid (PFDS) ND 2.0 0.60 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroctanesulfonamide (FOSA) 0.82 2.0 0.44 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoronanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-bexanesulfonamide (FHXSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonamide (FHXSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMBA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-6-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFPS) 0.96 2.0 0.51 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFPS) 0.96 2.0 0.51 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroetemesulfonic acid (PFDA) 3.3 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5		ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorotridecanoic acid (PFTrDA) ND 2.0 1.2 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotelomersulfonic acid (4:2FTS A) ND 2.0 1.0 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorodecanesulfonic acid (4:2FTS A) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocotanesulfonic acid (PFDS) ND 2.0 0.82 2.0 0.44 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorononanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-hexanesulfonamide (FMSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-hexanesulfonamide (FBSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMRA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMRA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMRA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMRA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-6-oxahexanoic acid (PFMRA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMRA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-6-oxahexanoic acid (PFMRA) ND 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluorotelomersulfonic acid (PFURA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluoroodeanesulfonic acid (PFURA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluoroodeanesulfonic acid (PFURA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluoroodeanesulfonic acid (PFURA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluoroodeanesulfonic acid (PFURA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Refluoroodea	N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 2.0 1.0 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorodecanesulfonic acid (PFDS) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroctanesulfonamide (FOSA) 0.82 2.0 0.44 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoronanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-hexanesulfonamide (FDSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonamide (FBSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFHXS) 2.2 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotelomersulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotelomersulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoronedecanoic acid (PFUAA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFUAA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluorobeptanoic acid (PFUAA) 5.0 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/1	Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorodecanesulfonic acid (PFDS) ND 2.0 0.60 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanesulfonamide (FOSA) 0.82 2.0 0.44 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoronanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-hexanesulfonamide (FHxSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonamide (FHxSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonic acid (PFNS) 2.2 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFNBA) 3.3 2.0 0.49 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 6.6 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoronanesulfonic acid (PFNS) ND 2.0 0.89 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-hexanesulfonamide (FHxSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonamide (FBSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMSA) ND 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFPAA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nerfluoropetanoic acid (PFDAA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0	Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-1-hexanesulfonamide (FHxSA) ND 2.0 0.70 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonamide (FBSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-1-butanesulfonic acid (PFHxS) 2.2 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFUpA) 6.6 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanoic acid (PFUpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1	Perfluorooctanesulfonamide (FOSA)	0.82	2.0	0.44	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-1-butanesulfonamide (FBSA) ND 2.0 0.55 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFHxS) 2.2 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC 6:2 Fluorotelomersulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (FPPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 6.6 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluorobeptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorocatanoic acid (PFOS) 4.1 2.0	Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorohexanesulfonic acid (PFHxS) 2.2 2.0 0.58 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFDA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-4-oxapentanoic acid (PFMPA) ND 2.0 0.37 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorotelomersulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFDA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-5-oxahexanoic acid (PFMBA) ND 2.0 0.65 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC 6:2 Fluorotelomersulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1	Perfluorohexanesulfonic acid (PFHxS)	2.2	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A) 12 2.0 1.1 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoropetanesulfonic acid (PFPeS) 0.96 2.0 0.51 ng/L 1 J SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoroundecanoic acid (PFUnA) 3.3 2.0 0.49 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	6:2 Fluorotelomersulfonic acid (6:2FTS A)	12	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Nonafluoro-3,6-dioxaheptanoic acid ND 2.0 0.53 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC (NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoropetanesulfonic acid (PFPeS)	0.96	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
(NFDHA) Perfluoroheptanoic acid (PFHpA) 6.6 2.0 0.62 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoroundecanoic acid (PFUnA)	3.3	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanoic acid (PFOA) 5.0 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	•	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanesulfonic acid (PFOS) 4.1 2.0 0.38 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluoroheptanoic acid (PFHpA)	6.6	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
	Perfluorooctanoic acid (PFOA)	5.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorononanoic acid (PFNA) 6.6 2.0 0.48 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 5:02 JFC	Perfluorooctanesulfonic acid (PFOS)	4.1	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
	Perfluorononanoic acid (PFNA)	6.6	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	54.2	50-150		4/17/21 5:02
M2-4:2FTS	83.8	50-150		4/17/21 5:02
M2PFTA	7.18 *	50-150	PF-02A	4/17/21 5:02
M2-8:2FTS	77.8	50-150		4/17/21 5:02
MPFBA	95.5	50-150		4/17/21 5:02
M3HFPO-DA	95.4	50-150		4/17/21 5:02
M6PFDA	88.8	50-150		4/17/21 5:02
M3PFBS	101	50-150		4/17/21 5:02



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021 Field Sample #: HW-302

Sampled: 3/17/2021 16:30

Sample ID: 21C1176-08

Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recove	ery Recovery Limi	ts	Flag/Qual				
M7PFUnA	70.8	50-150					4/17/21 5:02	
M2-6:2FTS	77.8	50-150					4/17/21 5:02	
M5PFPeA	99.6	50-150					4/17/21 5:02	
M5PFHxA	90.9	50-150					4/17/21 5:02	
M3PFHxS	103	50-150					4/17/21 5:02	
M4PFHpA	84.4	50-150					4/17/21 5:02	
M8PFOA	101	50-150					4/17/21 5:02	
M8PFOS	96.2	50-150					4/17/21 5:02	
M9PFNA	93.5	50-150					4/17/21 5:02	
MPFDoA	40.9 *	50-150		PF-02A			4/17/21 5:02	
d5-NEtFOSAA	72.8	50-150					4/17/21 5:02	
d3-NMeFOSAA	70.4	50-150					4/17/21 5:02	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-2

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-09
Sample Matrix: Ground Water

Semivolatile	Organic	Compounds	by - L	C/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	14	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorobutanesulfonic acid (PFBS)	0.84	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoropentanoic acid (PFPeA)	70	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorohexanoic acid (PFHxA)	27	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorodecanoic acid (PFDA)	1.4	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	1.0	2.0	0.70	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorohexanesulfonic acid (PFHxS)	2.3	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	64	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroheptanoic acid (PFHpA)	20	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanoic acid (PFOA)	17	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanesulfonic acid (PFOS)	21	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorononanoic acid (PFNA)	10	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Surrogates		% Reco	very	Recovery Limits	i	Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	46.0 *	50-150	PF-02A	4/17/21 5:32
M2-4:2FTS	147	50-150		4/17/21 5:32
M2PFTA	2.12 *	50-150	PF-02A	4/17/21 5:32
M2-8:2FTS	103	50-150		4/17/21 5:32
MPFBA	101	50-150		4/17/21 5:32
M3HFPO-DA	102	50-150		4/17/21 5:32
M6PFDA	85.5	50-150		4/17/21 5:32
M3PFBS	104	50-150		4/17/21 5:32



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-2

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-09

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		56.2		50-150					4/17/21 5:32	
M2-6:2FTS		128		50-150					4/17/21 5:32	
M5PFPeA		105		50-150					4/17/21 5:32	
M5PFHxA		93.3		50-150					4/17/21 5:32	
M3PFHxS		110		50-150					4/17/21 5:32	
M4PFHpA		75.7		50-150					4/17/21 5:32	
M8PFOA		103		50-150					4/17/21 5:32	
M8PFOS		98.2		50-150					4/17/21 5:32	
M9PFNA		90.9		50-150					4/17/21 5:32	
MPFD ₀ A		24.2	*	50-150		PF-02A			4/17/21 5:32	
d5-NEtFOSAA		60.4		50-150					4/17/21 5:32	
d3-NMeFOSAA		66.1		50-150					4/17/21 5:32	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-3

Sampled: 3/17/2021 15:00

98.9

94.0

50-150

50-150

Sample ID: 21C1176-10
Sample Matrix: Ground Water

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	70	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoropentanoic acid (PFPeA)	260	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorohexanoic acid (PFHxA)	110	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorohexanesulfonic acid (PFHxS)	6.4	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	470	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroheptanoic acid (PFHpA)	84	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanoic acid (PFOA)	64	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanesulfonic acid (PFOS)	56	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorononanoic acid (PFNA)	19	20	4.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		87.4		50-150					4/17/21 6:02	
M2-4:2FTS		76.7		50-150					4/17/21 6:02	
M2PFTA M2-8:2FTS		78.4 85.0		50-150 50-150					4/17/21 6:02 4/17/21 6:02	
MPFBA		95.4		50-150					4/17/21 6:02	
M3HFPO-DA		89.5		50-150					4/17/21 6:02	

4/17/21 6:02

4/17/21 6:02



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-3

Sampled: 3/17/2021 15:00

Sample ID: 21C1176-10

Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates		% Recov	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		91.4		50-150					4/17/21 6:02	
M2-6:2FTS		72.5		50-150					4/17/21 6:02	
M5PFPeA		101		50-150					4/17/21 6:02	
M5PFHxA		90.9		50-150					4/17/21 6:02	
M3PFHxS		98.1		50-150					4/17/21 6:02	
M4PFHpA		92.2		50-150					4/17/21 6:02	
M8PFOA		98.8		50-150					4/17/21 6:02	
M8PFOS		100		50-150					4/17/21 6:02	
M9PFNA		92.4		50-150					4/17/21 6:02	
MPFDoA		83.5		50-150					4/17/21 6:02	
d5-NEtFOSAA		80.8		50-150					4/17/21 6:02	
d3-NMeFOSAA		81.3		50-150					4/17/21 6:02	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-300

Sampled: 3/17/2021 16:45

Sample ID: 21C1176-11

Sample Matrix: Ground Water

						TT 10 1		Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.4	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorobutanesulfonic acid (PFBS)	0.70	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoropentanoic acid (PFPeA)	11	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorohexanoic acid (PFHxA)	5.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorohexanesulfonic acid (PFHxS)	9.9	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroheptanoic acid (PFHpA)	2.8	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanoic acid (PFOA)	4.4	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanesulfonic acid (PFOS)	15	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorononanoic acid (PFNA)	0.99	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Surrogates		% Reco	verv	Recovery Limits	1	Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	81.0	50-150		4/17/21 6:31
M2-4:2FTS	79.1	50-150		4/17/21 6:31
M2PFTA	74.6	50-150		4/17/21 6:31
M2-8:2FTS	85.2	50-150		4/17/21 6:31
MPFBA	91.3	50-150		4/17/21 6:31
M3HFPO-DA	90.9	50-150		4/17/21 6:31
M6PFDA	95.2	50-150		4/17/21 6:31
M3PFBS	89.8	50-150		4/17/21 6:31



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-300

Sampled: 3/17/2021 16:45

Sample ID: 21C1176-11
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		86.7		50-150					4/17/21 6:31	
M2-6:2FTS		68.8		50-150					4/17/21 6:31	
M5PFPeA		93.9		50-150					4/17/21 6:31	
M5PFHxA		83.7		50-150					4/17/21 6:31	
M3PFHxS		98.3		50-150					4/17/21 6:31	
M4PFHpA		71.5		50-150					4/17/21 6:31	
M8PFOA		94.2		50-150					4/17/21 6:31	
M8PFOS		96.1		50-150					4/17/21 6:31	
M9PFNA		87.6		50-150					4/17/21 6:31	
MPFDoA		77.6		50-150					4/17/21 6:31	
d5-NEtFOSAA		75.9		50-150					4/17/21 6:31	
d3-NMeFOSAA		75.2		50-150					4/17/21 6:31	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (S)

Sampled: 3/18/2021 10:00

Sample ID: 21C1176-12
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	89	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorobutanesulfonic acid (PFBS)	5.4	20	3.2	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoropentanoic acid (PFPeA)	430	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorohexanoic acid (PFHxA)	300	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorododecanoic acid (PFDoA)	11	20	2.9	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-1-butanesulfonamide (FBSA)	13	20	5.5	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorohexanesulfonic acid (PFHxS)	83	20	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3100	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoropetanesulfonic acid (PFPeS)	7.1	20	5.1	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroheptanoic acid (PFHpA)	140	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanoic acid (PFOA)	78	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanesulfonic acid (PFOS)	30	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorononanoic acid (PFNA)	24	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
				-		771 (0 1				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	19.4 *	50-150	PF-02A	4/17/21 7:01
M2-4:2FTS	87.5	50-150		4/17/21 7:01
M2PFTA	1.30 *	50-150	PF-02A	4/17/21 7:01
M2-8:2FTS	72.2	50-150		4/17/21 7:01
MPFBA	94.0	50-150		4/17/21 7:01
M3HFPO-DA	95.7	50-150		4/17/21 7:01
M6PFDA	79.9	50-150		4/17/21 7:01
M3PFBS	107	50-150		4/17/21 7:01



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (S)

Sampled: 3/18/2021 10:00

Sample ID: 21C1176-12
Sample Matrix: Ground Water

					Date	Date/Time	
Analyte	Results RL	DL Units	Dilution Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recover	y Recovery Limits	s Flag/Qual				
M7PFUnA	47.0 *	50-150	PF-02A			4/17/21 7:01	
M2-6:2FTS	100	50-150				4/17/21 7:01	
M5PFPeA	100	50-150				4/17/21 7:01	
M5PFHxA	92.2	50-150				4/17/21 7:01	
M3PFHxS	108	50-150				4/17/21 7:01	
M4PFHpA	93.4	50-150				4/17/21 7:01	
M8PFOA	97.9	50-150				4/17/21 7:01	
M8PFOS	96.0	50-150				4/17/21 7:01	
M9PFNA	90.6	50-150				4/17/21 7:01	
MPFD ₀ A	15.6 *	50-150	PF-02A			4/17/21 7:01	
d5-NEtFOSAA	44.8 *	50-150	PF-02A			4/17/21 7:01	
d3-NMeFOSAA	56.6	50-150				4/17/21 7:01	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (M)

Sampled: 3/18/2021 10:30

Sample ID: 21C1176-13

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.9	2.0	0.57	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorobutanesulfonic acid (PFBS)	0.46	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoropentanoic acid (PFPeA)	3.9	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorohexanoic acid (PFHxA)	2.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorohexanesulfonic acid (PFHxS)	7.3	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	6.7	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroheptanoic acid (PFHpA)	1.1	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanoic acid (PFOA)	1.8	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanesulfonic acid (PFOS)	6.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorononanoic acid (PFNA)	0.57	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Sympogratus		0/ Dage		Dagovous Limite		Flog/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	43.3 *	50-150	PF-02A	4/17/21 7:30
M2-4:2FTS	86.7	50-150		4/17/21 7:30
M2PFTA	2.23 *	50-150	PF-02A	4/17/21 7:30
M2-8:2FTS	83.9	50-150		4/17/21 7:30
MPFBA	95.3	50-150		4/17/21 7:30
M3HFPO-DA	58.4	50-150		4/17/21 7:30
M6PFDA	90.3	50-150		4/17/21 7:30
M3PFBS	102	50-150		4/17/21 7:30



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (M)

Sampled: 3/18/2021 10:30

Sample ID: 21C1176-13
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		70.9		50-150					4/17/21 7:30	
M2-6:2FTS		73.8		50-150					4/17/21 7:30	
M5PFPeA		96.5		50-150					4/17/21 7:30	
M5PFHxA		91.3		50-150					4/17/21 7:30	
M3PFHxS		106		50-150					4/17/21 7:30	
M4PFHpA		84.8		50-150					4/17/21 7:30	
M8PFOA		98.6		50-150					4/17/21 7:30	
M8PFOS		100		50-150					4/17/21 7:30	
M9PFNA		91.1		50-150					4/17/21 7:30	
MPFDoA		37.3	*	50-150		PF-02A			4/17/21 7:30	
d5-NEtFOSAA		62.7		50-150					4/17/21 7:30	
d3-NMeFOSAA		68.2		50-150					4/17/21 7:30	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (S)

Sampled: 3/18/2021 11:35

Sample ID: 21C1176-14
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	8.2	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoropentanoic acid (PFPeA)	22	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorohexanoic acid (PFHxA)	14	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorodecanoic acid (PFDA)	0.40	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.74	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.4	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroundecanoic acid (PFUnA)	0.81	2.0	0.49	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroheptanoic acid (PFHpA)	6.7	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanoic acid (PFOA)	4.2	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanesulfonic acid (PFOS)	0.49	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorononanoic acid (PFNA)	2.0	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
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Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	12.0 *	50-150	PF-02A	4/17/21 8:00
M2-4:2FTS	91.0	50-150		4/17/21 8:00
M2PFTA	1.30 *	50-150	PF-02A	4/17/21 8:00
M2-8:2FTS	75.5	50-150		4/17/21 8:00
MPFBA	93.7	50-150		4/17/21 8:00
M3HFPO-DA	101	50-150		4/17/21 8:00
M6PFDA	77.6	50-150		4/17/21 8:00
M3PFBS	105	50-150		4/17/21 8:00



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (S)

Sampled: 3/18/2021 11:35

Sample ID: 21C1176-14
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		38.4	*	50-150		PF-02A			4/17/21 8:00	
M2-6:2FTS		77.5		50-150					4/17/21 8:00	
M5PFPeA		95.7		50-150					4/17/21 8:00	
M5PFHxA		90.8		50-150					4/17/21 8:00	
M3PFHxS		105		50-150					4/17/21 8:00	
M4PFHpA		87.0		50-150					4/17/21 8:00	
M8PFOA		96.6		50-150					4/17/21 8:00	
M8PFOS		98.9		50-150					4/17/21 8:00	
M9PFNA		91.6		50-150					4/17/21 8:00	
MPFD ₀ A		8.32	*	50-150		PF-02A			4/17/21 8:00	
d5-NEtFOSAA		36.1	*	50-150		PF-02A			4/17/21 8:00	
d3-NMeFOSAA		45.4	*	50-150		PF-02A			4/17/21 8:00	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (M)

Sampled: 3/18/2021 12:00

Sample ID: 21C1176-15

Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	25	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorobutanesulfonic acid (PFBS)	0.51	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoropentanoic acid (PFPeA)	76	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorohexanoic acid (PFHxA)	34	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorohexanesulfonic acid (PFHxS)	1.5	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroheptanoic acid (PFHpA)	17	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanoic acid (PFOA)	9.6	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanesulfonic acid (PFOS)	3.5	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorononanoic acid (PFNA)	6.0	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		81.1		50-150					4/17/21 8:30	
M2-4:2FTS		75.0		50-150					4/17/21 8:30	

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	81.1	50-150		4/17/21 8:30
M2-4:2FTS	75.0	50-150		4/17/21 8:30
M2PFTA	68.6	50-150		4/17/21 8:30
M2-8:2FTS	74.6	50-150		4/17/21 8:30
MPFBA	90.3	50-150		4/17/21 8:30
M3HFPO-DA	89.7	50-150		4/17/21 8:30
M6PFDA	94.4	50-150		4/17/21 8:30
M3PFBS	86.4	50-150		4/17/21 8:30



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (M)

Sampled: 3/18/2021 12:00

Sample ID: 21C1176-15
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	(% Recov	ery F	Recovery Limit	s	Flag/Qual				
M7PFUnA		83.9		50-150					4/17/21 8:30	
M2-6:2FTS		63.2		50-150					4/17/21 8:30	
M5PFPeA		93.9		50-150					4/17/21 8:30	
M5PFHxA		83.7		50-150					4/17/21 8:30	
M3PFHxS		92.7		50-150					4/17/21 8:30	
M4PFHpA		64.4		50-150					4/17/21 8:30	
M8PFOA		93.4		50-150					4/17/21 8:30	
M8PFOS		86.4		50-150					4/17/21 8:30	
M9PFNA		89.4		50-150					4/17/21 8:30	
MPFDoA		75.2		50-150					4/17/21 8:30	
d5-NEtFOSAA		74.5		50-150					4/17/21 8:30	
d3-NMeFOSAA		74.8		50-150					4/17/21 8:30	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: RB-1(S)

Sampled: 3/18/2021 13:40

Sample ID: 21C1176-16

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.2	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorobutanesulfonic acid (PFBS)	2.0	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoropentanoic acid (PFPeA)	9.8	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorohexanoic acid (PFHxA)	12	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-1-butanesulfonamide (FBSA)	1.1	2.0	0.55	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorohexanesulfonic acid (PFHxS)	30	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.8	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroheptanoic acid (PFHpA)	5.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanoic acid (PFOA)	8.7	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanesulfonic acid (PFOS)	40	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorononanoic acid (PFNA)	2.5	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Surregates		0/ Dags		Deservery Limits		Flag/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	41.1 *	50-150	PF-02A	4/17/21 8:59
M2-4:2FTS	94.5	50-150		4/17/21 8:59
M2PFTA	3.75 *	50-150	PF-02A	4/17/21 8:59
M2-8:2FTS	80.2	50-150		4/17/21 8:59
MPFBA	95.2	50-150		4/17/21 8:59
M3HFPO-DA	91.7	50-150		4/17/21 8:59
M6PFDA	91.1	50-150		4/17/21 8:59
M3PFBS	100	50-150		4/17/21 8:59



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: RB-1(S)

Sampled: 3/18/2021 13:40

Sample ID: 21C1176-16
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results I	L DI	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%	Recovery	Recovery Limits	6	Flag/Qual				
M7PFUnA	6	5.9	50-150					4/17/21 8:59	
M2-6:2FTS	7	7.8	50-150					4/17/21 8:59	
M5PFPeA	9	7.5	50-150					4/17/21 8:59	
M5PFHxA	92	2.6	50-150					4/17/21 8:59	
M3PFHxS	1	00	50-150					4/17/21 8:59	
M4PFHpA	7	1.3	50-150					4/17/21 8:59	
M8PFOA	9	9.3	50-150					4/17/21 8:59	
M8PFOS	90	5.1	50-150					4/17/21 8:59	
M9PFNA	89	9.9	50-150					4/17/21 8:59	
MPFD ₀ A	30	5.7 *	50-150		PF-02A			4/17/21 8:59	
d5-NEtFOSAA	6-	1.8	50-150					4/17/21 8:59	
d3-NMeFOSAA	6	5.9	50-150					4/17/21 8:59	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: RB-1 (M)

Sampled: 3/18/2021 14:30

Sample ID: 21C1176-17
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	16	20	5.7	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoropentanoic acid (PFPeA)	44	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorohexanoic acid (PFHxA)	24	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorohexanesulfonic acid (PFHxS)	17	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	55	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroheptanoic acid (PFHpA)	13	20	6.2	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanoic acid (PFOA)	13	20	3.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanesulfonic acid (PFOS)	75	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorononanoic acid (PFNA)	7.2	20	4.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	23.8 *	50-150	PF-02A	4/17/21 9:29
M2-4:2FTS	93.8	50-150		4/17/21 9:29
M2PFTA	0.683 *	50-150	PF-02A	4/17/21 9:29
M2-8:2FTS	71.6	50-150		4/17/21 9:29
MPFBA	100	50-150		4/17/21 9:29
M3HFPO-DA	104	50-150		4/17/21 9:29
M6PFDA	79.7	50-150		4/17/21 9:29
M3PFBS	114	50-150		4/17/21 9:29



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: RB-1 (M)

Sampled: 3/18/2021 14:30

Sample ID: 21C1176-17
Sample Matrix: Ground Water

Analyte		DL		Dilution	Flag/Qual	Method	Date Prepared	Date/Time	
	Results RL		Units					Analyzed	Analyst
Surrogates	% Rec	overy	Recovery Limits	6	Flag/Qual				
M7PFUnA	46.0	*	50-150		PF-02A			4/17/21 9:29	
M2-6:2FTS	84.9		50-150					4/17/21 9:29	
M5PFPeA	104		50-150					4/17/21 9:29	
M5PFHxA	100		50-150					4/17/21 9:29	
M3PFHxS	123		50-150					4/17/21 9:29	
M4PFHpA	102		50-150					4/17/21 9:29	
M8PFOA	104		50-150					4/17/21 9:29	
M8PFOS	99.8		50-150					4/17/21 9:29	
M9PFNA	96.8		50-150					4/17/21 9:29	
MPFD ₀ A	13.6	*	50-150		PF-02A			4/17/21 9:29	
d5-NEtFOSAA	48.1	*	50-150		PF-02A			4/17/21 9:29	
d3-NMeFOSAA	58.5		50-150					4/17/21 9:29	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-K

Sampled: 3/18/2021 11:00

82.4

96.3

90.6

96.3

97.3

50-150

50-150

50-150

50-150

50-150

Sample ID: 21C1176-18
Sample Matrix: Ground Water

M2-8:2FTS

M3HFPO-DA

MPFBA

M6PFDA

M3PFBS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	6.3	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoropentanoic acid (PFPeA)	17	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorohexanoic acid (PFHxA)	7.7	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.66	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroheptanoic acid (PFHpA)	4.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanoic acid (PFOA)	3.6	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanesulfonic acid (PFOS)	1.5	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorononanoic acid (PFNA)	3.7	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		84.7		50-150					4/17/21 10:28	
M2-4:2FTS		86.6		50-150					4/17/21 10:28	
M2PFTA		80.4		50-150					4/17/21 10:28	

4/17/21 10:28

4/17/21 10:28

4/17/21 10:28 4/17/21 10:28

4/17/21 10:28



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-K

Sampled: 3/18/2021 11:00

Sample ID: 21C1176-18
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	9/	6 Recove	ery R	ecovery Limit	s	Flag/Qual				
M7PFUnA	Ģ	90.5		50-150					4/17/21 10:28	
M2-6:2FTS	7	71.5		50-150					4/17/21 10:28	
M5PFPeA	Ģ	97.9		50-150					4/17/21 10:28	
M5PFHxA	Ģ	91.0		50-150					4/17/21 10:28	
M3PFHxS		101		50-150					4/17/21 10:28	
M4PFHpA	8	85.5		50-150					4/17/21 10:28	
M8PFOA		101		50-150					4/17/21 10:28	
M8PFOS		102		50-150					4/17/21 10:28	
M9PFNA	Ģ	92.0		50-150					4/17/21 10:28	
MPFDoA	8	83.5		50-150					4/17/21 10:28	
d5-NEtFOSAA	8	80.6		50-150					4/17/21 10:28	
d3-NMeFOSAA	7	77.1		50-150					4/17/21 10:28	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19 (S)

Sampled: 3/18/2021 14:00

Sample ID: 21C1176-19
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.6	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorobutanesulfonic acid (PFBS)	2.9	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoropentanoic acid (PFPeA)	13	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorohexanoic acid (PFHxA)	7.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorodecanoic acid (PFDA)	1.0	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorohexanesulfonic acid (PFHxS)	6.4	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroheptanoic acid (PFHpA)	4.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanoic acid (PFOA)	7.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanesulfonic acid (PFOS)	15	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorononanoic acid (PFNA)	1.2	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Surregates		0/ Dags		Deservery Limits		Flog/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	56.3	50-150		4/17/21 10:57
M2-4:2FTS	103	50-150		4/17/21 10:57
M2PFTA	3.50 *	50-150	PF-02A	4/17/21 10:57
M2-8:2FTS	79.8	50-150		4/17/21 10:57
MPFBA	97.4	50-150		4/17/21 10:57
M3HFPO-DA	99.4	50-150		4/17/21 10:57
M6PFDA	87.5	50-150		4/17/21 10:57
M3PFBS	97.1	50-150		4/17/21 10:57



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19 (S)

Sampled: 3/18/2021 14:00

Sample ID: 21C1176-19
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	9/	6 Recov	ery	Recovery Limits	3	Flag/Qual				
M7PFUnA		66.6		50-150					4/17/21 10:57	
M2-6:2FTS		79.6		50-150					4/17/21 10:57	
M5PFPeA	9	95.7		50-150					4/17/21 10:57	
M5PFHxA	9	92.0		50-150					4/17/21 10:57	
M3PFHxS		105		50-150					4/17/21 10:57	
M4PFHpA	9	91.3		50-150					4/17/21 10:57	
M8PFOA	9	97.9		50-150					4/17/21 10:57	
M8PFOS	9	96.1		50-150					4/17/21 10:57	
M9PFNA	:	89.9		50-150					4/17/21 10:57	
MPFD ₀ A	;	38.2	k	50-150		PF-02A			4/17/21 10:57	
d5-NEtFOSAA		65.3		50-150					4/17/21 10:57	
d3-NMeFOSAA		69.2		50-150					4/17/21 10:57	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(M)

Sampled: 3/19/2021 13:15

Sample ID: 21C1176-20
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	43	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoropentanoic acid (PFPeA)	160	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorohexanoic acid (PFHxA)	100	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorohexanesulfonic acid (PFHxS)	14	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroheptanoic acid (PFHpA)	44	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanoic acid (PFOA)	9.4	20	3.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanesulfonic acid (PFOS)	27	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorononanoic acid (PFNA)	ND	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Surrogates		% Reco	very	Recovery Limits	3	Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	67.9	50-150		4/17/21 11:27
M2-4:2FTS	79.8	50-150		4/17/21 11:27
M2PFTA	13.8 *	50-150	PF-02A	4/17/21 11:27
M2-8:2FTS	75.3	50-150		4/17/21 11:27
MPFBA	93.9	50-150		4/17/21 11:27
M3HFPO-DA	93.4	50-150		4/17/21 11:27
M6PFDA	89.8	50-150		4/17/21 11:27
M3PFBS	95.0	50-150		4/17/21 11:27



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(M)

Sampled: 3/19/2021 13:15

Sample ID: 21C1176-20
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		74.7		50-150					4/17/21 11:27	
M2-6:2FTS		72.2		50-150					4/17/21 11:27	
M5PFPeA		99.2		50-150					4/17/21 11:27	
M5PFHxA		87.9		50-150					4/17/21 11:27	
M3PFHxS		99.5		50-150					4/17/21 11:27	
M4PFHpA		89.8		50-150					4/17/21 11:27	
M8PFOA		95.2		50-150					4/17/21 11:27	
M8PFOS		95.5		50-150					4/17/21 11:27	
M9PFNA		89.0		50-150					4/17/21 11:27	
MPFDoA		56.7		50-150					4/17/21 11:27	
d5-NEtFOSAA		70.4		50-150					4/17/21 11:27	
d3-NMeFOSAA		71.6		50-150					4/17/21 11:27	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(D)

Sampled: 3/19/2021 14:30

Sample ID: 21C1176-21
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	24	2.0	0.57	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorobutanesulfonic acid (PFBS)	1.6	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoropentanoic acid (PFPeA)	110	2.0	0.66	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorohexanoic acid (PFHxA)	71	2.0	0.75	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.70	2.0	0.55	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorohexanesulfonic acid (PFHxS)	26	2.0	0.58	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.8	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroheptanoic acid (PFHpA)	18	2.0	0.62	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanoic acid (PFOA)	9.7	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanesulfonic acid (PFOS)	47	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorononanoic acid (PFNA)	2.9	2.0	0.48	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Cummogratus		0/ Dage		Dogovowy I imite		Flog/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	87.9	50-150		4/16/21 16:12
M2-4:2FTS	85.2	50-150		4/16/21 16:12
M2PFTA	64.6	50-150		4/16/21 16:12
M2-8:2FTS	92.3	50-150		4/16/21 16:12
MPFBA	99.2	50-150		4/16/21 16:12
M3HFPO-DA	92.1	50-150		4/16/21 16:12
M6PFDA	98.0	50-150		4/16/21 16:12
M3PFBS	98.0	50-150		4/16/21 16:12



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: OW-19(D)

Sampled: 3/19/2021 14:30

Sample ID: 21C1176-21
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		89.6		50-150					4/16/21 16:12	
M2-6:2FTS		85.5		50-150					4/16/21 16:12	
M5PFPeA		95.7		50-150					4/16/21 16:12	
M5PFHxA		91.8		50-150					4/16/21 16:12	
M3PFHxS		108		50-150					4/16/21 16:12	
M4PFHpA		97.8		50-150					4/16/21 16:12	
M8PFOA		101		50-150					4/16/21 16:12	
M8PFOS		103		50-150					4/16/21 16:12	
M9PFNA		95.2		50-150					4/16/21 16:12	
MPFDoA		82.2		50-150					4/16/21 16:12	
d5-NEtFOSAA		83.4		50-150					4/16/21 16:12	
d3-NMeFOSAA		83.1		50-150					4/16/21 16:12	



Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1176-01RE1 [HW-R(S)]	B279942	250	1.00	04/14/21
21C1176-02RE1 [HW-J]	B279942	12.5	1.00	04/14/21
21C1176-03RE1 [HW-I (S)]	B279942	25.0	1.00	04/14/21
21C1176-04RE1 [HW-I (M)]	B279942	250	1.00	04/14/21
21C1176-05RE1 [HW-I (D)]	B279942	250	1.00	04/14/21
21C1176-06RE1 [HW-E]	B279942	250	1.00	04/14/21
21C1176-07RE1 [HW-F]	B279942	12.5	1.00	04/14/21
21C1176-08RE1 [HW-302]	B279942	250	1.00	04/14/21
21C1176-09RE1 [HW-2]	B279942	250	1.00	04/14/21
21C1176-10RE1 [HW-3]	B279942	25.0	1.00	04/14/21
21C1176-11RE1 [HW-300]	B279942	250	1.00	04/14/21
21C1176-12RE1 [HW-S (S)]	B279942	25.0	1.00	04/14/21
21C1176-13RE1 [HW-S (M)]	B279942	250	1.00	04/14/21
21C1176-14RE1 [HW-P (S)]	B279942	250	1.00	04/14/21
21C1176-15RE1 [HW-P (M)]	B279942	250	1.00	04/14/21
21C1176-16RE1 [RB-1(S)]	B279942	250	1.00	04/14/21
21C1176-17RE1 [RB-1 (M)]	B279942	25.0	1.00	04/14/21
21C1176-18RE1 [HW-K]	B279942	250	1.00	04/14/21
21C1176-19RE1 [OW-19 (S)]	B279942	250	1.00	04/14/21
21C1176-20RE1 [OW-19(M)]	B279942	25.0	1.00	04/14/21

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1176-21RE1 [OW-19(D)]	B279944	250	1.00	04/13/21



QUALITY CONTROL

Spike

Source

%REC

RPD

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

Reporting

Analyta	Dagult	Reporting	Haita	Spike	Source	0/.DEC	%REC	DDD	RPD Limit	Mata-
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
atch B279942 - SOP 454-PFAAS										
elank (B279942-BLK1)				Prepared: 04	1/14/21 Analy	yzed: 04/17/2	21			
erfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
erfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
erfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
erfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
1Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
,8-dioxa-3H-perfluorononanoic acid	ND	2.0	ng/L							
ADONA) [exafluoropropylene oxide dimer acid	ND	2.0	ng/L							
HFPO-DA) :2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/I							
erfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
	ND		ng/L							
erfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
erfluoro(2-ethoxyethane)sulfonic acid PFEESA) erfluoroheptanesulfonic acid (PFHpS)	ND ND	2.0	ng/L							
I-EtFOSAA	ND	2.0	ng/L							
I-EIFOSAA I-MeFOSAA	ND									
erfluorotetradecanoic acid (PFTA)	ND	2.0 2.0	ng/L							
erfluorotetradecanoic acid (PFTrDA)	ND		ng/L							
· · · · · · · · · · · · · · · · · · ·	ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
erfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
erfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
erfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
erfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
erfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
lonafluoro-3,6-dioxaheptanoic acid	ND	2.0	ng/L							
erfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
erfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
erfluorononanoic acid (PFNA)	ND	2.0	ng/L							
urrogate: M8FOSA	34.9		ng/L	40.0		87.2	50-150			
urrogate: M2-4:2FTS	28.6		ng/L	37.5		76.3	50-150			
urrogate: M2PFTA	26.0		ng/L	40.0		65.1	50-150			
urrogate: M2-8:2FTS	30.5		ng/L	38.4		79.6	50-150			
urrogate: MPFBA	38.6		ng/L	40.0		96.4	50-150			
urrogate: M3HFPO-DA	37.2		ng/L	40.0		93.1	50-150			
urrogate: M6PFDA	40.1		ng/L	40.0		100	50-150			
urrogate: M3PFBS	35.5		ng/L	37.3		95.3	50-150			
urrogate: M7PFUnA	35.9		ng/L	40.0		89.8	50-150			
urrogate: M2-6:2FTS	29.8		ng/L	38.0		78.2	50-150			
urrogate: M5PFPeA	41.0		ng/L	40.0		102	50-150			
urrogate: M5PFHxA	37.5		ng/L	40.0		93.8	50-150			
urrogate: M3PFHxS	37.0		ng/L	37.9		97.6	50-150			
urrogate: M4PFHpA	38.1		ng/L	40.0		95.4	50-150			
urrogate: M8PFOA	40.2		ng/L	40.0		100	50-150			



QUALITY CONTROL

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B279942 - SOP 454-PFAAS										
Blank (B279942-BLK1)				Prepared: 04	1/14/21 Analy	zed: 04/17/	21			
Surrogate: M8PFOS	36.5		ng/L	38.3		95.3	50-150			
Surrogate: M9PFNA	39.2		ng/L	40.0		97.9	50-150			
Surrogate: MPFDoA	32.5		ng/L	40.0		81.1	50-150			
Surrogate: d5-NEtFOSAA	34.3		ng/L	40.0		85.7	50-150			
Surrogate: d3-NMeFOSAA	34.6		ng/L	40.0		86.5	50-150			
LCS (B279942-BS1)				Prepared: 04	1/14/21 Analy	zed: 04/17/	21			
Perfluorobutanoic acid (PFBA)	2.35	2.0	ng/L	2.00		117	73-129			
Perfluorobutanesulfonic acid (PFBS)	1.52	2.0	ng/L	1.77		85.7	72-130			J
Perfluoropentanoic acid (PFPeA)	1.76	2.0	ng/L	2.00		88.0	72-129			J
Perfluorohexanoic acid (PFHxA)	1.65	2.0	ng/L	2.00		82.5	72-129			J
1Cl-PF3OUdS (F53B Major)	1.35	2.0	ng/L	1.89		71.7	50-150			J
PCI-PF3ONS (F53B Minor)	1.37	2.0	ng/L	1.90		72.0	50-150			J
4,8-dioxa-3H-perfluorononanoic acid	1.43	2.0	ng/L	1.89		75.8	50-150			J
ADONA) Hexafluoropropylene oxide dimer acid HFPO-DA)	1.34	2.0	ng/L	2.00		67.2	50-150			J
3:2 Fluorotelomersulfonic acid (8:2FTS A)	2.10	2.0	ng/L	1.92		109	67-138			
Perfluorodecanoic acid (PFDA)	1.52	2.0	ng/L	2.00		76.2	71-129			J
Perfluorododecanoic acid (PFDoA)	1.53	2.0	ng/L	2.00		76.3	72-134			J
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	1.53	2.0	ng/L	1.78		84.9	50-150			J
Perfluoroheptanesulfonic acid (PFHpS)	1.82	2.0	ng/L	1.91		95.4	69-134			J
I-EtFOSAA	1.76	2.0	ng/L	2.00		88.1	61-135			J
I-MeFOSAA	2.01	2.0	ng/L	2.00		101	65-136			
Perfluorotetradecanoic acid (PFTA)	1.59	2.0	ng/L	2.00		79.3	71-132			J
Perfluorotridecanoic acid (PFTrDA)	1.61	2.0	ng/L	2.00		80.4	65-144			J
:2 Fluorotelomersulfonic acid (4:2FTS A)	1.77	2.0	ng/L	1.87		94.2	63-143			J
Perfluorodecanesulfonic acid (PFDS)	1.75	2.0	ng/L	1.93		90.9	53-142			J
Perfluorooctanesulfonamide (FOSA)	1.60	2.0	ng/L	2.00		80.0	67-137			J
Perfluorononanesulfonic acid (PFNS)	1.68	2.0	ng/L	1.92		87.1	69-127			J
Perfluoro-1-hexanesulfonamide (FHxSA)	1.51	2.0	ng/L	2.00		75.5	50-150			J
Perfluoro-1-butanesulfonamide (FBSA)	1.84	2.0	ng/L	2.00		91.8	50-150			J
Perfluorohexanesulfonic acid (PFHxS)	1.45	2.0	ng/L	1.83		79.5	68-131			J
Perfluoro-4-oxapentanoic acid (PFMPA)	1.88	2.0	ng/L	2.00		94.2	50-150			J
Perfluoro-5-oxahexanoic acid (PFMBA)	2.16	2.0	ng/L	2.00		108	50-150			•
5:2 Fluorotelomersulfonic acid (6:2FTS A)	1.80	2.0	ng/L	1.90		94.7	64-140			J
Perfluoropetanesulfonic acid (PFPeS)	1.41	2.0	ng/L	1.88		75.1	71-127			J
Perfluoroundecanoic acid (PFUnA)	1.50	2.0	ng/L	2.00		75.1	69-133			J
Nonafluoro-3,6-dioxaheptanoic acid	1.92	2.0	ng/L	2.00		96.1	50-150			J
Perfluoroheptanoic acid (PFHpA)	1.47	2.0	ng/L	2.00		73.3	72-130			J
Perfluorooctanoic acid (PFOA)	1.71	2.0	ng/L	2.00		85.5	71-133			J
Perfluorooctanesulfonic acid (PFOS)	1.58	2.0	ng/L	1.86		85.1	65-140			J
Perfluorononanoic acid (PFNA)	1.70	2.0	ng/L	2.00		85.0	69-130			J
Surrogate: M8FOSA	33.1		ng/L	40.0		82.7	50-150			
Surrogate: M2-4:2FTS	27.9		ng/L	37.5		74.3	50-150			
Surrogate: M2PFTA	32.0		ng/L	40.0		80.0	50-150			
Surrogate: M2-8:2FTS	28.6		ng/L	38.4		74.4	50-150			
Surrogate: MPFBA	37.3		ng/L	40.0		93.3	50-150			
Surrogate: M3HFPO-DA	37.5		ng/L	40.0		93.7	50-150			
Surrogate: M6PFDA	38.1		ng/L	40.0		95.2	50-150			
Surrogate: M3PFBS	32.6		ng/L	37.3		87.4	50-150			



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 B279942 - SOP 454-PFAAS										
LCS (B279942-BS1)				Prepared: 04	1/14/21 Anal	yzed: 04/17/2	21			
Surrogate: M7PFUnA	35.7		ng/L	40.0		89.3	50-150			
Surrogate: M2-6:2FTS	27.1		ng/L	38.0		71.2	50-150			
Surrogate: M5PFPeA	38.5		ng/L	40.0		96.2	50-150			
Surrogate: M5PFHxA	34.8		ng/L	40.0		87.0	50-150			
Surrogate: M3PFHxS	35.1		ng/L	37.9		92.5	50-150			
Surrogate: M4PFHpA	36.9		ng/L	40.0		92.3	50-150			
Surrogate: M8PFOA	38.6		ng/L	40.0		96.6	50-150			
surrogate: M8PFOS	36.3		ng/L	38.3		94.7	50-150			
Surrogate: M9PFNA	36.4		ng/L	40.0		91.0	50-150			
urrogate: MPFDoA	33.9		ng/L	40.0		84.8	50-150			
Surrogate: d5-NEtFOSAA	32.0		ng/L	40.0		80.1	50-150			
urrogate: d3-NMeFOSAA	31.7		ng/L	40.0		79.2	50-150			
Batch B279944 - SOP 454-PFAAS										
Blank (B279944-BLK1)				Prepared: 04	1/13/21 Anal	yzed: 04/16/2	21			
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
erfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
erfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
1Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
,8-dioxa-3H-perfluorononanoic acid ADONA)	ND	2.0	ng/L							
lexafluoropropylene oxide dimer acid HFPO-DA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
'erfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
I-EtFOSAA	ND	2.0	ng/L							
I-MeFOSAA	ND	2.0	ng/L							
erfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
erfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Jonafluoro-3,6-dioxaheptanoic acid	ND	2.0	ng/L							
NFDHA)	ND		5							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.0	ng/L							

RPD

%REC



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

QUALITY CONTROL

Spike

Source

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

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
eatch B279944 - SOP 454-PFAAS										
slank (B279944-BLK1)				Prepared: 04	1/13/21 Analy	zed: 04/16/2	1			
urrogate: M8FOSA	32.9		ng/L	40.0		82.2	50-150			
urrogate: M2-4:2FTS	32.9		ng/L	37.5		87.6	50-150			
urrogate: M2PFTA	13.7		ng/L	40.0		34.1 *	50-150			PF-02A
urrogate: M2-8:2FTS	32.8		ng/L	38.4		85.3	50-150			
urrogate: MPFBA	39.5		ng/L	40.0		98.8	50-150			
urrogate: M3HFPO-DA	38.7		ng/L	40.0		96.7	50-150			
urrogate: M6PFDA	38.6		ng/L	40.0		96.5	50-150			
urrogate: M3PFBS	37.0		ng/L	37.3		99.3	50-150			
urrogate: M7PFUnA	35.3		ng/L	40.0		88.2	50-150			
urrogate: M2-6:2FTS	33.8		ng/L	38.0		88.8	50-150			
urrogate: M5PFPeA	39.5		ng/L	40.0		98.7	50-150			
urrogate: M5PFHxA	37.5		ng/L	40.0		93.7	50-150			
urrogate: M3PFHxS	39.9		ng/L	37.9		105	50-150			
urrogate: M4PFHpA	39.7		ng/L	40.0		99.2	50-150			
urrogate: M8PFOA	41.2		ng/L	40.0		103	50-150			
urrogate: M8PFOS	38.1		ng/L	38.3		99.5	50-150			
urrogate: M9PFNA	38.4		ng/L	40.0		95.9	50-150			
urrogate: MPFDoA	29.7		ng/L	40.0		74.2	50-150			
urrogate: d5-NEtFOSAA	33.1		ng/L	40.0		82.8	50-150			
urrogate: d3-NMeFOSAA	33.8		ng/L	40.0		84.5	50-150			
.CS (B279944-BS1)				Prepared: 04	1/13/21 Analy	zed: 04/16/2	1			
erfluorobutanoic acid (PFBA)	8.12	2.0	ng/L	10.0		81.2	73-129			
erfluorobutanesulfonic acid (PFBS)	7.18	2.0	ng/L	8.87		80.9	72-130			
erfluoropentanoic acid (PFPeA)	8.30	2.0	ng/L	10.0		83.0	72-129			
erfluorohexanoic acid (PFHxA)	7.52	2.0	ng/L	10.0		75.2	72-129			
1Cl-PF3OUdS (F53B Major)	7.10	2.0	ng/L	9.43		75.3	50-150			
Cl-PF3ONS (F53B Minor)	7.45	2.0	ng/L	9.51		78.4	50-150			
8-dioxa-3H-perfluorononanoic acid	7.21	2.0	ng/L	9.45		76.3	50-150			
ADONA) lexafluoropropylene oxide dimer acid HFPO-DA)	8.91	2.0	ng/L	10.0		89.1	50-150			
:2 Fluorotelomersulfonic acid (8:2FTS A)	8.54	2.0	ng/L	9.60		88.9	67-138			
erfluorodecanoic acid (PFDA)	7.69	2.0	ng/L	10.0		76.9	71-129			
erfluorododecanoic acid (PFDoA)	7.63	2.0	ng/L	10.0		76.3	72-134			
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	7.38	2.0	ng/L	8.90		82.9	50-150			
erfluoroheptanesulfonic acid (PFHpS)	8.15	2.0	ng/L	9.53		85.5	69-134			
I-EtFOSAA	8.71	2.0	ng/L	10.0		87.1	61-135			
-MeFOSAA	9.52	2.0	ng/L	10.0		95.2	65-136			
erfluorotetradecanoic acid (PFTA)	7.82	2.0	ng/L	10.0		78.2	71-132			
erfluorotridecanoic acid (PFTrDA)	7.98	2.0	ng/L	10.0		79.8	65-144			
:2 Fluorotelomersulfonic acid (4:2FTS A)	8.94	2.0	ng/L	9.37		95.4	63-143			
erfluorodecanesulfonic acid (PFDS)	7.23	2.0	ng/L	9.65		74.9	53-142			
erfluorooctanesulfonamide (FOSA)	8.45	2.0	ng/L	10.0		84.5	67-137			
erfluorononanesulfonic acid (PFNS)	8.25	2.0	ng/L	9.62		85.8	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	7.38	2.0	ng/L	10.0		73.8	50-150			
erfluoro-1-butanesulfonamide (FBSA)	8.37	2.0	ng/L	10.0		83.7	50-150			
erfluorohexanesulfonic acid (PFHxS)	6.95	2.0	ng/L	9.14		76.1	68-131			
	0.50	2.0	ng/L	10.0		85.9	50-150			
erfluoro-4-oxapentanoic acid (PFMPA)	8.59									
erfluoro-4-oxapentanoic acid (PFMPA) erfluoro-5-oxahexanoic acid (PFMBA)	8.59 9.49	2.0	ng/L	10.0		94.9	50-150			
		2.0 2.0	ng/L ng/L	10.0 9.51		94.9 85.3	50-150 64-140			
erfluoro-5-oxahexanoic acid (PFMBA)	9.49									



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
Anaryte	Kesult	LIIIII	Units	LEVEI	Resuit	/0KEC	Lillits	KFD	LIIIII	INUICS
Batch B279944 - SOP 454-PFAAS										
LCS (B279944-BS1)				Prepared: 04	/13/21 Analy	yzed: 04/16/2	21			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.83	2.0	ng/L	10.0		88.3	50-150			
Perfluoroheptanoic acid (PFHpA)	7.76	2.0	ng/L	10.0		77.6	72-130			
Perfluorooctanoic acid (PFOA)	8.22	2.0	ng/L	10.0		82.2	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.42	2.0	ng/L	9.28		80.0	65-140			
Perfluorononanoic acid (PFNA)	7.88	2.0	ng/L	10.0		78.8	69-130			
Surrogate: M8FOSA	31.1		ng/L	40.0		77.8	50-150			
Surrogate: M2-4:2FTS	33.5		ng/L	37.5		89.2	50-150			
Surrogate: M2PFTA	36.1		ng/L	40.0		90.4	50-150			
Surrogate: M2-8:2FTS	34.4		ng/L	38.4		89.6	50-150			
Surrogate: MPFBA	38.4		ng/L	40.0		96.1	50-150			
Surrogate: M3HFPO-DA	36.9		ng/L	40.0		92.2	50-150			
Surrogate: M6PFDA	40.8		ng/L	40.0		102	50-150			
Surrogate: M3PFBS	36.0		ng/L	37.3		96.6	50-150			
Surrogate: M7PFUnA	38.9		ng/L	40.0		97.4	50-150			
Surrogate: M2-6:2FTS	32.1		ng/L	38.0		84.5	50-150			
Surrogate: M5PFPeA	38.7		ng/L	40.0		96.7	50-150			
Surrogate: M5PFHxA	38.3		ng/L	40.0		95.8	50-150			
Surrogate: M3PFHxS	37.1		ng/L	37.9		97.8	50-150			
Surrogate: M4PFHpA	38.9		ng/L	40.0		97.4	50-150			
Surrogate: M8PFOA	39.3		ng/L	40.0		98.3	50-150			
Surrogate: M8PFOS	35.9		ng/L	38.3		93.7	50-150			
Surrogate: M9PFNA	39.1		ng/L	40.0		97.7	50-150			
Surrogate: MPFDoA	36.7		ng/L	40.0		91.8	50-150			
Surrogate: d5-NEtFOSAA	35.2		ng/L	40.0		88.1	50-150			
Surrogate: d3-NMeFOSAA	35.4		ng/L	40.0		88.5	50-150			



PF-02A

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.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

Surrogate recovery is outside of control limits. Re-analysis yielded similar surrogate non-conformance.



CERTIFICATIONS

Certified Analyses included in this Report

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



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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Publile Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

2/11/16

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Table of Contents missing samples from prepacked Glassware in freezer? Y / N Prepackaged Cooler? Y ≬N "Contest is not responsible for Fest values your partnership on each project and will try to assist with missing information, but will not t Chain of Custody is a legal document that must be complete and accurate and is used to determine whal analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Con Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Glassware in the fridge? ² Preservation Codes: I « Iced H = HCL M = Methanol N = Nitric Acid S » Sulfuric Acid B » Sodium Bisulfate X = Sodium Hydroxide T » Sodium 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water Total Number Of: A = Air S = Soil SL = Studge SOL = Solid O = Other (please 0 = Other (please Non Soxhlet PCB ONLY Soxhlet coolers Preservation Code BACTERIA GLASS__ VIALS PLASTIC ENCORE Thiosulfate possible sample concentration within the Conc H - High; M - Medium; L - Low; C - Clean; U -Please use the following codes to indicate NELAC and Alla-LaP, LLC Accredited Chromatogram AIHA-LAP, LLC Code column above: ANALYSIS REQUESTED held accountable, Field Blank not to be run, per client request - RJM 3/25/2021 WRTA S479 East Longmeadow, MA 01028 bmassa @harsleywitten.com GLASS PLASTIC BACTERIA ENCORE 39 Spruce Street EXCEL. Field Filtered Field Filtered Lab to Filter Lab to Filter School MWRA MBTA > CHAIN OF CUSTODY RECORD VIALS 0 0 0 0 Conc Code PDF Municipality 21 J Brownfield Due Date: Matrix 10-Day GE) 3-Day 4-Day COMP/GRAB 9 CLP Like Data Pkg Required PFAS 10-Day (std) Client Comments: が、土 15:35 04:81 L1/8 3/17 15:00 Government 13.40 <u>0</u>:± 3/17 16:30 Ending Date/Time <u>01:S</u> Email To: Fax To #: Federal ormat: Other: 7-Day -Day -Day 1 0 1 City Project Entity 1178 3117 317 317 3117 3117 Sandwids, Date/Time: 13:00 | 3/28 | 13:00 | Date/Time: Email: info@contestlabs.com エフエ 3/23/21 12co Client Sample ID / Description Grace C Phone: 413-525-2332 Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: Date/Time: HW-ICM HW-T(s) Z08-MH Invoice Recipient: Sryon Mass a HW- T HW-FI Project Manager: Bryon Masso HW-3 7-MH HW-R 1-MH Horsley Witten Address: 40 R-12 6/4 () Original Phone: (181) 245-1527 Project Location: Hyannis Project Number: 20102 Con-Test Quote Name/Number: TY LOOP TO THE (signature) Relinquished by: (signature Received by: (signature) Received by: (signature) Work Order# h 0 8 Sampled By: $\mu \omega$ 3 Con-Test (signa elinquished w Comments: Page 57 of 60

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*Contest is not responsible for missing samples from prepacked Glassware in freezer? Y / N Prepackaged Cooler? YN N 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 b Chain of Custody is a legal document that must be complete and accurate and is used to determine what Glassware in the fridge? Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water Total Number Of: 2 Preservation Codes: 5 = Sulfuric Acid B = Sodium Bisulfate SL = Sludge SOL = Solid O = Other (please define) Page Z of S Non Soxhlet H = HCL M = Methanol N = Nitríc Acid PCB ONLY Soxhlet Preservation Code BACTERIA PLASTIC ENCORE GLASS VIALS_ A = Air S = Soil define) possible sample concentration within the Conc H · High; M · Medium; L · Low; C · Clean; U · Please use the following codes to indicate NELAC and AlHa-LAP, LLC Accredited Chromatogram
AIHA-LAP, LLC Code column above: ANALYSIS REQUESTED held accountable. MA MCP Requires WRTA 45 state O'N Regulfred Vdd WCP Contification Form Re-East Longmeadow, MA 01028 ENCORE BACTERIA 39 Spruce Street EXCEL Field Filtered Field Filtered Lab to Fifter Lab to Filter PLASTIC School > ` `> GLASS CHAIN OF CUSTODY RECORD VIALS 100 0 0 0 0 Conc Code PDF Municipality Brownfield Due Date: 'Matrix Code 3 10-Day 3-Day GRAB COMP/GRAB CLP Like Data Pkg Required PFAS 10-Day (std) 16:45 31 18 13:4D 3/19/13:15 Ending Date/Time 8:0 3/18 11:00 2/18/14:00 3/18 10:50 3/18/12:00 3/19/14:30 Government Email To: Fax To #: Format; Federal Other: GW -Day -Day -Day Çity Project Entity 3/18 Beginning Date/Time 3/17 3118 Date/Time: 13:180 Email: info@contestiabs.com 17 -3/23/Pi 1300 Horsey Withen Group Client Sample 10 / Description Phone: 413-525-2332 RB-1/100 m Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: 4W-S(m Date/Time: HW-PCS) W 2770 HW-5(s 01/19(s) RB-165 08-13H HM-K Con-Test Quote Name/Number; (signature) Relinquished by: (signature) Received by: (signature) Ş Received by: (signature) 3 Con-Test Work Order# <u>0</u> Sampled By: トレ 2 9 Q nvoice Recipient: Project Location: Project Manager: Project Number: linguished by elinquished by eceived by: Address; Page 58 of 60

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Doc # 381 Rev 2_06262019

*Contest is not responsible for missing samples from prepacked Glassware in freezer? Y / N analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Contest values your partnership on each project and will try to assist with missing information, but will not be Chain of Custody is a legal document that must be complete and accurate and is used to determine what Glassware in the fridge? Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Prepackaged Cooler? Y 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium
Thiosulfate
O = Other (please Total Number Of: Preservation Codes: A = Air
S = Soil
SL = Studge
SOL = Solid
O = Other (please define) Page S of S Non Soxhlet PCB ONLY H = HCL M = Methanol N = Nitríc Acid Soxhlet BACTERIA_ ENCORE VIALS__ GLASS **PLASTIC** define) Please use the following codes to indicate possible sample concentration within the Conc H·High; M·Medium; L·Low; C·Clean; U· NELAC and Alha-LAP, LLC Accredited Chromatogram Code column above: ANALYSIS REQUESTED held accountable. SARID 39 Spruce Street East Longmeadow, MA 01028 ENCORE JOE BACTERIA Field Filtered Field Filtered Lab to Filter Lab to Filter PLASTIC School MWRA GLASS CHAIN OF CUSTODY RECORD VIALS 0 0 0 0 Conc Code PDF Municipality Due Date: Brownfield *Matrix Code 10-Day 3 1 1 3-Day WEND : 4-Day CLP Like Data Pkg Required: 3/19/14:30 Gras COMP/GRAB DEC PFAS 10-Day (std) Ending Date/Time 3/19 13:45 Date/Time: 13:90 Client Comments: Government mail To: Fax To #: Format: Federal Other: 7-Day -Day 2-Day Çity Project Entity Beginning Date/Time Herslay Withen Group Email: info@contestlabs.com 342 R1 1300 Client Sample ID / Description Phone: 413-525-2332 Field Blowk Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: OM-19(A) Con-Test Quote Name/Number: September Septem tinguished Al. Isimature nshed by: (signature) Relinquished by: (signature) Received by: (signature) Received by: (signature) Con-Test Work Order# Sampled By: eceived by (signat) Invoice Recipient: Project Location: Project Manager: Project Number: mments: Address: Phone: Page 59 of 60 I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

	ey witton							
Received By			Date	3 d3	<u>/ </u>	Time	<u> </u>	
How were the samples	In Cooler	T	No Cooler	, ,	On Ice	T	No Ice	
received?	Direct from Samp	lina	•		Ambient		Melted Ice	
		By Gun#	2		Actual Tem	0-48		
Were samples within	T	-			•			
Temperature? 2-6°C		By Blank #	18/	an Comenia	Actual Tem		4/1/2	
Was Custody So Was COC Relin		NT			s Tampered			
Are there broken/l	•	on any cam		Chair Agi	ee With Sar	iipies !		
Is COC in ink/ Legible?		On any Sam	· ••	inles recei	ved within ho	oldina time?	T	
Did COC include all	Client	T	Analysis	T		er Name		
pertinent Information?	Project	<u> </u>	ID's	T	•	Dates/Times	$-\tau$	
Are Sample labels filled	•		· · · · · · · · · · · · · · · · · · ·				····	
Are there Lab to Filters?	_	F		Who was	s notified?			
Are there Rushes?		F		Who was	notified?			
Are there Short Holds?		F		Who was	notified?		······································	
Is there enough Volume	?	Τ.						
Is there Headspace who	ere applicable?	NA		MS/MSD?	Ŧ	•		
Proper Media/Container	s Used?	+		ls splitting	samples req	uired? F		
Were trip blanks receive	ed?	F		On COC?	F			
Do all samples have the	proper pH?	NIF	Acid _			Base		
Vials #	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter I	Plastic		16 oz	Amb.	
HCL-	500 mL Amb.		500 mL				b/Clear	
Meoh-	250 mL Amb.		250 mL		43		b/Clear	
Bisulfate-	Flashpoint		Col./Ba				b/Clear	
DI-	Other Glass		Other F				ore	
Thiosulfate-	SOC Kit		Plastic			Frozen:		
Sulfuric-	Perchlorate		Ziplo					
1			Unused N	ledia				
Vials # Unp-	Containers: 1 Liter Amb.	#	1 Liter F	Diantio	#	16 oz	Amb	#
HCL-	500 mL Amb.		500 mL			8oz Am		
Meoh-	250 mL Amb.		250 mL			4oz Am		
Bisulfate-	Col./Bacteria		Flash		***************************************		b/Clear	······
DI-	Other Plastic		Other (ore	
Thiosulfate-	SOC Kit		Plastic			Frozen:		
Sulfuric-	Perchlorate		Ziplo		······································			
Comments:	<u></u>		·					

April 19, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21C1176

Enclosed are results of analyses for samples received by the laboratory on March 23, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MCorthy

Raymond J. McCarthy Project Manager

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Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

REPORT DATE: 4/19/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21C1176

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HW-R(S)	21C1176-01	Ground Water		SOP-454 PFAS	
HW-J	21C1176-02	Ground Water		SOP-454 PFAS	
HW-I (S)	21C1176-03	Ground Water		SOP-454 PFAS	
HW-I (M)	21C1176-04	Ground Water		SOP-454 PFAS	
HW-I (D)	21C1176-05	Ground Water		SOP-454 PFAS	
HW-E	21C1176-06	Ground Water		SOP-454 PFAS	
HW-F	21C1176-07	Ground Water		SOP-454 PFAS	
HW-302	21C1176-08	Ground Water		SOP-454 PFAS	
HW-2	21C1176-09	Ground Water		SOP-454 PFAS	
HW-3	21C1176-10	Ground Water		SOP-454 PFAS	
HW-300	21C1176-11	Ground Water		SOP-454 PFAS	
HW-S (S)	21C1176-12	Ground Water		SOP-454 PFAS	
HW-S (M)	21C1176-13	Ground Water		SOP-454 PFAS	
HW-P(S)	21C1176-14	Ground Water		SOP-454 PFAS	
HW-P (M)	21C1176-15	Ground Water		SOP-454 PFAS	
RB-1(S)	21C1176-16	Ground Water		SOP-454 PFAS	
RB-1 (M)	21C1176-17	Ground Water		SOP-454 PFAS	
HW-K	21C1176-18	Ground Water		SOP-454 PFAS	
OW-19 (S)	21C1176-19	Ground Water		SOP-454 PFAS	
OW-19(M)	21C1176-20	Ground Water		SOP-454 PFAS	
OW-19(D)	21C1176-21	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-02A

Surrogate recovery is outside of control limits. Re-analysis yielded similar surrogate non-conformance.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA

21C1176-14RE1[HW-P(S)]

d5-NEtFOSAA

21C1176-04RE1[HW-I (M)], 21C1176-12RE1[HW-S (S)], 21C1176-14RE1[HW-P (S)], 21C1176-17RE1[RB-1 (M)]

 $21C1176-04RE1[HW-I\ (M)], 21C1176-05RE1[HW-I\ (D)], 21C1176-06RE1[HW-E], 21C1176-07RE1[HW-F], 21C1176-08RE1[HW-302], 21C1176-09RE1[HW-2], \\ 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1\ (S)], 21C1176-17RE1[RB-1\ (M)], 21C1176-19RE1[OW-19\ (S)], 21C1176-20RE1[OW-19\ (M)], B279944-BLK1$

M7DEIIn A

21C1176-04RE1[HW-I (M)], 21C1176-12RE1[HW-S (S)], 21C1176-14RE1[HW-P (S)], 21C1176-17RE1[RB-I (M)]

M8FOSA

 $21C1176-04RE1[HW-I\ (M)], 21C1176-09RE1[HW-2], 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1(S)], 21C1176-17RE1[RB-1\ (M)]$

MPFDoA

 $21C1176-04RE1[HW-I\ (M)], 21C1176-05RE1[HW-I\ (D)], 21C1176-08RE1[HW-302], 21C1176-09RE1[HW-2], 21C1176-12RE1[HW-S\ (S)], 21C1176-13RE1[HW-S\ (M)], 21C1176-14RE1[HW-P\ (S)], 21C1176-16RE1[RB-1(S)], 21C1176-17RE1[RB-1\ (M)], 21C1176-19RE1[OW-19\ (S)]$

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.

Lisa A. Worthington Technical Representative

na Warrlington



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-R(S)

Sampled: 3/17/2021 11:55

83.1

87.2

79.4

50-150

50-150

50-150

Sample ID: 21C1176-01
Sample Matrix: Ground Water

M3HFPO-DA

M6PFDA

M3PFBS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.1	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorobutanesulfonic acid (PFBS)	0.85	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoropentanoic acid (PFPeA)	10	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorohexanoic acid (PFHxA)	6.1	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro(2-ethoxyethane)sulfonic acid	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
(PFEESA)				3						
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorohexanesulfonic acid (PFHxS)	10	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	4.8	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.63	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluoroheptanoic acid (PFHpA)	5.0	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanoic acid (PFOA)	4.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorooctanesulfonic acid (PFOS)	2.3	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Perfluorononanoic acid (PFNA)	1.0	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:05	JFC
Surrogates		% Reco	very	Recovery Limits	6	Flag/Qual				
M8FOSA		75.2		50-150					4/17/21 1:05	
M2-4:2FTS		128		50-150					4/17/21 1:05	
M2PFTA		66.4		50-150					4/17/21 1:05	
M2-8:2FTS		80.0		50-150					4/17/21 1:05	
MPFBA		90.0		50-150					4/17/21 1:05	

4/17/21 1:05

4/17/21 1:05

4/17/21 1:05



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-R(S)

Sampled: 3/17/2021 11:55

Sample ID: 21C1176-01
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limits	6	Flag/Qual				
M7PFUnA		83.0		50-150					4/17/21 1:05	
M2-6:2FTS		87.5		50-150					4/17/21 1:05	
M5PFPeA		87.0		50-150					4/17/21 1:05	
M5PFHxA		81.6		50-150					4/17/21 1:05	
M3PFHxS		84.7		50-150					4/17/21 1:05	
M4PFHpA		76.6		50-150					4/17/21 1:05	
M8PFOA		91.4		50-150					4/17/21 1:05	
M8PFOS		86.8		50-150					4/17/21 1:05	
M9PFNA		86.5		50-150					4/17/21 1:05	
MPFDoA		74.0		50-150					4/17/21 1:05	
d5-NEtFOSAA		75.6		50-150					4/17/21 1:05	
d3-NMeFOSAA		71.2		50-150					4/17/21 1:05	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-J

Sampled: 3/17/2021 12:50

93.2

101

96.2

50-150

50-150

50-150

Sample ID: 21C1176-02
Sample Matrix: Ground Water

M3HFPO-DA

M6PFDA

M3PFBS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	59	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	40	6.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoropentanoic acid (PFPeA)	150	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorohexanoic acid (PFHxA)	75	40	15	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
11Cl-PF3OUdS (F53B Major)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
9Cl-PF3ONS (F53B Minor)	ND	40	7.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	40	32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	40	29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorodecanoic acid (PFDA)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorododecanoic acid (PFDoA)	ND	40	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	40	7.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	40	26	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
N-EtFOSAA	ND	40	19	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
N-MeFOSAA	ND	40	19	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorotetradecanoic acid (PFTA)	ND	40	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	40	23	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	40	21	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanesulfonamide (FOSA)	ND	40	8.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorononanesulfonic acid (PFNS)	ND	40	18	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	15	40	14	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorohexanesulfonic acid (PFHxS)	88	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	40	7.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	440	40	22	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	40	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroundecanoic acid (PFUnA)	ND	40	9.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluoroheptanoic acid (PFHpA)	44	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanoic acid (PFOA)	61	40	7.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorooctanesulfonic acid (PFOS)	250	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Perfluorononanoic acid (PFNA)	35	40	9.7	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 1:35	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		92.7		50-150					4/17/21 1:35	
M2-4:2FTS		78.3		50-150					4/17/21 1:35	
M2PFTA		88.2		50-150					4/17/21 1:35	
M2-8:2FTS MPFBA		79.1 100		50-150 50-150					4/17/21 1:35 4/17/21 1:35	
WIFFDA		100		50-150					4/17/21 1:35	

4/17/21 1:35

4/17/21 1:35

4/17/21 1:35



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-J

Sampled: 3/17/2021 12:50

Sample ID: 21C1176-02

Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recove	ery Recovery Limit	ts	Flag/Qual				
M7PFUnA	98.4	50-150					4/17/21 1:35	
M2-6:2FTS	71.5	50-150					4/17/21 1:35	
M5PFPeA	105	50-150					4/17/21 1:35	
M5PFHxA	94.3	50-150					4/17/21 1:35	
M3PFHxS	104	50-150					4/17/21 1:35	
M4PFHpA	97.9	50-150					4/17/21 1:35	
M8PFOA	104	50-150					4/17/21 1:35	
M8PFOS	104	50-150					4/17/21 1:35	
M9PFNA	98.8	50-150					4/17/21 1:35	
MPFDoA	90.4	50-150					4/17/21 1:35	
d5-NEtFOSAA	88.6	50-150					4/17/21 1:35	
d3-NMeFOSAA	83.9	50-150					4/17/21 1:35	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (S)

Sampled: 3/17/2021 13:40

79.1

97.7

95.2

97.5

97.4

50-150

50-150

50-150

50-150

50-150

Sample ID: 21C1176-03
Sample Matrix: Ground Water

M2-8:2FTS

M3HFPO-DA

MPFBA

M6PFDA

M3PFBS

Semivolatile	Organic	Compounds	by - L	C/MS-MS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	32	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoropentanoic acid (PFPeA)	98	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorohexanoic acid (PFHxA)	56	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorohexanesulfonic acid (PFHxS)	21	20	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1700	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluoroheptanoic acid (PFHpA)	32	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanoic acid (PFOA)	50	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorooctanesulfonic acid (PFOS)	28	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Perfluorononanoic acid (PFNA)	65	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:04	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		87.0		50-150					4/17/21 2:04	
M2-4:2FTS		76.0		50-150					4/17/21 2:04	
M2PFTA		79.7		50-150					4/17/21 2:04	

4/17/21 2:04

4/17/21 2:04

4/17/21 2:04

4/17/21 2:04

4/17/21 2:04



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (S)

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-03

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA		91.9		50-150					4/17/21 2:04	
M2-6:2FTS		79.3		50-150					4/17/21 2:04	
M5PFPeA		101		50-150					4/17/21 2:04	
M5PFHxA		91.2		50-150					4/17/21 2:04	
M3PFHxS		99.0		50-150					4/17/21 2:04	
M4PFHpA		97.6		50-150					4/17/21 2:04	
M8PFOA		100		50-150					4/17/21 2:04	
M8PFOS		101		50-150					4/17/21 2:04	
M9PFNA		94.0		50-150					4/17/21 2:04	
MPFDoA		84.5		50-150					4/17/21 2:04	
d5-NEtFOSAA		85.0		50-150					4/17/21 2:04	
d3-NMeFOSAA		80.4		50-150					4/17/21 2:04	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (M)

Sampled: 3/17/2021 14:10

0.898

71.0

95.2

92.6

71.9

110

50-150

50-150

50-150

50-150

50-150

50-150

PF-02A

Sample ID: 21C1176-04
Sample Matrix: Ground Water

M2PFTA

MPFBA

M6PFDA

M3PFBS

M2-8:2FTS

M3HFPO-DA

Semivolatile Organic Compounds by - LC/N	/MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.0	2.0	0.57	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoropentanoic acid (PFPeA)	1.9	2.0	0.66	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorohexanoic acid (PFHxA)	1.8	2.0	0.75	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorohexanesulfonic acid (PFHxS)	5.2	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluoroheptanoic acid (PFHpA)	0.86	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanoic acid (PFOA)	1.4	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorooctanesulfonic acid (PFOS)	13	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 2:34	JFC
Surrogates		% Reco	overy	Recovery Limits	·	Flag/Qual				
M8FOSA			*	50-150		PF-02A			4/17/21 2:34	
M2-4:2FTS		90.7		50-150					4/17/21 2:34	

4/17/21 2:34

4/17/21 2:34

4/17/21 2:34

4/17/21 2:34

4/17/21 2:34

4/17/21 2:34



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (M)

Sampled: 3/17/2021 14:10

Sample ID: 21C1176-04
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results R	L DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%	Recovery	Recovery Limits	s	Flag/Qual				
M7PFUnA	35	5 *	50-150		PF-02A			4/17/21 2:34	
M2-6:2FTS	77	8	50-150					4/17/21 2:34	
M5PFPeA	93	6	50-150					4/17/21 2:34	
M5PFHxA	90	1	50-150					4/17/21 2:34	
M3PFHxS	11	1	50-150					4/17/21 2:34	
M4PFHpA	85	7	50-150					4/17/21 2:34	
M8PFOA	96	5	50-150					4/17/21 2:34	
M8PFOS	97	6	50-150					4/17/21 2:34	
M9PFNA	86	1	50-150					4/17/21 2:34	
MPFD ₀ A	11	1 *	50-150		PF-02A			4/17/21 2:34	
d5-NEtFOSAA	41	6 *	50-150		PF-02A			4/17/21 2:34	
d3-NMeFOSAA	51	5	50-150					4/17/21 2:34	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (D)

Sampled: 3/17/2021 14:35

Sample ID: 21C1176-05
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	9.9	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorobutanesulfonic acid (PFBS)	1.7	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoropentanoic acid (PFPeA)	37	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorohexanoic acid (PFHxA)	25	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorohexanesulfonic acid (PFHxS)	31	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.7	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluoroheptanoic acid (PFHpA)	6.5	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanoic acid (PFOA)	4.3	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorooctanesulfonic acid (PFOS)	38	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Perfluorononanoic acid (PFNA)	0.75	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:04	JFC
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M8FOSA		60.0		50-150					4/17/21 3:04	_
M2-4:2FTS		79.0	•	50-150		DE 02 A			4/17/21 3:04	

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	60.0	50-150		4/17/21 3:04
M2-4:2FTS	79.0	50-150		4/17/21 3:04
M2PFTA	11.9 *	50-150	PF-02A	4/17/21 3:04
M2-8:2FTS	69.4	50-150		4/17/21 3:04
MPFBA	91.2	50-150		4/17/21 3:04
M3HFPO-DA	93.1	50-150		4/17/21 3:04
M6PFDA	84.9	50-150		4/17/21 3:04
M3PFBS	93.0	50-150		4/17/21 3:04



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-I (D)

Sampled: 3/17/2021 14:35

Sample ID: 21C1176-05
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates		% Reco	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		67.1		50-150					4/17/21 3:04	
M2-6:2FTS		66.3		50-150					4/17/21 3:04	
M5PFPeA		91.8		50-150					4/17/21 3:04	
M5PFHxA		85.7		50-150					4/17/21 3:04	
M3PFHxS		96.5		50-150					4/17/21 3:04	
M4PFHpA		85.5		50-150					4/17/21 3:04	
M8PFOA		95.0		50-150					4/17/21 3:04	
M8PFOS		91.1		50-150					4/17/21 3:04	
M9PFNA		88.6		50-150					4/17/21 3:04	
MPFDoA		46.9	*	50-150		PF-02A			4/17/21 3:04	
d5-NEtFOSAA		63.0		50-150					4/17/21 3:04	
d3-NMeFOSAA		66.4		50-150					4/17/21 3:04	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-E

Sampled: 3/17/2021 15:10

Sample ID: 21C1176-06
Sample Matrix: Ground Water

MPFBA

M6PFDA

M3PFBS

M3HFPO-DA

Semivolatile Organic Compounds by - LC/N	/MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	5.5	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorobutanesulfonic acid (PFBS)	0.35	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoropentanoic acid (PFPeA)	16	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorohexanoic acid (PFHxA)	5.5	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorohexanesulfonic acid (PFHxS)	1.5	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.5	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluoroheptanoic acid (PFHpA)	14	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanoic acid (PFOA)	0.95	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorooctanesulfonic acid (PFOS)	0.82	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 3:33	JFC
Surrogates		% Rec	overy	Recovery Limits		Flag/Qual				
M8FOSA		79.8		50-150					4/17/21 3:33	
M2-4:2FTS		79.8		50-150					4/17/21 3:33	
M2PFTA		36.4	*	50-150		PF-02A			4/17/21 3:33	
M2-8:2FTS		77.7		50-150					4/17/21 3:33	

50-150

50-150

50-150

50-150

95.1

92.0

94.4

92.1

4/17/21 3:33

4/17/21 3:33

4/17/21 3:33

4/17/21 3:33



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-E

Sampled: 3/17/2021 15:10

Sample ID: 21C1176-06

Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA		85.0		50-150					4/17/21 3:33	
M2-6:2FTS		72.7		50-150					4/17/21 3:33	
M5PFPeA		93.3		50-150					4/17/21 3:33	
M5PFHxA		89.8		50-150					4/17/21 3:33	
M3PFHxS		100		50-150					4/17/21 3:33	
M4PFHpA		87.4		50-150					4/17/21 3:33	
M8PFOA		101		50-150					4/17/21 3:33	
M8PFOS		95.5		50-150					4/17/21 3:33	
M9PFNA		95.5		50-150					4/17/21 3:33	
MPFDoA		73.7		50-150					4/17/21 3:33	
d5-NEtFOSAA		77.4		50-150					4/17/21 3:33	
d3-NMeFOSAA		75.6		50-150					4/17/21 3:33	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-F

Sampled: 3/17/2021 15:35

Sample ID: 21C1176-07

Sample Matrix: Ground Water

Perfluorobatamenic acid (PFBA)	Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluonophatanesial (PFPeA) ND 40 6.4 Ng N 1 Ng N 40 13 Ng N 1 Ng N 45 47 147	Perfluorobutanoic acid (PFBA)	420	40	11	ng/L	1	<u> </u>	SOP-454 PFAS		4/17/21 4:03	JFC
Perfluorodecamoic acid (PFHA) 960 40 15 ng/L 1 SOP-454 PFAS 4/142 4/1721 4/03 4/05 1/14 1/14 1/14 1/14 4/1721 4/03 4/14 4/14	Perfluorobutanesulfonic acid (PFBS)	ND	40	6.4		1		SOP-454 PFAS	4/14/21		JFC
Incl-PFSOUds (FS3B Major) ND	Perfluoropentanoic acid (PFPeA)	1800	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
SCEPTSONS (FS3B Minor) ND 40 7.1 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4/3-dioa-3-H-perfluoronomonic acid ND 40 12 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4/00NA) Hexafluoropropylene oxide dimer acid ND 40 32 ng/L 1 SOP-454 PFAS 4/14/2 4/17/2 4/03 4/17/2	Perfluorohexanoic acid (PFHxA)	960	40	15	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
A-B-dioxa-3H-perfluoronomonic acid (ADONA) 12	11Cl-PF3OUdS (F53B Major)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
ADDINA Hexalluoropropriene oxide dimer acid (HEVADO) ND 40 29 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Refribuorodeomesulfonic acid (RESETSA) ND 40 7.6 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 7.3 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 26 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorodeomesia did (PFDA) ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 21 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 12 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFTA) ND 40 12 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanoic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21 4/17/21 4/03 Perfluoroteidecanosalifonic acid (PFNS) ND 40 13 ng/L 1 SOP-454 PEAS 4/14/21	9Cl-PF3ONS (F53B Minor)	ND	40	7.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
CHFOLAD See Purpose	- ·	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanoic acid (PFDA) ND 40 7,6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFDA) ND 40 5,8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFDA) ND 40 7,3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanoic acid (PFHBS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecanic acid (PFTDA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecsulfonic acid (4/2FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/22 Fluorotelomecanic acid (PFDS) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03		ND	40	32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanoic acid (PFDoA) ND 40 5.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro(2-ethoxyethane)sulfonic acid ND 40 7.3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotephanesulfonic acid (PFHpS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EFFOSAA ND 40 13 ng/L 1 SOP-45	8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	40	29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFILPS) ND 40 7.3 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MEFOSAA ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanoic acid (PFTDA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanesulfonic acid (4/2FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluoroteidecanesulfonic acid (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/17/21 4/17/21 4/03 4/17/21	Perfluorodecanoic acid (PFDA)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoroheptanesulfonic acid (PFHpS) ND 40 26 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-BetFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotedecanesulfonic acid (4/2FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (4/2FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (PFDS) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotecanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotenomanesulfonic acid (PFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotenomanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonia (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfonic acid (PFNAS) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotexanesulfon	Perfluorododecanoic acid (PFDoA)	ND	40	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
N-EIFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (FFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorooctanesulfonamide (FOSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-octanesulfonic acid (FFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-octanesulfonic acid (FFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-butanesulfonic acid (FFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (FFNS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (FFNSA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (FFNSA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-6-oxahexanoic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (FFNSA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetaneoic acid (FFNSA) ND 40 ND	(PFEESA)				-						JFC
N-MeFOSAA ND 40 19 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotedecanoic acid (PFTA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (42FTSA) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4/2 Fluorotelomersulfonic acid (42FTSA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoroctanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoroctanesulfonic acid (PFDS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-bexanesulfonamide (FDSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-bexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFNS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFNBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFNBA) ND 40 12 ng/L 1 SOP-454 PF	• • • • • • • • • • • • • • • • • • • •				_						JFC
Perfluorotetradecanoic acid (PFTA) ND 40 16 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorotridecanoic acid (PFTrDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorocanaesulfonic acid (PFOS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-hexanesulfonamide (FDSA) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-I-butanesulfonic acid (PFHXS) ND 40			40		ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorotridecanoic acid (PFTrDA) ND 40 23 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoron-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMRA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPRS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFURA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanoic acid (PFURA) SOP 454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorocatanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/			40	19	ng/L			SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
4.2 Fluorotelomersulfonic acid (4.2FTS A) ND 40 21 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorononanesulfonic acid (PFDS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-1-hexanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-4-oxapentanoic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMPA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFMBA) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesulfonic acid (PFURA) SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4/03 Perfluoropetanesul	` '	ND	40	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorodecanesulfonic acid (PFDS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoronanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonic acid (PFNS) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFNA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFNA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorotridecanoic acid (PFTrDA)	ND	40	23	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanesulfonamide (FOSA) ND 40 8.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorononanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FHxSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFNS) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFMS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-3-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-3-o-6-dioxaheptanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3-6-dioxaheptanoic acid (PFDA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFDA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	40	21	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoronanesulfonic acid (PFNS) ND 40 18 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorotelomersulfonic acid (6:2FTSA) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	` ,	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-1-hexanesulfonamide (FHxSA) ND 40 14 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroetanesulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobetanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorooctanesulfonamide (FOSA)	ND	40	8.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-1-butanesulfonamide (FBSA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanosulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorononanesulfonic acid (PFNS)	ND	40	18	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorohexanesulfonic acid (PFHxS) ND 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorobeptanoic acid (PFDA) 390 40	Perfluoro-1-hexanesulfonamide (FHxSA)	ND	40	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-4-oxapentanoic acid (PFMPA) ND 40 7.4 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (PFUnA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40	Perfluoro-1-butanesulfonamide (FBSA)	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoro-5-oxahexanoic acid (PFMBA) ND 40 13 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 NOFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorohexanesulfonic acid (PFHxS)	ND	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A) 4800 40 22 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoro-4-oxapentanoic acid (PFMPA)	ND	40	7.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoropetanesulfonic acid (PFPeS) ND 40 10 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoro-5-oxahexanoic acid (PFMBA)	ND	40	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluoroundecanoic acid (PFUnA) ND 40 9.8 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	6:2 Fluorotelomersulfonic acid (6:2FTS A)	4800	40	22	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Nonafluoro-3,6-dioxaheptanoic acid ND 40 11 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 (NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoropetanesulfonic acid (PFPeS)	ND	40	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
(NFDHA) Perfluoroheptanoic acid (PFHpA) 390 40 12 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoroundecanoic acid (PFUnA)	ND	40	9.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanoic acid (PFOA) 52 40 7.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03 Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	•	ND	40	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorooctanesulfonic acid (PFOS) ND 40 7.6 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluoroheptanoic acid (PFHpA)	390	40	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
	Perfluorooctanoic acid (PFOA)	52	40	7.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
Perfluorononanoic acid (PFNA) ND 40 9.7 ng/L 1 SOP-454 PFAS 4/14/21 4/17/21 4:03	Perfluorooctanesulfonic acid (PFOS)	ND	40	7.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC
•	Perfluorononanoic acid (PFNA)	ND	40	9.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 4:03	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	69.3	50-150		4/17/21 4:03
M2-4:2FTS	78.0	50-150		4/17/21 4:03
M2PFTA	21.1 *	50-150	PF-02A	4/17/21 4:03
M2-8:2FTS	73.8	50-150		4/17/21 4:03
MPFBA	93.8	50-150		4/17/21 4:03
M3HFPO-DA	90.9	50-150		4/17/21 4:03
M6PFDA	88.8	50-150		4/17/21 4:03
M3PFBS	96.4	50-150		4/17/21 4:03



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-F

Sampled: 3/17/2021 15:35

Sample ID: 21C1176-07

Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results	RL	DL Un	its Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	9,	% Recover	y Recovery	Limits	Flag/Qual				
M7PFUnA		76.9	50-1	50				4/17/21 4:03	
M2-6:2FTS		93.0	50-1	50				4/17/21 4:03	
M5PFPeA		96.9	50-1	50				4/17/21 4:03	
M5PFHxA		88.8	50-1	50				4/17/21 4:03	
M3PFHxS		101	50-1	50				4/17/21 4:03	
M4PFHpA		94.4	50-1	50				4/17/21 4:03	
M8PFOA		96.9	50-1	50				4/17/21 4:03	
M8PFOS		96.8	50-1	50				4/17/21 4:03	
M9PFNA		90.9	50-1	50				4/17/21 4:03	
MPFDoA		60.6	50-1	50				4/17/21 4:03	
d5-NEtFOSAA		74.7	50-1	50				4/17/21 4:03	
d3-NMeFOSAA		71.4	50-1	50				4/17/21 4:03	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-302

Sampled: 3/17/2021 16:30

Sample ID: 21C1176-08
Sample Matrix: Ground Water

			A IIII VOIA	the Organic Comp	ounus by - 1	LC/MB-MB				
Amalista	D l4-	DI	DI	TT:4-	D:14:	FI/OI	M.d. J	Date	Date/Time	A I4
Analyte Perfluorobutanoic acid (PFBA)	Results	RL	DL 0.57	Units	Dilution 1	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanesulfonic acid (PFBS)	6.9	2.0	0.57	ng/L		т	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoropentanoic acid (PFPeA)	1.6	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
1 ,	18	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorohexanoic acid (PFHxA)	11	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	3.1	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorodecanoic acid (PFDA)	0.86	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanesulfonamide (FOSA)	0.82	2.0	0.44	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorohexanesulfonic acid (PFHxS)	2.2	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	12	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.96	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoroundecanoic acid (PFUnA)	3.3	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluoroheptanoic acid (PFHpA)	6.6	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanoic acid (PFOA)	5.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorooctanesulfonic acid (PFOS)	4.1	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Perfluorononanoic acid (PFNA)	6.6	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:02	JFC
Surrogates		% Reco	verv	Recovery Limits		Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	54.2	50-150		4/17/21 5:02
M2-4:2FTS	83.8	50-150		4/17/21 5:02
M2PFTA	7.18 *	50-150	PF-02A	4/17/21 5:02
M2-8:2FTS	77.8	50-150		4/17/21 5:02
MPFBA	95.5	50-150		4/17/21 5:02
M3HFPO-DA	95.4	50-150		4/17/21 5:02
M6PFDA	88.8	50-150		4/17/21 5:02
M3PFBS	101	50-150		4/17/21 5:02



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021 Field Sample #: HW-302

Sampled: 3/17/2021 16:30

Sample ID: 21C1176-08

Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recove	ery Recovery Limi	ts	Flag/Qual				
M7PFUnA	70.8	50-150					4/17/21 5:02	
M2-6:2FTS	77.8	50-150					4/17/21 5:02	
M5PFPeA	99.6	50-150					4/17/21 5:02	
M5PFHxA	90.9	50-150					4/17/21 5:02	
M3PFHxS	103	50-150					4/17/21 5:02	
M4PFHpA	84.4	50-150					4/17/21 5:02	
M8PFOA	101	50-150					4/17/21 5:02	
M8PFOS	96.2	50-150					4/17/21 5:02	
M9PFNA	93.5	50-150					4/17/21 5:02	
MPFDoA	40.9 *	50-150		PF-02A			4/17/21 5:02	
d5-NEtFOSAA	72.8	50-150					4/17/21 5:02	
d3-NMeFOSAA	70.4	50-150					4/17/21 5:02	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-2

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-09

Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	14	2.0	0.57	ng/L	1	<u> </u>	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorobutanesulfonic acid (PFBS)	0.84	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoropentanoic acid (PFPeA)	70	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorohexanoic acid (PFHxA)	27	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorodecanoic acid (PFDA)	1.4	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	1.0	2.0	0.70	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorohexanesulfonic acid (PFHxS)	2.3	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	64	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluoroheptanoic acid (PFHpA)	20	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanoic acid (PFOA)	17	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorooctanesulfonic acid (PFOS)	21	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC
Perfluorononanoic acid (PFNA)	10	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 5:32	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	46.0 *	50-150	PF-02A	4/17/21 5:32
M2-4:2FTS	147	50-150		4/17/21 5:32
M2PFTA	2.12 *	50-150	PF-02A	4/17/21 5:32
M2-8:2FTS	103	50-150		4/17/21 5:32
MPFBA	101	50-150		4/17/21 5:32
M3HFPO-DA	102	50-150		4/17/21 5:32
M6PFDA	85.5	50-150		4/17/21 5:32
M3PFBS	104	50-150		4/17/21 5:32



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-2

Sampled: 3/17/2021 13:40

Sample ID: 21C1176-09

Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Recov	ery Recovery Limi	its	Flag/Qual				
M7PFUnA	56.2	50-150					4/17/21 5:32	
M2-6:2FTS	128	50-150					4/17/21 5:32	
M5PFPeA	105	50-150					4/17/21 5:32	
M5PFHxA	93.3	50-150					4/17/21 5:32	
M3PFHxS	110	50-150					4/17/21 5:32	
M4PFHpA	75.7	50-150					4/17/21 5:32	
M8PFOA	103	50-150					4/17/21 5:32	
M8PFOS	98.2	50-150					4/17/21 5:32	
M9PFNA	90.9	50-150					4/17/21 5:32	
MPFD ₀ A	24.2	50-150		PF-02A			4/17/21 5:32	
d5-NEtFOSAA	60.4	50-150					4/17/21 5:32	
d3-NMeFOSAA	66.1	50-150					4/17/21 5:32	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-3

Sampled: 3/17/2021 15:00

Sample ID: 21C1176-10

Sample Matrix: Ground Water

Semivolatile Organic Compound	ls by - LC/MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	70	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoropentanoic acid (PFPeA)	260	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorohexanoic acid (PFHxA)	110	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorohexanesulfonic acid (PFHxS)	6.4	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	470	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluoroheptanoic acid (PFHpA)	84	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanoic acid (PFOA)	64	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorooctanesulfonic acid (PFOS)	56	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC
Perfluorononanoic acid (PFNA)	19	20	4.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:02	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	87.4	50-150		4/17/21 6:02
M2-4:2FTS	76.7	50-150		4/17/21 6:02
M2PFTA	78.4	50-150		4/17/21 6:02
M2-8:2FTS	85.0	50-150		4/17/21 6:02
MPFBA	95.4	50-150		4/17/21 6:02
M3HFPO-DA	89.5	50-150		4/17/21 6:02
M6PFDA	98.9	50-150		4/17/21 6:02
M3PFBS	94.0	50-150		4/17/21 6:02



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-3

Sampled: 3/17/2021 15:00

Sample ID: 21C1176-10

Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results R	L DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%]	Recovery	Recovery Limit	s	Flag/Qual				
M7PFUnA	91	4	50-150					4/17/21 6:02	
M2-6:2FTS	72	5	50-150					4/17/21 6:02	
M5PFPeA	10	1	50-150					4/17/21 6:02	
M5PFHxA	90	9	50-150					4/17/21 6:02	
M3PFHxS	98	1	50-150					4/17/21 6:02	
M4PFHpA	92	2	50-150					4/17/21 6:02	
M8PFOA	98	8	50-150					4/17/21 6:02	
M8PFOS	10	0	50-150					4/17/21 6:02	
M9PFNA	92	4	50-150					4/17/21 6:02	
MPFDoA	83	5	50-150					4/17/21 6:02	
d5-NEtFOSAA	80	8	50-150					4/17/21 6:02	
d3-NMeFOSAA	81	3	50-150					4/17/21 6:02	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-300

Sampled: 3/17/2021 16:45

Sample ID: 21C1176-11
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.4	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorobutanesulfonic acid (PFBS)	0.70	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoropentanoic acid (PFPeA)	11	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorohexanoic acid (PFHxA)	5.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorohexanesulfonic acid (PFHxS)	9.9	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluoroheptanoic acid (PFHpA)	2.8	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanoic acid (PFOA)	4.4	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorooctanesulfonic acid (PFOS)	15	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Perfluorononanoic acid (PFNA)	0.99	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 6:31	JFC
Surrogates		% Reco	very	Recovery Limits	·	Flag/Qual				
M8FOSA		81.0		50-150					4/17/21 6:31	
M2-4:2FTS		79.1		50-150					4/17/21 6:31	

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	81.0	50-150		4/17/21 6:31
M2-4:2FTS	79.1	50-150		4/17/21 6:31
M2PFTA	74.6	50-150		4/17/21 6:31
M2-8:2FTS	85.2	50-150		4/17/21 6:31
MPFBA	91.3	50-150		4/17/21 6:31
M3HFPO-DA	90.9	50-150		4/17/21 6:31
M6PFDA	95.2	50-150		4/17/21 6:31
M3PFBS	89.8	50-150		4/17/21 6:31



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-300

Sampled: 3/17/2021 16:45

Sample ID: 21C1176-11
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	9/	6 Recove	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA	3	86.7		50-150					4/17/21 6:31	
M2-6:2FTS	6	68.8		50-150					4/17/21 6:31	
M5PFPeA	Ģ	93.9		50-150					4/17/21 6:31	
M5PFHxA	8	83.7		50-150					4/17/21 6:31	
M3PFHxS	Ģ	98.3		50-150					4/17/21 6:31	
M4PFHpA	7	71.5		50-150					4/17/21 6:31	
M8PFOA	Ģ	94.2		50-150					4/17/21 6:31	
M8PFOS	Ģ	96.1		50-150					4/17/21 6:31	
M9PFNA	8	87.6		50-150					4/17/21 6:31	
MPFDoA	7	77.6		50-150					4/17/21 6:31	
d5-NEtFOSAA	7	75.9		50-150					4/17/21 6:31	
d3-NMeFOSAA	7	75.2		50-150					4/17/21 6:31	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (S)

Sampled: 3/18/2021 10:00

Sample ID: 21C1176-12
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	89	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorobutanesulfonic acid (PFBS)	5.4	20	3.2	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoropentanoic acid (PFPeA)	430	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorohexanoic acid (PFHxA)	300	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorododecanoic acid (PFDoA)	11	20	2.9	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-1-butanesulfonamide (FBSA)	13	20	5.5	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorohexanesulfonic acid (PFHxS)	83	20	5.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3100	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoropetanesulfonic acid (PFPeS)	7.1	20	5.1	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluoroheptanoic acid (PFHpA)	140	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanoic acid (PFOA)	78	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorooctanesulfonic acid (PFOS)	30	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Perfluorononanoic acid (PFNA)	24	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:01	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		19.4	*	50-150		PF-02A			4/17/21 7:01	

M8FOSA	19.4 *	50-150	PF-02A	4/17/21 7:01
M2-4:2FTS	87.5	50-150		4/17/21 7:01
M2PFTA	1.30 *	50-150	PF-02A	4/17/21 7:01
M2-8:2FTS	72.2	50-150		4/17/21 7:01
MPFBA	94.0	50-150		4/17/21 7:01
M3HFPO-DA	95.7	50-150		4/17/21 7:01
M6PFDA	79.9	50-150		4/17/21 7:01
M3PFBS	107	50-150		4/17/21 7:01



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (S)

Sampled: 3/18/2021 10:00

Sample ID: 21C1176-12
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		47.0	*	50-150		PF-02A			4/17/21 7:01	
M2-6:2FTS		100		50-150					4/17/21 7:01	
M5PFPeA		100		50-150					4/17/21 7:01	
M5PFHxA		92.2		50-150					4/17/21 7:01	
M3PFHxS		108		50-150					4/17/21 7:01	
M4PFHpA		93.4		50-150					4/17/21 7:01	
M8PFOA		97.9		50-150					4/17/21 7:01	
M8PFOS		96.0		50-150					4/17/21 7:01	
M9PFNA		90.6		50-150					4/17/21 7:01	
MPFD ₀ A		15.6	*	50-150		PF-02A			4/17/21 7:01	
d5-NEtFOSAA		44.8	*	50-150		PF-02A			4/17/21 7:01	
d3-NMeFOSAA		56.6		50-150					4/17/21 7:01	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (M)

Sampled: 3/18/2021 10:30

95.3

58.4

90.3

102

50-150

50-150

50-150

50-150

Sample ID: 21C1176-13
Sample Matrix: Ground Water

MPFBA

M6PFDA

M3PFBS

M3HFPO-DA

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.9	2.0	0.57	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorobutanesulfonic acid (PFBS)	0.46	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoropentanoic acid (PFPeA)	3.9	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorohexanoic acid (PFHxA)	2.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorohexanesulfonic acid (PFHxS)	7.3	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	6.7	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluoroheptanoic acid (PFHpA)	1.1	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanoic acid (PFOA)	1.8	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorooctanesulfonic acid (PFOS)	6.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Perfluorononanoic acid (PFNA)	0.57	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 7:30	JFC
Surrogates		% Rec		Recovery Limits		Flag/Qual				
M8FOSA		43.3	*	50-150		PF-02A			4/17/21 7:30	
M2-4:2FTS M2PFTA		86.7 2.23	*	50-150 50-150		PF-02A			4/17/21 7:30 4/17/21 7:30	
M2-8:2FTS		83.9	•	50-150		rr-UZA			4/17/21 7:30	

4/17/21 7:30

4/17/21 7:30

4/17/21 7:30

4/17/21 7:30



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-S (M)

Sampled: 3/18/2021 10:30

Sample ID: 21C1176-13
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Reco	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		70.9		50-150					4/17/21 7:30	
M2-6:2FTS		73.8		50-150					4/17/21 7:30	
M5PFPeA		96.5		50-150					4/17/21 7:30	
M5PFHxA		91.3		50-150					4/17/21 7:30	
M3PFHxS		106		50-150					4/17/21 7:30	
M4PFHpA		84.8		50-150					4/17/21 7:30	
M8PFOA		98.6		50-150					4/17/21 7:30	
M8PFOS		100		50-150					4/17/21 7:30	
M9PFNA		91.1		50-150					4/17/21 7:30	
MPFD ₀ A		37.3	*	50-150		PF-02A			4/17/21 7:30	
d5-NEtFOSAA		62.7		50-150					4/17/21 7:30	
d3-NMeFOSAA		68.2		50-150					4/17/21 7:30	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (S)

Sampled: 3/18/2021 11:35

Sample ID: 21C1176-14

Sample Matrix: Ground Water

Semivolatile	Organic	Compounds	by - L	C/MS-MS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	8.2	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoropentanoic acid (PFPeA)	22	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorohexanoic acid (PFHxA)	14	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorodecanoic acid (PFDA)	0.40	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.74	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.4	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroundecanoic acid (PFUnA)	0.81	2.0	0.49	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluoroheptanoic acid (PFHpA)	6.7	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanoic acid (PFOA)	4.2	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorooctanesulfonic acid (PFOS)	0.49	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Perfluorononanoic acid (PFNA)	2.0	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:00	JFC
Surregates		0/ Dage		Dagayawy I imita		Flag/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	12.0 *	50-150	PF-02A	4/17/21 8:00
M2-4:2FTS	91.0	50-150		4/17/21 8:00
M2PFTA	1.30 *	50-150	PF-02A	4/17/21 8:00
M2-8:2FTS	75.5	50-150		4/17/21 8:00
MPFBA	93.7	50-150		4/17/21 8:00
M3HFPO-DA	101	50-150		4/17/21 8:00
M6PFDA	77.6	50-150		4/17/21 8:00
M3PFBS	105	50-150		4/17/21 8:00



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (S)

Sampled: 3/18/2021 11:35

Sample ID: 21C1176-14
Sample Matrix: Ground Water

Analyte	Results RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates	% R6	covery	Recovery Limit	s	Flag/Qual				
M7PFUnA	38.4	*	50-150		PF-02A			4/17/21 8:00	
M2-6:2FTS	77.5		50-150					4/17/21 8:00	
M5PFPeA	95.7		50-150					4/17/21 8:00	
M5PFHxA	90.8		50-150					4/17/21 8:00	
M3PFHxS	105		50-150					4/17/21 8:00	
M4PFHpA	87.0		50-150					4/17/21 8:00	
M8PFOA	96.6		50-150					4/17/21 8:00	
M8PFOS	98.9		50-150					4/17/21 8:00	
M9PFNA	91.6		50-150					4/17/21 8:00	
MPFDoA	8.32	*	50-150		PF-02A			4/17/21 8:00	
d5-NEtFOSAA	36.1	*	50-150		PF-02A			4/17/21 8:00	
d3-NMeFOSAA	45.4	*	50-150		PF-02A			4/17/21 8:00	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (M)

Sampled: 3/18/2021 12:00

Sample ID: 21C1176-15
Sample Matrix: Ground Water

M3HFPO-DA

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	25	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorobutanesulfonic acid (PFBS)	0.51	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoropentanoic acid (PFPeA)	76	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorohexanoic acid (PFHxA)	34	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorohexanesulfonic acid (PFHxS)	1.5	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluoroheptanoic acid (PFHpA)	17	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanoic acid (PFOA)	9.6	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorooctanesulfonic acid (PFOS)	3.5	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Perfluorononanoic acid (PFNA)	6.0	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:30	JFC
Surrogates		% Reco	overy	Recovery Limits	i	Flag/Qual				
M8FOSA		81.1		50-150					4/17/21 8:30	
M2-4:2FTS		75.0		50-150					4/17/21 8:30	
M2PFTA		68.6		50-150					4/17/21 8:30	
M2-8:2FTS MPFBA		74.6 90.3		50-150 50-150					4/17/21 8:30 4/17/21 8:30	
WILL DA		90.3		50-150					4/1//21 8.30	

50-150

50-150

50-150

89.7

94.4

86.4

4/17/21 8:30

4/17/21 8:30

4/17/21 8:30



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-P (M)

Sampled: 3/18/2021 12:00

Sample ID: 21C1176-15
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA		83.9		50-150					4/17/21 8:30	
M2-6:2FTS		63.2		50-150					4/17/21 8:30	
M5PFPeA		93.9		50-150					4/17/21 8:30	
M5PFHxA		83.7		50-150					4/17/21 8:30	
M3PFHxS		92.7		50-150					4/17/21 8:30	
M4PFHpA		64.4		50-150					4/17/21 8:30	
M8PFOA		93.4		50-150					4/17/21 8:30	
M8PFOS		86.4		50-150					4/17/21 8:30	
M9PFNA		89.4		50-150					4/17/21 8:30	
MPFDoA		75.2		50-150					4/17/21 8:30	
d5-NEtFOSAA		74.5		50-150					4/17/21 8:30	
d3-NMeFOSAA		74.8		50-150					4/17/21 8:30	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: RB-1(S)

Sampled: 3/18/2021 13:40

Sample ID: 21C1176-16
Sample Matrix: Ground Water

Semivolatile	Organic	Compounds b	v - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.2	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorobutanesulfonic acid (PFBS)	2.0	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoropentanoic acid (PFPeA)	9.8	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorohexanoic acid (PFHxA)	12	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-1-butanesulfonamide (FBSA)	1.1	2.0	0.55	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorohexanesulfonic acid (PFHxS)	30	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.8	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluoroheptanoic acid (PFHpA)	5.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanoic acid (PFOA)	8.7	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorooctanesulfonic acid (PFOS)	40	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Perfluorononanoic acid (PFNA)	2.5	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 8:59	JFC
Surrogates		% Reco	very	Recovery Limits	3	Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	41.1 *	50-150	PF-02A	4/17/21 8:59
M2-4:2FTS	94.5	50-150		4/17/21 8:59
M2PFTA	3.75 *	50-150	PF-02A	4/17/21 8:59
M2-8:2FTS	80.2	50-150		4/17/21 8:59
MPFBA	95.2	50-150		4/17/21 8:59
M3HFPO-DA	91.7	50-150		4/17/21 8:59
M6PFDA	91.1	50-150		4/17/21 8:59
M3PFBS	100	50-150		4/17/21 8:59



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: RB-1(S)

Sampled: 3/18/2021 13:40

Sample ID: 21C1176-16
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results I	L DI	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%	Recovery	Recovery Limits	6	Flag/Qual				
M7PFUnA	6	5.9	50-150					4/17/21 8:59	
M2-6:2FTS	7	7.8	50-150					4/17/21 8:59	
M5PFPeA	9	7.5	50-150					4/17/21 8:59	
M5PFHxA	92	2.6	50-150					4/17/21 8:59	
M3PFHxS	1	00	50-150					4/17/21 8:59	
M4PFHpA	7	1.3	50-150					4/17/21 8:59	
M8PFOA	9	9.3	50-150					4/17/21 8:59	
M8PFOS	90	5.1	50-150					4/17/21 8:59	
M9PFNA	89	9.9	50-150					4/17/21 8:59	
MPFD ₀ A	30	5.7 *	50-150		PF-02A			4/17/21 8:59	
d5-NEtFOSAA	6-	1.8	50-150					4/17/21 8:59	
d3-NMeFOSAA	6	5.9	50-150					4/17/21 8:59	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: RB-1 (M)

Sampled: 3/18/2021 14:30

Sample ID: 21C1176-17
Sample Matrix: Ground Water

Semivolatile	Organic	Compounds	by - L	C/MS-MS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	16	20	5.7	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoropentanoic acid (PFPeA)	44	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorohexanoic acid (PFHxA)	24	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
9Cl-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorohexanesulfonic acid (PFHxS)	17	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	55	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluoroheptanoic acid (PFHpA)	13	20	6.2	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanoic acid (PFOA)	13	20	3.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorooctanesulfonic acid (PFOS)	75	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Perfluorononanoic acid (PFNA)	7.2	20	4.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 9:29	JFC
Surregates		9/ Dage		Dogovowy I imito		Flag/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	23.8 *	50-150	PF-02A	4/17/21 9:29
M2-4:2FTS	93.8	50-150		4/17/21 9:29
M2PFTA	0.683 *	50-150	PF-02A	4/17/21 9:29
M2-8:2FTS	71.6	50-150		4/17/21 9:29
MPFBA	100	50-150		4/17/21 9:29
M3HFPO-DA	104	50-150		4/17/21 9:29
M6PFDA	79.7	50-150		4/17/21 9:29
M3PFBS	114	50-150		4/17/21 9:29



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: RB-1 (M)

Sampled: 3/18/2021 14:30

Sample ID: 21C1176-17
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	covery	Recovery Limit	s	Flag/Qual				
M7PFUnA		46.0	*	50-150		PF-02A			4/17/21 9:29	
M2-6:2FTS		84.9		50-150					4/17/21 9:29	
M5PFPeA		104		50-150					4/17/21 9:29	
M5PFHxA		100		50-150					4/17/21 9:29	
M3PFHxS		123		50-150					4/17/21 9:29	
M4PFHpA		102		50-150					4/17/21 9:29	
M8PFOA		104		50-150					4/17/21 9:29	
M8PFOS		99.8		50-150					4/17/21 9:29	
M9PFNA		96.8		50-150					4/17/21 9:29	
MPFD ₀ A		13.6	*	50-150		PF-02A			4/17/21 9:29	
d5-NEtFOSAA		48.1	*	50-150		PF-02A			4/17/21 9:29	
d3-NMeFOSAA		58.5		50-150					4/17/21 9:29	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021
Field Sample #: HW-K

Sampled: 3/18/2021 11:00

90.6

96.3

97.3

50-150

50-150

50-150

Sample ID: 21C1176-18
Sample Matrix: Ground Water

M3HFPO-DA

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	6.3	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoropentanoic acid (PFPeA)	17	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorohexanoic acid (PFHxA)	7.7	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.66	2.0	0.58	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluoroheptanoic acid (PFHpA)	4.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanoic acid (PFOA)	3.6	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorooctanesulfonic acid (PFOS)	1.5	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Perfluorononanoic acid (PFNA)	3.7	2.0	0.48	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:28	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		84.7		50-150					4/17/21 10:28	
M2-4:2FTS		86.6		50-150					4/17/21 10:28	
M2PFTA		80.4		50-150					4/17/21 10:28	
M2-8:2FTS MPFBA		82.4 96.3		50-150 50-150					4/17/21 10:28 4/17/21 10:28	
MILLOA		20.5		50-150					7/1//21 10.20	

4/17/21 10:28

4/17/21 10:28

4/17/21 10:28



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: HW-K

Sampled: 3/18/2021 11:00

Sample ID: 21C1176-18
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limits	s	Flag/Qual				
M7PFUnA		90.5		50-150					4/17/21 10:28	
M2-6:2FTS		71.5		50-150					4/17/21 10:28	
M5PFPeA		97.9		50-150					4/17/21 10:28	
M5PFHxA		91.0		50-150					4/17/21 10:28	
M3PFHxS		101		50-150					4/17/21 10:28	
M4PFHpA		85.5		50-150					4/17/21 10:28	
M8PFOA		101		50-150					4/17/21 10:28	
M8PFOS		102		50-150					4/17/21 10:28	
M9PFNA		92.0		50-150					4/17/21 10:28	
MPFDoA		83.5		50-150					4/17/21 10:28	
d5-NEtFOSAA		80.6		50-150					4/17/21 10:28	
d3-NMeFOSAA		77.1		50-150					4/17/21 10:28	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19 (S)

Sampled: 3/18/2021 14:00

Sample ID: 21C1176-19
Sample Matrix: Ground Water

						T. (0.1		Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.6	2.0	0.57	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorobutanesulfonic acid (PFBS)	2.9	2.0	0.32	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoropentanoic acid (PFPeA)	13	2.0	0.66	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorohexanoic acid (PFHxA)	7.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorodecanoic acid (PFDA)	1.0	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorohexanesulfonic acid (PFHxS)	6.4	2.0	0.58	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluoroheptanoic acid (PFHpA)	4.4	2.0	0.62	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanoic acid (PFOA)	7.0	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorooctanesulfonic acid (PFOS)	15	2.0	0.38	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC
Perfluorononanoic acid (PFNA)	1.2	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 10:57	JFC

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	56.3	50-150		4/17/21 10:57
M2-4:2FTS	103	50-150		4/17/21 10:57
M2PFTA	3.50 *	50-150	PF-02A	4/17/21 10:57
M2-8:2FTS	79.8	50-150		4/17/21 10:57
MPFBA	97.4	50-150		4/17/21 10:57
M3HFPO-DA	99.4	50-150		4/17/21 10:57
M6PFDA	87.5	50-150		4/17/21 10:57
M3PFBS	97.1	50-150		4/17/21 10:57



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19 (S)

Sampled: 3/18/2021 14:00

Sample ID: 21C1176-19
Sample Matrix: Ground Water

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates		% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA		66.6		50-150					4/17/21 10:57	
M2-6:2FTS		79.6		50-150					4/17/21 10:57	
M5PFPeA		95.7		50-150					4/17/21 10:57	
M5PFHxA		92.0		50-150					4/17/21 10:57	
M3PFHxS		105		50-150					4/17/21 10:57	
M4PFHpA		91.3		50-150					4/17/21 10:57	
M8PFOA		97.9		50-150					4/17/21 10:57	
M8PFOS		96.1		50-150					4/17/21 10:57	
M9PFNA		89.9		50-150					4/17/21 10:57	
MPFDoA		38.2	*	50-150		PF-02A			4/17/21 10:57	
d5-NEtFOSAA		65.3		50-150					4/17/21 10:57	
d3-NMeFOSAA		69.2		50-150					4/17/21 10:57	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(M)

Sampled: 3/19/2021 13:15

Sample ID: 21C1176-20
Sample Matrix: Ground Water

	D 14	DI	DI	TT *4	Dil di	El (O 1	M (1. 1	Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	43	20	5.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	20	3.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoropentanoic acid (PFPeA)	160	20	6.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorohexanoic acid (PFHxA)	100	20	7.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
11Cl-PF3OUdS (F53B Major)	ND	20	5.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
9CI-PF3ONS (F53B Minor)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	20	16	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	20	14	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorodecanoic acid (PFDA)	ND	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorododecanoic acid (PFDoA)	ND	20	2.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	3.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	20	13	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
N-EtFOSAA	ND	20	9.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
N-MeFOSAA	ND	20	9.6	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorotetradecanoic acid (PFTA)	ND	20	8.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	20	12	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	20	10	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	20	6.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanesulfonamide (FOSA)	ND	20	4.4	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorononanesulfonic acid (PFNS)	ND	20	8.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	20	7.0	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	20	5.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorohexanesulfonic acid (PFHxS)	14	20	5.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	20	3.7	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	20	6.5	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	20	11	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	20	5.1	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroundecanoic acid (PFUnA)	ND	20	4.9	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	5.3	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluoroheptanoic acid (PFHpA)	44	20	6.2	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanoic acid (PFOA)	9.4	20	3.8	ng/L	1	J	SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorooctanesulfonic acid (PFOS)	27	20	3.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Perfluorononanoic acid (PFNA)	ND	20	4.8	ng/L	1		SOP-454 PFAS	4/14/21	4/17/21 11:27	JFC
Surregates		9/ Dage		Dagovous Limito		Flog/Ougl				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	67.9	50-150		4/17/21 11:27
M2-4:2FTS	79.8	50-150		4/17/21 11:27
M2PFTA	13.8 *	50-150	PF-02A	4/17/21 11:27
M2-8:2FTS	75.3	50-150		4/17/21 11:27
MPFBA	93.9	50-150		4/17/21 11:27
M3HFPO-DA	93.4	50-150		4/17/21 11:27
M6PFDA	89.8	50-150		4/17/21 11:27
M3PFBS	95.0	50-150		4/17/21 11:27



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(M)

Sampled: 3/19/2021 13:15

Sample ID: 21C1176-20
Sample Matrix: Ground Water

Analyte	Results RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates	% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA	74.7		50-150					4/17/21 11:27	
M2-6:2FTS	72.2		50-150					4/17/21 11:27	
M5PFPeA	99.2		50-150					4/17/21 11:27	
M5PFHxA	87.9		50-150					4/17/21 11:27	
M3PFHxS	99.5		50-150					4/17/21 11:27	
M4PFHpA	89.8		50-150					4/17/21 11:27	
M8PFOA	95.2		50-150					4/17/21 11:27	
M8PFOS	95.5		50-150					4/17/21 11:27	
M9PFNA	89.0		50-150					4/17/21 11:27	
MPFDoA	56.7		50-150					4/17/21 11:27	
d5-NEtFOSAA	70.4		50-150					4/17/21 11:27	
d3-NMeFOSAA	71.6		50-150					4/17/21 11:27	



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(D)

Sampled: 3/19/2021 14:30

Sample ID: 21C1176-21
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	24	2.0	0.57	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorobutanesulfonic acid (PFBS)	1.6	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoropentanoic acid (PFPeA)	110	2.0	0.66	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorohexanoic acid (PFHxA)	71	2.0	0.75	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.70	2.0	0.55	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorohexanesulfonic acid (PFHxS)	26	2.0	0.58	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.8	2.0	0.51	ng/L	1	J	SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluoroheptanoic acid (PFHpA)	18	2.0	0.62	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanoic acid (PFOA)	9.7	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorooctanesulfonic acid (PFOS)	47	2.0	0.38	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Perfluorononanoic acid (PFNA)	2.9	2.0	0.48	ng/L	1		SOP-454 PFAS	4/13/21	4/16/21 16:12	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		87.9		50-150					4/16/21 16:12	

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	87.9	50-150		4/16/21 16:12
M2-4:2FTS	85.2	50-150		4/16/21 16:12
M2PFTA	64.6	50-150		4/16/21 16:12
M2-8:2FTS	92.3	50-150		4/16/21 16:12
MPFBA	99.2	50-150		4/16/21 16:12
M3HFPO-DA	92.1	50-150		4/16/21 16:12
M6PFDA	98.0	50-150		4/16/21 16:12
M3PFBS	98.0	50-150		4/16/21 16:12



Project Location: Hyannis, MA Sample Description: Work Order: 21C1176

Date Received: 3/23/2021

Field Sample #: OW-19(D)

Sampled: 3/19/2021 14:30

Sample ID: 21C1176-21
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results F	RL DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%	Recovery	Recovery Limits	s	Flag/Qual				
M7PFUnA	89	9.6	50-150					4/16/21 16:12	
M2-6:2FTS	8:	5.5	50-150					4/16/21 16:12	
M5PFPeA	9:	5.7	50-150					4/16/21 16:12	
M5PFHxA	9	1.8	50-150					4/16/21 16:12	
M3PFHxS	1	08	50-150					4/16/21 16:12	
M4PFHpA	9'	7.8	50-150					4/16/21 16:12	
M8PFOA	1	01	50-150					4/16/21 16:12	
M8PFOS	1	03	50-150					4/16/21 16:12	
M9PFNA	9:	5.2	50-150					4/16/21 16:12	
MPFDoA	82	2.2	50-150					4/16/21 16:12	
d5-NEtFOSAA	83	3.4	50-150					4/16/21 16:12	
d3-NMeFOSAA	83	3.1	50-150					4/16/21 16:12	



Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1176-01RE1 [HW-R(S)]	B279942	250	1.00	04/14/21
21C1176-02RE1 [HW-J]	B279942	12.5	1.00	04/14/21
21C1176-03RE1 [HW-I (S)]	B279942	25.0	1.00	04/14/21
21C1176-04RE1 [HW-I (M)]	B279942	250	1.00	04/14/21
21C1176-05RE1 [HW-I (D)]	B279942	250	1.00	04/14/21
21C1176-06RE1 [HW-E]	B279942	250	1.00	04/14/21
21C1176-07RE1 [HW-F]	B279942	12.5	1.00	04/14/21
21C1176-08RE1 [HW-302]	B279942	250	1.00	04/14/21
21C1176-09RE1 [HW-2]	B279942	250	1.00	04/14/21
21C1176-10RE1 [HW-3]	B279942	25.0	1.00	04/14/21
21C1176-11RE1 [HW-300]	B279942	250	1.00	04/14/21
21C1176-12RE1 [HW-S (S)]	B279942	25.0	1.00	04/14/21
21C1176-13RE1 [HW-S (M)]	B279942	250	1.00	04/14/21
21C1176-14RE1 [HW-P (S)]	B279942	250	1.00	04/14/21
21C1176-15RE1 [HW-P (M)]	B279942	250	1.00	04/14/21
21C1176-16RE1 [RB-1(S)]	B279942	250	1.00	04/14/21
21C1176-17RE1 [RB-1 (M)]	B279942	25.0	1.00	04/14/21
21C1176-18RE1 [HW-K]	B279942	250	1.00	04/14/21
21C1176-19RE1 [OW-19 (S)]	B279942	250	1.00	04/14/21
21C1176-20RE1 [OW-19(M)]	B279942	25.0	1.00	04/14/21

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21C1176-21RE1 [OW-19(D)]	B279944	250	1.00	04/13/21



QUALITY CONTROL

Spike

Source

%REC

RPD

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

Reporting

1.4	D 1.	Reporting	TT *-	Spike	Source	0/DEC	%REC	DPD	RPD	NT -
nalyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
atch B279942 - SOP 454-PFAAS										
lank (B279942-BLK1)				Prepared: 04	1/14/21 Analy	zed: 04/17/2	.1			
erfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
erfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
erfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
erfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
8-dioxa-3H-perfluorononanoic acid ADONA)	ND	2.0	ng/L							
exafluoropropylene oxide dimer acid IFPO-DA)	ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
erfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
erfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	2.0	ng/L							
erfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
-EtFOSAA	ND	2.0	ng/L							
-MeFOSAA	ND	2.0	ng/L							
erfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
erfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
erfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
erfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
erfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
erfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
erfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND ND	2.0	ng/L							
onafluoro-3,6-dioxaheptanoic acid	ND ND	2.0	ng/L							
erfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
erfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
erfluorononanoic acid (PFNA)	ND	2.0	ng/L							
urrogate: M8FOSA	34.9		ng/L	40.0		87.2	50-150			
urrogate: M2-4:2FTS	28.6		ng/L ng/L	37.5		76.3	50-150			
urrogate: M2PFTA	26.0		ng/L ng/L	40.0		65.1	50-150			
urrogate: M2-8:2FTS	30.5		ng/L ng/L	38.4		79.6	50-150			
arrogate: MPFBA	38.6		ng/L ng/L	40.0		96.4	50-150			
urrogate: M3HFPO-DA	37.2		ng/L ng/L	40.0		93.1	50-150			
urrogate: M6PFDA	40.1		ng/L ng/L	40.0		100	50-150			
urrogate: M3PFBS	35.5		ng/L ng/L	37.3		95.3	50-150			
urrogate: M7PFUnA	35.9		ng/L	40.0		89.8	50-150			
irrogate: M7FF0fiA	29.8		ng/L ng/L	38.0		78.2	50-150			
urrogate: M2-6.2F18	41.0		ng/L ng/L	40.0		102	50-150			
=	37.5			40.0		93.8	50-150			
ırrogate: M5PFHxA ırrogate: M3PFHxS	37.3 37.0		ng/L							
	3/.0		ng/L	37.9		97.6	50-150			
urrogate: M4PFHpA	38.1		ng/L	40.0		95.4	50-150			



QUALITY CONTROL

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B279942 - SOP 454-PFAAS										
Blank (B279942-BLK1)				Prepared: 04	1/14/21 Analy	zed: 04/17/	21			
Surrogate: M8PFOS	36.5		ng/L	38.3		95.3	50-150			
Surrogate: M9PFNA	39.2		ng/L	40.0		97.9	50-150			
Surrogate: MPFDoA	32.5		ng/L	40.0		81.1	50-150			
Surrogate: d5-NEtFOSAA	34.3		ng/L	40.0		85.7	50-150			
Surrogate: d3-NMeFOSAA	34.6		ng/L	40.0		86.5	50-150			
LCS (B279942-BS1)				Prepared: 04	1/14/21 Analy	zed: 04/17/	21			
Perfluorobutanoic acid (PFBA)	2.35	2.0	ng/L	2.00		117	73-129			
Perfluorobutanesulfonic acid (PFBS)	1.52	2.0	ng/L	1.77		85.7	72-130			J
Perfluoropentanoic acid (PFPeA)	1.76	2.0	ng/L	2.00		88.0	72-129			J
Perfluorohexanoic acid (PFHxA)	1.65	2.0	ng/L	2.00		82.5	72-129			J
1Cl-PF3OUdS (F53B Major)	1.35	2.0	ng/L	1.89		71.7	50-150			J
PCI-PF3ONS (F53B Minor)	1.37	2.0	ng/L	1.90		72.0	50-150			J
4,8-dioxa-3H-perfluorononanoic acid	1.43	2.0	ng/L	1.89		75.8	50-150			J
ADONA) Hexafluoropropylene oxide dimer acid HFPO-DA)	1.34	2.0	ng/L	2.00		67.2	50-150			J
HFPO-DA) 3:2 Fluorotelomersulfonic acid (8:2FTS A)	2.10	2.0	ng/L	1.92		109	67-138			
Perfluorodecanoic acid (PFDA)	1.52	2.0	ng/L	2.00		76.2	71-129			J
Perfluorododecanoic acid (PFDoA)	1.53	2.0	ng/L	2.00		76.3	72-134			J
PFEESA)	1.53	2.0	ng/L	1.78		84.9	50-150			J
Perfluoroheptanesulfonic acid (PFHpS)	1.82	2.0	ng/L	1.91		95.4	69-134			J
I-EtFOSAA	1.76	2.0	ng/L	2.00		88.1	61-135			J
I-MeFOSAA	2.01	2.0	ng/L	2.00		101	65-136			
Perfluorotetradecanoic acid (PFTA)	1.59	2.0	ng/L	2.00		79.3	71-132			J
Perfluorotridecanoic acid (PFTrDA)	1.61	2.0	ng/L	2.00		80.4	65-144			J
:2 Fluorotelomersulfonic acid (4:2FTS A)	1.77	2.0	ng/L	1.87		94.2	63-143			J
Perfluorodecanesulfonic acid (PFDS)	1.75	2.0	ng/L	1.93		90.9	53-142			J
Perfluorooctanesulfonamide (FOSA)	1.60	2.0	ng/L	2.00		80.0	67-137			J
Perfluorononanesulfonic acid (PFNS)	1.68	2.0	ng/L	1.92		87.1	69-127			J
Perfluoro-1-hexanesulfonamide (FHxSA)	1.51	2.0	ng/L	2.00		75.5	50-150			J
Perfluoro-1-butanesulfonamide (FBSA)	1.84	2.0	ng/L	2.00		91.8	50-150			J
Perfluorohexanesulfonic acid (PFHxS)	1.45	2.0	ng/L	1.83		79.5	68-131			J
Perfluoro-4-oxapentanoic acid (PFMPA)	1.88	2.0	ng/L	2.00		94.2	50-150			J
Perfluoro-5-oxahexanoic acid (PFMBA)	2.16	2.0	ng/L	2.00		108	50-150			•
5:2 Fluorotelomersulfonic acid (6:2FTS A)	1.80	2.0	ng/L	1.90		94.7	64-140			J
Perfluoropetanesulfonic acid (PFPeS)	1.41	2.0	ng/L	1.88		75.1	71-127			J
Perfluoroundecanoic acid (PFUnA)	1.50	2.0	ng/L	2.00		75.1	69-133			J
Nonafluoro-3,6-dioxaheptanoic acid	1.92	2.0	ng/L	2.00		96.1	50-150			J
Perfluoroheptanoic acid (PFHpA)	1.47	2.0	ng/L	2.00		73.3	72-130			J
Perfluorooctanoic acid (PFOA)	1.71	2.0	ng/L	2.00		85.5	71-133			J
Perfluorooctanesulfonic acid (PFOS)	1.58	2.0	ng/L	1.86		85.1	65-140			J
Perfluorononanoic acid (PFNA)	1.70	2.0	ng/L	2.00		85.0	69-130			J
Surrogate: M8FOSA	33.1		ng/L	40.0		82.7	50-150			
Surrogate: M2-4:2FTS	27.9		ng/L	37.5		74.3	50-150			
Surrogate: M2PFTA	32.0		ng/L	40.0		80.0	50-150			
Surrogate: M2-8:2FTS	28.6		ng/L	38.4		74.4	50-150			
Surrogate: MPFBA	37.3		ng/L	40.0		93.3	50-150			
Surrogate: M3HFPO-DA	37.5		ng/L	40.0		93.7	50-150			
Surrogate: M6PFDA	38.1		ng/L	40.0		95.2	50-150			
Surrogate: M3PFBS	32.6		ng/L	37.3		87.4	50-150			



QUALITY CONTROL

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B279942 - SOP 454-PFAAS										
LCS (B279942-BS1)				Prepared: 04	1/14/21 Anal	yzed: 04/17/2	21			
Surrogate: M7PFUnA	35.7		ng/L	40.0		89.3	50-150			
Surrogate: M2-6:2FTS	27.1		ng/L	38.0		71.2	50-150			
Surrogate: M5PFPeA	38.5		ng/L	40.0		96.2	50-150			
Surrogate: M5PFHxA	34.8		ng/L	40.0		87.0	50-150			
Surrogate: M3PFHxS	35.1		ng/L	37.9		92.5	50-150			
Surrogate: M4PFHpA	36.9		ng/L	40.0		92.3	50-150			
Surrogate: M8PFOA	38.6		ng/L	40.0		96.6	50-150			
Surrogate: M8PFOS	36.3		ng/L	38.3		94.7	50-150			
Surrogate: M9PFNA	36.4		ng/L	40.0		91.0	50-150			
Surrogate: MPFDoA	33.9		ng/L	40.0		84.8	50-150			
Surrogate: d5-NEtFOSAA	32.0		ng/L	40.0		80.1	50-150			
Surrogate: d3-NMeFOSAA	31.7		ng/L	40.0		79.2	50-150			
Batch B279944 - SOP 454-PFAAS										
Blank (B279944-BLK1)				Prepared: 04	1/13/21 Anal	yzed: 04/16/2	21			
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
Perfluorooctanoic acid (PFOA)	ND ND	2.0	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND ND	2.0	ng/L							
Perfluorononanoic acid (PFNA)		2.0	ng/L							
	ND	2.0	115/12							

RPD

%REC



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

QUALITY CONTROL

Spike

Source

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

Reporting

Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
eatch B279944 - SOP 454-PFAAS										
slank (B279944-BLK1)				Prepared: 04	1/13/21 Analy	yzed: 04/16/2	21			
urrogate: M8FOSA	32.9		ng/L	40.0		82.2	50-150			
urrogate: M2-4:2FTS	32.9		ng/L	37.5		87.6	50-150			
urrogate: M2PFTA	13.7		ng/L	40.0		34.1 *	50-150			PF-02A
urrogate: M2-8:2FTS	32.8		ng/L	38.4		85.3	50-150			
urrogate: MPFBA	39.5		ng/L	40.0		98.8	50-150			
urrogate: M3HFPO-DA	38.7		ng/L	40.0		96.7	50-150			
urrogate: M6PFDA	38.6		ng/L	40.0		96.5	50-150			
urrogate: M3PFBS	37.0		ng/L	37.3		99.3	50-150			
urrogate: M7PFUnA	35.3		ng/L	40.0		88.2	50-150			
urrogate: M2-6:2FTS	33.8		ng/L	38.0		88.8	50-150			
urrogate: M5PFPeA	39.5		ng/L	40.0		98.7	50-150			
urrogate: M5PFHxA	37.5		ng/L	40.0		93.7	50-150			
urrogate: M3PFHxS	39.9		ng/L	37.9		105	50-150			
urrogate: M4PFHpA	39.7		ng/L	40.0		99.2	50-150			
urrogate: M8PFOA	41.2		ng/L	40.0		103	50-150			
urrogate: M8PFOS	38.1		ng/L	38.3		99.5	50-150			
urrogate: M9PFNA	38.4		ng/L	40.0		95.9	50-150			
urrogate: MPFDoA	29.7		ng/L	40.0		74.2	50-150			
urrogate: d5-NEtFOSAA	33.1		ng/L	40.0		82.8	50-150			
urrogate: d3-NMeFOSAA	33.8		ng/L	40.0		84.5	50-150			
CS (B279944-BS1)				Prepared: 04	1/13/21 Analy	yzed: 04/16/2	21			
erfluorobutanoic acid (PFBA)	8.12	2.0	ng/L	10.0		81.2	73-129			
erfluorobutanesulfonic acid (PFBS)	7.18	2.0	ng/L	8.87		80.9	72-130			
erfluoropentanoic acid (PFPeA)	8.30	2.0	ng/L	10.0		83.0	72-129			
erfluorohexanoic acid (PFHxA)	7.52	2.0	ng/L	10.0		75.2	72-129			
1Cl-PF3OUdS (F53B Major)	7.10	2.0	ng/L	9.43		75.3	50-150			
Cl-PF3ONS (F53B Minor)	7.45	2.0	ng/L	9.51		78.4	50-150			
8-dioxa-3H-perfluorononanoic acid	7.21	2.0	ng/L	9.45		76.3	50-150			
ADONA) lexafluoropropylene oxide dimer acid HFPO-DA)	8.91	2.0	ng/L	10.0		89.1	50-150			
:2 Fluorotelomersulfonic acid (8:2FTS A)	8.54	2.0	ng/L	9.60		88.9	67-138			
erfluorodecanoic acid (PFDA)	7.69	2.0	ng/L	10.0		76.9	71-129			
erfluorododecanoic acid (PFDoA)	7.63	2.0	ng/L	10.0		76.3	72-134			
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	7.38	2.0	ng/L	8.90		82.9	50-150			
erfluoroheptanesulfonic acid (PFHpS)	8.15	2.0	ng/L	9.53		85.5	69-134			
I-EtFOSAA	8.71	2.0	ng/L	10.0		87.1	61-135			
-MeFOSAA	9.52	2.0	ng/L	10.0		95.2	65-136			
erfluorotetradecanoic acid (PFTA)	7.82	2.0	ng/L	10.0		78.2	71-132			
erfluorotridecanoic acid (PFTrDA)	7.98	2.0	ng/L	10.0		79.8	65-144			
:2 Fluorotelomersulfonic acid (4:2FTS A)	8.94	2.0	ng/L	9.37		95.4	63-143			
erfluorodecanesulfonic acid (PFDS)	7.23	2.0	ng/L	9.65		74.9	53-142			
erfluorooctanesulfonamide (FOSA)	8.45	2.0	ng/L	10.0		84.5	67-137			
erfluorononanesulfonic acid (PFNS)	8.25	2.0	ng/L	9.62		85.8	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	7.38	2.0	ng/L	10.0		73.8	50-150			
erfluoro-1-butanesulfonamide (FBSA)	8.37	2.0	ng/L	10.0		83.7	50-150			
erfluorohexanesulfonic acid (PFHxS)	6.95	2.0	ng/L	9.14		76.1	68-131			
		2.0	ng/L	10.0		85.9	50-150			
erfluoro-4-oxapentanoic acid (PFMPA)	8.59	2.0								
erfluoro-4-oxapentanoic acid (PFMPA) erfluoro-5-oxahexanoic acid (PFMBA)	8.59 9.49	2.0	ng/L	10.0		94.9	50-150			
				10.0 9.51		94.9 85.3	50-150 64-140			
erfluoro-5-oxahexanoic acid (PFMBA)	9.49	2.0	ng/L							



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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B279944 - SOP 454-PFAAS										
LCS (B279944-BS1)				Prepared: 04	1/13/21 Analy	yzed: 04/16/2	21			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.83	2.0	ng/L	10.0		88.3	50-150			
Perfluoroheptanoic acid (PFHpA)	7.76	2.0	ng/L	10.0		77.6	72-130			
Perfluorooctanoic acid (PFOA)	8.22	2.0	ng/L	10.0		82.2	71-133			
Perfluorooctanesulfonic acid (PFOS)	7.42	2.0	ng/L	9.28		80.0	65-140			
Perfluorononanoic acid (PFNA)	7.88	2.0	ng/L	10.0		78.8	69-130			
Surrogate: M8FOSA	31.1		ng/L	40.0		77.8	50-150			
Surrogate: M2-4:2FTS	33.5		ng/L	37.5		89.2	50-150			
Surrogate: M2PFTA	36.1		ng/L	40.0		90.4	50-150			
Surrogate: M2-8:2FTS	34.4		ng/L	38.4		89.6	50-150			
Surrogate: MPFBA	38.4		ng/L	40.0		96.1	50-150			
Surrogate: M3HFPO-DA	36.9		ng/L	40.0		92.2	50-150			
Surrogate: M6PFDA	40.8		ng/L	40.0		102	50-150			
Surrogate: M3PFBS	36.0		ng/L	37.3		96.6	50-150			
Surrogate: M7PFUnA	38.9		ng/L	40.0		97.4	50-150			
Surrogate: M2-6:2FTS	32.1		ng/L	38.0		84.5	50-150			
Surrogate: M5PFPeA	38.7		ng/L	40.0		96.7	50-150			
Surrogate: M5PFHxA	38.3		ng/L	40.0		95.8	50-150			
Surrogate: M3PFHxS	37.1		ng/L	37.9		97.8	50-150			
Surrogate: M4PFHpA	38.9		ng/L	40.0		97.4	50-150			
Surrogate: M8PFOA	39.3		ng/L	40.0		98.3	50-150			
Surrogate: M8PFOS	35.9		ng/L	38.3		93.7	50-150			
Surrogate: M9PFNA	39.1		ng/L	40.0		97.7	50-150			
Surrogate: MPFDoA	36.7		ng/L	40.0		91.8	50-150			
Surrogate: d5-NEtFOSAA	35.2		ng/L	40.0		88.1	50-150			
Surrogate: d3-NMeFOSAA	35.4		ng/L	40.0		88.5	50-150			



PF-02A

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.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).

Surrogate recovery is outside of control limits. Re-analysis yielded similar surrogate non-conformance.



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

CERTIFICATIONS

Certified Analyses included in this Report

54 PFAS in Water	
luorobutanoic acid (PFBA)	NH-P
luorobutanesulfonic acid (PFBS)	NH-P
luoropentanoic acid (PFPeA)	NH-P
luorohexanoic acid (PFHxA)	NH-P
-PF3OUdS (F53B Major)	NH-P
PF3ONS (F53B Minor)	NH-P
dioxa-3H-perfluorononanoic acid (ADONA)	NH-P
afluoropropylene oxide dimer acid (HFPO-DA)	NH-P
Fluorotelomersulfonic acid (8:2FTS A)	NH-P
luorodecanoic acid (PFDA)	NH-P
luorododecanoic acid (PFDoA)	NH-P
luoro(2-ethoxyethane)sulfonic acid (PFEESA)	NH-P
luoroheptanesulfonic acid (PFHpS)	NH-P
FOSAA	NH-P
IeFOSAA	NH-P
luorotetradecanoic acid (PFTA)	NH-P
luorotridecanoic acid (PFTrDA)	NH-P
Fluorotelomersulfonic acid (4:2FTS A)	NH-P
luorodecanesulfonic acid (PFDS)	NH-P
luorooctanesulfonamide (FOSA)	NH-P
luorononanesulfonic acid (PFNS)	NH-P
luoro-1-hexanesulfonamide (FHxSA)	NH-P
luoro-1-butanesulfonamide (FBSA)	NH-P
luorohexanesulfonic acid (PFHxS)	NH-P
luoro-4-oxapentanoic acid (PFMPA)	NH-P
luoro-5-oxahexanoic acid (PFMBA)	NH-P
Fluorotelomersulfonic acid (6:2FTS A)	NH-P
luoropetanesulfonic acid (PFPeS)	NH-P
luoroundecanoic acid (PFUnA)	NH-P
afluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
luoroheptanoic acid (PFHpA)	NH-P
luorooctanoic acid (PFOA)	NH-P
luorooctanesulfonic acid (PFOS)	NH-P
luorononanoic acid (PFNA)	NH-P



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

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Publile Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

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ıllı con-test	Phone:	413-525-2332				CHAI	N OF CUSTO	OY RECU	(B)	39 Spruc		, MA 0102	rø						Page of
ANALYTICAL LABORATORY		13-525-6405				irana ya				LGSE LOII			.0	۸A	IALYSIS	REQUEST	ED		rage or
		info@contestlabs.c	com	7-Day		10∙Day			lamanahallahahalah	ield Filter	SECTION OF STREET	03982439957443		ТТ		Ťī			² Preservation Code
Horsey	Diffon	Group		PFAS 10-Day	(std)	Due Date	e:	0	ı	ab to Filt	er			1-1-					
Address: 90 Rtz 6A	しつけユ	Sondwid	MA		(121)	Regulesi					S HEE								Total Number Of:
Phone: (781) 243-	1527			1-Day	: "}	3-Day		0	F	ield Filter	ed								
<u>wya </u>				2-Day		4-Day		0	L	ab to Filt	er	1							VIALS
Project Location: Hyanni	5							•											GLASS
Project Number: 20102				Format:			PDF	7			EXCEL.	マ							PLASTIC
Project Manager: Bryan	<u>Masso</u>	<u> </u>		Other:								9							BACTERIA
Con-Test Quote Name/Number:		~		CLP Like Dat	a Pkg Required:		<u> </u>			_ 1 -									ENCORE
Invoice Recipient: Bryow	1 Mass	0		Email To:	bma	<u>ssa</u>	ω_h	ecsl	عيد	51-77	en.c	om	\mathcal{D}						
Sampled By: HW				Fax To #:			_						17				İ		
Con-Test Work Order#	Client Sam	ple ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	¹ Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	٥						Glassware in the fridge? Y / N
65555 550 January 1	JW-R	<u>(S) </u>	3/17	11:55	Grab	GW				$\sqrt{}$	Mint water		\checkmark						Glassware in freezer? Y / N
	<u> 7 M+</u>	·	3/17	12:50						1			/						Prepackaged Cooler? Y
3	HM-1	<u>(S)</u>	3/17	13:40					ļ	\			√						*Contest is not responsible for missing samples from prepacke
<u> </u>	HW-I	(m)	3/17	14:10		11				√			√ _						coolers
	HW- =	<u> [(q)</u>	3/17	14:35		4-4-	-			1			√						1 Matrix Codes:
6	<u> 1M-F</u>		3/17	15:10						\checkmark			√						GW = Ground Water WW = Waste Water
7 250	HW-F	2	3/17	15:35						✓	1		$\sqrt{}$						DW = Drinking Water
8		0Z.	3/17	16:30		11				1			V						A = Air S = Soil
	1W-Z		3/17	13:40						/			J						SL = Sludge SOL = Solid
10	HW-3)	3/17	15:00	1	V				1			\checkmark				***************************************		O = Other (please define)
Relinquished by (signature)		Date/Time: 13:E	D Client Com	ments: - MCF	Fiel	d Bla	nk not	to b	e rur	n per	clier	nt rea	uest	- RJI	VI 3/2	25/202	1		
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Relinquished v. Rignature)	<u> </u>	321 3cc																	H = HCL M = Methanol
1000 V	3/23	21 17	ン						****			ana sasti	Require	் Plow	so wo th	o following			N = Nitric Acid
Received to Separature	lid	Date/Times	フフィ						***************************************	ν.	or contri	Cattur Puri	n Roquire	1		e following concentrat			S = Sulfuric Acid B = Sodium Bisulfate
TANTYN	<u> </u>	5/1361 1	<i>15</i> †									C.C. ROCK	Reganne			de column a			X = Sodium Hydroxide
Retinquished by: (signature)	•	Date/Tiyne:		<u> </u>						į,i	Alf tempet	Gatikos 7 Gri	n Regione	H - Hig	h; M - Me	edium; L - L		Clean; U	T = Sodium Thiosulfate
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(Signature)		Date/ fittle.		1		PARMD 4					Va.s.	98,312, 8779	Madella 40	2822077018450.444	40130340005050040		OMORPH STREET	official National Control	define)
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	***************************************			City		Brownfie	≥ld			MBTA	 					1,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	L. Gon Soviner
O Comments:										Discla	imer: C	nn-Test I	ahs is n	nt resnon	isible fo	r any omit	rod inf	ormation	on the Chain of Custody. The
ge										Chain	of Custoo	dy is a le	gal docu	iment tha	nt must l	be comple	te and	accurate:	and is used to determine what
ហ្									;	analyse	s the lat	poratory	will per	form. An	y missin	ng informat	tion is r	not the lai	poratory's responsibility. Con
57 of										Test val	ues your	partner	ship on (each proj	ect and	will try to	assist	with missi	ing information, but will not t
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Table of Contents

*Contest is not responsible for missing samples from prepacked Glassware in freezer? Y / N Prepackaged Cooler? YN N 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 b Chain of Custody is a legal document that must be complete and accurate and is used to determine what Glassware in the fridge? Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The X = Sodium Hydroxide T = Sodium Thiosulfate O = Other (please 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water Total Number Of: 2 Preservation Codes: 5 = Sulfuric Acid B = Sodium Bisulfate SL = Sludge SOL = Solid O = Other (please define) Page Z of S Non Soxhlet H = HCL M = Methanol N = Nitríc Acid PCB ONLY Soxhlet Preservation Code BACTERIA PLASTIC ENCORE GLASS VIALS_ A = Air S = Soil define) possible sample concentration within the Conc H · High; M · Medium; L · Low; C · Clean; U · Please use the following codes to indicate NELAC and AlHa-LAP, LLC Accredited Chromatogram
AIHA-LAP, LLC Code column above: ANALYSIS REQUESTED held accountable. MA MCP Requires WRTA 45 state O'N Regulfred Vdd WCP Contification Form Re-East Longmeadow, MA 01028 ENCORE BACTERIA 39 Spruce Street EXCEL Field Filtered Field Filtered Lab to Fifter Lab to Filter PLASTIC School > ` `> GLASS CHAIN OF CUSTODY RECORD VIALS 100 0 0 0 0 Conc Code PDF Municipality Brownfield Due Date: 'Matrix Code 3 10-Day 3-Day GRAB COMP/GRAB CLP Like Data Pkg Required PFAS 10-Day (std) 16:45 31 18 13:4D 3/19/13:15 Ending Date/Time 8:0 3/18 11:00 2/18/14:00 3/18 10:50 3/18/12:00 3/19/14:30 Government Email To: Fax To #: Format; Federal Other: GW -Day -Day -Day Çity Project Entity 3/18 Beginning Date/Time 3/17 3118 Date/Time: 13:180 Email: info@contestiabs.com 17 -3/23/Pi 1300 Horsey Withen Group Client Sample 10 / Description Phone: 413-525-2332 RB-1/100 m Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: 4W-S(m Date/Time: HW-PCS) W 27 70 HW-5(s 01/19(s) RB-165 08-13H HM-K Con-Test Quote Name/Number; (signature) Relinquished by: (signature) Received by: (signature) Ş Received by: (signature) 3 Con-Test Work Order# 9 Sampled By: トレ 2 9 Q nvoice Recipient: Project Location: Project Manager: Project Number: linguished by elinquished by eceived by: Address; Page 58 of 60

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Doc # 381 Rev 2_06262019

*Contest is not responsible for missing samples from prepacked Glassware in freezer? Y / N analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Contest values your partnership on each project and will try to assist with missing information, but will not be Chain of Custody is a legal document that must be complete and accurate and is used to determine what Glassware in the fridge? Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Prepackaged Cooler? Y 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium
Thiosulfate
O = Other (please Total Number Of: Preservation Codes: A = Air
S = Soil
SL = Studge
SOL = Solid
O = Other (please define) Page S of S Non Soxhlet PCB ONLY H = HCL M = Methanol N = Nitríc Acid Soxhlet BACTERIA_ ENCORE VIALS__ GLASS **PLASTIC** define) Please use the following codes to indicate possible sample concentration within the Conc H·High; M·Medium; L·Low; C·Clean; U· NELAC and Alha-LAP, LLC Accredited Chromatogram Code column above: ANALYSIS REQUESTED held accountable. SARID 39 Spruce Street East Longmeadow, MA 01028 ENCORE JOE BACTERIA Field Filtered Field Filtered Lab to Filter Lab to Filter PLASTIC School MWRA GLASS CHAIN OF CUSTODY RECORD VIALS 0 0 0 0 Conc Code PDF Municipality Due Date: Brownfield *Matrix Code 10-Day 3 1 1 3-Day WEND : 4-Day CLP Like Data Pkg Required: 3/19/14:30 Gras COMP/GRAB DEC PFAS 10-Day (std) Ending Date/Time 3/19 13:45 Date/Time: 13:90 Client Comments: Government mail To: Fax To #: format: Federal Other: 7-Day -Day 2-Day Çity Project Entity Beginning Date/Time Herslay Withen Group Email: info@contestlabs.com 342 R1 1300 Client Sample ID / Description Phone: 413-525-2332 Field Blowk Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: OM-19(A) Con-Test Quote Name/Number: September 18 Septe tinguished Al. Isimature nshed by: (signature) Relinquished by: (signature) Received by: (signature) Received by: (signature) Con-Test Work Order# Sampled By: eceived by (signat) Invoice Recipient: Project Location: Project Manager: Project Number: mments: Address: Phone: Page 59 of 60 I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

	ey witton							
Received By			Date	3 d3	<u>/ </u>	Time	<u> </u>	
How were the samples	In Cooler	T	No Cooler	, ,	On Ice	T	No Ice	
received?	Direct from Samp	lina	•		Ambient		Melted Ice	
		By Gun#	2		Actual Tem	0-48		
Were samples within	T	-			•			
Temperature? 2-6°C		By Blank #	18/	an Comenta	Actual Tem		4/1/2	
Was Custody So Was COC Relin		NT			s Tampered			
Are there broken/l	•	on any cam		Chair Agi	ee With Sar	iipies !		
Is COC in ink/ Legible?		On any Sam	· ••	inles recei	ved within ho	oldina time?	T	
Did COC include all	Client	T	Analysis	T		er Name		
pertinent Information?	Project	<u> </u>	ID's	T	•	Dates/Times	$-\tau$	
Are Sample labels filled	•		· · · · · · · · · · · · · · · · · · ·				····	
Are there Lab to Filters?	_	F		Who was	s notified?			
Are there Rushes?		F		Who was	notified?			
Are there Short Holds?		F		Who was	notified?		······································	
Is there enough Volume	?	Τ.						
Is there Headspace who	ere applicable?	NA		MS/MSD?	Ŧ	•		
Proper Media/Container	s Used?	+		ls splitting	samples req	uired? F		
Were trip blanks receive	ed?	F		On COC?	F	·		
Do all samples have the	proper pH?	NIF	Acid _			Base		
Vials #	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter I	Plastic		16 oz	Amb.	
HCL-	500 mL Amb.		500 mL				b/Clear	
Meoh-	250 mL Amb.		250 mL		43		b/Clear	
Bisulfate-	Flashpoint		Col./Ba				b/Clear	
DI-	Other Glass		Other F				ore	
Thiosulfate-	SOC Kit		Plastic			Frozen:		
Sulfuric-	Perchlorate		Ziplo					
1			Unused N	ledia				
Vials # Unp-	Containers: 1 Liter Amb.	#	1 Liter F	Diantio	#	16 oz	Amb	#
HCL-	500 mL Amb.		500 mL			8oz Am		
Meoh-	250 mL Amb.		250 mL			4oz Am		
Bisulfate-	Col./Bacteria		Flash		***************************************		b/Clear	······
DI-	Other Plastic		Other (ore	
Thiosulfate-	SOC Kit		Plastic			Frozen:		
Sulfuric-	Perchlorate		Ziplo		······································			
Comments:	<u></u>		·					



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Bryan Massa Horsley & Witten 90 Route 6A Sandwich, MA 02563

RE: Barnstable Airport (20102)

ESS Laboratory Work Order Number: 21D0199

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director

REVIEWED

By ESS Laboratory at 3:24 pm, Apr 14, 2021

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

SAMPLE RECEIPT

The following samples were received on April 07, 2021 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

Lab Number	Sample Name	<u>Matrix</u>	Analysis
21D0199-01	HW-W dd 3-5 ft	Soil	9060
21D0199-02	HW-W dd 8-10 ft	Soil	9060
21D0199-03	HW-W dd 18-20 ft	Soil	9060
21D0199-04	HW-W dd 23-25 ft	Soil	9060
21D0199-05	HW-W dd 28-30 ft	Soil	9060
21D0199-06	HW-W dd 33-35 ft	Soil	9060
21D0199-07	HW-W dd 38-40 ft	Soil	9060
21D0199-08	HW-W dd 43-45 ft	Soil	9060
21D0199-09	HW-W dd 48-50 ft	Soil	9060
21D0199-10	HW-W dd 58-60 ft	Soil	9060
21D0199-11	HW-W dd 63-65 ft	Soil	9060



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Quality

Dependability

Fax: 401-461-4486

• Service



The Microbiology Division of Thielsch Engineering, Inc.

ESS Laboratory Work Order: 21D0199



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015C - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH

MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion

3020A - Aqueous Graphite Furnace / ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

Classical Chemistry

Client Sample ID: HW-W dd 3-5 ft Date Sampled: 04/06/21 10:35

Percent Solids:

ESS Laboratory Sample ID: 21D0199-01

Sample Matrix: Soil

Analyte Results Units MRL Method DF **Analyst** Analyzed Total Organic Carbon (Average) mg/kg dry 94.8 9060 CCP 04/12/21 17:22 ND

Client Sample ID: HW-W dd 8-10 ft ESS Laboratory Sample ID: 21D0199-02

Date Sampled: 04/06/21 10:45

Percent Solids: 90

Sample Matrix: Soil

Results Analyte Units MRL Method DF Analyst Analyzed 04/12/21 17:38 Total Organic Carbon (Average) ND mg/kg dry 94.3 9060 CCP

Client Sample ID: HW-W dd 18-20 ft ESS Laboratory Sample ID: 21D0199-03

Date Sampled: 04/06/21 10:55 Sample Matrix: Soil

Percent Solids: 96

Analyte Results Units MRL Method <u>DF</u> **Analyst Analyzed** Total Organic Carbon (Average) 96.5 9060 04/12/21 17:55 ND mg/kg dry CCP

Client Sample ID: HW-W dd 23-25 ft ESS Laboratory Sample ID: 21D0199-04

Date Sampled: 04/06/21 11:04

Percent Solids:

Sample Matrix: Soil

Analyte Results **Units** Method DF **Analyzed Analyst** Total Organic Carbon (Average) 04/12/21 18:12 ND mg/kg dry 93.9 9060 CCP



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

Classical Chemistry

Client Sample ID: HW-W dd 28-30 ft

Date Sampled: 04/06/21 11:13

Percent Solids:

ESS Laboratory Sample ID: 21D0199-05

Sample Matrix: Soil

Analyte Results Units MRL Method DF **Analyst** Analyzed Total Organic Carbon (Average) mg/kg dry 95.7 9060 CCP 04/12/21 18:30 ND

Client Sample ID: HW-W dd 33-35 ft

Date Sampled: 04/06/21 11:30

Percent Solids: 82 ESS Laboratory Sample ID: 21D0199-06

Sample Matrix: Soil

Results Analyte Units MRL Method DF Analyst Analyzed 04/12/21 19:20 Total Organic Carbon (Average) ND mg/kg dry 93.5 9060 CCP

Client Sample ID: HW-W dd 38-40 ft

Date Sampled: 04/06/21 13:10

Percent Solids: 84 ESS Laboratory Sample ID: 21D0199-07

Sample Matrix: Soil

Analyte Results Units MRL Method <u>DF</u> **Analyst** <u>Analyzed</u> Total Organic Carbon (Average) 96.9 9060 04/12/21 19:39 ND mg/kg dry CCP

Client Sample ID: HW-W dd 43-45 ft

Date Sampled: 04/06/21 13:15

Percent Solids:

ESS Laboratory Sample ID: 21D0199-08

Sample Matrix: Soil

Analyte Results **Units** Method DF **Analyzed Analyst** Total Organic Carbon (Average) 04/12/21 19:55 ND mg/kg dry 95.7 9060 CCP



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

Classical Chemistry

Client Sample ID: HW-W dd 48-50 ft

Date Sampled: 04/06/21 13:30

Percent Solids: 80

ESS Laboratory Sample ID: 21D0199-09

Sample Matrix: Soil

AnalyteResultsUnitsMRLMethodDFAnalystAnalystTotal Organic Carbon (Average)NDmg/kg dry95.790601CCP04/12/2120:12

Client Sample ID: HW-W dd 58-60 ft

Date Sampled: 04/06/21 13:50

Percent Solids: 86

ESS Laboratory Sample ID: 21D0199-10

Sample Matrix: Soil

AnalyteResultsUnitsMRLMethodDFAnalystAnalystTotal Organic Carbon (Average)NDmg/kg dry94.290601CCP04/12/2120:29

Client Sample ID: HW-W dd 63-65 ft

Date Sampled: 04/06/21 14:10

Percent Solids: 79

ESS Laboratory Sample ID: 21D0199-11

Sample Matrix: Soil

AnalyteResultsUnitsMRLMethodDFAnalystAnalyzedTotal Organic Carbon (Average)NDmg/kg dry95.790601CCP04/12/2121:41

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Tel: 401-461-7181

Fax: 401-461-4486

• Service



The Microbiology Division of Thielsch Engineering, Inc.



RPD

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

%REC

Quality Control Data

Spike

Source

Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
		С	lassical Che	mistry						
Batch DD10758 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
LCS										
Total Organic Carbon (1)	9230	100	mg/kg	10000		92	80-120			
Total Organic Carbon (2)	9440	100	mg/kg	10000		94	80-120			
LCS Dup										
Total Organic Carbon (1)	9630	100	mg/kg	10000		96	80-120	4	20	
Total Organic Carbon (2)	9320	100	mg/kg	10000		93	80-120	1	20	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0199

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
	71 1 25 1

LOD Limit of Detection
LOQ Limit of Quantitation
DL Detection Limit
I/V Initial Volume
F/V Final Volume

§ Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range.
3 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

[CALC] Calculated Analyte

SUB Subcontracted analysis; see attached report

RL Reporting Limit

EDL Estimated Detection Limit
MF Membrane Filtration
MPN Most Probably Number
TNTC Too numerous to Count
CFU Colony Forming Units

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The Microbiology Division of Thielsch Engineering, Inc.

ESS Laboratory Work Order: 21D0199



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

> Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002 http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

> > Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

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Phone: (500) 633-4400	Project Manager: 37 VAN VYASSA	is compliant			
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2 416121 10:45		8-10,)	1		
3 4/4/21 10:55		18-20)	1		
4 4/6/21 11:04	3011 HW-W (dd) (23-25')	1		
5 4/6/21 11:13	Spil HW-W (dd)	28-30')	1		
6 A16/21 11:30	SOII HW-W (dd) (33-35')	1		
7 4/6/21 13:10	SOII HW-W (dd)	(38.40)	1		
8 4/6/21 13:15		(43-45)	1		
9 414121 13:30	SOIL HW-1/199)	(48.50)			
10 416121 13:50	8011 HW-W (dd)	(58-60.)			
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Cooler Temperature (c).			condition	ons.	☐ Lab Filter
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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Bryan Massa Horsley & Witten 90 Route 6A Sandwich, MA 02563

RE: Barnstable Airport (20102)

ESS Laboratory Work Order Number: 21D0671

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director

REVIEWED

By ESS Laboratory at 5:09 pm, Apr 26, 2021

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0671

SAMPLE RECEIPT

The following samples were received on April 20, 2021 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

The methods for aqueous VOA and Soil Each method has been set-up in the laboratory to reach required MCP standards. Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison above regulatory standards. spreadsheet) electronic deliverable which will highlight these exceedances.

Lab Number	Sample Name	Matrix	Analysis
21D0671-01	S1 0-2 ft	Soil	9060
21D0671-02	S1 2-4 ft	Soil	9060
21D0671-03	S1 4-6 ft	Soil	9060
21D0671-04	S2 0-2 ft	Soil	9060
21D0671-05	S2 2-4 ft	Soil	9060
21D0671-06	S2 4-6 ft	Soil	9060

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0671

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

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The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0671

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015C - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH

MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion

3020A - Aqueous Graphite Furnace / ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S1 0-2 ft Date Sampled: 04/19/21 10:28

Percent Solids: 88

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-01

Sample Matrix: Soil

Classical Chemistry

Analyte Results (MRL) **MDL** Method **Limit** Analyst Analyzed <u>Units</u> **Batch** Total Organic Carbon (Average) **28900** (95.0) 9060 ZZZ 04/22/21 13:56 mg/kg dry [CALC]

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181 Dependability

Quality

Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S1 2-4 ft Date Sampled: 04/19/21 12:33

Percent Solids: 96

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-02

Sample Matrix: Soil

Classical Chemistry

MDL Analyte Results (MRL) Method **Limit** Analyst Analyzed <u>Units</u> **Batch** Total Organic Carbon (Average) **1150** (92.5) 9060 ZZZ 04/22/21 16:34 mg/kg dry [CALC]

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181 Dependability

Quality

Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S1 4-6 ft Date Sampled: 04/19/21 13:10

Percent Solids: 97

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-03

Sample Matrix: Soil

Classical Chemistry

AnalyteResults (MRL)MDLMethodLimitDFAnalystAnalyzedUnitsBatchTotal Organic Carbon (Average)180 (95.5)906011ZZZ04/22/21 15:02mg/kg dry[CALC]

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2211 Tel: 401-461-7181

Dependability • Quality

Fax: 401-461-4486

http://www.ESSLaboratory.com

Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S2 0-2 ft Date Sampled: 04/19/21 13:30

Percent Solids: 92

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-04

Sample Matrix: Soil

Classical Chemistry

AnalyteResults (MRL)MDLMethodLimitDFAnalystAnalyzedUnitsBatchTotal Organic Carbon (Average)1550 (94.4)906011ZZZ04/22/21 15:19mg/kg dry[CALC]

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·/181 I Quality

Fax: 401-461-4486

◆ Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S2 2-4 ft Date Sampled: 04/19/21 13:40

Percent Solids: 97

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-05

Sample Matrix: Soil

Classical Chemistry

MDL Analyte Results (MRL) Method **Limit** Analyst Analyzed <u>Units</u> **Batch** Total Organic Carbon (Average) ND (95.1) 9060 ZZZ 04/22/21 15:36 mg/kg dry [CALC]

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181 Dependability

Quality

Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

Client Sample ID: S2 4-6 ft Date Sampled: 04/19/21 13:45

Percent Solids: 86

ESS Laboratory Work Order: 21D0671 ESS Laboratory Sample ID: 21D0671-06

Sample Matrix: Soil

Classical Chemistry

Analyte Results (MRL) **MDL** Method **Limit** Analyst Analyzed <u>Units</u> **Batch** Total Organic Carbon (Average) **3500** (91.8) 9060 ZZZ 04/22/21 15:52 mg/kg dry [CALC]

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181 Dependability

Fax: 401-461-4486 Service



The Microbiology Division of Thielsch Engineering, Inc.



RPD

CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0671

%REC

Quality Control Data

Spike

Source

Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
Classical Chemistry										
Batch DD12038 - General Preparation										
Blank										
Total Organic Carbon (1)	ND	100	mg/kg							
Total Organic Carbon (2)	ND	100	mg/kg							
LCS										
Total Organic Carbon (1)	9340	100	mg/kg	10000		93	80-120			
Total Organic Carbon (2)	9020	100	mg/kg	10000		90	80-120			
LCS Dup										
Total Organic Carbon (1)	9330	100	mg/kg	10000		93	80-120	0.04	20	
Total Organic Carbon (2)	9270	100	mg/kg	10000		93	80-120	3	20	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS Laboratory Work Order: 21D0671

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume

§ Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range. 3 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

[CALC] Calculated Analyte

SUB Subcontracted analysis; see attached report

RL Reporting Limit

EDL Estimated Detection Limit MF Membrane Filtration **MPN** Most Probably Number **TNTC** Too numerous to Count **CFU Colony Forming Units**

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

The Microbiology Division of Thielsch Engineering, Inc.

ESS Laboratory Work Order: 21D0671



CERTIFICATE OF ANALYSIS

Client Name: Horsley & Witten Client Project ID: Barnstable Airport

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

> Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002 http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

> > Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

ESS Laboratory Sample and Cooler Receipt Checklist

Client:	Horsley Witten Group - KPB		ESS Project ID:		<u> </u>
			Date Received:	4/20/2021	
Shipped/Delivered	l Via: ESS Courier		Project Due Date:		
			Days for Project:	5 Day	
Air bill manifest Air No.:		No	6. Does COC match bottles?		Yes
All No			7. Is COC complete and corre	ect?	Yes
2. Were custody s	eals present?	No	,		
•			Were samples received int	act?	Yes
3. Is radiation coul	nt <100 CPM?	Yes			
			9. Were labs informed about	t <u>short holds & rushes</u> ?	Yes / No NA
4. is a Cooler Pres Temp: 1.	sent? 2 Iced with: Ice	Yes	10. Were any analyses recei	ved outside of hold time?	Yes No
5 Was COC signs	ed and dated by client?	Yes			<u> </u>
J. 7140 000 01911					
			<u></u>		
11. Any Subcontra	cting needed?	₁₀))	12. Were VOAs received?		Yes (No
ESS Sample	-		a. Air bubbles in aqueous V	OAs?	Yes / No
•		_	b. Does methanol cover soil		Yes / No / NA
7 1110	alysis: TAT:		2. 2 000 0000	,	
					
		1			
	co brobarry brosserson.	es / No		5	
a. If metals preser		Date: Date:	Time: Time:	By: By:	
b. Low Level VOA	A vials trozen:	Date:	rime:	ьу;	
Sample Receiving	Notes:				
Cample Receiving	114,00.				
				<u> </u>	
<u> </u>					
14. Was there a r	need to contact Project Manager?	Yes / 1	vo)		
a. Was there a ne	eed to contact the client?	Yes	10		
Who was contacted	ed?	Date:	Time:	Ву:	

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
1	156537	Yes	N/A	Yes	2 oz. Jar	NP	
2	156538	Yes	N/A	Yes	2 oz. Jar	NP	
3	156539	Yes	N/A	Yes	2 oz. Jar	NP	
4	156540	Yes	N/A	Yes	2 oz. Jar	NP	
5	156541	Yes	N/A	Yes	2 oz. Jar	NP	
6	156542	Yes	N/A	Yes	2 oz. Jar	NP	

2nd Review

Were all containers scanned into storage/lab?

Are barcode labels on correct containers?

Are all Flashpoint stickers attached/container ID # circled?

Are all Hex Chrome stickers attached?

Are all QC stickers attached?

Are VOA stickers attached if bubbles noted?

ESS Laboratory Sample and Cooler Receipt Checklist

Client:	_Horsley Witten Group - KPB	_	ESS Project ID:	21D0671	
	() // M.		Date/Received:	4/20/2021	
By:	Cambin Hourn	Date & Time:	4/20/21 31	o:1 <u>Z</u>	
Reviewed			ا ان	/	
By:		Date & Time:	7/20/21	اکامال	

	•		CHAIN OF C	USTODY		ESS Lab #	21	XXXX	_	Page	1	of /
	n, RI 02921	Turn Time	□>5 □5 □4 □	3 🗖 2 🔲 1	☐ Same Day	FTEC	TRONG	DELIVE	(ABI ES (I	ine (Re	ports aci	r PDF)
		Regulatory State:	Crite	ia:		☐ Limit Cl	ecker	□ State	Forms	□ BQ	uIS	
A 10 35	1-461-4486		Is this project for any of	the following?:		Excel		⊓ □ Hard			viro Data	
In Www.essiah	poratory.com	☐ CT RCP	MA MCP DRGP	☐ Permit	□ 401 WQ	CLP-Lik			r (Specify)			
CLIENT INFORMAT	TON		PROJECT INFO.		page our annual process of growing per may find an own		RE	QUESTE	DANAL	TSES		
Client: HONKY WITH	GIDUD	Project Name:	Barnstable Munici	trogred to	Client							걸
Address: 90 ROCK 6A		Project Location:	<u></u>	· · · · · · · · · · · · · · · · · · ·	acknowledges						1 1 1	
Sandwich MA	02563	Project Number:			that sampling is		11	1		.]	i	
Phone: (508) 833-6600			Bryan Masso		compliant with							ğ
Email Distribution List:		Bill to:		·	regulatory							
bmassa@horsleywith	mwm	PO#:			programs	O						Total Number of Bottles
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ESS Lab Collection Collection ID Date Lime	Sample Type	Sample Vistrix		Sample ID				- -	┵			
1 4/19/21/10:28 6	AYQ\0	Soil	81 (0-2')			/	_ _ _		-			_}_
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5 4119/21 13 40 G		8011	52 (2-4-)			`		 	1-1-1			
6 4/19/21/13:45/6	arab	8011	52 (4-6)			~ - -		╫┼┼┼	+			
		1						 		$\dashv \dashv$		
												
				,,,								
Container Type: AC-Air Ca	annuta A Amher (Glass B-BOD Botti	le C-Cubitainer J-Jar O-	Other P-Poly S-Ste	erile V-Vial							
	2-2.5 gal 3-250			oz 9-4 oz 10-8 oz	11-Other*				1-1-1			
Preservation Code: Non Preserv	ved 2-HCl 3-H2SO4	4-HNO3 5-NaOH 6-	Methanol 7-Na2S2O3 8-ZnAce, l	NaOH 9-NH4CI 10-DI	H2O 11-Other*				ــــــــــــــــــــــــــــــــــــــ			أسانيا
Sampled by:				Chain n	eeds to be fille	ed out nea	tly and	complet	tely for ()p tim	e deliv	ery.
Laboratory Use Only	Comments: * 1	Please specify "Ot	ther" preservative and jon	tainers types in this	space	All sample	submit	ted are sub	ject to	Dissi	nfvert Fill	tratioo
			/1		1	ESS Labora	tory's pa	syment ter	ns and			
Cooler Temperature (°C):					/	e di salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah salah sal Salah salah sa	conditi	ons.	2 con 100 c 1946		Lab	Fliter
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May 4, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21D1020

Enclosed are results of analyses for samples received by the laboratory on April 20, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

MCorthy

Raymond J. McCarthy Project Manager

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Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

PURCHASE ORDER NUMBER:

REPORT DATE: 5/4/2021

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

21D1020 WORK ORDER NUMBER:

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
OW-W (m)	21D1020-01	Ground Water		SOP-454 PFAS	
OW-W (d)	21D1020-02	Ground Water		SOP-454 PFAS	
OW-W (dd)	21D1020-03	Ground Water		SOP-454 PFAS	
HW-U (s)	21D1020-04	Ground Water		SOP-454 PFAS	
HW-U (m)	21D1020-05	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-05

Opening calibration verification was within control criteria. Closing calibration verification was outside of criteria and biased on the low side. Re-analysis yielded similar non-conformance. Analyte & Samples(s) Qualified:

4,8-dioxa-3H-perfluorononanoic ac

S059260-CCV2

N-EtFOSAA

S059260-CCV2

N-MeFOSAA

S059260-CCV2

Perfluoro-1-butanesulfonamide (FI

S059260-CCV2

Perfluorodecanesulfonic acid (PFD

S059260-CCV2

Perfluorooctanesulfonamide (FOSA

S059260-CCV2

PF-06

Opening calibration verification was within control criteria. Closing calibration verification was outside of criteria and biased on the high side. Re-analysis yielded similar non-conformance.

Analyte & Samples(s) Qualified:

M2-4:2FTS

S059260-CCV2

M3PFBS

S059260-CCV2

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.

Technical Representative

Lua Warrengton



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: OW-W (m)

Sampled: 4/19/2021 10:45

102

96.1

102

50-150

50-150

50-150

Sample ID: 21D1020-01
Sample Matrix: Ground Water

M3HFPO-DA

M6PFDA

M3PFBS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	7.1	2.0	0.57	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorobutanesulfonic acid (PFBS)	0.60	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoropentanoic acid (PFPeA)	21	2.0	0.66	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorohexanoic acid (PFHxA)	12	2.0	0.75	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorooctanesulfonamide (FOSA)	40	2.0	0.44	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	0.72	2.0	0.70	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorohexanesulfonic acid (PFHxS)	12	2.0	0.58	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluoroheptanoic acid (PFHpA)	5.2	2.0	0.62	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorooctanoic acid (PFOA)	4.1	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorooctanesulfonic acid (PFOS)	75	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Perfluorononanoic acid (PFNA)	0.77	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 7:10	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		86.1		50-150					5/3/21 7:10	
M2-4:2FTS		80.1		50-150					5/3/21 7:10	
M2PFTA M2-8:2FTS		85.1 77.3		50-150 50-150					5/3/21 7:10 5/3/21 7:10	
MPFBA		97.3		50-150					5/3/21 7:10	
		,,,,		50 150					5/5/21 7.10	

5/3/21 7:10

5/3/21 7:10

5/3/21 7:10



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021 Field Sample #: OW-W (m)

Sampled: 4/19/2021 10:45

Sample ID: 21D1020-01
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates		% Recov	very	Recovery Limit	s	Flag/Qual				
M7PFUnA		95.6		50-150					5/3/21 7:10	
M2-6:2FTS		83.2		50-150					5/3/21 7:10	
M5PFPeA		102		50-150					5/3/21 7:10	
M5PFHxA		96.1		50-150					5/3/21 7:10	
M3PFHxS		101		50-150					5/3/21 7:10	
M4PFHpA		99.3		50-150					5/3/21 7:10	
M8PFOA		98.0		50-150					5/3/21 7:10	
M8PFOS		96.1		50-150					5/3/21 7:10	
M9PFNA		95.1		50-150					5/3/21 7:10	
MPFDoA		88.4		50-150					5/3/21 7:10	
d5-NEtFOSAA		91.9		50-150					5/3/21 7:10	
d3-NMeFOSAA		77.5		50-150					5/3/21 7:10	



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: OW-W (d)

Sampled: 4/19/2021 11:30

Sample ID: 21D1020-02
Sample Matrix: Ground Water

MPFBA

M6PFDA

M3PFBS

M3HFPO-DA

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.4	2.0	0.57	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorobutanesulfonic acid (PFBS)	0.39	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoropentanoic acid (PFPeA)	7.5	2.0	0.66	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorohexanoic acid (PFHxA)	5.0	2.0	0.75	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorohexanesulfonic acid (PFHxS)	8.8	2.0	0.58	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluoroheptanoic acid (PFHpA)	2.1	2.0	0.62	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorooctanoic acid (PFOA)	2.9	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorooctanesulfonic acid (PFOS)	12	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Perfluorononanoic acid (PFNA)	1.3	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 7:40	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		90.7		50-150					5/3/21 7:40	
M2-4:2FTS		79.4		50-150					5/3/21 7:40	
M2PFTA		92.9		50-150 50-150					5/3/21 7:40	
M2-8:2FTS		89.5		50-150					5/3/21 7:40	

50-150

50-150

50-150

50-150

95.3

103

99.1

106

5/3/21 7:40

5/3/21 7:40

5/3/21 7:40 5/3/21 7:40



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: OW-W (d)

Sampled: 4/19/2021 11:30

Sample ID: 21D1020-02
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results F	L DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	%	Recovery	Recovery Limit	s	Flag/Qual				
M7PFUnA	90	5.7	50-150					5/3/21 7:40	
M2-6:2FTS	89	9.1	50-150					5/3/21 7:40	
M5PFPeA	98	3.9	50-150					5/3/21 7:40	
M5PFHxA	99	9.5	50-150					5/3/21 7:40	
M3PFHxS	1	01	50-150					5/3/21 7:40	
M4PFHpA	93	7.1	50-150					5/3/21 7:40	
M8PFOA	1	01	50-150					5/3/21 7:40	
M8PFOS	1	00	50-150					5/3/21 7:40	
M9PFNA	99	9.2	50-150					5/3/21 7:40	
MPFDoA	94	1.0	50-150					5/3/21 7:40	
d5-NEtFOSAA	97	7.8	50-150					5/3/21 7:40	
d3-NMeFOSAA	87	7.3	50-150					5/3/21 7:40	



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: OW-W (dd)

Sampled: 4/19/2021 12:45

99.1

103

50-150

50-150

Sample ID: 21D1020-03
Sample Matrix: Ground Water

M6PFDA

M3PFBS

Semivolatile Organic Compounds by - LC/M	MS-MS
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Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	9.6	2.0	0.57	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorobutanesulfonic acid (PFBS)	0.39	2.0	0.32	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoropentanoic acid (PFPeA)	33	2.0	0.66	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorohexanoic acid (PFHxA)	23	2.0	0.75	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
9CI-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
(ADONA) Hexafluoropropylene oxide dimer acid	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
(HFPO-DA) 8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	_	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
				ng/L	-					
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA) Perfluoroheptanesulfonic acid (PFHpS)	ND ND	2.0	0.36	ng/L	1		SOP-454 PFAS SOP-454 PFAS	4/28/21 4/28/21	5/3/21 8:09 5/3/21 8:09	JFC JFC
N-EtFOSAA			0.93	_	1					
	ND	2.0		ng/L	-		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorohexanesulfonic acid (PFHxS)	8.6	2.0	0.58	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluoroheptanoic acid (PFHpA)	9.1	2.0	0.62	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorooctanoic acid (PFOA)	4.6	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorooctanesulfonic acid (PFOS)	15	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Perfluorononanoic acid (PFNA)	1.4	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 8:09	JFC
Surrogates		% Reco	overy	Recovery Limi	ts	Flag/Qual				
M8FOSA		92.8		50-150					5/3/21 8:09	
M2-4:2FTS		78.2		50-150					5/3/21 8:09	
M2PFTA		89.6		50-150					5/3/21 8:09	
M2-8:2FTS MPFBA		89.2 98.2		50-150 50-150					5/3/21 8:09	
M3HFPO-DA		104		50-150					5/3/21 8:09 5/3/21 8:09	
MOREDA		107		50-150					5/5/21 0.09	

5/3/21 8:09

5/3/21 8:09



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: OW-W (dd)

Sampled: 4/19/2021 12:45

Sample ID: 21D1020-03

Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Surrogates		% Recov	ery	Recovery Limit	s	Flag/Qual				
M7PFUnA		95.6		50-150					5/3/21 8:09	
M2-6:2FTS		84.8		50-150					5/3/21 8:09	
M5PFPeA		102		50-150					5/3/21 8:09	
M5PFHxA		101		50-150					5/3/21 8:09	
M3PFHxS		97.0		50-150					5/3/21 8:09	
M4PFHpA		97.9		50-150					5/3/21 8:09	
M8PFOA		100		50-150					5/3/21 8:09	
M8PFOS		93.7		50-150					5/3/21 8:09	
M9PFNA		96.9		50-150					5/3/21 8:09	
MPFDoA		92.3		50-150					5/3/21 8:09	
d5-NEtFOSAA		94.9		50-150					5/3/21 8:09	
d3-NMeFOSAA		92.0		50-150					5/3/21 8:09	



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: HW-U (s)

Sampled: 4/19/2021 13:30

85.2

95.2

104

99.4

105

50-150

50-150

50-150

50-150

50-150

Sample ID: 21D1020-04
Sample Matrix: Ground Water

M2-8:2FTS

M3HFPO-DA

MPFBA

M6PFDA

M3PFBS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.0	2.0	0.57	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorobutanesulfonic acid (PFBS)	5.1	2.0	0.32	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoropentanoic acid (PFPeA)	2.9	2.0	0.66	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorohexanoic acid (PFHxA)	3.6	2.0	0.75	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorodecanoic acid (PFDA)	0.64	2.0	0.38	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.55	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorohexanesulfonic acid (PFHxS)	10	2.0	0.58	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluoroheptanoic acid (PFHpA)	2.0	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorooctanoic acid (PFOA)	7.5	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorooctanesulfonic acid (PFOS)	60	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Perfluorononanoic acid (PFNA)	1.3	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 8:39	JFC
Surrogates		% Reco	very	Recovery Limits		Flag/Qual				
M8FOSA		91.8		50-150					5/3/21 8:39	
M2-4:2FTS M2PFTA		83.7 93.0		50-150 50-150					5/3/21 8:39 5/3/21 8:39	
1912 1 1A		93.0		50-150					5/3/21 0.39	

5/3/21 8:39

5/3/21 8:39

5/3/21 8:39

5/3/21 8:39

5/3/21 8:39



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: HW-U (s)

Sampled: 4/19/2021 13:30

Sample ID: 21D1020-04
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Rec	overy	Recovery Limit	s	Flag/Qual				
M7PFUnA	98.6		50-150					5/3/21 8:39	
M2-6:2FTS	83.1		50-150					5/3/21 8:39	
M5PFPeA	99.3		50-150					5/3/21 8:39	
M5PFHxA	98.4		50-150					5/3/21 8:39	
M3PFHxS	102		50-150					5/3/21 8:39	
M4PFHpA	96.6		50-150					5/3/21 8:39	
M8PFOA	101		50-150					5/3/21 8:39	
M8PFOS	99.5		50-150					5/3/21 8:39	
M9PFNA	96.9		50-150					5/3/21 8:39	
MPFDoA	93.7		50-150					5/3/21 8:39	
d5-NEtFOSAA	96.2		50-150					5/3/21 8:39	
d3-NMeFOSAA	86.4		50-150					5/3/21 8:39	



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021

Field Sample #: HW-U (m)

Sampled: 4/19/2021 14:00

Sample ID: 21D1020-05

Sample Matrix: Ground Water

Semivolatile	Organic	Compounds 1	bv - 1	LC/MS-MS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.7	2.0	0.57	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorobutanesulfonic acid (PFBS)	2.6	2.0	0.32	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoropentanoic acid (PFPeA)	3.5	2.0	0.66	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorohexanoic acid (PFHxA)	2.9	2.0	0.75	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
11Cl-PF3OUdS (F53B Major)	ND	2.0	0.54	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
9Cl-PF3ONS (F53B Minor)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	1.6	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	1.4	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	1.3	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
N-EtFOSAA	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
N-MeFOSAA	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.82	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	1.2	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	1.0	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.89	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.70	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.79	2.0	0.55	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorohexanesulfonic acid (PFHxS)	4.3	2.0	0.58	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	1.1	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.51	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.53	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluoroheptanoic acid (PFHpA)	1.8	2.0	0.62	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorooctanoic acid (PFOA)	5.5	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorooctanesulfonic acid (PFOS)	9.3	2.0	0.38	ng/L	1		SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Perfluorononanoic acid (PFNA)	0.83	2.0	0.48	ng/L	1	J	SOP-454 PFAS	4/28/21	5/3/21 9:08	JFC
Surrogates		% Reco	******	Recovery Limits		Flag/Qual				

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
M8FOSA	92.7	50-150		5/3/21 9:08
M2-4:2FTS	78.4	50-150		5/3/21 9:08
M2PFTA	93.5	50-150		5/3/21 9:08
M2-8:2FTS	80.1	50-150		5/3/21 9:08
MPFBA	98.1	50-150		5/3/21 9:08
M3HFPO-DA	102	50-150		5/3/21 9:08
M6PFDA	98.1	50-150		5/3/21 9:08
M3PFBS	104	50-150		5/3/21 9:08



Project Location: Hyannis, MA Sample Description: Work Order: 21D1020

Date Received: 4/20/2021 Field Sample #: HW-U (m)

Sampled: 4/19/2021 14:00

Sample ID: 21D1020-05
Sample Matrix: Ground Water

						Date	Date/Time	
Analyte	Results RL	DL Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Surrogates	% Reco	very Recovery Lin	nits	Flag/Qual				
M7PFUnA	98.2	50-150					5/3/21 9:08	
M2-6:2FTS	84.1	50-150					5/3/21 9:08	
M5PFPeA	102	50-150					5/3/21 9:08	
M5PFHxA	99.1	50-150					5/3/21 9:08	
M3PFHxS	97.2	50-150					5/3/21 9:08	
M4PFHpA	97.3	50-150					5/3/21 9:08	
M8PFOA	98.3	50-150					5/3/21 9:08	
M8PFOS	95.9	50-150					5/3/21 9:08	
M9PFNA	99.7	50-150					5/3/21 9:08	
MPFDoA	94.1	50-150					5/3/21 9:08	
d5-NEtFOSAA	96.2	50-150					5/3/21 9:08	
d3-NMeFOSAA	88.4	50-150					5/3/21 9:08	



Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21D1020-01 [OW-W (m)]	B280315	250	1.00	04/28/21
21D1020-02 [OW-W (d)]	B280315	250	1.00	04/28/21
21D1020-03 [OW-W (dd)]	B280315	250	1.00	04/28/21
21D1020-04 [HW-U (s)]	B280315	250	1.00	04/28/21
21D1020-05 [HW-U (m)]	B280315	250	1.00	04/28/21



QUALITY CONTROL

Spike

Source

%REC

RPD

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

Reporting

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC	RPD	RPD Limit	Notes
Analyte	Result	Limit	OHITS	Level	Kesuit	/OKEU	Limits	KLD	Limit	notes
atch B280315 - SOP 454-PFAAS										
lank (B280315-BLK1)				Prepared: 04	1/28/21 Anal	yzed: 05/03/2	21			
erfluorobutanoic acid (PFBA)	0.75	2.0	ng/L							J
erfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
erfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
erfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
1Cl-PF3OUdS (F53B Major)	ND	2.0	ng/L							
Cl-PF3ONS (F53B Minor)	ND	2.0	ng/L							
8-dioxa-3H-perfluorononanoic acid	ND	2.0	ng/L							
ADONA) [exafluoropropylene oxide dimer acid	ND	2.0	ng/L							
HFPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/I							
erfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
	ND		ng/L							
erfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
erfluoro(2-ethoxyethane)sulfonic acid PFEESA) erfluoroheptanesulfonic acid (PFHpS)	ND ND	2.0	ng/L							
-EtFOSAA		2.0	ng/L							
-MeFOSAA	ND ND	2.0	ng/L							
erfluorotetradecanoic acid (PFTA)	ND ND	2.0	ng/L							
erfluorotridecanoic acid (PFTrDA)	ND ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
erfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	2.0								
erfluorononanesulfonic acid (PFNS)	ND		ng/L							
erfluorononanesuffonic acid (FFNS) erfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
erfluoro-1-nexanesuifonamide (FHXSA)	ND	2.0	ng/L							
erfluoro-1-butanesulfonamide (FBSA) erfluorohexanesulfonic acid (PFHxS)	ND	2.0 2.0	ng/L							
	ND		ng/L							
erfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
onafluoro-3,6-dioxaheptanoic acid NFDHA) erfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
• • • •	ND	2.0	ng/L							
erfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	2.0 2.0	ng/L							
erfluorononanoic acid (PFNA)	ND	2.0	ng/L							
rrogate: M8FOSA	35.1		ng/L	40.0		87.9	50-150			
arrogate: M2-4:2FTS	32.1		ng/L	37.5		85.7	50-150			
urrogate: M2PFTA	34.8		ng/L	40.0		87.0	50-150			
urrogate: M2-8:2FTS	30.8		ng/L	38.4		80.2	50-150			
urrogate: MPFBA	36.9		ng/L	40.0		92.2	50-150			
rrogate: M3HFPO-DA	37.7		ng/L	40.0		94.2	50-150			
urrogate: M6PFDA	38.0		ng/L	40.0		95.0	50-150			
urrogate: M3PFBS	36.4		ng/L	37.3		97.5	50-150			
urrogate: M7PFUnA	37.6		ng/L	40.0		94.1	50-150			
urrogate: M2-6:2FTS	30.7		ng/L	38.0		80.7	50-150			
urrogate: M5PFPeA	39.0		ng/L	40.0		97.4	50-150			
urrogate: M5PFHxA	37.8		ng/L	40.0		94.5	50-150			
urrogate: M3PFHxS	35.3		ng/L	37.9		93.2	50-150			
urrogate: M4PFHpA	38.0		ng/L	40.0		95.0	50-150			
urrogate: M8PFOA	37.6		ng/L	40.0		94.1	50-150			



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 B280315 - SOP 454-PFAAS	Result	Dimit	Cinto	DOVOI	resuit	/ UICLC	Limits	МЪ	Liiiit	110103
Blank (B280315-BLK1)				Prepared: 04	1/28/21 Analy	zed: 05/03/3)1			
	2.0				#/26/21 Allaly					
Surrogate: M8PFOS	36.9		ng/L	38.4		96.1	50-150			
Surrogate: M9PFNA	38.1		ng/L	40.0		95.1	50-150			
Surrogate: MPFDoA Surrogate: d5-NEtFOSAA	36.3 35.8		ng/L ng/L	40.0 40.0		90.7 89.4	50-150 50-150			
Surrogate: d3-NMeFOSAA	32.4		ng/L ng/L	40.0		81.0	50-150			
_	32.4		ng/L							
LCS (B280315-BS1)		2.0	/T		1/28/21 Analy					
Perfluorobutanoic acid (PFBA) Perfluorobutanesulfonic acid (PFBS)	21.4	2.0 2.0	ng/L ng/L	20.0		107	73-129			
, ,	18.0	2.0	_	17.7		101	72-130			
Perfluoropentanoic acid (PFPeA)	19.6		ng/L	20.0		98.0	72-129			
Perfluorohexanoic acid (PFHxA)	21.0	2.0	ng/L	20.0		105	72-129			
1Cl-PF3OUdS (F53B Major)	19.6	2.0	ng/L	18.9		104	50-150			
CI-PF3ONS (F53B Minor)	19.7	2.0	ng/L	18.7		106	50-150			
4,8-dioxa-3H-perfluorononanoic acid ADONA)	18.7	2.0	ng/L	18.9		98.8	50-150			
ADONA) Hexafluoropropylene oxide dimer acid HFPO-DA)	16.6	2.0	ng/L	20.0		83.0	50-150			
3:2 Fluorotelomersulfonic acid (8:2FTS A)	21.4	2.0	ng/L	19.2		112	67-138			
Perfluorodecanoic acid (PFDA)	20.3	2.0	ng/L	20.0		102	71-129			
Perfluorododecanoic acid (PFDoA)	20.7	2.0	ng/L	20.0		103	72-134			
rerfluoro(2-ethoxyethane)sulfonic acid PFEESA)	18.1	2.0	ng/L	17.8		102	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	18.8	2.0	ng/L	19.1		98.9	69-134			
I-EtFOSAA	21.4	2.0	ng/L	20.0		107	61-135			
I-MeFOSAA	20.6	2.0	ng/L	20.0		103	65-136			
Perfluorotetradecanoic acid (PFTA)	20.2	2.0	ng/L	20.0		101	71-132			
Perfluorotridecanoic acid (PFTrDA)	20.5	2.0	ng/L	20.0		102	65-144			
:2 Fluorotelomersulfonic acid (4:2FTS A)	21.4	2.0	ng/L	18.7		114	63-143			
Perfluorodecanesulfonic acid (PFDS)	19.2	2.0	ng/L	19.3		99.6	53-142			
Perfluorooctanesulfonamide (FOSA)	20.3	2.0	ng/L	20.0		101	67-137			
Perfluorononanesulfonic acid (PFNS)	19.8	2.0	ng/L	19.2		103	69-127			
Perfluoro-1-hexanesulfonamide (FHxSA)	18.9	2.0	ng/L	20.0		94.6	50-150			
Perfluoro-1-butanesulfonamide (FBSA)	20.4	2.0	ng/L	20.0		102	50-150			
Perfluorohexanesulfonic acid (PFHxS)	18.2	2.0	ng/L	18.3		99.7	68-131			
Perfluoro-4-oxapentanoic acid (PFMPA)	22.1	2.0	ng/L	20.0		110	50-151			
Perfluoro-5-oxahexanoic acid (PFMBA)	19.5	2.0	ng/L	20.0		97.4	50-150			
5:2 Fluorotelomersulfonic acid (6:2FTS A)	20.2	2.0	ng/L	19.0		106	64-140			
Perfluoropetanesulfonic acid (PFPeS)	18.4	2.0	ng/L	18.8		97.7	71-127			
Perfluoroundecanoic acid (PFUnA)	20.7	2.0	ng/L	20.0		103	69-133			
Nonafluoro-3,6-dioxaheptanoic acid	20.7	2.0	ng/L	20.0		100	50-150			
Perfluoroheptanoic acid (PFHpA)	20.2	2.0	ng/L	20.0		101	72-130			
Perfluorooctanoic acid (PFOA)	21.3	2.0	ng/L	20.0		106	71-133			
Perfluorooctanesulfonic acid (PFOS)	18.5	2.0	ng/L	18.6		99.6	65-140			
Perfluorononanoic acid (PFNA)	19.7	2.0	ng/L	20.0		98.6	69-130			
Surrogate: M8FOSA	37.5		ng/L	40.0		93.9	50-150			
Surrogate: M2-4:2FTS	36.2		ng/L	37.5		96.5	50-150			
Surrogate: M2PFTA	35.0		ng/L	40.0		87.6	50-150			
Surrogate: M2-8:2FTS	38.4		ng/L	38.4		100	50-150			
Surrogate: MPFBA	37.6		ng/L	40.0		93.9	50-150			
Surrogate: M3HFPO-DA	42.5		ng/L	40.0		106	50-150			
Surrogate: M6PFDA	38.4		ng/L	40.0		96.0	50-150			
Surrogate: M3PFBS	37.4		ng/L	37.3		100	50-150			



QUALITY CONTROL

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

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

Batch B280315 - SOP 454-PFAAS					
LCS (B280315-BS1)			Prepared: 04/28/2	1 Analyzed: 05/03	/21
Surrogate: M7PFUnA	37.3	ng/L	40.0	93.3	50-150
Surrogate: M2-6:2FTS	37.4	ng/L	38.0	98.2	50-150
Surrogate: M5PFPeA	40.5	ng/L	40.0	101	50-150
Surrogate: M5PFHxA	38.5	ng/L	40.0	96.3	50-150
Surrogate: M3PFHxS	37.1	ng/L	37.9	97.8	50-150
Surrogate: M4PFHpA	38.6	ng/L	40.0	96.6	50-150
Surrogate: M8PFOA	38.4	ng/L	40.0	96.1	50-150
Surrogate: M8PFOS	36.6	ng/L	38.4	95.5	50-150
Surrogate: M9PFNA	38.6	ng/L	40.0	96.5	50-150
Surrogate: MPFDoA	36.3	ng/L	40.0	90.7	50-150
Surrogate: d5-NEtFOSAA	38.1	ng/L	40.0	95.2	50-150
Surrogate: d3-NMeFOSAA	35.8	ng/L	40.0	89.4	50-150



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.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
PF-05	Opening calibration verification was within control criteria. Closing calibration verification was outside of criteria and biased on the low side. Re-analysis yielded similar non-conformance.
PF-06	Opening calibration verification was within control criteria. Closing calibration verification was outside of

criteria and biased on the high side. Re-analysis yielded similar non-conformance.



CERTIFICATIONS

Certified Analyses included in this Report

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



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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2021
CT	Connecticut Department of Publile Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2021
FL	Florida Department of Health	E871027 NELAP	06/30/2021
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2021
ME	State of Maine	MA00100	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2021
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2021
NC-DW	North Carolina Department of Health	25703	07/31/2021
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2021
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

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943 [1]		-525-6405			de la Sama		iE		Dis ij,		ation G			AN	ALYSIS I	REQUE:	STED			
		fo@contestlabs.com		7-Day		10-Day		0	1	Field Filte	red	to contract of the contract of			TT	Ī	T		7	² Preservation Code
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Address: 90 Kte 6A Phone: Ask (7.8)	DVITTI	and wich,	MY	**************************************	Kushisan masuli	Realthail														Total Number Of:
Phone: (781)	243-18	241		1-Day		3-Day		0	ı	Field Filte	red									
Project time HYATA	<u> </u>			2-Day		4-Day		0		Lab to Fil	ter									VIALS
Project Location: HVA Project Number: 260102																				GLASS
	Massi	\L		Format:			PDF	V			EXCEL	ζ								PLASTIC_1860
Con-Test Quote Name/Number:	1 leason	<u> </u>		Other:									.							BACTERIA
Invoice Recipient:				CLP Like Dat	a Pkg Required:	<u>~1</u>	3	الرا	À		_		9							ENCORE
Sampled By: (Charles)	1.1			Email To:	<u>massa</u>	<u> (01)</u>	<u>975lQL</u>	w_i	<u> 19f</u>	<u>, co</u>	MI		女上の							
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Work Order#		ID / Description	Beginning Date/Time	Ending Date/Time	COMP/GRAB	Matrix Code	Conc Code	VIALS	GLASS	PLASTIC	BACTERIA	ENCORE	0						***************************************	Glassware in the fridge?
282. 282.02E	<u> </u>	(m)	4/19	10:45	Grab	GW				*			Х							Glassware in freezer? Y / N
3	<u> </u>	$\overline{n(q)}$	4/19	11:30	<u>60010</u>	GW				X			X					4		Prepackaged Cooler? Y / N
3		7(99)	4/19	12:45	<u>evap</u>	GW				X			×					a de la composition della comp		*Contest is not responsible for missing samples from prepacked
4	HW-)	X (S)	4/19	13:30		GM				Х			X							coolers
5	<u>WH-></u>	(m)	4/19	14:00	Grab	GW				X			X						1	1,11,4,1, 6, 1
the the terms of t	,													1 1		\top	1			¹ <u>Matrix Codes:</u> GW = Ground Water
																	\vdash			WW = Waste Water DW = Drinking Water
and the section of							<u> </u>		<u> </u>					+	-	-			+-	A = Air S = Soil
					~…								_	+	+	-	-			SL = Sludge SOL = Solid
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Relinquished by: (signature)	Da	atę/Time:	Client Comr	nents:		L	L	L												define)
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[(CX 22) /	N 4/20					-f							Keguire							M = Methanol N = Nitric Acid
Received by (signature)	n / d Da	rte/Time:								Э	N.P. Janeston			→ FRE456	e use the t sample co	following oncentra	g code ation w	s to indi vithin th	icate se Conc	S = Sulfuric Acid
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				City	,	Brownfie	ld			MBTA						11	AIHA-	LAP,LLC	•	Non Soxhlet
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<u>G</u>										Discla	imer: Cor	n-Test L	abs is no	ot respons	ible for a	any omi	tted i	nforma	tion or	n the Chain of Custody. The
9 22										Chain	л custoay	y isa te⊧	gat docu	ment that	must be	comple	ete ar	od accu	rate ar	nd is used to determine the first
2										Test val	ues your i	partner	thip on a	each proie	inissing	intorma All tox t	ation i	is not ti	ne labo	oratory's responsibility. Con- ing information, but will not be
of 2											,	,	F/	p. 0)c	held ac	ccounta	ble.	ar Miffi	111122111	g information, but will not be

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client	nothin balex	_						
Received By	JUU		Date	460	$D_{\mathcal{C}}$	Time	1735	
How were the samples	In Cooler	4	No Cooler		On Ice	7	No Ice	
received?	Direct from Samp	olina			Ambient		Melted Ice	
		By Gun #	ユ		Actual Tem	n-フ は	11101100 100	
Were samples within		•						
Temperature? 2-6°C Was Custody Se	ad Intest?	By Blank #	14/0	un Commin	Actual Tem	·	. 7.6	•
Was COC Relin		$\underline{\underline{n}}$	•	_	s Tampered		n/a	•
Are there broken/k		on any sam	•	S Chain Ag	ree With Sar	ilpies?	<u> </u>	•
Is COC in ink/ Legible?		On any Sam	•	i	ved within ho	alding time?		
Did COC include all	Client	•	Analysis			er Name	1	
pertinent Information?	Project		ID's			Dates/Times		
Are Sample labels filled	-		•				- 1	1
Are there Lab to Filters?	——————————————————————————————————————			Who was	s notified?			
Are there Rushes?					s notified?			
Are there Short Holds?					s notified?			
Is there enough Volume	?						 	
Is there Headspace whe		n la		MS/MSD?	F			
Proper Media/Container					samples req	uired?	-	
Were trip blanks receive		F		On COC?		_		
Do all samples have the	proper pH?		Acid	76		Base	n a	
Vials #	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter			16 oz	Amb.	
HCL-	500 mL Amb.		500 mL			8oz Am		
Meoh-	250 mL Amb.		250 mL		10	4oz Am		
Bisulfate-	Flashpoint		Col./Ba			2oz Am		
DI- Thiosulfate-	Other Glass	***************************************	Other F			Enc	ore	
Sulfuric-	SOC Kit Perchlorate		Plastic Ziplo			Frozen:		
Sullulic-	reichiorate							
Vials #	Containers:	# 1	Unused N	fedia	#			22
Unp-	1 Liter Amb.	#	1 Liter I	Plaetic	Tr.	16 oz .	∆mb.	#
HCL-	500 mL Amb.		500 mL			8oz Ami		
Meoh-	250 mL Amb.		250 mL			4oz Ami		
Bisulfate-	Col./Bacteria	***************************************	Flash			2oz Aml		
DI-	Other Plastic		Other (Glass		Ence		
Thiosulfate-	SOC Kit		Plastic	Bag		Frozen:		
Sulfuric-	Perchlorate		Ziplo	ock				
Comments:								

September 22, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21I0272

Enclosed are results of analyses for samples received by the laboratory on September 7, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Matthew J Beaupre Project Manager

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Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

REPORT DATE: 9/22/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0272

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HW-302	21I0272-01	Ground Water		SOP-454 PFAS	
HW-2	21I0272-02	Ground Water		SOP-454 PFAS	
HW-3	21I0272-03	Ground Water		SOP-454 PFAS	
HW-K	21I0272-04	Ground Water		SOP-454 PFAS	
OW-19 (S)	21I0272-05	Ground Water		SOP-454 PFAS	
HW-300	21I0272-06	Ground Water		SOP-454 PFAS	
OW-19 (M)	21I0272-07	Ground Water		SOP-454 PFAS	
HW-S (MW)	21I0272-08	Ground Water		SOP-454 PFAS	
HW-S (S)	21I0272-09	Ground Water		SOP-454 PFAS	
HW-W (M)	21I0272-10	Ground Water		SOP-454 PFAS	
HW-W (D)	21I0272-11	Ground Water		SOP-454 PFAS	
HW-W (DD)	21I0272-12	Ground Water		SOP-454 PFAS	
RB-1 (S)	21I0272-13	Ground Water		SOP-454 PFAS	
RB-1 (M)	21I0272-14	Ground Water		SOP-454 PFAS	
HW-U (S)	21I0272-15	Ground Water		SOP-454 PFAS	
HW-U (M)	21I0272-16	Ground Water		SOP-454 PFAS	
HW-U (D)	21I0272-17	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:

E

Reported result is estimated. Value reported over verified calibration range.

Analyte & Samples(s) Qualified:

6:2 Fluorotelomersulfonic acid (6:2

21I0272-09RE1[HW-S (S)]

L-01

Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high side.

Analyte & Samples(s) Qualified:

Perfluoro(2-ethoxyethane)sulfonic B290250-BS1, B290250-BSD1

Perfluoro-5-oxahexanoic acid (PFN

B290250-BS1, B290250-BSD1

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

21I0272-13[RB-1 (S)]

M2-6:2FTS

21I0272-13[RB-1 (S)]

M2-8:2FTS

21I0272-07[OW-19 (M)], 21I0272-13[RB-1 (S)]

M2PFTA

21I0272-07RE1[OW-19 (M)]

M3HFPO-DA

2110272-04RE1[HW-K], 2110272-10[HW-W (M)], 2110272-11[HW-W (D)], 2110272-12[HW-W (DD)], 2110272-13[RB-1 (S)], 2110272-14[RB-1 (M)], 2110272-15[HW-U (DD)], 2110272-14[RB-1 (N)], 2110272-14[RB-1 (N)], 2110272-15[HW-U (DD)], 2110272-14[RB-1 (N)], 2110272-14[RB-1 (N)], 2110272-15[HW-U (DD)], 2110272-14[RB-1 (N)],
PF-18

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.

Analyte & Samples(s) Qualified:

M2PFTA

21I0272-06[HW-300], 21I0272-06RE1[HW-300], 21I0272-07[OW-19 (M)]

M8FOSA

2110272 - 04[HW-K], 2110272 - 04RE1[HW-K], 2110272 - 05[OW-19(S)], 2110272 - 05RE1[OW-19(S)], 2110272 - 06[HW-300], 2110272 - 06RE1[HW-300], 2110272 - 06[HW-300], 2110272 - 0

21I0272-06[HW-300], 21I0272-06RE1[HW-300]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

d3-NMeFOSAA

21I0272-07RE1[OW-19 (M)]

d5-NEtFOSAA

21I0272-07RE1[OW-19 (M)]

M2-4:2FTS

21I0272-03RE1[HW-3]

M2PFTA

21I0272-04RE1[HW-K], 21I0272-05RE1[OW-19 (S)]

M3HFPO-DA

B290484-BSD1

M7PFUnA

21I0272-07RE1[OW-19 (M)]

M8FOSA

21I0272-07RE1[OW-19 (M)]

21I0272-04RE1[HW-K], 21I0272-05RE1[OW-19 (S)], 21I0272-07RE1[OW-19 (M)]



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.

Lisa A. Worthington
Technical Representative



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021

Field Sample #: HW-302

Sampled: 9/1/2021 12:00

Sample ID: 21I0272-01
Sample Matrix: Ground Water

			semivoratiie	Organic Con	iipounus by - i	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	7.0	1.9	0.71	ng/L	1	1 mg/ 2 mm	SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorobutanesulfonic acid (PFBS)	0.63	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoropentanoic acid (PFPeA)	20	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorohexanoic acid (PFHxA)	11	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	2.6	1.9	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorodecanoic acid (PFDA)	1.0	1.9	0.47	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.90	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
N-MeFOSAA	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorooctanesulfonamide (FOSA)	1.7	1.9	0.40	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	1.2	1.9	0.30	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorohexanesulfonic acid (PFHxS)	4.0	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	6.2	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoroundecanoic acid (PFUnA)	9.9	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluoroheptanoic acid (PFHpA)	6.2	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorooctanoic acid (PFOA)	6.5	1.9	0.65	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorooctanesulfonic acid (PFOS)	15	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC
Perfluorononanoic acid (PFNA)	5.0	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 12:52	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021

Field Sample #: HW-2

Sampled: 9/1/2021 14:30

Sample ID: 2110272-02
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS												
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst		
Perfluorobutanoic acid (PFBA)	38	10	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorobutanesulfonic acid (PFBS)	ND	10	1.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoropentanoic acid (PFPeA)	140	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorohexanoic acid (PFHxA)	71	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
11Cl-PF3OUdS (F53B Minor)	ND	10	3.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
9Cl-PF3ONS (F53B Major)	ND	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	10	1.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	10	3.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorodecanoic acid (PFDA)	ND	10	2.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorododecanoic acid (PFDoA)	ND	10	2.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	10	1.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoroheptanesulfonic acid (PFHpS)	ND	10	4.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
N-EtFOSAA	ND	10	3.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
N-MeFOSAA	ND	10	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorotetradecanoic acid (PFTA)	ND	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorotridecanoic acid (PFTrDA)	ND	10	1.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	10	1.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorodecanesulfonic acid (PFDS)	ND	10	1.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorooctanesulfonamide (FOSA)	ND	10	2.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorononanesulfonic acid (PFNS)	ND	10	0.87	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	10	1.6	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoro-1-butanesulfonamide (FBSA)	ND	10	0.99	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorohexanesulfonic acid (PFHxS)	5.6	10	1.8	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	10	2.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	71	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoropetanesulfonic acid (PFPeS)	ND	10	1.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoroundecanoic acid (PFUnA)	ND	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	10	1.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluoroheptanoic acid (PFHpA)	46	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorooctanoic acid (PFOA)	12	10	3.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorooctanesulfonic acid (PFOS)	26	10	3.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		
Perfluorononanoic acid (PFNA)	4.0	10	1.8	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:40	BLH		



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-3

Sampled: 9/1/2021 16:00

Sample ID: 2110272-03

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS												
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst		
Perfluorobutanoic acid (PFBA)	58	21	7.9	ng/L	1	<u> </u>	SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorobutanesulfonic acid (PFBS)	ND	21	3.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoropentanoic acid (PFPeA)	220	21	4.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorohexanoic acid (PFHxA)	81	21	4.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
11Cl-PF3OUdS (F53B Minor)	ND	21	6.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
9Cl-PF3ONS (F53B Major)	ND	21	4.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	21	3.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	21	2.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
8:2 Fluorotelomersulfonic acid (8:2FTS A)	13	21	6.5	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorodecanoic acid (PFDA)	ND	21	5.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorododecanoic acid (PFDoA)	ND	21	4.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	21	2.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoroheptanesulfonic acid (PFHpS)	ND	21	10	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
N-EtFOSAA	ND	21	6.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
N-MeFOSAA	ND	21	8.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorotetradecanoic acid (PFTA)	ND	21	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorotridecanoic acid (PFTrDA)	ND	21	2.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	21	3.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorodecanesulfonic acid (PFDS)	ND	21	3.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorooctanesulfonamide (FOSA)	ND	21	4.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorononanesulfonic acid (PFNS)	ND	21	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	21	3.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoro-1-butanesulfonamide (FBSA)	ND	21	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorohexanesulfonic acid (PFHxS)	5.7	21	3.6	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	21	4.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	21	3.6	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	200	21	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoropetanesulfonic acid (PFPeS)	ND	21	2.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoroundecanoic acid (PFUnA)	ND	21	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	21	2.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluoroheptanoic acid (PFHpA)	35	21	3.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorooctanoic acid (PFOA)	16	21	7.2	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorooctanesulfonic acid (PFOS)	44	21	6.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		
Perfluorononanoic acid (PFNA)	14	21	3.7	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:47	BLH		



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-K

Sampled: 9/2/2021 14:30

Sample ID: 2110272-04
Sample Matrix: Ground Water

		5	Semivolatile	Organic Co	mpounds by - l	LC/MS-MS				
				***				Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	14	1.9	0.69	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorobutanoic acid (PFBA)	13	1.9	0.70	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorobutanesulfonic acid (PFBS)	0.36	1.9	0.26	ng/L	1	J	SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorobutanesulfonic acid (PFBS)	0.37	1.9	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoropentanoic acid (PFPeA)	39	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoropentanoic acid (PFPeA)	35	1.9	0.37	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorohexanoic acid (PFHxA)	20	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorohexanoic acid (PFHxA)	19	1.9	0.36	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.87	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.88	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
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Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-K

Sampled: 9/2/2021 14:30

Sample ID: 21I0272-04
Sample Matrix: Ground Water

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1	<u> </u>	SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorohexanesulfonic acid (PFHxS)	1.5	1.9	0.31	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorohexanesulfonic acid (PFHxS)	1.3	1.9	0.32	ng/L	1	J	SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluoroheptanoic acid (PFHpA)	8.6	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluoroheptanoic acid (PFHpA)	8.7	1.9	0.32	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorooctanoic acid (PFOA)	3.8	1.9	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorooctanoic acid (PFOA)	3.8	1.9	0.64	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorooctanesulfonic acid (PFOS)	1.9	1.9	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorooctanesulfonic acid (PFOS)	2.1	1.9	0.56	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH
Perfluorononanoic acid (PFNA)	3.0	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:13	JFC
Perfluorononanoic acid (PFNA)	2.5	1.9	0.32	ng/L	1		SOP-454 PFAS	9/20/21	9/21/21 18:03	BLH



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: OW-19 (S)

Sampled: 9/2/2021 18:15

Sample ID: 21I0272-05
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS										
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.1	2.0	0.73	ng/L	1	r rag/Quar	SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorobutanoic acid (PFBA)	4.3	1.9	0.69	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorobutanesulfonic acid (PFBS)	2.1	2.0	0.28	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorobutanesulfonic acid (PFBS)	2.2	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluoropentanoic acid (PFPeA)	9.8	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluoropentanoic acid (PFPeA)	10	2.0	0.39	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorohexanoic acid (PFHxA)	7.6	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorohexanoic acid (PFHxA)	7.8	2.0	0.38	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
9CI-PF3ONS (F53B Major)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
(ADONA) 4,8-dioxa-3H-perfluorononanoic acid	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.87	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
N-MeFOSAA	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC



Project Location: Hyannis, MA

Sample Description:

Work Order: 21I0272

Date Received: 9/7/2021 Field Sample #: OW-19 (S)

Sampled: 9/2/2021 18:15

Sample ID: 21I0272-05 Sample Matrix: Ground Water

Perfluorononanoic acid (PFNA)

2.2

2.0

0.34

ng/L

1

SOP-454 PFAS

Semivolatile Organic Compounds by - LC/MS-MS											
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst	
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.31	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoro-1-butanesulfonamide (FBSA)	0.23	2.0	0.19	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-1-butanesulfonamide (FBSA)	0.27	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluorohexanesulfonic acid (PFHxS)	2.7	1.9	0.32	ng/L	1	3	SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluorohexanesulfonic acid (PFHxS)	2.8	2.0	0.33	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoropetanesulfonic acid (PFPeS)	0.50	1.9	0.24	ng/L	1	J	SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoropetanesulfonic acid (PFPeS)	0.48	2.0	0.25	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.34	ng/L	1	, and the second	SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluoroheptanoic acid (PFHpA)	5.6	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluoroheptanoic acid (PFHpA)	5.8	2.0	0.34	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluorooctanoic acid (PFOA)	6.6	1.9	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluorooctanoic acid (PFOA)	6.3	2.0	0.67	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluorooctanesulfonic acid (PFOS)	31	1.9	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	
Perfluorooctanesulfonic acid (PFOS)	28	2.0	0.59	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 15:54	BLH	
Perfluorononanoic acid (PFNA)	2.5	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/17/21 13:20	JFC	

BLH

9/15/21 9/20/21 15:54



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-300

Sampled: 9/2/2021 16:30

Sample ID: 21I0272-06
Sample Matrix: Ground Water

Personant	Semivolatile Organic Compounds by - LC/MS-MS											
Purpose Purp												
Performantiament and (PETA) 1.0				DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst	
Perfunonbunanceulionia acid (PFBS)	` '	3.3	1.9	0.70	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfonce/ordenters 1,00	` '	3.1	1.9	0.72	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Pertinence pertinence acid (FFPAA) 3.6 3.9 3.7 3.8	Perfluorobutanesulfonic acid (PFBS)	1.1	1.9	0.26	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Pertinuncipation and (PFPAA) 24 13 0.37 0.58 0	Perfluorobutanesulfonic acid (PFBS)	0.99	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluonolecanois acid (PFHAA) 24 19 036	Perfluoropentanoic acid (PFPeA)	3.1	1.9	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluonohamnic acid (PFHAN) 2.6	Perfluoropentanoic acid (PFPeA)	3.6	1.9	0.37	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Interprotuse (F3B Minor)	Perfluorohexanoic acid (PFHxA)	2.4	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Interprotecting 15	Perfluorohexanoic acid (PFHxA)	2.6	1.9	0.36	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Per-Para Para Para Para Para Para Para Par	11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.62	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Potential Performance Pote	11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
A-dioxa-3H-perfluoronamoic acide No	9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
CAPONA CASIGNA CASIG	9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
As-diancy-Hiperinanomaiosiacid (ADONA) 19	-	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Hexalthoroprepylene oxide dimer acid ND 19 0.23 ngl. 1 SOP-454 PFAS 91521 92021 1602 B1H Hexalthoroprepylene oxide dimer acid ND 19 0.23 ngl. 1 SOP-454 PFAS 91021 91521 20.26 PTC PTC ND ND 19 0.57 ngl. 1 SOP-454 PFAS 91021 91521 20.26 DTC PTC ND ND 19 0.59 ngl. 1 SOP-454 PFAS 91021 91021 1602 B1H ND ND 19 0.59 ngl. 1 SOP-454 PFAS 91021 91021 1602 B1H ND ND ND 19 0.59 ngl. 1 SOP-454 PFAS 91021 91021 1602 B1H ND ND ND ND ND ND ND N	4,8-dioxa-3H-perfluorononanoic acid	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
CHEPICADA Separation Sep	Hexafluoropropylene oxide dimer acid	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
8.2 Fluorotelomersulfonic acid (8:2FTS A) ND 1.9 0.59 ng/L 1 1 1 1 1 1 1 1 1 1 1 1 1	(HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorodecanoic acid (PFDA) 0.60 1.9 0.46 ng/L 1 J SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluorodecanoic acid (PFDA) 0.56 1.9 0.47 ng/L 1 J SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorodecanoic acid (PFDA) ND 1.9 0.43 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorodecanoic acid (PFDA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluorodecanoic acid (PFDA) ND 1.9 0.22 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluoro(2-ethoxyethane)sulfonic acid ND 1.9 0.22 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluoro(2-ethoxyethane)sulfonic acid ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorodecanoic acid (PFHpS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.36 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20/26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16/02 BLH Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/15/21 20/26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9	8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorodecanoic acid (PFDA) 0.56 1.9 0.47 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorododecanoic acid (PFDA) ND 1.9 0.43 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorododecanoic acid (PFDA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanoic acid (PFDA) ND 1.9 0.22 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorof2-ethoxyethane)sulfonic acid (PFDA) ND 1.9 0.22 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorof2-ethoxyethane)sulfonic acid (PFHPS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHPS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHPS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHPS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC PERFOSAA ND 1.9 0.61 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.36 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTDA) ND 1.9 0.31 ng/L 1	8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorodecanoic acid (PFDoA) ND 1.9 0.43 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JEA	Perfluorodecanoic acid (PFDA)	0.60	1.9	0.46	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorodecanoic acid (PFDoA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluoro(2-ethoxyethane)sulfonic acid (PFDA) ND 1.9 0.22 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluoro(2-ethoxyethane)sulfonic acid (PFHpS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHpS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroheptanesulfonic acid (PFHpS) ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-EIFOSAA ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.33 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (42FTSA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (42FTSA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC	Perfluorodecanoic acid (PFDA)	0.56	1.9	0.47	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluoro(2-ethoxyethane)sulfonic acid (PFESA) Profluoro(2-ethoxyethane)sulfonic acid (PFEESA) Profluoro(2-ethoxyethane)sulfonic acid (PFEESA) Profluoro(2-ethoxyethane)sulfonic acid (PFEESA) Profluoro(2-ethoxyethane)sulfonic acid (PFHpS) Profluoro(2-ethoxyethane)sulfonic acid (PFTpDA) Profluoro(2-ethoxyethane)sulfonic acid (PFDS) Profluoro(2-ethoxyethane)sulfonic ac	Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluoro(2-ethoxyethane)sulfonic acid (PFHpS)	Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
CPFEESA) Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.91 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorobeptanesulfonic acid (PFHpS) ND 1.9 0.88 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-EiFOSAA ND 1.9 0.61 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC N-MeFOSAA ND 1.9 0.61 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 <td< td=""><td></td><td>ND</td><td>1.9</td><td>0.22</td><td>ng/L</td><td>1</td><td></td><td>SOP-454 PFAS</td><td>9/15/21</td><td>9/20/21 16:02</td><td>BLH</td></td<>		ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluoroheptanesulfonic acid (PFHpS) ND 1.9 0.88 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-EiFOSAA ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-EiFOSAA ND 1.9 0.61 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTADA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotidecanoic acid (PFTDA) ND 1.9 0.27 ng/L 1	(PFEESA)				_							
N-EifOSAA ND 1.9 0.59 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH					_							
N-EtFOSAA ND 1.9 0.61 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC N-MeFOSAA ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotidecanoic acid (PFTA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotidecanoic acid (PFTDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng		ND	1.9	0.88	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
N-MeFOSAA ND 1.9 0.71 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH N-MeFOSAA ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTDA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/20/21 16:02 BLH Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (4:2FTS A) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/20/21 16:02 BLH		ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
N-MeFOSAA ND 1.9 0.73 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroccanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC PERFLUOROCCANESULFONAMIC (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC PERFLUOROCCANESULFONAMIC (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC PERFLUOROCCANESULFONAMIC	N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorotetradecanoic acid (PFTA) ND 1.9 0.35 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonamide (FOSA)<	N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorotetradecanoic acid (PFTA) ND 1.9 0.34 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA)	N-MeFOSAA	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA)<	Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorotridecanoic acid (PFTrDA) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC	Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.26 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH 4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluoroctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH	Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
4:2 Fluorotelomersulfonic acid (4:2FTS A) ND 1.9 0.27 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/10/21 9/20/21 16:02 BLH	Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH	4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorodecanesulfonic acid (PFDS) ND 1.9 0.31 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH	4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorooctanesulfonamide (FOSA) ND 1.9 0.41 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH	Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
Perfluorooctanesulfonamide (FOSA) ND 1.9 0.39 ng/L 1 SOP-454 PFAS 9/15/21 9/20/21 16:02 BLH	Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
	Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	
Perfluorononanesulfonic acid (PFNS) ND 1.9 0.16 ng/L 1 SOP-454 PFAS 9/10/21 9/15/21 20:26 JFC	Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH	
	Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC	



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021

Field Sample #: HW-300

Sampled: 9/2/2021 16:30

Sample ID: 21I0272-06
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS $\,$

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1	-	SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.22	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-1-butanesulfonamide (FBSA)	0.21	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.66	1.9	0.33	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.70	1.9	0.32	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoroheptanoic acid (PFHpA)	2.9	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluoroheptanoic acid (PFHpA)	3.4	1.9	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluorooctanoic acid (PFOA)	4.4	1.9	0.66	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluorooctanoic acid (PFOA)	5.1	1.9	0.64	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluorooctanesulfonic acid (PFOS)	17	1.9	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluorooctanesulfonic acid (PFOS)	24	1.9	0.56	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH
Perfluorononanoic acid (PFNA)	2.8	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:26	JFC
Perfluorononanoic acid (PFNA)	4.0	1.9	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:02	BLH



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: OW-19 (M)

Sampled: 9/3/2021 16:00

Sample ID: 2110272-07
Sample Matrix: Ground Water

Semivolatile	Organic	Compounds l	hv - L	C/MS_MS

		5	Semivolatile	Organic Cor	npounds by - l	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	14	1.8	0.69	ng/L	1	r rag/Quar	SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorobutanoic acid (PFBA)	16	1.9	0.70	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorobutanesulfonic acid (PFBS)	0.57	1.8	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorobutanesulfonic acid (PFBS)	0.68	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoropentanoic acid (PFPeA)	49	1.8	0.36	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoropentanoic acid (PFPeA)	56	1.9	0.37	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorohexanoic acid (PFHxA)	33	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorohexanoic acid (PFHxA)	36	1.9	0.36	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
4,8-dioxa-3H-perfluorononanoic acid	ND ND	1.8	0.37		1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
(ADONA) 4,8-dioxa-3H-perfluorononanoic acid	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/13/21 20:34	BLH
(ADONA) Hexafluoropropylene oxide dimer acid	ND	1.8	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
(HFPO-DA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.87	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.89	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
N-EtFOSAA	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
N-MeFOSAA	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorotridecanoic acid (PFTrDA)	0.43	1.8	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorononanesulfonic acid (PFNS)	ND	1.8	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: OW-19 (M)

Sampled: 9/3/2021 16:00

Sample ID: 21I0272-07
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorohexanesulfonic acid (PFHxS)	15	1.8	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorohexanesulfonic acid (PFHxS)	17	1.9	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoropetanesulfonic acid (PFPeS)	0.53	1.8	0.24	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.64	1.9	0.24	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluoroheptanoic acid (PFHpA)	14	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluoroheptanoic acid (PFHpA)	16	1.9	0.33	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorooctanoic acid (PFOA)	3.7	1.8	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorooctanoic acid (PFOA)	4.4	1.9	0.64	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorooctanesulfonic acid (PFOS)	29	1.8	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorooctanesulfonic acid (PFOS)	36	1.9	0.57	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH
Perfluorononanoic acid (PFNA)	2.1	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:34	JFC
Perfluorononanoic acid (PFNA)	2.3	1.9	0.33	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:09	BLH



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-S (MW)

Sampled: 9/3/2021 17:00

Sample ID: 21I0272-08
Sample Matrix: Ground Water

Semivolatile Organic	Compounds by .	- LC/MS-MS
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								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	1.4	1.9	0.71	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorobutanesulfonic acid (PFBS)	0.28	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoropentanoic acid (PFPeA)	3.0	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorohexanoic acid (PFHxA)	2.6	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.89	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
N-MeFOSAA	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorohexanesulfonic acid (PFHxS)	5.3	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.6	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluoroheptanoic acid (PFHpA)	1.2	1.9	0.33	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorooctanoic acid (PFOA)	1.4	1.9	0.65	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorooctanesulfonic acid (PFOS)	9.4	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC
Perfluorononanoic acid (PFNA)	0.55	1.9	0.33	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:41	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-S (S)

Sampled: 9/3/2021 17:30

Sample ID: 21I0272-09
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS $\,$

			cinivolatiic	Organic Cor	iipounus by - i	LC/MS-MS				
								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	64	47	18	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	47	6.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoropentanoic acid (PFPeA)	260	47	9.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorohexanoic acid (PFHxA)	160	47	9.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
11Cl-PF3OUdS (F53B Minor)	ND	47	15	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
9Cl-PF3ONS (F53B Major)	ND	47	9.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	47	8.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	47	5.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	47	14	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorodecanoic acid (PFDA)	ND	47	12	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorododecanoic acid (PFDoA)	ND	47	10	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	47	5.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	47	22	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
N-EtFOSAA	ND	47	15	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
N-MeFOSAA	ND	47	18	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorotetradecanoic acid (PFTA)	ND	47	8.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	47	6.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	47	6.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	47	7.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorooctanesulfonamide (FOSA)	ND	47	9.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorononanesulfonic acid (PFNS)	ND	47	4.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	47	7.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoro-1-butanesulfonamide (FBSA)	5.8	47	4.5	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorohexanesulfonic acid (PFHxS)	64	47	8.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	47	9.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	47	8.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	5200	47	8.6	ng/L	1	Е	SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	47	6.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoroundecanoic acid (PFUnA)	ND	47	8.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	47	6.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluoroheptanoic acid (PFHpA)	110	47	8.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorooctanoic acid (PFOA)	130	47	16	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorooctanesulfonic acid (PFOS)	48	47	14	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH
Perfluorononanoic acid (PFNA)	100	47	8.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:16	BLH



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-W (M)

Sampled: 9/5/2021 17:30

Sample ID: 21I0272-10
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

	Semivolatule Organic Compounds by - LC/MS-MS											
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst		
Perfluorobutanoic acid (PFBA)	3.1	1.9	0.71	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorobutanesulfonic acid (PFBS)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoropentanoic acid (PFPeA)	13	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorohexanoic acid (PFHxA)	6.8	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
8:2 Fluorotelomersulfonic acid (8:2FTS A)	0.83	1.9	0.58	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.89	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
N-MeFOSAA	ND	1.9	0.72	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorooctanesulfonamide (FOSA)	76	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoro-1-hexanesulfonamide (FHxSA)	4.9	1.9	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoro-1-butanesulfonamide (FBSA)	0.36	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorohexanesulfonic acid (PFHxS)	15	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.9	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoropetanesulfonic acid (PFPeS)	0.29	1.9	0.25	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoroundecanoic acid (PFUnA)	0.66	1.9	0.35	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluoroheptanoic acid (PFHpA)	3.4	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorooctanoic acid (PFOA)	2.4	1.9	0.65	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorooctanesulfonic acid (PFOS)	42	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		
Perfluorononanoic acid (PFNA)	1.0	1.9	0.33	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 20:55	JFC		



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-W (D)

Sampled: 9/5/2021 17:00

Sample ID: 2110272-11
Sample Matrix: Ground Water

		2	semivolatile	Organic Coi	mpounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	7.4	1.9	0.70	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorobutanesulfonic acid (PFBS)	0.27	1.9	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoropentanoic acid (PFPeA)	20	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorohexanoic acid (PFHxA)	13	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.46	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.88	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorohexanesulfonic acid (PFHxS)	6.4	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.42	1.9	0.34	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.27	1.9	0.24	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluoroheptanoic acid (PFHpA)	10	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorooctanoic acid (PFOA)	9.4	1.9	0.64	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorooctanesulfonic acid (PFOS)	17	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC
Perfluorononanoic acid (PFNA)	2.5	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:02	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-W (DD)

Sampled: 9/5/2021 16:30

Sample ID: 21I0272-12
Sample Matrix: Ground Water

			emivolatiic	organic Co	inpounds by - 1	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	5.4	2.0	0.74	ng/L	1	1 mg/ 2 mm	SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoropentanoic acid (PFPeA)	13	2.0	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorohexanoic acid (PFHxA)	8.8	2.0	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
N-MeFOSAA	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorohexanesulfonic acid (PFHxS)	4.8	2.0	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluoroheptanoic acid (PFHpA)	7.3	2.0	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorooctanoic acid (PFOA)	6.9	2.0	0.67	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorooctanesulfonic acid (PFOS)	8.1	2.0	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC
Perfluorononanoic acid (PFNA)	2.0	2.0	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:10	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: RB-1 (S)

Sampled: 9/5/2021 18:00

Sample ID: 21I0272-13
Sample Matrix: Ground Water

		2	semivolatile	Organic Coi	mpounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	6.4	1.8	0.69	ng/L	1	<u> </u>	SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorobutanesulfonic acid (PFBS)	0.65	1.8	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoropentanoic acid (PFPeA)	16	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorohexanoic acid (PFHxA)	9.8	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.8	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorodecanoic acid (PFDA)	ND	1.8	0.45	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.87	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
N-EtFOSAA	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.30	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.8	0.15	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	0.18	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorohexanesulfonic acid (PFHxS)	5.1	1.8	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.8	0.24	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluoroheptanoic acid (PFHpA)	7.7	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorooctanoic acid (PFOA)	9.3	1.8	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorooctanesulfonic acid (PFOS)	10	1.8	0.55	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC
Perfluorononanoic acid (PFNA)	2.6	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:17	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021

Field Sample #: RB-1 (M)

Sampled: 9/5/2021 17:30

Sample ID: 21I0272-14
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/M	MS-MS
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			, ciiii voiatiit	Organic Con	npounus by - 1	LC/MS-MS		Data	Data/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	8.5	1.8	0.68	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorobutanesulfonic acid (PFBS)	1.7	1.8	0.26	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoropentanoic acid (PFPeA)	22	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorohexanoic acid (PFHxA)	15	1.8	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.8	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.56	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorodecanoic acid (PFDA)	3.3	1.8	0.45	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoroheptanesulfonic acid (PFHpS)	0.91	1.8	0.86	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
N-EtFOSAA	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
N-MeFOSAA	ND	1.8	0.70	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorodecanesulfonic acid (PFDS)	0.63	1.8	0.30	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.8	0.15	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	0.62	1.8	0.29	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.93	1.8	0.18	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorohexanesulfonic acid (PFHxS)	9.9	1.8	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	13	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.92	1.8	0.24	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.8	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluoroheptanoic acid (PFHpA)	7.3	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorooctanoic acid (PFOA)	12	1.8	0.63	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorooctanesulfonic acid (PFOS)	55	1.8	0.55	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC
Perfluorononanoic acid (PFNA)	4.4	1.8	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:24	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021

Field Sample #: HW-U (S)

Sampled: 9/5/2021 19:30

Sample ID: 21I0272-15
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.9	1.9	0.70	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorobutanesulfonic acid (PFBS)	2.7	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoropentanoic acid (PFPeA)	7.5	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorohexanoic acid (PFHxA)	7.2	1.9	0.36	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorodecanoic acid (PFDA)	1.1	1.9	0.46	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.88	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
N-EtFOSAA	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
N-MeFOSAA	ND	1.9	0.71	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorodecanesulfonic acid (PFDS)	0.32	1.9	0.31	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.29	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.44	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorohexanesulfonic acid (PFHxS)	3.4	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.39	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.24	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluoroheptanoic acid (PFHpA)	4.0	1.9	0.32	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorooctanoic acid (PFOA)	4.7	1.9	0.64	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorooctanesulfonic acid (PFOS)	29	1.9	0.57	ng/L	1		SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC
Perfluorononanoic acid (PFNA)	1.7	1.9	0.32	ng/L	1	J	SOP-454 PFAS	9/10/21	9/15/21 21:31	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0272

Date Received: 9/7/2021 Field Sample #: HW-U (M)

Sampled: 9/5/2021 19:00

Sample ID: 21I0272-16 Sample Matrix: Ground Water

Sample Matrix: Ground Water Sample Flags: D		S	Semivolatile	Organic Co	mpounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	3.6	4.1	1.5	ng/L	1	J	SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorobutanesulfonic acid (PFBS)	8.6	4.1	0.58	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoropentanoic acid (PFPeA)	8.3	4.1	0.81	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorohexanoic acid (PFHxA)	7.1	4.1	0.79	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
11Cl-PF3OUdS (F53B Minor)	ND	4.1	1.3	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
9Cl-PF3ONS (F53B Major)	ND	4.1	0.80	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	4.1	0.72	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	4.1	0.49	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	4.1	1.3	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorodecanoic acid (PFDA)	ND	4.1	1.0	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorododecanoic acid (PFDoA)	ND	4.1	0.91	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	4.1	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	4.1	1.9	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
N-EtFOSAA	ND	4.1	1.3	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
N-MeFOSAA	ND	4.1	1.6	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorotetradecanoic acid (PFTA)	ND	4.1	0.75	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	4.1	0.57	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	4.1	0.58	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	4.1	0.67	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorooctanesulfonamide (FOSA)	ND	4.1	0.87	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorononanesulfonic acid (PFNS)	ND	4.1	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	4.1	0.64	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoro-1-butanesulfonamide (FBSA)	1.8	4.1	0.39	ng/L	1	J	SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorohexanesulfonic acid (PFHxS)	11	4.1	0.70	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	4.1	0.86	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	4.1	0.70	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	4.1	0.75	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.1	4.1	0.53	ng/L	1	J	SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoroundecanoic acid (PFUnA)	ND	4.1	0.76	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	4.1	0.57	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluoroheptanoic acid (PFHpA)	4.9	4.1	0.71	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorooctanoic acid (PFOA)	9.4	4.1	1.4	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorooctanesulfonic acid (PFOS)	27	4.1	1.2	ng/L	1		SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC
Perfluorononanoic acid (PFNA)	1.1	4.1	0.71	ng/L	1	J	SOP-454 PFAS	9/16/21	9/17/21 20:38	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110272

Date Received: 9/7/2021

Field Sample #: HW-U (D)

Sampled: 9/5/2021 18:30

Sample ID: 21I0272-17
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS $\,$

			Sciiiivoiatiic	Organic Cor	iipoulius by - i	JC/MS-MS				
								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	4.8	10	3.9	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorobutanesulfonic acid (PFBS)	7.8	10	1.5	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoropentanoic acid (PFPeA)	13	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorohexanoic acid (PFHxA)	10	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
11Cl-PF3OUdS (F53B Minor)	ND	10	3.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
9Cl-PF3ONS (F53B Major)	ND	10	2.0	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	10	1.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	10	3.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorodecanoic acid (PFDA)	ND	10	2.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorododecanoic acid (PFDoA)	ND	10	2.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	10	1.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	10	4.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
N-EtFOSAA	ND	10	3.3	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
N-MeFOSAA	ND	10	3.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorotetradecanoic acid (PFTA)	ND	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	10	1.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	10	1.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	10	1.7	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorooctanesulfonamide (FOSA)	ND	10	2.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorononanesulfonic acid (PFNS)	ND	10	0.87	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	10	1.6	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoro-1-butanesulfonamide (FBSA)	1.8	10	0.99	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorohexanesulfonic acid (PFHxS)	22	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	10	2.2	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	10	1.8	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
6:2 Fluorotelomersulfonic acid (6:2FTS A)	40	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoropetanesulfonic acid (PFPeS)	1.4	10	1.3	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoroundecanoic acid (PFUnA)	ND	10	1.9	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	10	1.4	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluoroheptanoic acid (PFHpA)	7.7	10	1.8	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorooctanoic acid (PFOA)	13	10	3.5	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorooctanesulfonic acid (PFOS)	51	10	3.1	ng/L	1		SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH
Perfluorononanoic acid (PFNA)	5.0	10	1.8	ng/L	1	J	SOP-454 PFAS	9/15/21	9/20/21 16:23	BLH



Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0272-01 [HW-302]	B289938	262	1.00	09/10/21
21I0272-04 [HW-K]	B289938	270	1.00	09/10/21
21I0272-05 [OW-19 (S)]	B289938	269	1.00	09/10/21
21I0272-06 [HW-300]	B289938	259	1.00	09/10/21
21I0272-07 [OW-19 (M)]	B289938	271	1.00	09/10/21
21I0272-08 [HW-S (MW)]	B289938	264	1.00	09/10/21
21I0272-10 [HW-W (M)]	B289938	263	1.00	09/10/21
21I0272-11 [HW-W (D)]	B289938	266	1.00	09/10/21
21I0272-12 [HW-W (DD)]	B289938	253	1.00	09/10/21
21I0272-13 [RB-1 (S)]	B289938	272	1.00	09/10/21
21I0272-14 [RB-1 (M)]	B289938	272	1.00	09/10/21
21I0272-15 [HW-U (S)]	B289938	266	1.00	09/10/21

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0272-16RE1 [HW-U (M)]	B290193	122	1.00	09/16/21

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date	
21I0272-02RE1 [HW-2]	B290250	48.3	1.00	09/15/21	
21I0272-03RE1 [HW-3]	B290250	23.6	1.00	09/15/21	
21I0272-05RE1 [OW-19 (S)]	B290250	254	1.00	09/15/21	
21I0272-06RE1 [HW-300]	B290250	267	1.00	09/15/21	
21I0272-07RE1 [OW-19 (M)]	B290250	265	1.00	09/15/21	
21I0272-09RE1 [HW-S (S)]	B290250	10.6	1.00	09/15/21	
21I0272-17RE1 [HW-U (D)]	B290250	48.2	1.00	09/15/21	

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0272-04RE1 [HW-K]	B290484	268	1.00	09/20/21



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 B289938 - SOP 454-PFAAS										
Blank (B289938-BLK1)				Prepared: 09	0/10/21 Analy	zed: 09/17/	21			
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							
1Cl-PF3OUdS (F53B Minor)	ND	1.9	ng/L							
PCI-PF3ONS (F53B Major)	ND	1.9	ng/L							
,8-dioxa-3H-perfluorononanoic acid ADONA)	ND	1.9	ng/L							
Hexafluoropropylene oxide dimer acid HFPO-DA)	ND	1.9	ng/L							
3:2 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 PFEESA)	ND	1.9	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L							
N-EtFOSAA	ND	1.9	ng/L							
N-MeFOSAA	ND	1.9	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	1.9	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	ng/L							
:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L							
erfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L							
erfluorohexanesulfonic 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							
:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	1.9	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid	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 (B289938-BS1) Perfluorobutanoic acid (PFBA)	8.65	2.0	ng/L	Prepared: 09 9.93	0/10/21 Analy	yzed: 09/17/ 87.1	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.82	2.0	ng/L ng/L	8.79		89.0	72-130			
Perfluoropentanoic acid (PFPeA)	7.82 8.45	2.0	ng/L ng/L	9.93		85.0	72-130			
Perfluorohexanoic acid (PFHxA)	8.43 8.56	2.0	ng/L ng/L	9.93		86.2	72-129			
1Cl-PF3OUdS (F53B Minor)	9.58	2.0	ng/L	9.36		102	50-150			
Cl-PF3ONS (F53B Major)	9.58 8.50	2.0	ng/L	9.26		91.9	50-150			
,8-dioxa-3H-perfluorononanoic acid ADONA)	8.36	2.0	ng/L	9.36		89.4	50-150			
HEXAFIUOTORY IERA STATE OF THE ACT OF THE AC	10.3	2.0	ng/L	9.93		104	50-150			
:2 Fluorotelomersulfonic acid (8:2FTS A)	8.23	2.0	ng/L	9.53		86.3	67-138			
Perfluorodecanoic acid (PFDA)	8.34	2.0	ng/L	9.93		84.0	71-129			
Perfluorododecanoic acid (PFDoA)	9.07	2.0	ng/L	9.93		91.3	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid	8.91	2.0	ng/L	8.84		101	50-150			



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

QUALITY CONTROL

Partition Part		REC imits RPD	RPD Limit Notes
### Priliprocess Pr			
EFFOSAA	0/10/21 Analyzed: 09/17/21		
### Properties of Personal Properties of Pers	95.2 69	-134	
refluorotetradecanoic acid (PFTA)	82.2 61	-135	
refluorotridecanoic acid (PFTrDA)	80.7 65	-136	
2 Fluorotelomersulfonic acid (42FTS A) 2 Fluorotelomersulfonic acid (PFDS) 3 Fluorotelomersulfonic acid (PFDS) 3 Fluorotelomersulfonic acid (PFNS) 3 Fluorotelomersulfonic acid (PFNS) 4 Fluorotenansulfonic acid (PFNS) 4 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFNS) 5 Fluorotelomersulfonic acid (PFPS) 7 Fluorotelomersulfonic acid (PFPS) 7 Fluorotelomersulfonic acid (PFPS) 7 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPS) 8 Fluorotelomersulfonic acid (PFPA) 8 Fluorotelomersulfonic acid	88.8 71	-132	
refluorodecanesulfonic acid (PFDS) 8.14 2.0 ng/L 9.58 refluoroctanesulfonamide (FOSA) 8.84 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FDSA) 8.84 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FHSA) 8.53 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FHSA) 8.53 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FHSA) 8.50 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FHSA) 8.50 2.0 ng/L 9.93 refluoro-Linekanesulfonamide (FBSA) 8.97 2.0 ng/L 9.93 refluoro-Loxapeatanoic acid (PFMBA) 9.95 2.0 ng/L 9.93 refluoro-Soxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.93 refluoro-Soxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.94 refluoro-Soxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.94 refluoro-Soxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.94 refluoropetanesulfonic acid (6:2FTSA) 8.80 2.0 ng/L 9.94 refluoropetanesulfonic acid (FPEDS) 8.31 2.0 ng/L 9.93 refluoropetanoic acid (PFUnA) refluoropetanoic acid (PFUnA) refluoropetanoic acid (PFHA) refluoropetanoic acid (PFHA) refluoropetanoic acid (PFHA) refluoropetanoic acid (PFNA) 8.69 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 8.03 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 8.03 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.64 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.69 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.60 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.61 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.62 9.81 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.63 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.60 2.0 ng/L 9.87 refluoropetanoic acid (PFNA) 8.61 8.62 2.0 ng/L 9.87 refluoropetanoic acid (PFN	88.2 65	-144	
refluorooctanesulfoniamide (FOSA)	91.7 63	-143	
refluoronnanesulfonie acid (PFNS) 9.29 2.0 ng/L 9.53 refluoro-1-hexanesulfonamide (FHxSA) refluoro-1-hexanesulfonamide (FHxSA) refluoro-1-hexanesulfonamide (FHxSA) 8.53 2.0 ng/L 9.93 refluoro-1-butanesulfonic acid (PFHSS) 8.50 2.0 ng/L 9.94 refluoro-4-oxapentanoic acid (PFMBA) 9.95 2.0 ng/L 9.93 refluoro-5-oxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.93 refluoro-5-oxahexanoic acid (FPMBA) 10.2 2.0 ng/L 9.93 refluoro-denosulfonic acid (FPBS) 8.31 2.0 ng/L 9.93 refluoroundecanoic acid (FPES) 8.31 2.0 ng/L 9.93 refluoroundecanoic acid (FPIDA) 7.64 2.0 ng/L 9.93 refluoroundecanoic acid (FPHA) 9.50 2.0 ng/L 9.93 refluoroundecanoic acid (FPHA) 9.50 2.0 ng/L 9.93 refluoroundecanoic acid (FPHA) 9.50 2.0 ng/L 9.93 refluoroctanoic acid (FPOA) 8.03 2.0 ng/L 9.93 refluoroctanoic acid (FPOA) 8.03 2.0 ng/L 9.93 refluoroctanosulfonic acid (FPOS) 8.17 2.0 ng/L 9.93 refluoroctanosulfonic acid (FPOS) 8.17 2.0 ng/L 9.93 CS Dup (B289938-BSDI) Prepared: 09/ refluorobutanoic acid (FPBA) 8.67 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.67 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (FPEA) 8.64 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.67 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.67 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.67 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.67 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.69 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.60 2.0 ng/L 9.87 refluorodecanoic acid (FPEA) 8.60 2.0	84.9 53	-142	
refluoro-1-hexanesulfonamide (FHxSA) ### 1000-1-hexanesulfonamide (FBSA) ### 20 ng/L ### 993 ### 1000-1-butanesulfonia edid (PFHxS) ### 1000-1-butanesulfonia edid (PFHxS) ### 1000-1-butanesulfonia edid (PFMBA) ### 1000-1-butanesulfonia edi	89.0 67	'-137	
refluoro-1-butanesulfonia acid (FFBA) refluoro-1-butanesulfonia acid (FFHxS) refluoro-4-oxapentanoic acid (FFMPA) refluoro-4-oxapentanoic acid (FFMBA) refluoro-4-oxapentanoic acid (FFMBA) 2.0 ng/L 9.93 2.1 Fluorotelomersulfonic acid (FFMBA) 2.2 Fluorotelomersulfonic acid (FFMBA) 2.3 Fluorotelomersulfonic acid (FFMBA) 2.4 Fluorotelomersulfonic acid (FFPS) 8.31 2.0 ng/L 9.44 refluoro-2-tanesulfonic acid (FFPS) 8.31 2.0 ng/L 9.93 refluorotelomersulfonic acid (FFMPA) 7.64 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 7.64 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 8.69 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 8.03 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 8.03 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 8.03 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 9.54 2.0 ng/L 9.93 refluoroteptanoic acid (FFMA) 8.67 2.0 ng/L 9.93 CS Dup (B28938-BSD1) Prepared: 09/ refluorobutanoic acid (FFBA) 8.67 2.0 ng/L 9.87 refluoroteptanoic acid (FFBA) 8.67 2.0 ng/L 9.87 refluoroteptanoic acid (FFBA) 8.64 2.0 ng/L 9.87 refluoroteptanoic acid (FFHxA) 8.43 2.0 ng/L 9.87 refluorotexanoic acid (FFHxA) 8.40 2.0 ng/L 9.87 refluorotectolomersulfonic acid (8:2FTS A) 9.59 2.0 ng/L 9.87 refluorodecanoic acid (FFDA) 8.87 refluorotectonoic acid (FFDA) 8.89 2.0 ng/L 9.87 refluorotectonoic acid (FFDA) 8.89 2.0 ng/L 9.87 refluorotectonoic acid (FFTDA) 8.89 2.0 ng/L 9.87 refluorotectono	97.5 69	-127	
refluorohexanesulfonic acid (PFHxS) 8.50 2.0 ng/L 9.04 refluoro-4-oxapentanoic acid (PFMRA) 9.95 2.0 ng/L 9.93 2.7 10.2 2.0 ng/L 9.93 2.7 10.2 2.0	85.9 50	-150	
refluoro-4-oxapentanoic acid (PFMPA) 2,955 2,0 ng/L 9,93 2rfluoro-5-oxahexanoic acid (PFMBA) 10,2 2 Fluorotelomersulfonic acid (62FTS A) 8,80 2,0 ng/L 9,44 2,0 ng/L 9,34 2rfluoropetanesulfonic acid (FPUA) 7,64 2,0 ng/L 9,93 3 nafluoro-3,6-dioxaheptanoic acid 8,69 2,0 ng/L 9,93 3 nafluoro-3,6-dioxaheptanoic acid 8,69 2,0 ng/L 9,93 3 refluoropetanoic acid (PFUA) 8,31 2,0 ng/L 9,93 3 refluoropetanoic acid (PFUA) 8,33 2,0 ng/L 9,93 3 refluorocotanoic acid (PFDA) 8,33 2,0 ng/L 9,93 3 refluorocotanoic acid (PFDA) 8,03 2,0 ng/L 9,93 3 refluorocotanoic acid (PFOA) 8,03 2,0 ng/L 9,93 3 refluoropetanoic acid (PFOA) 8,04 2,0 ng/L 9,87 3 refluoropetanoic acid (PFBA) 8,67 2,0 ng/L 9,87 3 refluoropetanoic acid (PFBA) 8,67 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPeA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPeA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFPEA) 8,64 2,0 ng/L 9,87 3 refluoropetanoic acid (PFDA) 8,87 3 refluoropetanoic acid (PFDA) 8,97 2,0 ng/L 9,87 3 refluoropetanoic acid (PFDA) 8,97 2,0 ng/L 9,87 3 refluoropetanoic acid (PFDA) 8,97 3,0 ng/L 9,87 3 refluoropetanoic acid (PFDA) 8,97 3,0 ng/L 9,87 3 refluorodecanoic acid (PFDA) 8,97 3,0 ng/L 9,87 3 refluorodecanoic acid (PFDA) 8,97 3,0 ng/L 9,87 3 refluorodecanoic acid (PFDA) 8,97 3,0 ng/L 9,87 3,0 ng/L 9	90.4 50	-150	
erfluoro-5-oxahexanoic acid (PFMBA) 2 Fluorotelomersulfonic acid (62FTS A) 8 880 2 0 ng/L 9 944 2 Fluorotelomersulfonic acid (62FTS A) 8 880 2 0 ng/L 9 944 2 Fluorotelomersulfonic acid (PFPS) 8 31 2 0 ng/L 9 93 onafluoro-3-6-dioxaheptanoic acid 8 69 2 0 ng/L 9 93 onafluoro-3-6-dioxaheptanoic acid 8 69 2 0 ng/L 9 93 erfluorooneptanoic acid (PFHA) refluoroopetanoic acid (PFHA) refluoroopetanoic acid (PFHA) refluorooctanoic acid (PFOA) 8 803 2 0 ng/L 9 93 refluorooctanoic acid (PFOA) 8 803 2 0 ng/L 9 93 refluorooctanoic acid (PFOA) 8 803 2 0 ng/L 9 93 refluorooctanoic acid (PFOA) 8 803 2 0 ng/L 9 93 refluorootanoic acid (PFOA) 8 803 2 0 ng/L 9 93 refluorootanoic acid (PFNA) 8 807 2 0 ng/L 9 87 refluorobutanoic acid (PFNA) 8 867 2 0 ng/L 9 87 refluorobutanoic acid (PFBA) 8 867 2 0 ng/L 9 87 refluorobutanoic acid (PFBA) 8 864 2 0 ng/L 9 87 refluorobutanoic acid (PFHAA) 8 843 2 0 ng/L 9 88 10 1 9	94.0 68	-131	
2 Fluorotelomersulfonic acid (6:2FTS A) 8.880 2.0 ng/L 9.44 erfluoropetanesulfonic acid (PFPeS) 8.31 2.0 ng/L 9.34 erfluoroundecanoic acid (PFUnA) 7.64 2.0 ng/L 9.93 ornaliuoro-3,6-dioxaheptanoic acid 8.69 2.0 ng/L 9.93 erfluorooteptanoic acid (PFUnA) 8.69 2.0 ng/L 9.93 erfluorooteptanoic acid (PFDA) 8.03 2.0 ng/L 9.93 erfluorootenoic acid (PFOA) 8.03 2.0 ng/L 9.93 erfluorootenoic acid (PFOA) 8.17 2.0 ng/L 9.93 erfluorootenoic acid (PFOA) 8.67 2.0 ng/L 9.93 erfluorootanosic acid (PFNA) 8.67 2.0 ng/L 9.93 erfluorobutanoic acid (PFNA) 8.67 2.0 ng/L 9.87 erfluoroputanesulfonic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluoroputanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.63 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.65 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.96 2.0 ng/L 9.87 erfluoroteptanesulfonic acid (PFDA) 8.80 2.0 ng/L 9.87 erfluoroteptanesulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluoroteptanesulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluoroteptanesulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFNS) 8.59 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluorotelomersulfo	100 50	-150	
erfluoropetanesulfonic acid (PFPeS) 8.31 2.0 ng/L 9.34 erfluoroundecanoic acid (PFUnA) 7.64 2.0 ng/L 9.93 onafluoro-3,6-dioxaheptanoic acid 8.69 2.0 ng/L 9.93 erfluoropetanoic acid (PFHpA) 9.50 2.0 ng/L 9.93 erfluorocotanoic acid (PFDA) 8.03 2.0 ng/L 9.93 erfluorocotanoic acid (PFOA) 8.03 2.0 ng/L 9.93 erfluorocotanoic acid (PFOA) 8.03 2.0 ng/L 9.93 erfluorocotanoic acid (PFNA) 9.54 2.0 ng/L 9.93 erfluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.93 CS Dup (B289938-BSD1) Prepared: 09/ erfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 erfluoropetanoic acid (PFBA) 8.65 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.67 erfluorodecanoic acid (REDA) 8.897 2.0 ng/L 9.87 erfluorodecanoic acid (REDA) 8.897 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.896 2.0 ng/L 9.87 erfluoroteptanesulfonic acid (PFBA) 8.896 2.0 ng/L 9.87 erfluoroteptanoic acid (PFTDA) 8.896 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFDS) 8.400 2.7000 2.7	102 50	-150	
refluoropetanesulfonic acid (PFPeS) 8.31 2.0 ng/L 9.34 refluoroundecanoic acid (PFUnA) 7.64 2.0 ng/L 9.93 refluorobeptanoic acid (PFUnA) 7.64 2.0 ng/L 9.93 refluorobeptanoic acid (PFHpA) refluorobeptanoic acid (PFHpA) 9.50 2.0 ng/L 9.93 refluorocotanesulfonic acid (PFOA) 8.03 2.0 ng/L 9.93 refluorocotanesulfonic acid (PFOS) 8.17 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 9.54 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 9.54 2.0 ng/L 9.93 refluoropetanoic acid (PFNA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFBA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFBA) 8.67 2.0 ng/L 9.87 refluoropetanoic acid (PFBA) 8.64 2.0 ng/L 9.87 refluoropetanoic acid (PFBA) 8.65 8.89 2.0 ng/L 9.87 refluorodecanoic acid (RFDA) 8.897 2.0 ng/L 9.87 refluorodecanoic acid (RFDA) 8.897 2.0 ng/L 9.87 refluorodecanoic acid (RFDA) 8.897 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.897 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.897 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.896 2.0 ng/L 9.87	93.3 64	-140	
erfluoroundecanoic acid (PFUnA) 7,64 2.0 ng/L 9.93 onafluoro-3,6-dioxaheptanoic acid (PFHpA) 8.69 2.0 ng/L 9.93 orfluorobeptanoic acid (PFHpA) 9,50 2.0 ng/L 9.93 orfluorobeptanoic acid (PFHpA) 9,50 2.0 ng/L 9.93 orfluorooctanoic acid (PFOA) 8.03 2.0 ng/L 9.93 orfluorooctanoic acid (PFOA) 8.03 2.0 ng/L 9.19 orfluoronanoic acid (PFNA) 9,54 2.0 ng/L 9.93 orfluorobutanoic acid (PFNA) 9,54 2.0 ng/L 9.93 orfluorobutanoic acid (PFNA) 8.667 2.0 ng/L 9.87 orfluorobutanoic acid (PFBS) 7,59 2.0 ng/L 8.74 orfluorobutanoic acid (PFBA) 8.64 2.0 ng/L 9.87 orfluorobutanoic acid (PFHxA) 8.64 2.0 ng/L 9.87 orfluorobutanoic acid (PFHxA) 8.64 2.0 ng/L 9.87 orfluorobutanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 orfluorobutanoic acid (PFHxA) 8.43 2.0 ng/L 9.30 ordluorobutanoic acid (PFDA) 8.65 3.0 ng/L 9.30 ordluorobutanoic acid (PFDA) 8.87 ordluorobutanoic acid (PFDA) 8.81 2.0 ng/L 9.87 ordluorobutanoic acid (PFDA) 8.95 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.95 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.95 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.96 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.96 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.96 2.0 ng/L 9.87 ordluorobeptanoic acid (PFDA) 8.96 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobeptanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobetanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobetanoic acid (PFTA) 8.80 2.0 ng/L 9.87 ordluorobetanoic acid (PFTA) 8.80 2.0 ng/L 9.87 o	89.0 71	-127	
### APPIDHA #### APPIDHA ##### APPIDHA ####################################	76.9 69	-133	
erfluorooctanoic acid (PFOA) 8,03 2.0 ng/L 9,93 erfluorooctanesulfonic acid (PFOS) 8,17 2.0 ng/L 9,19 erfluorononanoic acid (PFNA) 9,54 2.0 ng/L 9,93 CCS Dup (B289938-BSD1) Prepared: 09/ erfluorobutanesulfonic acid (PFBA) 8,67 2.0 ng/L 9,87 erfluorobutanesulfonic acid (PFBS) 7,59 2.0 ng/L 9,87 erfluorobutanesulfonic acid (PFPAA) 8,64 2.0 ng/L 9,87 erfluorohexanoic acid (PFHAA) 8,43 2.0 ng/L 9,87 erfluorohexanoic acid (PFHXA) 8,43 2.0 ng/L 9,87 erfluorohexanoic acid (PFHXA) 8,43 2.0 ng/L 9,87 erfluorohexanoic acid (PFBAB) 8,64 2.0 ng/L 9,87 9,30 CCL-PF3ONS (F53B Major) 10.0 2.0 ng/L 9,30 CL-PF3ONS (F53B Major) 10.0 2.0 ng/L 9,30 Exalluoropropylene oxide dimer acid 9,81 2.0 ng/L 9,87 erfluorodecanoic acid (RFDAB) 8,97 2.0 ng/L 9,87 erfluorodecanoic acid (PFDAB) erfluorodecanoic acid (PFDAB) erfluorodecanoic acid (PFDAB) erfluorodecanoic acid (PFDAB) erfluoroheptanesulfonic acid (PFHpS) 9,12 2.0 ng/L 9,87 erfluoroheptanesulfonic acid (PFHpS) 9,12 2.0 ng/L 9,87 erfluoroheptanesulfonic acid (PFTAB) 8,80 2.0 ng/L 9,87 erfluoroterdecanoic acid (PFTDAB) 8,80 2.0 ng/L 9,87 erfluoroterdecanoic acid (PFTDAB) 8,80 2.0 ng/L 9,87 erfluoroterdecanoic acid (PFTDAB) 8,80 2.0 ng/L 9,87 erfluoroterdecanoic acid (PFTDABB) 2.1 Fluorotelomersulfonic acid (PFTDABB) 8,80 2.0 ng/L 9,87 erfluoroterdecanoic acid (PFTDABB) 2.1 Fluorotelomersulfonic acid (PFDSB) 8,40 2.0 ng/L 9,87 erfluorotelomersulfonic acid (PFDSB) 8,40 2.0 ng/L 9,87 erfluorotelomersulfonic acid (PFDSB) 8,40 2.0 ng/L 9,87 erfluorotelomersulfonic acid (PFNSB) 8,50 2.0 ng/L 9,87 erfluor	87.5 50	-150	
erfluorooctanesulfonic acid (PFOS) 8.17 2.0 ng/L 9.19 erfluorononanoic acid (PFNA) 9.54 2.0 ng/L 9.93 Prepared: 09/ erfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluorobutanesulfonic acid (PFBS) 7.59 2.0 ng/L 9.87 erfluorobutanoic acid (PFPAA) 8.64 2.0 ng/L 9.87 erfluorohexanoic acid (PFPAA) 8.64 2.0 ng/L 9.87 erfluorohexanoic acid (PFHXA) 8.43 2.0 ng/L 9.87 erfluorohexanoic acid (PFHXA) 8.43 2.0 ng/L 9.87 erfluorohexanoic acid (PFBAB) 8.64 2.0 ng/L 9.87 erfluorohexanoic acid (PFBAB) 8.65 2.0 ng/L 9.30 CL-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.30 CL-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.30 Exalluoropropylene oxide dimer acid 100NA) exalluoropropylene oxide dimer acid 100NA) 8.81 100 ng/L 9.87 100 n	95.6 72	-130	
Prepared: 09/ Prepared: 09	80.9 71	-133	
Prepared: 09/ Perfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 Perfluorobutanesulfonic acid (PFBS) 7.59 2.0 ng/L 9.87 Perfluorobutanesulfonic acid (PFPeA) 8.64 2.0 ng/L 9.87 Perfluorobexanoic acid (PFPeA) 8.64 2.0 ng/L 9.87 Perfluorobexanoic acid (PFPeA) 8.43 2.0 ng/L 9.87 Perfluorobexanoic acid (PFBA) 9.34 2.0 ng/L 9.30 Perfluorobexanoic acid (PF3B Minor) 9.34 2.0 ng/L 9.30 Perfluorobexanoic acid (PF3B Minor) 10.0 2.0 ng/L 9.30 Perfluorobexanoic acid (PF3B Major) 10.0 2.0 ng/L 9.30 Perfluorobexanoic acid (PF0A) 9.81 2.0 ng/L 9.87 Perfluorobexanoic acid (Rizers A) 9.59 2.0 ng/L 9.87 Perfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 Perfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 Perfluorobexanoic acid (PFDA) 7.55 2.0 ng/L 9.87 Perfluorobexanoic acid (PFDA) 8.82 2.0 ng/L 9.87 Perfluorobexanoic acid (PFDA) 9.12 2.0 ng/L 9.87 Perfluorobexanoic acid (PFHpS) 9.12 2.0 ng/L 9.87 Perfluorobexanoic acid (PFTA) 8.80 2.0 ng/L 9.87 Perfluorotexanoic acid (PFTA) 8.80 2.0 ng/L 9.87 Perfluorotridecanoic acid (PFTA) 8.59 2.0 ng/L 9.87 Perfluorotridecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 Perfluorotexanoic acid (PFDS) 8.40 2.0 ng/L 9.87 Perfluorotexanoic acid (PFDS)	88.9 65	-140	
erfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluorobutanesulfonic acid (PFBS) 7.59 2.0 ng/L 8.74 erfluoropentanoic acid (PFPeA) 8.64 2.0 ng/L 9.87 erfluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 erfluorohexanoic acid (PFBA) 8.43 2.0 ng/L 9.87 ector 9.34 2.0 ng/L 9.30 CI-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.20 8-dioxa-3H-perfluorononanoic acid 7.99 2.0 ng/L 9.30 ADONA) 2.0 ng/L 9.87 9.87 exafluoropropylene oxide dimer acid 9.81 2.0 ng/L 9.87 HFPO-DA) 2.5 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.82 2.0 ng/L 9.87 erfluorodeptanesulfonic acid (PFHS) 9.12 2.0	96.0 69	-130	
erfluorobutanoic acid (PFBA) 8.67 2.0 ng/L 9.87 erfluorobutanesulfonic acid (PFBS) 7.59 2.0 ng/L 8.74 erfluoropentanoic acid (PFPeA) 8.64 2.0 ng/L 9.87 erfluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 erfluorohexanoic acid (PFBA) 8.43 2.0 ng/L 9.87 ector 9.34 2.0 ng/L 9.30 CI-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.20 8-dioxa-3H-perfluorononanoic acid 7.99 2.0 ng/L 9.30 ADONA) 2.0 ng/L 9.87 9.87 exafluoropropylene oxide dimer acid 9.81 2.0 ng/L 9.87 HFPO-DA) 2.5 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.82 2.0 ng/L 9.87 erfluorodeptanesulfonic acid (PFHS) 9.12 2.0	N/10/21 A 1 1 00/17/21		
refluorobutanesulfonic acid (PFBS) 7.59 2.0 ng/L 8.74 refluoropentanoic acid (PFPeA) 8.64 2.0 ng/L 9.87 refluoropentanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFBS) 8.43 2.0 ng/L 9.30 refluorohexanoic acid (PFBS) 8.40 2.0 ng/L 9.30 refluorohexanoic acid 7.99 2.0 ng/L 9.30 refluorohexanoic acid 8.81 2.0 ng/L 9.87 refluorotelomersulfonic acid (8:2FTS A) 8.97 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.97 refluorohexanoic acid (PFDA) 8.82 2.0 ng/L 9.87 refluorohexanoic acid (PFDA) 8.82 refluorohexanoic acid (PFHpS) 9.12 2.0 ng/L 9.87 refluorohexanoic acid (PFTA) 8.80 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFTSA) 8.65 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 refluorotelomersulfonic acid (0/10/21 Analyzed: 09/17/21		
refluoropentanoic acid (PFPA) 8.64 2.0 ng/L 9.87 refluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 refluorohexanoic acid (PFBA) 8.43 2.0 ng/L 9.30 refluorononanoic acid 7.99 2.0 ng/L 9.30 refluoropropylene oxide dimer acid 9.81 2.0 ng/L 9.87 refluorodecanoic acid (8:2FTS A) 9.59 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 refluorodecanoic acid (PFDA) 8.897 2.0 ng/L 9.87 refluorotelomersulfonic acid 8.82 2.0 ng/L 8.79 refluorotelomersulfonic acid (PFHpS) 9.12 2.0 ng/L 9.87 refluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 refluorotetradecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 refluorotetradecanoic acid (PFDS) 8.40 2.0 ng/L 9.53 refluorotetradecanosulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 refluorotetradecanosulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 refluorotetradecanosulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 9.87	87.8 73	-129 0.147	30
erfluorohexanoic acid (PFHxA) 8.43 2.0 ng/L 9.87 ICI-PF3OUdS (F53B Minor) 9.34 2.0 ng/L 9.30 CI-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.20 8-dioxa-3H-perfluorononanoic acid 7.99 2.0 ng/L 9.30 ADONA) 2 9.81 2.0 ng/L 9.87 IFPO-DA) 2 Pluorotelomersulfonic acid (8:2FTS A) 9.59 2.0 ng/L 9.87 2 Fluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 2 erfluorododecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 2 FEESA) 9.12 2.0 ng/L 9.43 2 FEESA) 9.12 2.0 ng/L 9.87 2 FEFOSAA 7.33 2.0 ng/L 9.87 2 FILOrotelomersulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (PFTA) 8.59 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (PFTA)		-130 2.96	30
CI-PF3OUdS (F53B Minor) 9.34 2.0 ng/L 9.30	87.5 72	-129 2.29	30
CI-PF3ONS (F53B Major) 10.0 2.0 ng/L 9.20 8-dioxa-3H-perfluorononanoic acid 7.99 2.0 ng/L 9.30 NDONA) exafluoropropylene oxide dimer acid 9.81 2.0 ng/L 9.87 HFPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A) 9.59 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.82 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 9.12 2.0 ng/L 9.87 erfluoroheptanesulfonic acid (PFDS) 9.12 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.59 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 erfluorotedomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorocanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluoronanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluoronanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FHXSA) 8.95 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FHXSA) 8.95 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FHXSA) 8.95 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FHXSA) 8.95 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87 erfluorol-houtanesulfonamide (FBSA) 8.70 2.0 ng/L	85.4 72	-129 1.57	30
8-dioxa-3H-perfluorononanoic acid 7.99 2.0 ng/L 9.30 ADONA) exafluoropropylene oxide dimer acid 49.81 8-PPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A) 2 Fluorodecanoic acid (PFDA) 8.97 2 crfluorodecanoic acid (PFDA) 8.97 2 crfluorodecanoic acid (PFDA) 8.897 2 crfluorodecanoic acid (PFDA) 8.82 2 crfluorotelomersulfonic acid 8 crfluorodecanoic acid (PFDA) 8 crfluorodecanoic acid (PFDA) 8 crfluorodecanoic acid (PFDA) 8 crfluorodecanoic acid (PFDA) 8 crfluorodecanoic acid (PFHpS) 9 crfluoroheptanesulfonic acid (PFHpS) 9 crfluoroheptanesulfonic acid (PFHpS) 9 crfluorotetradecanoic acid (PFTA) 8 crfluorotetradecanoic acid (PFTA) 8 crfluorotetradecanoic acid (PFTDA) 8 crfluorotelomersulfonic acid (4:2FTS A) 8 crfluorotelomersulfonic acid (4:2FTS A) 8 crfluorodecanesulfonic acid (PFDS) 8 crfluorocanesulfonic acid (PFNS) 8 crfluoronanesulfonic acid (PFNS) 9 crfluoronanesulfonic acid (PFNS) 9 crfluorol-1-hexanesulfonamide (PBSA) 8 crfluorol-1-butanesulfonamide (FBSA) 8 crfluorol-1-butane	100 50	-150 2.56	30
ADONA) exafluoropropylene oxide dimer acid 9.81 2.0 ng/L 9.87 HPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A) 9.59 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 erfluoro(2-ethoxyethane)sulfonic acid 8.82 2.0 ng/L 9.87 erfluoroheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.87 erfluorotelomersulfonic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 erfluorotedomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.87 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.87 erfluorooctanesulfonic acid (PFNS) 8.78 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluorol-1-hexanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87	109 50	-150 16.6	30
#PPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A) 9,59 2.0 ng/L 9.48 erfluorodecanoic acid (PFDA) 8,97 2.0 ng/L 9.87 erfluorodecanoic acid (PFDA) 7,55 2.0 ng/L 9.87 erfluoro(2-ethoxyethane)sulfonic acid 8,82 2.0 ng/L 9.87 erfluoroheptanesulfonic acid (PFHpS) 9,12 2.0 ng/L 9,43 -EtFOSAA 7,33 2.0 ng/L 9,87 -MeFOSAA 8,96 2.0 ng/L 9,87 erfluorotetradecanoic acid (PFTA) 8,80 2.0 ng/L 9,87 erfluorotetradecanoic acid (PFTDA) 8,59 2 Fluorotelomersulfonic acid (4:2FTS A) 8,65 2 ng/L 9,87 erfluorodecanesulfonic acid (PFDS) 8,40 2.0 ng/L 9,23 erfluorotedanoic acid (PFDS) 8,40 2.0 ng/L 9,53 erfluorocanesulfonic acid (PFNS) 9,53 erfluoroocanesulfonic acid (PFNS) 9,53 2.0 ng/L 9,87 erfluoroocanesulfonamide (FOSA) 8,78 2.0 ng/L 9,87 erfluorol-hexanesulfonamide (FHXSA) 8,95 2.0 ng/L 9,87 erfluorol-hexanesulfonamide (FHXSA) 8,95 2.0 ng/L 9,87 erfluorol-butanesulfonamide (FBSA) 8,70 2.0 ng/L 9,87	85.9 50	1-150 4.56	30
erfluorodecanoic acid (PFDA) 8.97 2.0 ng/L 9.87 erfluorododecanoic acid (PFDA) 7.55 2.0 ng/L 9.87 erfluorododecanoic acid (PFDA) 8.82 2.0 ng/L 8.79 PFEESA) erfluoroheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.87 9.87 -EtFOSAA 7.33 2.0 ng/L 9.87 -MeFOSAA 8.96 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotridecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 erfluorotetrodecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 erfluorotedomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.83 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorol-hexanesulfonamide (FNSA) 8.95 2.0 ng/L 9.87 erfluorol-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		1-150 4.96	30
erfluorododecanoic acid (PFDoA) 7.55 2.0 ng/L 9.87 erfluoro(2-ethoxyethane)sulfonic acid 8.82 2.0 ng/L 8.79 erfluoroheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.43 e-EtFOSAA 7.33 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTDA) 8.80 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTDA) 8.59 2.10 ng/L 9.87 erfluorotedenesulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.87 erfluoro-1-hexanesulfonamide (FHSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		'-138 15.3	30
erfluoro(2-ethoxyethane)sulfonic acid 8.82 2.0 ng/L 8.79 erfEESA) erfluorotheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.43 erfluorotheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.87 e-EtFOSAA 7.33 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.96 2.0 ng/L 9.87 erfluorotridecanoic acid (PFTA) 8.59 2.0 ng/L 9.87 erfluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-129 7.28	30
FEESA) 9.12 2.0 ng/L 9.43 erfluoroheptanesulfonic acid (PFHpS) 9.12 2.0 ng/L 9.87 -EtFOSAA 7.33 2.0 ng/L 9.87 -MeFOSAA 8.96 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotridecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluoro-1-hexanesulfonamide (FHSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-134 18.2	30
-EtFOSAA 7.33 2.0 ng/L 9.87 -MeFOSAA 8.96 2.0 ng/L 9.87 erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotridecanoic acid (PFTDA) 8.59 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		0.981	30
No. No.		0.983	30
erfluorotetradecanoic acid (PFTA) 8.80 2.0 ng/L 9.87 erfluorotridecanoic acid (PFTrDA) 8.59 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluoroctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluoro-1-hexanesulfonamide (FHxSA) 9.53 2.0 ng/L 9.48 erfluoro-1-butanesulfonamide (FBSA) 8.95 2.0 ng/L 9.87		-135 10.9	30
erfluorotridecanoic acid (PFTrDA) 8.59 2.0 ng/L 9.87 2 Fluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.48 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-136 11.1	30
2 Fluorotelomersulfonic acid (4:2FTS A) 8.65 2.0 ng/L 9.23 erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.48 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-132 0.247	30
erfluorodecanesulfonic acid (PFDS) 8.40 2.0 ng/L 9.53 erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.48 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		1.98	30
erfluorooctanesulfonamide (FOSA) 8.78 2.0 ng/L 9.87 erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.48 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-143 1.64	30
erfluorononanesulfonic acid (PFNS) 9.53 2.0 ng/L 9.48 erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		-142 3.15	30
erfluoro-1-hexanesulfonamide (FHxSA) 8.95 2.0 ng/L 9.87 erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		0.679	30
erfluoro-1-butanesulfonamide (FBSA) 8.70 2.0 ng/L 9.87		2.57	30
		-150 4.83	30
erfluorohexanesulfonic acid (PFHxS) 7.92 2.0 ng/L 8.99	88.1 50	-150 3.07	30
	88.1 68	7.06	30
erfluoro-4-oxapentanoic acid (PFMPA) 9.88 2.0 ng/L 9.87	100 50	0.762	30
erfluoro-5-oxahexanoic acid (PFMBA) 10.2 2.0 ng/L 9.87	103 50	0.0908	30



QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B289938 - SOP 454-PFAAS										
.CS Dup (B289938-BSD1)				Prepared: 09	7/10/21 Anal	yzed: 09/17/2	21			
5:2 Fluorotelomersulfonic acid (6:2FTS A)	8.07	2.0	ng/L	9.38		86.0	64-140	8.69	30	
Perfluoropetanesulfonic acid (PFPeS)	7.57	2.0	ng/L	9.28		81.5	71-127	9.32	30	
Perfluoroundecanoic acid (PFUnA)	9.08	2.0	ng/L	9.87		91.9	69-133	17.2	30	
Nonafluoro-3,6-dioxaheptanoic acid	8.51	2.0	ng/L	9.87		86.2	50-150	2.04	30	
NFDHA)										
Perfluoroheptanoic acid (PFHpA)	8.84	2.0	ng/L	9.87		89.5	72-130	7.24	30	
Perfluorooctanoic acid (PFOA)	9.07	2.0	ng/L	9.87		91.8	71-133	12.1	30	
Perfluorooctanesulfonic acid (PFOS)	8.49	2.0	ng/L	9.13		93.0	65-140	3.90	30	
Perfluorononanoic acid (PFNA)	9.04	2.0	ng/L	9.87		91.5	69-130	5.38	30	
Batch B290193 - SOP 454-PFAAS										
Blank (B290193-BLK1)				Prepared: 09	0/16/21 Anal	yzed: 09/17/2	21			
Perfluorobutanoic acid (PFBA)	ND	2.1	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.1	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L							
1Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L							
PCI-PF3ONS (F53B Major)	ND	2.1	ng/L							
l,8-dioxa-3H-perfluorononanoic acid ADONA)	ND	2.1	ng/L							
Hexafluoropropylene oxide dimer acid HFPO-DA)	ND	2.1	ng/L							
3:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	ng/L							
Perfluorodecanoic acid (PFDA)	ND	2.1	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	2.1	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L							
N-EtFOSAA	ND	2.1	ng/L							
N-MeFOSAA	ND	2.1	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L							
2:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	ng/L							
5:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	2.1	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid	ND	2.1	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L							
Perfluorooctanoic acid (PFOA)	ND ND	2.1	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND ND	2.1	ng/L							
()	ND	2.1								



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QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290193 - SOP 454-PFAAS										
LCS (B290193-BS1)				Prepared: 09	/16/21 Analy	zed: 09/17/2	21			
Perfluorobutanoic acid (PFBA)	9.12	2.0	ng/L	9.88		92.3	73-129			
Perfluorobutanesulfonic acid (PFBS)	8.08	2.0	ng/L	8.74		92.4	72-130			
Perfluoropentanoic acid (PFPeA)	8.84	2.0	ng/L	9.88		89.5	72-129			
Perfluorohexanoic acid (PFHxA)	8.73	2.0	ng/L	9.88		88.4	72-129			
1Cl-PF3OUdS (F53B Minor)	8.28	2.0	ng/L	9.31		88.9	50-150			
Cl-PF3ONS (F53B Major)	8.28	2.0	ng/L	9.21		89.9	50-150			
,8-dioxa-3H-perfluorononanoic acid	8.15	2.0	ng/L	9.31		87.5	50-150			
ADONA) Iexafluoropropylene oxide dimer acid	7.44	2.0	ng/L	9.88		75.3	50-150			
HFPO-DA)	10.2	2.0	na/I	0.40		100	(7.120			
:2 Fluorotelomersulfonic acid (8:2FTS A) erfluorodecanoic acid (PFDA)	10.3	2.0	ng/L	9.49		109	67-138			
erfluorodecanoic acid (PFDA)	8.05	2.0 2.0	ng/L	9.88		81.5	71-129			
erfluoro(2-ethoxyethane)sulfonic acid	9.34 10.1	2.0	ng/L ng/L	9.88 8.79		94.5 115	72-134 50-150			
PFEESA)	_	2.0	,/r	0.44		01.4	(0.12:			
Perfluoroheptanesulfonic acid (PFHpS)	8.62	2.0	ng/L	9.44		91.4	69-134			
I-EtFOSAA	11.2	2.0	ng/L	9.88		113	61-135			
J-MeFOSAA	10.4	2.0	ng/L	9.88		105	65-136			
erfluorotetradecanoic acid (PFTA)	8.09	2.0	ng/L	9.88		81.9	71-132			
erfluorotridecanoic acid (PFTrDA)	9.73	2.0	ng/L	9.88		98.4	65-144			
22 Fluorotelomersulfonic acid (4:2FTS A)	8.76	2.0	ng/L	9.24		94.8	63-143			
erfluorodecanesulfonic acid (PFDS)	8.71	2.0	ng/L	9.53		91.4	53-142			
erfluorooctanesulfonamide (FOSA)	9.40	2.0	ng/L	9.88		95.1	67-137			
erfluorononanesulfonic acid (PFNS)	9.74	2.0	ng/L	9.49		103	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	8.23	2.0	ng/L	9.88		83.3	50-150			
erfluoro-1-butanesulfonamide (FBSA) erfluorohexanesulfonic acid (PFHxS)	9.48	2.0	ng/L	9.88		95.9	50-150			
	8.34	2.0	ng/L	8.99		92.8	68-131			
erfluoro-4-oxapentanoic acid (PFMPA) erfluoro-5-oxahexanoic acid (PFMBA)	10.4	2.0 2.0	ng/L	9.88		106	50-150			
2 Fluorotelomersulfonic acid (6:2FTS A)	11.1	2.0	ng/L	9.88		112	50-150			
erfluoropetanesulfonic acid (PFPeS)	8.69	2.0	ng/L ng/L	9.39		92.6	64-140			
erfluoroundecanoic acid (PFUnA)	8.18	2.0	_	9.29		88.1 76.0	71-127			
Ionafluoro-3,6-dioxaheptanoic acid	7.60	2.0	ng/L ng/L	9.88 9.88		76.9 94.4	69-133 50-150			
NFDHA)	9.32	2.0	ng/L	7.08		74.4	50-150			
erfluoroheptanoic acid (PFHpA)	9.23	2.0	ng/L	9.88		93.4	72-130			
erfluorooctanoic acid (PFOA)	8.53	2.0	ng/L	9.88		86.3	71-133			
erfluorooctanesulfonic acid (PFOS)	8.35	2.0	ng/L	9.14		91.4	65-140			
erfluorononanoic acid (PFNA)	9.09	2.0	ng/L	9.88		92.0	69-130			
.CS Dup (B290193-BSD1)				Prepared: 09	/16/21 Analy	yzed: 09/17/2	21			
erfluorobutanoic acid (PFBA)	8.44	2.0	ng/L	9.87		85.5	73-129	7.72	30	
erfluorobutanesulfonic acid (PFBS)	7.38	2.0	ng/L	8.73		84.5	72-130	9.10	30	
erfluoropentanoic acid (PFPeA)	8.18	2.0	ng/L	9.87		82.9	72-129	7.71	30	
erfluorohexanoic acid (PFHxA)	8.11	2.0	ng/L	9.87		82.2	72-129	7.40	30	
1Cl-PF3OUdS (F53B Minor)	7.84	2.0	ng/L	9.30		84.4	50-150	5.39	30	
Cl-PF3ONS (F53B Major)	7.37	2.0	ng/L	9.20		80.2	50-150	11.6	30	
8-dioxa-3H-perfluorononanoic acid ADONA)	7.75	2.0	ng/L	9.30		83.4	50-150	4.95	30	
exafluoropropylene oxide dimer acid HFPO-DA)	8.40	2.0	ng/L	9.87		85.2	50-150	12.1	30	
:2 Fluorotelomersulfonic acid (8:2FTS A)	9.27	2.0	ng/L	9.47		97.9	67-138	10.5	30	
erfluorodecanoic acid (PFDA)	8.71	2.0	ng/L	9.87		88.2	71-129	7.84	30	
erfluorododecanoic acid (PFDoA)	7.65	2.0	ng/L	9.87		77.6	72-134	19.8	30	
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	9.53	2.0	ng/L	8.78		108	50-150	5.66	30	
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QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290193 - SOP 454-PFAAS										
LCS Dup (B290193-BSD1)				Prepared: 09	9/16/21 Analy	zed: 09/17/	21			
Perfluoroheptanesulfonic acid (PFHpS)	7.86	2.0	ng/L	9.42		83.4	69-134	9.26	30	
N-EtFOSAA	9.11	2.0	ng/L	9.87		92.3	61-135	20.5	30	
N-MeFOSAA	10.8	2.0	ng/L	9.87		109	65-136	3.33	30	
Perfluorotetradecanoic acid (PFTA)	7.80	2.0	ng/L	9.87		79.0	71-132	3.64	30	
Perfluorotridecanoic acid (PFTrDA)	8.28	2.0	ng/L	9.87		83.9	65-144	16.1	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	7.98	2.0	ng/L	9.23		86.5	63-143	9.32	30	
Perfluorodecanesulfonic acid (PFDS)	8.60	2.0	ng/L	9.52		90.3	53-142	1.29	30	
Perfluorooctanesulfonamide (FOSA)	8.10	2.0	ng/L	9.87		82.0	67-137	14.9	30	
Perfluorononanesulfonic acid (PFNS)	8.32	2.0	ng/L	9.47		87.9	69-127	15.7	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	7.13	2.0	ng/L	9.87		72.2	50-150	14.4	30	
Perfluoro-1-butanesulfonamide (FBSA)	8.85	2.0	ng/L	9.87		89.7	50-150	6.87	30	
Perfluorohexanesulfonic acid (PFHxS)	7.40	2.0	ng/L	8.98		82.4	68-131	12.0	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	9.75	2.0	ng/L	9.87		98.8	50-150	6.83	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	10.2	2.0	ng/L	9.87		103	50-150	8.13	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.87	2.0	ng/L	9.37		94.6	64-140	2.05	30	
Perfluoropetanesulfonic acid (PFPeS)	7.62	2.0	ng/L	9.28		82.2	71-127	7.07	30	
Perfluoroundecanoic acid (PFUnA)	8.49	2.0	ng/L	9.87		86.0	69-133	11.0	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	8.75	2.0	ng/L	9.87		88.7	50-150	6.35	30	
Perfluoroheptanoic acid (PFHpA)	8.69	2.0	ng/L	9.87		88.0	72-130	6.09	30	
Perfluorooctanoic acid (PFOA)	7.14	2.0	ng/L	9.87		72.4	71-133	17.7	30	
Perfluorooctanesulfonic acid (PFOS)	7.89	2.0	ng/L	9.13		86.5	65-140	5.66	30	
Perfluorononanoic acid (PFNA)	9.27	2.0	ng/L	9.87		93.9	69-130	1.98	30	
Blank (B290250-BLK1)				Prepared: 09	9/15/21 Analy	zed: 09/20/	21			
Perfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L							
9Cl-PF3ONS (F53B Major)	ND	2.0	ng/L							
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	ng/L							
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
Perfluorodecanoic acid (PFDA)	ND ND	2.0	ng/L							
Perfluorododecanoic acid (PFDoA)	ND ND	2.0	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
N-EtFOSAA	ND	2.0	ng/L							
N-MeFOSAA	ND	2.0	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
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QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290250 - SOP 454-PFAAS										
Blank (B290250-BLK1)				Prepared: 09)/15/21 Analy	yzed: 09/20/	21			
erfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Jonafluoro-3,6-dioxaheptanoic acid	ND	2.0	ng/L							
NFDHA)										
erfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
erfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
erfluorononanoic acid (PFNA)	ND	2.0	ng/L							
CS (B290250-BS1)				Prepared: 09	0/15/21 Analy	yzed: 09/20/	21			
erfluorobutanoic acid (PFBA)	9.88	2.0	ng/L	9.91		99.6	73-129			
erfluorobutanesulfonic acid (PFBS)	8.59	2.0	ng/L	8.77		97.9	72-130			
erfluoropentanoic acid (PFPeA)	9.57	2.0	ng/L	9.91		96.5	72-129			
erfluorohexanoic acid (PFHxA)	9.46	2.0	ng/L	9.91		95.4	72-129			
Cl-PF3OUdS (F53B Minor)	9.07	2.0	ng/L	9.34		97.1	50-150			
Cl-PF3ONS (F53B Major)	9.76	2.0	ng/L	9.24		106	50-150			
8-dioxa-3H-perfluorononanoic acid .DONA)	8.30	2.0	ng/L	9.34		88.9	50-150			
exafluoropropylene oxide dimer acid	10.7	2.0	ng/L	9.91		108	50-150			
2 Fluorotelomersulfonic acid (8:2FTS A)	10.0	2.0	ng/L	9.52		105	67-138			
erfluorodecanoic acid (PFDA)	9.66	2.0	ng/L	9.91		97.4	71-129			
erfluorododecanoic acid (PFDoA)	9.61	2.0	ng/L	9.91		96.9	72-134			
erfluoro(2-ethoxyethane)sulfonic acid FEESA)	15.1	2.0	ng/L	8.82		171 *	50-150			L-01
erfluoroheptanesulfonic acid (PFHpS)	9.12	2.0	ng/L	9.47		96.3	69-134			
-EtFOSAA	11.5	2.0	ng/L	9.91		116	61-135			
-MeFOSAA	11.4	2.0	ng/L	9.91		115	65-136			
erfluorotetradecanoic acid (PFTA)	9.86	2.0	ng/L	9.91		99.5	71-132			
erfluorotridecanoic acid (PFTrDA)	9.23	2.0	ng/L	9.91		93.1	65-144			
2 Fluorotelomersulfonic acid (4:2FTS A)	9.57	2.0	ng/L	9.27		103	63-143			
erfluorodecanesulfonic acid (PFDS)	8.62	2.0	ng/L	9.57		90.1	53-142			
erfluorooctanesulfonamide (FOSA)	9.94	2.0	ng/L	9.91		100	67-137			
erfluorononanesulfonic acid (PFNS)	9.83	2.0	ng/L	9.52		103	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	9.83 8.45	2.0	ng/L	9.91		85.3	50-150			
erfluoro-1-butanesulfonamide (FBSA)	9.38	2.0	ng/L	9.91		94.6	50-150			
erfluorohexanesulfonic acid (PFHxS)	9.38 9.17	2.0	ng/L	9.91		102	68-131			
erfluoro-4-oxapentanoic acid (PFMPA)		2.0	ng/L ng/L	9.02		131	50-150			
erfluoro-5-oxapentanoic acid (PFMBA)	13.0	2.0	ng/L	9.91		131 171 *				L-01
2 Fluorotelomersulfonic acid (6:2FTS A)	17.0	2.0	ng/L	9.42		102	64-140			L-01
erfluoropetanesulfonic acid (PFPeS)	9.59	2.0	ng/L ng/L							
erfluoroundecanoic acid (PFUnA)	8.91			9.32		95.6	71-127			
onafluoro-3,6-dioxaheptanoic acid	9.10 13.4	2.0 2.0	ng/L ng/L	9.91 9.91		91.8 135	69-133 50-150			
NFDHA) erfluoroheptanoic acid (PFHpA)	10.1	2.0	nc/I	0.01		102	72 120			
	10.1	2.0	ng/L	9.91		102	72-130			
erfluorooctanoic acid (PFOA)	9.31	2.0	ng/L	9.91		93.9	71-133			
erfluorooctanesulfonic acid (PFOS)	9.03 10.2	2.0 2.0	ng/L ng/L	9.17 9.91		98.4 103	65-140 69-130			



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QUALITY CONTROL

rifluorobutanoic acid (PFBA) rifluorobutanosulfonic acid (PFBS) rifluorobutanesulfonic acid (PFBS) 9.30 2.0 ng/L 8.71 rifluorobutanesulfonic acid (PFBS) 9.30 2.0 ng/L 9.84 rifluorobutanesulfonic acid (PFBA) 10.2 2.0 ng/L 9.84 CL-PF3OUdS (F53B Minor) 9.54 2.0 ng/L 9.27 2-PF3ONS (F53B Major) 9.85 2.0 ng/L 9.17 8-dioxa-3H-perfluorononanoic acid DONA) radioropropylene oxide dimer acid 9.43 2.0 ng/L 9.84 rifluorobetanesulfonic acid (8:2FTS A) 11.4 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 rifluorodepanesulfonic acid (PFIPS) 9.78 2.0 ng/L 9.84 rifluoroteptanesulfonic acid (PFIPS) 9.78 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFTA) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 9.88 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.1 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.2 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.3 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.4 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.1 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.2 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.3 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoic acid (PFNS) 10.5 2.0 ng/L 9.84 rifluorotetradecanoi	Source Result %REC	Limits	RPD	Limit	Notes
rfluorobutanoic acid (PFBA) rfluorobutanoic acid (PFBA) rfluorobutanesulfonic acid (PFBS) 9,30 2,0 ng/L 8,71 rfluoropentanoic acid (PFPA) 10,2 2,0 ng/L 9,84 rfluoropentanoic acid (PFPA) 10,1 2,0 ng/L 9,84 rfluoropentanoic acid (PFBA) 10,1 2,0 ng/L 9,84 rfluoropentanoic acid (PFBA) 10,1 2,0 ng/L 9,84 rfluoropentanoic acid (PFBA) 10,1 2,0 ng/L 9,84 10,1 2,0 ng/L 9,17 8,86 10,89 12 2,0 ng/L 9,17 8,86 10,80 10,91 2,0 ng/L 9,17 8,86 10,80 10,91 2,0 ng/L 9,84 11,4 2,0 ng/L 9,84 11,4 2,0 ng/L 9,84 11,1 2,0 11,1					
refluorobutanesulfonic acid (PFBS) 9,30 2.0 ng/L 9,84 rfluoropentanoic acid (PFBA) 10.2 2.0 ng/L 9,84 rfluoropentanoic acid (PFBA) 10.1 2.0 ng/L 9,84 CL-PF3OUGS (F53B Minor) 9,54 2.0 ng/L 9,27 2.PF3ONS (F53B Minor) 9,54 2.0 ng/L 9,27 2.PF3ONS (F53B Minor) 9,55 2.0 ng/L 9,17 2.PF3ONS (F53B Minor) 9,54 2.0 ng/L 9,17 2.PF3ONS (F53B Minor) 9,55 2.0 ng/L 9,17 2.PF3ONS (F53B Minor) 9,12 2.0 ng/L 9,27 2.PF3ONS (F53B Minor) 9,12 2.0 ng/L 9,27 2.PF3ONS (F53B Minor) 9,12 2.0 ng/L 9,84 rfluorodecanoic acid (FFDA) 11.4 2.0 ng/L 9,84 rfluorodecanoic acid (FFDA) 11.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFDA) 11.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 11.9 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 11.0 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 11.0 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.0 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.2 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1 2.0 ng/L 9,84 rfluorodecanoic acid (FFIDA) 10.1	15/21 Analyzed: 09/20/2	1			
refluoropentanoie acid (PFPeA) 10.2 2.0 ng/L 9.84 refluorobexanoie acid (PFHA) 10.1 2.0 ng/L 9.84 refluorobexanoie acid (PFHA) 10.1 2.0 ng/L 9.84 2.0 ng/L 9.27 C1-PF3ONS (F33B Minor) 9.54 2.0 ng/L 9.27 C1-PF3ONS (F33B Minor) 9.85 2.0 ng/L 9.27 C1-PF3ONS (F33B Minor) 9.85 2.0 ng/L 9.27 DDONA) 2.0 ng/L 9.27 DDONA) 2.0 ng/L 9.27 DDONA 2.0 ng/L 9.28 2.0 ng/L 9.27 DDONA 2.0 ng/L 9.28 2.0 ng/L 9.28 2.0 ng/L 9.84 2.0 ng/L 9.85 2.0 ng/L 9.8	107	73-129	6.58	30	
refluorohexanoic acid (PFHxA) 10.1 2.0 ng/L 9.84 CLPF3OUdS (F53B Minor) 9.54 2.0 ng/L 9.27 2.10F13ONS (F53B Minor) 9.85 2.0 ng/L 9.17 9.87 8-dioxa-3H-perfluorononanoic acid 9.12 2.0 ng/L 9.84 2.0 ng/L 9.85 2.0 ng/L 9.84 2.0 ng/L 9.84 2.0 ng/L 9.85 2.0 ng/L 9.84 2.0 ng/L 9.85 2.0 ng/L 9.84 2.0 ng/L 9.85 2.0 ng/L 9.84 2.0 1.0 2.0	107	72-130	7.97	30	
CL-PF3OUdS (F53B Minor)	104	72-129	6.72	30	
2-PF3ONS (F53B Major)	102	72-129	6.32	30	
8-dioxa-3H-perfluorononanoic acid	103	50-150	5.06	30	
DONA	107	50-150	0.914	30	
EPO-DA 2 Fluorotelomersulfonic acid (8:2FTS A)	98.3	50-150	9.39	30	
2 Fluorotelomersulfonic acid (8:2FTS A) 11.4 2.0 ng/L 9.45 rffluorodecanoic acid (PFDA) 10.0 2.0 ng/L 9.84 refluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 refluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 refluorodecanoic acid (PFDA) 11.1 2.0 ng/L 9.84 refluorodecanoic acid (PFHPS) 9.78 2.0 ng/L 9.40 rffluoroheptanesulfonic acid (PFHPS) 9.78 2.0 ng/L 9.84 refluorotelorateacid (PFTA) 10.4 2.0 ng/L 9.84 refluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 refluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 refluorotetradecanoic acid (PFTA) 10.0 2.0 ng/L 9.84 refluorotetradecanoic acid (PFTA) 10.5 2.0 ng/L 9.84 refluorotetradecanoic acid (PFDS) 9.88 2.0 ng/L 9.20 refluorodecanesulfonic acid (4:2FTS A) 10.5 2.0 ng/L 9.20 refluorodecanesulfonic acid (FDSA) 10.2 2.0 ng/L 9.50 refluorodecanesulfonic acid (FDSA) 10.2 2.0 ng/L 9.84 refluoronanesulfonic acid (FDSA) 10.1 2.0 ng/L 9.45 refluoro-1-hexanesulfonamide (FBSA) 10.1 2.0 ng/L 9.84 refluoro-1-hexanesulfonamide (FBSA) 10.2 2.0 ng/L 9.84 refluoro-1-hexanesulfonic acid (PFNS) 9.75 2.0 ng/L 9.84 refluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-4-oxapentanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluorobetanosulfonic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluorobetanosulfonic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluorobetanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluorobetanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluorobetanoic acid (PFMBA) 19.9 ng/L 9.84 refluorobetanoic acid (PFMBA) 10.8 2.0 ng/L 9.84 refluorobetanoic acid (PFMBA) 10.8 2.0 ng/L 9.84 refluorobetanoic acid (PFMBA	95.8	50-150	12.9	30	
refluorodecanoic acid (PFDA) 10.0 2.0 ng/L 9.84 refluorodocanoic acid (PFDA) 11.1 2.0 ng/L 9.84 refluorod-e-thoxyethane)sulfonic acid 16.4 2.0 ng/L 8.76 refluorode-e-thoxyethane)sulfonic acid 16.4 2.0 ng/L 8.76 refluorodeptanesulfonic acid (PFHpS) 9.78 2.0 ng/L 9.84 refluorodeptanesulfonic acid (PFHpS) 9.78 2.0 ng/L 9.84 refluorodeptanesulfonic acid (PFTA) 10.4 2.0 ng/L 9.84 refluorotridecanoic acid (PFTA) 10.0 2.0 ng/L 9.84 refluorotridecanoic acid (PFTDA) 10.0 2.0 ng/L 9.84 refluorotridecanoic acid (PFTDA) 10.0 2.0 ng/L 9.84 refluorotelomersulfonic acid (PFDS) 9.88 2.0 ng/L 9.80 refluorodecanesulfonic acid (PFDS) 9.88 2.0 ng/L 9.50 refluorocanesulfonic acid (PFDS) 10.1 2.0 ng/L 9.84 refluoro-1-hexanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.84 refluoro-1-butanesulfoniamide (FBSA) 10.2 2.0 ng/L 9.84 refluoro-1-butanesulfoniamide (FBSA) 10.2 2.0 ng/L 9.84 refluoro-4-oxpentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-6-oxahexanoic acid (PFMA) 10.8 2.0 ng/L 9.84 refluoro-6-oxahexanoic acid (PFMA) 10.9 refluorobetanoic acid (PFMA) 10.9	120	67-138	12.5	30	
refluorododecanoic acid (PFDoA) 11.1 2.0 ng/L 9.84 refluorody-ethoxyethane)sulfonic acid 16.4 2.0 ng/L 9.876 FEESA) refluorody-ethoxyethane)sulfonic acid 16.4 2.0 ng/L 9.40 - 8.76 FEESA) refluorobetanesulfonic acid (PFHpS) 9.78 2.0 ng/L 9.84 - 9.88 - 0 ng/L 9.84 - 9.80 - 9.84 - 9.80 - 9.88 - 0 ng/L 9.84 - 9.50 - 9.84 - 9.50 - 9.84 - 9.50 - 9.84 - 9.50 - 9.84 - 9.60 - 9.84 -	102	71-129	3.62	30	
refluoro(2-ethoxyethane)sulfonic acid FEESA) refluorohetanesulfonic acid (PFHpS)	113	72-134	14.5	30	
### 2.0 ng/L 9.40 #### 2.0 ng/L 9.40 ##### 2.0 ng/L 9.84 ####################################	187 *	50-150	8.25	30	L-01
### Purpose	104	69-134	7.01	30	
### PAMEROSAA 13.4 2.0 mg/L 9.84	121	61-135	3.70	30	
refluorotetradecanoic acid (PFTA) 10.4 2.0 ng/L 9.84 refluorotridecanoic acid (PFTDA) 10.0 2.0 ng/L 9.84 2 Fluorotelomersulfonic acid (4:2FTSA) 10.5 2.0 ng/L 9.20 refluorodecanesulfonic acid (PFDS) 9.88 2.0 ng/L 9.50 refluoroctanesulfonamide (FOSA) 10.2 10.1 2.0 ng/L 9.84 refluorononanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.84 refluoro-1-hexanesulfoniadic (FHxSA) 9.44 2.0 ng/L 9.84 refluoro-1-butanesulfoniadic (FBSA) 10.2 2.0 ng/L 9.84 refluoro-5-oxapentanoic acid (PFMS) 13.8 2.0 ng/L 9.84 refluoro-5-oxapentanoic acid (FMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxapentanoic acid (FFMBA) 17.9 2.0 ng/L 9.84 refluoro-6-oxapentanoic acid (FFBS) 9.99 2.0 ng/L 9.84 refluoropetanesulfonic acid (FPES) 9.99 2.0 ng/L 9.84 refluoropetanesulfonic acid (FFBS) 9.89 2.0 ng/L 9.84 refluoropetanesulfonic acid (FFBS) 10.8 refluoropetanesulfonic acid (FFBA) refluoropetanesulfonic aci	136	65-136	16.5	30	
refluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) 10.5 2.0 ng/L 9.84 2 Fluorotelomersulfonic acid (4:2FTS A) 10.5 2.0 ng/L 9.20 refluorodecanesulfonic acid (PFDS) 9.88 2.0 ng/L 9.50 refluorooteanesulfonic acid (PFDS) 10.1 2.0 ng/L 9.84 refluorononanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.84 refluoro-1-hexanesulfonamide (FHSSA) 9.44 2.0 ng/L 9.84 refluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9.84 refluoro-1-butanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.84 refluoro-1-butanesulfonic acid (PFNS) 10.2 2.0 ng/L 9.84 refluoro-1-butanesulfonic acid (PFNS) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanesulfonic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoropetanesulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.85 refluoropetanesulfonic acid (PFPS) 9.99 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFUnA) 9.89 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFUnA) 9.89 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFNBA) 10.8 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFNBA) 10.8 refluoropetanesulfonic acid (PFNBA) 10.8 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFNBA) 10.9 ng/L 9.84 refluoropetanesulfonic acid (PFNBA) 10.9 ng/L 9.84 refluoropetanesic acid (PFNBA) 10.9 ng/L refluoropetanesic acid (PFNBA) 10.9 ng/L refluoropetanesic acid (PFNBA) ND 1.9 ng/L refluoropetanesic acid (PFNB	106	71-132	5.45	30	
2 Fluorotelomersulfonic acid (4:2FTS A) 10.5 2.0 ng/L 9.20	102	65-144	8.01	30	
refluorodecanesulfonic acid (PFDS) 9,88 2.0 ng/L 9,84 refluoronanide (FOSA) 10.2 2.0 ng/L 9,84 refluoronanesulfonamide (FOSA) 10.1 2.0 ng/L 9,84 refluorol-1-hexanesulfonamide (FHxSA) 9,44 2.0 ng/L 9,84 refluorol-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9,84 refluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9,84 refluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9,84 refluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9,84 refluoro-1-oxanensulfonic acid (PFMS) 9,75 2.0 ng/L 9,84 refluoro-5-oxanensulfonic acid (PFMBA) 17,9 2.0 ng/L 9,84 refluoro-5-oxanexanoic acid (PFMBA) 11,9 2.0 ng/L 9,85 refluoropetanesulfonic acid (FFPSS) 9,99 2.0 ng/L 9,84 refluoropetanesulfonic acid (PFPSS) 9,89 2.0 ng/L 9,84 refluoropetanesulfonic acid (PFDA) 10.8 2.0 ng/L 9,84 refluorodeptanoic acid (PFHpA) 10.8 refluoropetanoic acid (PFHpA) 10.8 refluoropetanesulfonic acid (PFNA) 10.8 10.9	114	63-143	9.56	30	
refluorooctanesulfonamide (FOSA) 10.2 2.0 ng/L 9.84 refluorononanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.45 refluoro-1-hexanesulfonamide (FHxSA) 9.44 2.0 ng/L 9.84 refluoro-1-butanesulfonamide (FHxSA) 9.44 2.0 ng/L 9.84 refluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9.84 refluoro-1-butanesulfonic acid (PFHxS) 9.75 2.0 ng/L 9.84 refluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoropetanesulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.85 refluoropetanesulfonic acid (PFPeS) 9.99 2.0 ng/L 9.84 refluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 refluorobetanoic acid (PFUnA) 10.8 2.0 ng/L 9.84 refluorobetanoic acid (PFDA) 10.8 refluorooctanoic acid (PFDA) 10.8 refluorooctanoic acid (PFOS) 9.59 2.0 ng/L 9.84 refluorooctanoic acid (PFOS) 9.59 2.0 ng/L 9.84 refluorooctanoic acid (PFNA) 10.8 2.0 ng/L 9.84 refluorooctanoic acid (PFNA) 10.8 10.9 10	104	53-142	13.6	30	
refluorononanesulfonic acid (PFNS) 10.1 2.0 ng/L 9.45 refluoro-1-hexanesulfonamide (FHxSA) 9.44 2.0 ng/L 9.84 refluoro-1-butanesulfonamide (FHxSA) 10.2 2.0 ng/L 9.84 refluoro-1-butanesulfonic acid (PFHxS) 9.75 2.0 ng/L 9.84 refluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 refluoro-5-oxahexanoic acid (PFPSA) 11.9 2.0 ng/L 9.84 refluoropetanesulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.85 refluoropetanesulfonic acid (PFPSA) 9.99 2.0 ng/L 9.84 refluoropetanesulfonic acid (PFUnA) 9.89 2.0 ng/L 9.84 refluoropetanoic acid (PFUnA) 10.8 2.0 ng/L 9.84 refluoropetanoic acid (PFHpA) 10.8 2.0 ng/L 9.84 refluorocotanoic acid (PFOA) 9.74 2.0 ng/L 9.84 refluorocotanoic acid (PFOA) 9.74 2.0 ng/L 9.84 refluorocotanoic acid (PFOA) 9.74 2.0 ng/L 9.84 refluoropetanoic acid (PFOA) 10.8 2.0 ng/L 9.84 refluoropetanoic acid (PFOA) 9.74 2.0 ng/L 9.84 refluoropetanoic acid (PFOA) 10.8 10.9 10.	104	67-137	2.86	30	
2.0 mg/L 9.84 2.0 mg/L 9.85 2.0 mg/L 9.84 2.0 mg/L	107	69-127	2.65	30	
erfluoro-1-butanesulfonamide (FBSA) 10.2 2.0 ng/L 9.84 erfluorohexanesulfonic acid (PFHxS) 9.75 2.0 ng/L 8.96 erfluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 erfluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 2 Fluorotelomersulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.35 erfluoropetanesulfonic acid (PFPeS) 9.99 2.0 ng/L 9.25 erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 erfluorobeptanoic acid (PFHpA) 10.8 2.0 ng/L 9.84 erfluoroctanoic acid (PFOA) 9.74 2.0 ng/L 9.84 erfluoroctanesulfonic acid (PFOS) 9.59 2.0 ng/L 9.84 erfluorobatanesulfonic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluorobutanesulfonic acid (PFBA) ND 1.9 ng/L <t< td=""><td>95.9</td><td>50-150</td><td>11.0</td><td>30</td><td></td></t<>	95.9	50-150	11.0	30	
erfluorohexanesulfonic acid (PFHxS) 9,75 2.0 ng/L 8,96 erfluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9,84 erfluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9,84 2 Fluorotelomersulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9,35 erfluoropetanesulfonic acid (PFPeS) 9,99 2.0 ng/L 9,25 erfluoroundecanoic acid (PFUnA) 9,89 2.0 ng/L 9,84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9,84 erfluoroheptanoic acid (PFHpA) 10.8 2.0 ng/L 9,84 erfluorocotanoic acid (PFOA) 9,74 2.0 ng/L 9,84 erfluorocotanesulfonic acid (PFOS) 9,59 2.0 ng/L 9,84 erfluorobutanoic acid (PFNA) 10.8 2.0 ng/L 9,84 erfluorobutanoic acid (PFNA) ND 1.9 ng/L ng/L erfluorobutanesulfonic acid (PFBS) ND 1.9 ng/L ng/L	104	50-150	8.55	30	
erfluoro-4-oxapentanoic acid (PFMPA) 13.8 2.0 ng/L 9.84 erfluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 2 Fluorotelomersulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.35 erfluoropetanesulfonic acid (PFPeS) 9.99 2.0 ng/L 9.25 erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 diFDHA) 10.8 2.0 ng/L 9.84 erfluorobeptanoic acid (PFHAA) 10.8 2.0 ng/L 9.84 erfluorocotanesulfonic acid (PFOA) 9.74 2.0 ng/L 9.84 erfluorononanoic acid (PFOS) 9.59 2.0 ng/L 9.84 erfluorobutanesulfonic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluorobutanoic acid (PFBA) ND 1.9 ng/L erfluorobutanesulfonic acid (PFBS) ND 1.9 ng/L erfluorobexanoic acid (PFHAA) ND	109	68-131	6.13	30	
erfluoro-5-oxahexanoic acid (PFMBA) 17.9 2.0 ng/L 9.84 2 Fluorotelomersulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.35 erfluoropetanesulfonic acid (PFPeS) 9.99 2.0 ng/L 9.25 erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 iFDHA) 10.8 2.0 ng/L 9.84 erfluoroetanoic acid (PFDA) 9.74 2.0 ng/L 9.84 erfluorooctanesulfonic acid (PFOS) 9.59 2.0 ng/L 9.84 erfluorononanoic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluorobutanesulfonic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluorobutanoic acid (PFBA) ND 1.9 ng/L 9.84 erfluorobutanesulfonic acid (PFBA) ND 1.9 ng/L 9.84 erfluoropentanoic acid (PFBA) ND 1.9 ng/L 9.84 erfluorobexanoic acid (P	140	50-150	5.88	30	
2 Fluorotelomersulfonic acid (6:2FTS A) 11.9 2.0 ng/L 9.35 erfluoropetanesulfonic acid (PFPeS) 9.99 2.0 ng/L 9.25 erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 erfluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 erfluoroheptanoic acid (PFHpA) 10.8 2.0 ng/L 9.84 erfluorocetanoic acid (PFOA) 9.74 2.0 ng/L 9.84 erfluorocetanoic acid (PFOA) 9.74 2.0 ng/L 9.84 erfluorocetanesulfonic acid (PFOS) 9.59 2.0 ng/L 9.84 erfluorononanoic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluorononanoic acid (PFNA) 10.8 2.0 ng/L 9.84 erfluoropentanoic acid (PFNA) 10.8 10.8 10.9 10.	182 *	50-150	5.61	30	L-01
erfluoropetanesulfonic acid (PFPeS) 9,99 2.0 ng/L 9.25 erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 IFDHA) 10.8 2.0 ng/L 9.84 erfluoropetanoic acid (PFHpA) 10.8 2.0 ng/L 9.84 erfluorocotanoic acid (PFOA) 9.74 2.0 ng/L 9.84 erfluorocotanesulfonic acid (PFOS) 9.59 2.0 ng/L 9.84 erfluoronanoic acid (PFNA) 10.8 2.0 ng/L 9.84 earth B290484 - SOP 454-PFAAS 2.0 ng/L 9.84 earth B290484 - SOP 454-PFAAS ND 1.9 ng/L erfluorobutanoic acid (PFBA) ND 1.9 ng/L erfluoropentanoic acid (PFBA) ND 1.9 ng/L erfluoropentanoic acid (PFHxA) ND 1.9 ng/L C1-PF3OUdS (F53B Minor) ND 1.9 ng/L C1-PF3ONS (F53B Major) ND 1.9 ng/L Redioxa-3H-perfluorononanoic acid	127	64-140	21.3	30	
erfluoroundecanoic acid (PFUnA) 9.89 2.0 ng/L 9.84 onafluoro-3,6-dioxaheptanoic acid 14.2 2.0 ng/L 9.84 IFDHA) 10.8 2.0 ng/L 9.84 erfluoroheptanoic acid (PFDA) 10.8 2.0 ng/L 9.84 erfluorooctanesulfonic acid (PFOA) 9.59 2.0 ng/L 9.84 erfluorononanoic acid (PFNA) 10.8 2.0 ng/L 9.84 eatch B290484 - SOP 454-PFAAS ND 1.9 ng/L 9.84 erfluorobutanoic acid (PFBA) ND 1.9 ng/L 9.84 erfluorobutanesulfonic acid (PFBA) ND 1.9 ng/L 9.84 erfluorobutanesulfonic acid (PFBA) ND 1.9 ng/L 9.84 erfluoropentanoic acid (PFBA) ND 1.9 ng/L 9.84 erfluoropentanoic acid (PFBA) ND 1.9 ng/L 9.84 erfluorobaxanoic acid (PFBA) ND 1.9 ng/L 9.84 C1-PF3OUdS (F53B Minor) ND	108	71-127	11.5	30	
14.2 2.0 ng/L 9.84	100	69-133	8.32	30	
Prepared Prepared	144	50-150	5.64	30	
2.0 mg/L 9.11 mg/L 9.11 mg/L 9.84	110	72-130	6.41	30	
10.8 2.0 ng/L 9.84	98.9	71-133	4.47	30	
Arch B290484 - SOP 454-PFAAS Prepared: 09/2	105	65-140	6.07	30	
Iank (B290484-BLK1) Prepared: 09/2 erfluorobutanoic acid (PFBA) ND 1.9 ng/L erfluorobutanesulfonic acid (PFBS) ND 1.9 ng/L erfluoropentanoic acid (PFPeA) ND 1.9 ng/L erfluorohexanoic acid (PFHxA) ND 1.9 ng/L Cl-PF3OUdS (F53B Minor) ND 1.9 ng/L Cl-PF3ONS (F53B Major) ND 1.9 ng/L 8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L	109	69-130	5.44	30	
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 Cl-PF3OUdS (F53B Minor) ND 1.9 ng/L Cl-PF3ONS (F53B Major) ND 1.9 ng/L 8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L	20/21 Analyzed: 09/21/2	1			
perfluoropentanoic acid (PFPeA) ND 1.9 ng/L perfluorohexanoic acid (PFHxA) ND 1.9 ng/L Cl-PF3OUdS (F53B Minor) ND 1.9 ng/L Cl-PF3ONS (F53B Major) ND 1.9 ng/L 8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L					
ND 1.9 ng/L					
Cl-PF3OUdS (F53B Minor) ND 1.9 ng/L Cl-PF3ONS (F53B Major) ND 1.9 ng/L 8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L					
Cl-PF3ONS (F53B Major) ND 1.9 ng/L 8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L					
8-dioxa-3H-perfluorononanoic acid ND 1.9 ng/L					
•					
exafluoropropylene oxide dimer acid ND 1.9 ng/L IFPO-DA)					
2 Fluorotelomersulfonic acid (8:2FTS A) ND 1.9 ng/L					
erfluorodecanoic acid (PFDA) ND 1.9 ng/L					
erfluorododecanoic acid (PFDoA) ND 1.9 ng/L					age 36



QUALITY CONTROL

Spike

Source

%REC

RPD

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

Reporting

analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
atch B290484 - SOP 454-PFAAS										
lank (B290484-BLK1)				Prepared: 09	/20/21 Analy	zed: 09/21/2	1			
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	1.9	ng/L							
erfluoroheptanesulfonic acid (PFHpS)	ND	1.9	ng/L							
-EtFOSAA	ND ND	1.9	ng/L							
-MeFOSAA	ND	1.9	ng/L							
erfluorotetradecanoic acid (PFTA)	ND ND	1.9	ng/L							
erfluorotridecanoic acid (PFTrDA)	ND ND	1.9	ng/L							
2 Fluorotelomersulfonic acid (4:2FTS A)	ND ND	1.9	ng/L							
erfluorodecanesulfonic acid (PFDS)	ND ND	1.9	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	1.9	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	1.9	ng/L							
erfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	ng/L							
erfluoro-1-butanesulfonamide (FBSA)	ND	1.9	ng/L							
erfluorohexanesulfonic acid (PFHxS)	ND ND	1.9	ng/L							
erfluoro-4-oxapentanoic acid (PFMPA)	ND ND	1.9	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND ND	1.9	ng/L							
2 Fluorotelomersulfonic acid (6:2FTS A)	ND ND	1.9	ng/L ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND ND	1.9	ng/L							
erfluoroundecanoic acid (PFUnA)	ND ND	1.9	ng/L							
onafluoro-3,6-dioxaheptanoic acid		1.9	ng/L							
JFDHA)	ND	1.9	ng/L							
erfluoroheptanoic acid (PFHpA)	ND	1.9	ng/L							
erfluorooctanoic acid (PFOA)	ND	1.9	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	1.9	ng/L							
rfluorononanoic acid (PFNA)	ND	1.9	ng/L							
CS (B290484-BS1)				Prepared: 09	/20/21 Analy	zed: 09/21/2	1			
erfluorobutanoic acid (PFBA)	8.78	1.9	ng/L	9.64		91.1	73-129			
erfluorobutanesulfonic acid (PFBS)	7.75	1.9	ng/L	8.53		90.9	72-130			
rrfluoropentanoic acid (PFPeA)	8.41	1.9	ng/L	9.64		87.3	72-129			
erfluorohexanoic acid (PFHxA)	8.45	1.9	ng/L	9.64		87.7	72-129			
Cl-PF3OUdS (F53B Minor)	7.29	1.9	ng/L	9.08		80.3	50-150			
Cl-PF3ONS (F53B Major)	7.65	1.9	ng/L	8.98		85.1	50-150			
8-dioxa-3H-perfluorononanoic acid	7.92	1.9	ng/L	9.08		87.2	50-150			
ADONA)			_							
exafluoropropylene oxide dimer acid	7.78	1.9	ng/L	9.64		80.7	50-150			
HFPO-DA) 2 Fluorotelomersulfonic acid (8:2FTS A)	0.12	1.9	ng/L	0.25		08.5	67 129			
erfluorodecanoic acid (PFDA)	9.12	1.9	ng/L ng/L	9.25		98.5 81.5	67-138			
· · · · · ·	7.85 9.02	1.9		9.64		81.5	71-129			
erfluorododecanoic acid (PFDoA)	9.07	1.9	ng/L	9.64		93.6 115	72-134			
erfluorododecanoic acid (PFDoA)		1.0	no /T			113	50-150			
erfluoro(2-ethoxyethane)sulfonic acid	9.86	1.9	ng/L	8.58		113				
· · ·	9.86	1.9 1.9								
erfluoro(2-ethoxyethane)sulfonic acid FEESA) erfluoroheptanesulfonic acid (PFHpS)	9.86 8.53		ng/L	9.20		92.7	69-134			
rfluoro(2-ethoxyethane)sulfonic acid FEESA) rrfluoroheptanesulfonic acid (PFHpS) EtFOSAA	9.86 8.53 9.85	1.9	ng/L	9.20 9.64		92.7 102	69-134 61-135			
rrfluoro(2-ethoxyethane)sulfonic acid FEESA) rrfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA	9.86 8.53 9.85 10.1	1.9 1.9 1.9	ng/L ng/L ng/L	9.20 9.64 9.64		92.7 102 105	69-134 61-135 65-136			
rfluoro(2-ethoxyethane)sulfonic acid FEESA) rfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA rfluorotetradecanoic acid (PFTA)	9.86 8.53 9.85 10.1 8.22	1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64		92.7 102 105 85.3	69-134 61-135 65-136 71-132			
erfluoro(2-ethoxyethane)sulfonic acid FEESA) erfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA erfluorotetradecanoic acid (PFTA) erfluorotridecanoic acid (PFTDA)	9.86 8.53 9.85 10.1 8.22 8.31	1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64		92.7 102 105 85.3 86.2	69-134 61-135 65-136 71-132 65-144			
rrfluoro(2-ethoxyethane)sulfonic acid FEESA) rrfluoroheptanesulfonic acid (PFHpS) EEFOSAA MeFOSAA rrfluorotetradecanoic acid (PFTA) rrfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A)	9.86 8.53 9.85 10.1 8.22 8.31 8.61	1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01		92.7 102 105 85.3 86.2 95.5	69-134 61-135 65-136 71-132 65-144 63-143			
erfluoro(2-ethoxyethane)sulfonic acid FEESA) erfluoroheptanesulfonic acid (PFHpS) EEFOSAA EMEFOSAA erfluorotetradecanoic acid (PFTA) erfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS)	9.86 8.53 9.85 10.1 8.22 8.31 8.61 7.41	1.9 1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01 9.30		92.7 102 105 85.3 86.2 95.5 79.7	69-134 61-135 65-136 71-132 65-144 63-143 53-142			
rrfluoro(2-ethoxyethane)sulfonic acid FEESA) rrfluoroheptanesulfonic acid (PFHpS) EEFOSAA MeFOSAA rrfluorotetradecanoic acid (PFTA) rrfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) rrfluorodecanesulfonic acid (PFDS) rrfluorocctanesulfonamide (FOSA)	9.86 8.53 9.85 10.1 8.22 8.31 8.61 7.41 8.53	1.9 1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01 9.30 9.64		92.7 102 105 85.3 86.2 95.5 79.7 88.5	69-134 61-135 65-136 71-132 65-144 63-143 53-142 67-137			
erfluoro(2-ethoxyethane)sulfonic acid FEESA) erfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA erfluorotetradecanoic acid (PFTA) erfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS)	9.86 8.53 9.85 10.1 8.22 8.31 8.61 7.41 8.53 8.63	1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01 9.30 9.64 9.25		92.7 102 105 85.3 86.2 95.5 79.7 88.5 93.3	69-134 61-135 65-136 71-132 65-144 63-143 53-142 67-137 69-127			
erfluoro(2-ethoxyethane)sulfonic acid PFESA) erfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA erfluorotetradecanoic acid (PFTA) erfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS) erfluoro-1-hexanesulfonamide (FHxSA)	9.86 8.53 9.85 10.1 8.22 8.31 8.61 7.41 8.53 8.63 8.64	1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01 9.30 9.64 9.25 9.64		92.7 102 105 85.3 86.2 95.5 79.7 88.5 93.3 89.7	69-134 61-135 65-136 71-132 65-144 63-143 53-142 67-137 69-127 50-150			
erfluoro(2-ethoxyethane)sulfonic acid FEESA) erfluoroheptanesulfonic acid (PFHpS) -EtFOSAA -MeFOSAA erfluorotetradecanoic acid (PFTA) erfluorotridecanoic acid (PFTrDA) 2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS)	9.86 8.53 9.85 10.1 8.22 8.31 8.61 7.41 8.53 8.63	1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9 1.9	ng/L ng/L ng/L ng/L ng/L ng/L ng/L ng/L	9.20 9.64 9.64 9.64 9.64 9.01 9.30 9.64 9.25		92.7 102 105 85.3 86.2 95.5 79.7 88.5 93.3	69-134 61-135 65-136 71-132 65-144 63-143 53-142 67-137 69-127			



QUALITY CONTROL

		Reporting		Spike	Source	%REC		RPD	
Analyte	Result	Limit	Units	Level	Result %REC	Limits	RPD	Limit	Notes
Batch B290484 - SOP 454-PFAAS									
CS (B290484-BS1)				Prepared: 09	/20/21 Analyzed: 09/21/	21			
erfluoro-4-oxapentanoic acid (PFMPA)	10.3	1.9	ng/L	9.64	106	50-150			
erfluoro-5-oxahexanoic acid (PFMBA)	10.3	1.9	ng/L	9.64	107	50-150			
2 Fluorotelomersulfonic acid (6:2FTS A)	9.40	1.9	ng/L	9.16	103	64-140			
erfluoropetanesulfonic acid (PFPeS)	8.21	1.9	ng/L	9.06	90.7	71-127			
erfluoroundecanoic acid (PFUnA)	8.12	1.9	ng/L	9.64	84.2	69-133			
onafluoro-3,6-dioxaheptanoic acid	8.99	1.9	ng/L	9.64	93.3	50-150			
NFDHA)			_						
erfluoroheptanoic acid (PFHpA)	9.26	1.9	ng/L	9.64	96.1	72-130			
erfluorooctanoic acid (PFOA)	8.73	1.9	ng/L	9.64	90.6	71-133			
erfluorooctanesulfonic acid (PFOS)	8.09	1.9	ng/L	8.91	90.7	65-140			
erfluorononanoic acid (PFNA)	9.22	1.9	ng/L	9.64	95.7	69-130			
CS Dup (B290484-BSD1)				Prepared: 09	/20/21 Analyzed: 09/21/	21			
erfluorobutanoic acid (PFBA)	8.58	1.9	ng/L	9.72	88.2	73-129	2.34	30	
erfluorobutanesulfonic acid (PFBS)	7.43	1.9	ng/L	8.61	86.3	72-130	4.25	30	
erfluoropentanoic acid (PFPeA)	8.43	1.9	ng/L	9.72	86.7	72-129	0.181	30	
erfluorohexanoic acid (PFHxA)	8.39	1.9	ng/L	9.72	86.2	72-129	0.724	30	
Cl-PF3OUdS (F53B Minor)	7.61	1.9	ng/L	9.16	83.1	50-150	4.36	30	
Cl-PF3ONS (F53B Major)	7.58	1.9	ng/L	9.06	83.6	50-150	0.915	30	
8-dioxa-3H-perfluorononanoic acid ADONA)	7.48	1.9	ng/L	9.16	81.6	50-150	5.70	30	
exafluoropropylene oxide dimer acid IFPO-DA)	7.37	1.9	ng/L	9.72	75.8	50-150	5.37	30	
2 Fluorotelomersulfonic acid (8:2FTS A)	8.41	1.9	ng/L	9.33	90.1	67-138	8.02	30	
erfluorodecanoic acid (PFDA)	7.52	1.9	ng/L	9.72	77.3	71-129	4.37	30	
erfluorododecanoic acid (PFDoA)	8.59	1.9	ng/L	9.72	88.4	72-134	4.83	30	
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	9.46	1.9	ng/L	8.65	109	50-150	4.21	30	
erfluoroheptanesulfonic acid (PFHpS)	8.61	1.9	ng/L	9.29	92.7	69-134	0.972	30	
-EtFOSAA	9.26	1.9	ng/L	9.72	95.2	61-135	6.12	30	
-MeFOSAA	9.80	1.9	ng/L	9.72	101	65-136	3.51	30	
erfluorotetradecanoic acid (PFTA)	7.51	1.9	ng/L	9.72	77.2	71-132	9.14	30	
erfluorotridecanoic acid (PFTrDA)	7.58	1.9	ng/L	9.72	77.9	65-144	9.24	30	
2 Fluorotelomersulfonic acid (4:2FTS A)	8.40	1.9	ng/L	9.09	92.4	63-143	2.43	30	
erfluorodecanesulfonic acid (PFDS)	8.08	1.9	ng/L	9.38	86.1	53-142	8.61	30	
erfluorooctanesulfonamide (FOSA)	8.21	1.9	ng/L	9.72	84.4	67-137	3.78	30	
erfluorononanesulfonic acid (PFNS)	7.92	1.9	ng/L	9.33	84.9	69-127	8.58	30	
erfluoro-1-hexanesulfonamide (FHxSA)	8.49	1.9	ng/L	9.72	87.3	50-150	1.77	30	
erfluoro-1-butanesulfonamide (FBSA)	9.02	1.9	ng/L	9.72	92.8	50-150	7.22	30	
erfluorohexanesulfonic acid (PFHxS)	7.58	1.9	ng/L	8.85	85.6	68-131	1.63	30	
erfluoro-4-oxapentanoic acid (PFMPA)	9.77	1.9	ng/L	9.72	100	50-150	4.89	30	
erfluoro-5-oxahexanoic acid (PFMBA)	10.1	1.9	ng/L	9.72	104	50-150	1.35	30	
2 Fluorotelomersulfonic acid (6:2FTS A)	8.74	1.9	ng/L	9.24	94.6	64-140	7.29	30	
rfluoropetanesulfonic acid (PFPeS)	7.30	1.9	ng/L	9.14	79.9	71-127	11.8	30	
rfluoroundecanoic acid (PFUnA)	7.54	1.9	ng/L	9.72	77.5	69-133	7.43	30	
onafluoro-3,6-dioxaheptanoic acid (FDHA)	8.69	1.9	ng/L	9.72	89.4	50-150	3.36	30	
erfluoroheptanoic acid (PFHpA)	9.04	1.9	ng/L	9.72	93.0	72-130	2.45	30	
erfluorooctanoic acid (PFOA)	8.95	1.9	ng/L	9.72	92.1	71-133	2.46	30	
erfluorooctanesulfonic acid (PFOS)	7.78	1.9	ng/L	8.99	86.5	65-140	3.85	30	
erfluorononanoic acid (PFNA)	8.93	1.9	ng/L	9.72	91.8	69-130	3.23	30	



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.
D	Sample analyzed at a dilution.
E	Reported result is estimated. Value reported over verified calibration range.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-01	Laboratory fortified blank/laboratory control sample recovery outside of control limits. Data validation is not affected since all results are "not detected" for all samples in this batch for this compound and bias is on the high
PF-17	side. Extracted Internal Standard recovery is outside of control limits. Data is not significantly affected since associated
11 17	analyte is not detected and bias is on the high side.
PF-18	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.
S-29	Extracted Internal Standard is outside of control limits.



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-302 (21I0272-01)			Lab File ID: 21I02	72-01.d		Analyzed: 09/1	7/21 12:52		
M8FOSA	293027.3	4.01255	369,591.00	4.01255	79	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	95093.95	2.505033	158,816.00	2.505033	60	50 - 150	0.0000	+/-0.50	
M2PFTA	1313460	4.32155	1,328,511.00	4.32155	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	90175.99	3.810767	92,666.00	3.810767	97	50 - 150	0.0000	+/-0.50	
MPFBA	563206.3	1.0917	585,136.00	1.0917	96	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	238066.4	2.847483	198,070.00	2.847483	120	50 - 150	0.0000	+/-0.50	
M6PFDA	726131	3.811283	707,695.00	3.811283	103	50 - 150	0.0000	+/-0.50	
M3PFBS	163827	1.911533	165,269.00	1.911533	99	50 - 150	0.0000	+/-0.50	
M7PFUnA	1016555	3.954033	942,111.00	3.954033	108	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	56597.03	3.453267	79,940.00	3.453267	71	50 - 150	0.0000	+/-0.50	
M5PFPeA	560048.8	1.741117	583,615.00	1.741117	96	50 - 150	0.0000	+/-0.50	
M5PFHxA	879884.4	2.596983	912,809.00	2.588767	96	50 - 150	0.0082	+/-0.50	
M3PFHxS	119770.2	3.226417	118,966.00	3.226417	101	50 - 150	0.0000	+/-0.50	
M4PFHpA	850816.3	3.195017	872,221.00	3.186933	98	50 - 150	0.0081	+/-0.50	
M8PFOA	726593.3	3.469917	754,054.00	3.469917	96	50 - 150	0.0000	+/-0.50	
M8PFOS	124543.8	3.660133	125,235.00	3.660133	99	50 - 150	0.0000	+/-0.50	
M9PFNA	618483.1	3.661183	634,069.00	3.661183	98	50 - 150	0.0000	+/-0.50	
MPFDoA	958073.1	4.08865	983,581.00	4.08865	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	187939.4	3.9615	188,700.00	3.9615	100	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	245012.9	3.88175	272,416.00	3.88175	90	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-2 (21I0272-02RE1)			Lab File ID: 21I02	72-02RE1.d		Analyzed: 09/20	0/21 15:40		
M8FOSA	236509.9	4.00455	218,614.00	4.01255	108	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	59621.48	2.57895	103,259.00	2.57895	58	50 - 150	0.0000	+/-0.50	
M2PFTA	1098722	4.362167	915,422.00	4.3703	120	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	68884.31	3.842967	71,083.00	3.842967	97	50 - 150	0.0000	+/-0.50	
MPFBA	416079.5	1.116633	362,574.00	1.116633	115	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	141725	2.904767	128,250.00	2.904767	111	50 - 150	0.0000	+/-0.50	
M6PFDA	561809.4	3.843467	458,138.00	3.843467	123	50 - 150	0.0000	+/-0.50	
M3PFBS	118075.8	1.96145	94,406.00	1.969733	125	50 - 150	-0.0083	+/-0.50	
M7PFUnA	796925.9	3.986	656,922.00	3.986	121	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	46034.37	3.485367	48,940.00	3.493333	94	50 - 150	-0.0080	+/-0.50	
M5PFPeA	473805.5	1.791367	370,457.00	1.791367	128	50 - 150	0.0000	+/-0.50	
M5PFHxA	692360.5	2.663233	551,718.00	2.663233	125	50 - 150	0.0000	+/-0.50	
M3PFHxS	82250.35	3.25875	65,016.00	3.25875	127	50 - 150	0.0000	+/-0.50	
M4PFHpA	670352.6	3.227617	534,996.00	3.227617	125	50 - 150	0.0000	+/-0.50	
M8PFOA	601740.9	3.50185	486,421.00	3.50185	124	50 - 150	0.0000	+/-0.50	
M8PFOS	94157.73	3.6841	73,070.00	3.6841	129	50 - 150	0.0000	+/-0.50	
M9PFNA	489503.8	3.685133	399,608.00	3.685133	122	50 - 150	0.0000	+/-0.50	
MPFDoA	780479.6	4.120767	673,085.00	4.1288	116	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	166600.3	3.993467	138,654.00	4.001467	120	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	191048.4	3.9139	175,092.00	3.921883	109	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-3 (21I0272-03RE1)			Lab File ID: 21I02	72-03RE1.d		Analyzed: 09/20	0/21 15:47		
M8FOSA	217376.5	4.01255	218,614.00	4.01255	99	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	47490.55	2.570733	103,259.00	2.57895	46	50 - 150	-0.0082	+/-0.50	*
M2PFTA	911604.2	4.362167	915,422.00	4.3703	100	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	57792	3.842967	71,083.00	3.842967	81	50 - 150	0.0000	+/-0.50	
MPFBA	437490.9	1.116633	362,574.00	1.116633	121	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	155294.7	2.896583	128,250.00	2.904767	121	50 - 150	-0.0082	+/-0.50	
M6PFDA	502013.4	3.843467	458,138.00	3.843467	110	50 - 150	0.0000	+/-0.50	
M3PFBS	108278.8	1.96145	94,406.00	1.969733	115	50 - 150	-0.0083	+/-0.50	
M7PFUnA	669566	3.986	656,922.00	3.986	102	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	37918.68	3.48535	48,940.00	3.493333	77	50 - 150	-0.0080	+/-0.50	
M5PFPeA	443108.7	1.791367	370,457.00	1.791367	120	50 - 150	0.0000	+/-0.50	
M5PFHxA	634636.3	2.655	551,718.00	2.663233	115	50 - 150	-0.0082	+/-0.50	
M3PFHxS	72275.3	3.25875	65,016.00	3.25875	111	50 - 150	0.0000	+/-0.50	
M4PFHpA	608572.3	3.227617	534,996.00	3.227617	114	50 - 150	0.0000	+/-0.50	
M8PFOA	537297.1	3.50185	486,421.00	3.50185	110	50 - 150	0.0000	+/-0.50	
M8PFOS	80523.12	3.6841	73,070.00	3.6841	110	50 - 150	0.0000	+/-0.50	
M9PFNA	437334.9	3.685133	399,608.00	3.685133	109	50 - 150	0.0000	+/-0.50	
MPFDoA	710094.1	4.120767	673,085.00	4.1288	105	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	141472.8	3.993467	138,654.00	4.001467	102	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	168179.8	3.9139	175,092.00	3.921883	96	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-K (2110272-04)			Lab File ID: 21I02	72-04.d		Analyzed: 09/1	7/21 13:13		
M8FOSA	174498.3	4.01255	369,591.00	4.01255	47	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	88020.01	2.505033	158,816.00	2.505033	55	50 - 150	0.0000	+/-0.50	
M2PFTA	1004625	4.32155	1,328,511.00	4.32155	76	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	80646.11	3.810767	92,666.00	3.810767	87	50 - 150	0.0000	+/-0.50	
MPFBA	513313	1.0917	585,136.00	1.0917	88	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	287744.9	2.847483	198,070.00	2.847483	145	50 - 150	0.0000	+/-0.50	
M6PFDA	734466.4	3.811283	707,695.00	3.811283	104	50 - 150	0.0000	+/-0.50	
M3PFBS	155563.8	1.911533	165,269.00	1.911533	94	50 - 150	0.0000	+/-0.50	
M7PFUnA	970316.8	3.954033	942,111.00	3.954033	103	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	52958.18	3.453267	79,940.00	3.453267	66	50 - 150	0.0000	+/-0.50	
M5PFPeA	554604.6	1.741117	583,615.00	1.741117	95	50 - 150	0.0000	+/-0.50	
M5PFHxA	872127.8	2.588767	912,809.00	2.588767	96	50 - 150	0.0000	+/-0.50	
M3PFHxS	105965.9	3.226417	118,966.00	3.226417	89	50 - 150	0.0000	+/-0.50	
M4PFHpA	844316.6	3.186933	872,221.00	3.186933	97	50 - 150	0.0000	+/-0.50	
M8PFOA	744350.2	3.469917	754,054.00	3.469917	99	50 - 150	0.0000	+/-0.50	
M8PFOS	116162.3	3.66015	125,235.00	3.660133	93	50 - 150	0.0000	+/-0.50	
M9PFNA	590049.6	3.661183	634,069.00	3.661183	93	50 - 150	0.0000	+/-0.50	
MPFDoA	906923.6	4.08865	983,581.00	4.08865	92	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	173283.2	3.9615	188,700.00	3.9615	92	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	234792.6	3.88175	272,416.00	3.88175	86	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-K (2110272-04RE1)			Lab File ID: 21I02	72-04RE1.d		Analyzed: 09/2	1/21 18:03		
M8FOSA	88149.39	4.00455	298,565.00	4.01255	30	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	103543.8	2.51325	152,461.00	2.537883	68	50 - 150	-0.0246	+/-0.50	
M2PFTA	82373.4	4.3378	1,205,326.00	4.3378	07	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	87874.27	3.818733	111,876.00	3.827067	79	50 - 150	-0.0083	+/-0.50	
MPFBA	543173.6	1.100017	500,132.00	1.100017	109	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	272107.8	2.855667	168,519.00	2.872033	161	50 - 150	-0.0164	+/-0.50	*
M6PFDA	552325.6	3.81925	618,239.00	3.81925	89	50 - 150	0.0000	+/-0.50	
M3PFBS	156107	1.919817	128,141.00	1.9364	122	50 - 150	-0.0166	+/-0.50	
M7PFUnA	555310.1	3.962017	896,694.00	3.970017	62	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	49039.09	3.461417	84,421.00	3.469383	58	50 - 150	-0.0080	+/-0.50	
M5PFPeA	592146.4	1.749417	507,610.00	1.757717	117	50 - 150	-0.0083	+/-0.50	
M5PFHxA	896410.4	2.605183	753,606.00	2.621617	119	50 - 150	-0.0164	+/-0.50	
M3PFHxS	106562.5	3.2345	96,253.00	3.242583	111	50 - 150	-0.0081	+/-0.50	
M4PFHpA	819093.3	3.195017	712,666.00	3.203083	115	50 - 150	-0.0081	+/-0.50	
M8PFOA	723099.3	3.4779	632,450.00	3.4779	114	50 - 150	0.0000	+/-0.50	
M8PFOS	92944.63	3.660133	100,319.00	3.668133	93	50 - 150	-0.0080	+/-0.50	
M9PFNA	560388.5	3.661183	536,176.00	3.669167	105	50 - 150	-0.0080	+/-0.50	
MPFDoA	325398.7	4.096633	882,883.00	4.104633	37	50 - 150	-0.0080	+/-0.50	*
d5-NEtFOSAA	122556.6	3.9695	184,789.00	3.977483	66	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	162991.3	3.889733	221,851.00	3.897717	73	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OW-19 (S) (2110272-05)			Lab File ID: 21I02	72-05.d		Analyzed: 09/1	7/21 13:20		
M8FOSA	160058.6	4.00455	369,591.00	4.01255	43	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	97904.59	2.496817	158,816.00	2.505033	62	50 - 150	-0.0082	+/-0.50	
M2PFTA	740304.9	4.32155	1,328,511.00	4.32155	56	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	91941.77	3.810767	92,666.00	3.810767	99	50 - 150	0.0000	+/-0.50	
MPFBA	427388.7	1.0917	585,136.00	1.0917	73	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	251704.3	2.8393	198,070.00	2.847483	127	50 - 150	-0.0082	+/-0.50	
M6PFDA	661833.7	3.803317	707,695.00	3.811283	94	50 - 150	-0.0080	+/-0.50	
M3PFBS	151493.2	1.911533	165,269.00	1.911533	92	50 - 150	0.0000	+/-0.50	
M7PFUnA	916116.8	3.946033	942,111.00	3.954033	97	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	71904.77	3.453267	79,940.00	3.453267	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	506993.2	1.731383	583,615.00	1.741117	87	50 - 150	-0.0097	+/-0.50	
M5PFHxA	833416.8	2.58055	912,809.00	2.588767	91	50 - 150	-0.0082	+/-0.50	
M3PFHxS	102263.7	3.226417	118,966.00	3.226417	86	50 - 150	0.0000	+/-0.50	
M4PFHpA	788014.8	3.186933	872,221.00	3.186933	90	50 - 150	0.0000	+/-0.50	
M8PFOA	733171.1	3.469917	754,054.00	3.469917	97	50 - 150	0.0000	+/-0.50	
M8PFOS	108385.3	3.65215	125,235.00	3.660133	87	50 - 150	-0.0080	+/-0.50	
M9PFNA	580720.5	3.6532	634,069.00	3.661183	92	50 - 150	-0.0080	+/-0.50	
MPFDoA	872480.6	4.08865	983,581.00	4.08865	89	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	166249.8	3.9535	188,700.00	3.9615	88	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	210439.5	3.88175	272,416.00	3.88175	77	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OW-19 (S) (21I0272-05RE1)			Lab File ID: 21I02	72-05RE1.d		Analyzed: 09/20	0/21 15:54		
M8FOSA	66299.16	4.00455	218,614.00	4.01255	30	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	77941.08	2.562517	103,259.00	2.57895	75	50 - 150	-0.0164	+/-0.50	
M2PFTA	143560.8	4.362167	915,422.00	4.3703	16	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	66350.29	3.842967	71,083.00	3.842967	93	50 - 150	0.0000	+/-0.50	
MPFBA	321250.4	1.116633	362,574.00	1.116633	89	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	131564.8	2.896583	128,250.00	2.904767	103	50 - 150	-0.0082	+/-0.50	
M6PFDA	366641.4	3.8355	458,138.00	3.843467	80	50 - 150	-0.0080	+/-0.50	
M3PFBS	108643.2	1.95315	94,406.00	1.969733	115	50 - 150	-0.0166	+/-0.50	
M7PFUnA	356914.8	3.986	656,922.00	3.986	54	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	54603.26	3.485367	48,940.00	3.493333	112	50 - 150	-0.0080	+/-0.50	
M5PFPeA	412259.5	1.7826	370,457.00	1.791367	111	50 - 150	-0.0088	+/-0.50	
M5PFHxA	627253.8	2.646767	551,718.00	2.663233	114	50 - 150	-0.0165	+/-0.50	
M3PFHxS	75719.32	3.250667	65,016.00	3.25875	116	50 - 150	-0.0081	+/-0.50	
M4PFHpA	592698.9	3.219533	534,996.00	3.227617	111	50 - 150	-0.0081	+/-0.50	
M8PFOA	502974.3	3.493867	486,421.00	3.50185	103	50 - 150	-0.0080	+/-0.50	
M8PFOS	65249.45	3.6841	73,070.00	3.6841	89	50 - 150	0.0000	+/-0.50	
M9PFNA	381050.4	3.685133	399,608.00	3.685133	95	50 - 150	0.0000	+/-0.50	
MPFDoA	272093.6	4.120767	673,085.00	4.1288	40	50 - 150	-0.0080	+/-0.50	*
d5-NEtFOSAA	76089.26	3.993467	138,654.00	4.001467	55	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	102287.5	3.9139	175,092.00	3.921883	58	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-300 (21I0272-06)			Lab File ID: 21I02	72-06.d		Analyzed: 09/1:	5/21 20:26		
M8FOSA	89146.98	4.00455	264,454.00	4.01255	34	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	114791.1	2.505033	106,035.00	2.51325	108	50 - 150	-0.0082	+/-0.50	
M2PFTA	34270.55	4.329683	979,713.00	4.329683	03	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	74667.34	3.810767	62,559.00	3.810767	119	50 - 150	0.0000	+/-0.50	
MPFBA	441150.5	1.0917	467,144.00	1.0917	94	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	247342.5	2.8393	196,636.00	2.847483	126	50 - 150	-0.0082	+/-0.50	
M6PFDA	632757.2	3.811283	506,494.00	3.811283	125	50 - 150	0.0000	+/-0.50	
M3PFBS	159061.5	1.911533	117,013.00	1.911533	136	50 - 150	0.0000	+/-0.50	
M7PFUnA	564673.9	3.954033	708,269.00	3.954033	80	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	84639.68	3.453267	56,462.00	3.461417	150	50 - 150	-0.0082	+/-0.50	
M5PFPeA	577215.7	1.741117	454,641.00	1.741117	127	50 - 150	0.0000	+/-0.50	
M5PFHxA	897981.5	2.588767	675,515.00	2.596983	133	50 - 150	-0.0082	+/-0.50	
M3PFHxS	109811.3	3.226417	83,413.00	3.226417	132	50 - 150	0.0000	+/-0.50	
M4PFHpA	863842.6	3.186933	637,955.00	3.195017	135	50 - 150	-0.0081	+/-0.50	
M8PFOA	755457.9	3.469917	553,550.00	3.469917	136	50 - 150	0.0000	+/-0.50	
M8PFOS	106095.7	3.66015	91,091.00	3.660133	116	50 - 150	0.0000	+/-0.50	
M9PFNA	639070.6	3.661183	464,517.00	3.661183	138	50 - 150	0.0000	+/-0.50	
MPFDoA	235757	4.08865	721,060.00	4.08865	33	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	116052	3.9615	147,554.00	3.9615	79	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	168311.4	3.88175	178,646.00	3.889733	94	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-300 (2110272-06RE1)			Lab File ID: 21I02	72-06RE1.d		Analyzed: 09/20	0/21 16:02		
M8FOSA	50594.25	4.00455	218,614.00	4.01255	23	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	83647.66	2.562517	103,259.00	2.57895	81	50 - 150	-0.0164	+/-0.50	
M2PFTA	52143.98	4.362167	915,422.00	4.3703	06	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	67831.51	3.835017	71,083.00	3.842967	95	50 - 150	-0.0079	+/-0.50	
MPFBA	296686.3	1.116633	362,574.00	1.116633	82	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	145071.3	2.8884	128,250.00	2.904767	113	50 - 150	-0.0164	+/-0.50	
M6PFDA	354594.6	3.835517	458,138.00	3.843467	77	50 - 150	-0.0080	+/-0.50	
M3PFBS	102314.8	1.95315	94,406.00	1.969733	108	50 - 150	-0.0166	+/-0.50	
M7PFUnA	362371.8	3.986	656,922.00	3.986	55	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	53702.3	3.485367	48,940.00	3.493333	110	50 - 150	-0.0080	+/-0.50	
M5PFPeA	389308.3	1.7743	370,457.00	1.791367	105	50 - 150	-0.0171	+/-0.50	
M5PFHxA	583188.1	2.646767	551,718.00	2.663233	106	50 - 150	-0.0165	+/-0.50	
M3PFHxS	66431.47	3.250667	65,016.00	3.25875	102	50 - 150	-0.0081	+/-0.50	
M4PFHpA	549416.1	3.219533	534,996.00	3.227617	103	50 - 150	-0.0081	+/-0.50	
M8PFOA	482865.7	3.493867	486,421.00	3.50185	99	50 - 150	-0.0080	+/-0.50	
M8PFOS	66746.61	3.6841	73,070.00	3.6841	91	50 - 150	0.0000	+/-0.50	
M9PFNA	359869.1	3.685133	399,608.00	3.685133	90	50 - 150	0.0000	+/-0.50	
MPFDoA	200792.2	4.120767	673,085.00	4.1288	30	50 - 150	-0.0080	+/-0.50	*
d5-NEtFOSAA	82451.94	3.993467	138,654.00	4.001467	59	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	111104.4	3.9139	175,092.00	3.921883	63	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OW-19 (M) (21I0272-07)			Lab File ID: 21I02	72-07.d		Analyzed: 09/1:	5/21 20:34		
M8FOSA	181225.1	4.00455	264,454.00	4.01255	69	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	123690.8	2.505033	106,035.00	2.51325	117	50 - 150	-0.0082	+/-0.50	
M2PFTA	60709.61	4.329683	979,713.00	4.329683	06	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	99632.58	3.810767	62,559.00	3.810767	159	50 - 150	0.0000	+/-0.50	*
MPFBA	464074.9	1.100017	467,144.00	1.0917	99	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	283183.4	2.8393	196,636.00	2.847483	144	50 - 150	-0.0082	+/-0.50	
M6PFDA	594689.5	3.811283	506,494.00	3.811283	117	50 - 150	0.0000	+/-0.50	
M3PFBS	154538	1.911533	117,013.00	1.911533	132	50 - 150	0.0000	+/-0.50	
M7PFUnA	649787.2	3.954033	708,269.00	3.954033	92	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	69927.2	3.453267	56,462.00	3.461417	124	50 - 150	-0.0082	+/-0.50	
M5PFPeA	535337.9	1.741117	454,641.00	1.741117	118	50 - 150	0.0000	+/-0.50	
M5PFHxA	851006.1	2.588767	675,515.00	2.596983	126	50 - 150	-0.0082	+/-0.50	
M3PFHxS	108201.6	3.226417	83,413.00	3.226417	130	50 - 150	0.0000	+/-0.50	
M4PFHpA	807336.7	3.186933	637,955.00	3.195017	127	50 - 150	-0.0081	+/-0.50	
M8PFOA	777370.1	3.469917	553,550.00	3.469917	140	50 - 150	0.0000	+/-0.50	
M8PFOS	112956.3	3.660133	91,091.00	3.660133	124	50 - 150	0.0000	+/-0.50	
M9PFNA	586442.8	3.653183	464,517.00	3.661183	126	50 - 150	-0.0080	+/-0.50	
MPFDoA	377617.6	4.08865	721,060.00	4.08865	52	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	138926.1	3.9615	147,554.00	3.9615	94	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	172129.6	3.88175	178,646.00	3.889733	96	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OW-19 (M) (21I0272-07RE1)			Lab File ID: 21I02	72-07RE1.d		Analyzed: 09/20	0/21 16:09		
M8FOSA	23184.42	4.00455	218,614.00	4.01255	11	50 - 150	-0.0080	+/-0.50	*
M2-4:2FTS	81101.6	2.5543	103,259.00	2.57895	79	50 - 150	-0.0246	+/-0.50	
M2PFTA	63089.97	4.362167	915,422.00	4.3703	07	50 - 150	-0.0081	+/-0.50	*
M2-8:2FTS	60782.73	3.835017	71,083.00	3.842967	86	50 - 150	-0.0079	+/-0.50	
MPFBA	379391.5	1.116633	362,574.00	1.116633	105	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	148119.2	2.8884	128,250.00	2.904767	115	50 - 150	-0.0164	+/-0.50	
M6PFDA	286627.8	3.8355	458,138.00	3.843467	63	50 - 150	-0.0080	+/-0.50	
M3PFBS	113065.9	1.95315	94,406.00	1.969733	120	50 - 150	-0.0166	+/-0.50	
M7PFUnA	204176.1	3.978017	656,922.00	3.986	31	50 - 150	-0.0080	+/-0.50	*
M2-6:2FTS	55984.09	3.485367	48,940.00	3.493333	114	50 - 150	-0.0080	+/-0.50	
M5PFPeA	431864.6	1.7743	370,457.00	1.791367	117	50 - 150	-0.0171	+/-0.50	
M5PFHxA	649653.7	2.638533	551,718.00	2.663233	118	50 - 150	-0.0247	+/-0.50	
M3PFHxS	75691.62	3.250667	65,016.00	3.25875	116	50 - 150	-0.0081	+/-0.50	
M4PFHpA	606449.4	3.219533	534,996.00	3.227617	113	50 - 150	-0.0081	+/-0.50	
M8PFOA	517460.9	3.493867	486,421.00	3.50185	106	50 - 150	-0.0080	+/-0.50	
M8PFOS	54384.38	3.676117	73,070.00	3.6841	74	50 - 150	-0.0080	+/-0.50	
M9PFNA	370769.4	3.685133	399,608.00	3.685133	93	50 - 150	0.0000	+/-0.50	
MPFDoA	137631	4.120767	673,085.00	4.1288	20	50 - 150	-0.0080	+/-0.50	*
d5-NEtFOSAA	44407.26	3.985483	138,654.00	4.001467	32	50 - 150	-0.0160	+/-0.50	*
d3-NMeFOSAA	69751.59	3.9139	175,092.00	3.921883	40	50 - 150	-0.0080	+/-0.50	*



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-S (MW) (2110272-08)			Lab File ID: 21I02	72-08.d		Analyzed: 09/1:	5/21 20:41		
M8FOSA	206053	4.00455	264,454.00	4.01255	78	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	85858.25	2.505033	106,035.00	2.51325	81	50 - 150	-0.0082	+/-0.50	
M2PFTA	974369.3	4.329683	979,713.00	4.329683	99	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	74426.35	3.810767	62,559.00	3.810767	119	50 - 150	0.0000	+/-0.50	
MPFBA	468496.4	1.0917	467,144.00	1.0917	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	281128	2.847483	196,636.00	2.847483	143	50 - 150	0.0000	+/-0.50	
M6PFDA	640062.5	3.811283	506,494.00	3.811283	126	50 - 150	0.0000	+/-0.50	
M3PFBS	145962.9	1.911533	117,013.00	1.911533	125	50 - 150	0.0000	+/-0.50	
M7PFUnA	891197.8	3.954033	708,269.00	3.954033	126	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	52524.18	3.453267	56,462.00	3.461417	93	50 - 150	-0.0082	+/-0.50	
M5PFPeA	513560.3	1.741117	454,641.00	1.741117	113	50 - 150	0.0000	+/-0.50	
M5PFHxA	808824.9	2.588767	675,515.00	2.596983	120	50 - 150	-0.0082	+/-0.50	
M3PFHxS	104394.1	3.226417	83,413.00	3.226417	125	50 - 150	0.0000	+/-0.50	
M4PFHpA	783049.8	3.186933	637,955.00	3.195017	123	50 - 150	-0.0081	+/-0.50	
M8PFOA	721167.5	3.469917	553,550.00	3.469917	130	50 - 150	0.0000	+/-0.50	
M8PFOS	105101.7	3.660133	91,091.00	3.660133	115	50 - 150	0.0000	+/-0.50	
M9PFNA	562112.8	3.661183	464,517.00	3.661183	121	50 - 150	0.0000	+/-0.50	
MPFDoA	823263.7	4.08865	721,060.00	4.08865	114	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	173314.2	3.9615	147,554.00	3.9615	117	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	212206.2	3.88175	178,646.00	3.889733	119	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-S (S) (2110272-09RE1)			Lab File ID: 21I02	72-09RE1.d		Analyzed: 09/20	0/21 16:16		
M8FOSA	239651	4.00455	218,614.00	4.01255	110	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	55253.3	2.562517	103,259.00	2.57895	54	50 - 150	-0.0164	+/-0.50	
M2PFTA	1088887	4.362167	915,422.00	4.3703	119	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	75475.87	3.835017	71,083.00	3.842967	106	50 - 150	-0.0079	+/-0.50	
MPFBA	489417.5	1.116633	362,574.00	1.116633	135	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	136267.6	2.8884	128,250.00	2.904767	106	50 - 150	-0.0164	+/-0.50	
M6PFDA	585620.7	3.8355	458,138.00	3.843467	128	50 - 150	-0.0080	+/-0.50	
M3PFBS	118212.7	1.95315	94,406.00	1.969733	125	50 - 150	-0.0166	+/-0.50	
M7PFUnA	755689.9	3.986	656,922.00	3.986	115	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	64389.04	3.48535	48,940.00	3.493333	132	50 - 150	-0.0080	+/-0.50	
M5PFPeA	484752.2	1.7826	370,457.00	1.791367	131	50 - 150	-0.0088	+/-0.50	
M5PFHxA	698211.3	2.646767	551,718.00	2.663233	127	50 - 150	-0.0165	+/-0.50	
M3PFHxS	81804.17	3.250667	65,016.00	3.25875	126	50 - 150	-0.0081	+/-0.50	
M4PFHpA	675023.6	3.219533	534,996.00	3.227617	126	50 - 150	-0.0081	+/-0.50	
M8PFOA	598753.4	3.493867	486,421.00	3.50185	123	50 - 150	-0.0080	+/-0.50	
M8PFOS	94226.3	3.6841	73,070.00	3.6841	129	50 - 150	0.0000	+/-0.50	
M9PFNA	497225.6	3.685133	399,608.00	3.685133	124	50 - 150	0.0000	+/-0.50	
MPFDoA	768773.5	4.120767	673,085.00	4.1288	114	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	152114.1	3.993467	138,654.00	4.001467	110	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	192693.1	3.9139	175,092.00	3.921883	110	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-W (M) (21I0272-10)			Lab File ID: 21I02	72-10.d		Analyzed: 09/1:	5/21 20:55		
M8FOSA	322959.3	4.00455	264,454.00	4.01255	122	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	92171.34	2.505033	106,035.00	2.51325	87	50 - 150	-0.0082	+/-0.50	
M2PFTA	1204946	4.329683	979,713.00	4.329683	123	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	88997.16	3.810767	62,559.00	3.810767	142	50 - 150	0.0000	+/-0.50	
MPFBA	510618	1.0917	467,144.00	1.0917	109	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	339446.4	2.8393	196,636.00	2.847483	173	50 - 150	-0.0082	+/-0.50	*
M6PFDA	698264.8	3.811283	506,494.00	3.811283	138	50 - 150	0.0000	+/-0.50	
M3PFBS	158919.9	1.911533	117,013.00	1.911533	136	50 - 150	0.0000	+/-0.50	
M7PFUnA	955705.8	3.954033	708,269.00	3.954033	135	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	54276.04	3.453267	56,462.00	3.461417	96	50 - 150	-0.0082	+/-0.50	
M5PFPeA	570574.2	1.741117	454,641.00	1.741117	125	50 - 150	0.0000	+/-0.50	
M5PFHxA	890583.2	2.588767	675,515.00	2.596983	132	50 - 150	-0.0082	+/-0.50	
M3PFHxS	110309.9	3.226417	83,413.00	3.226417	132	50 - 150	0.0000	+/-0.50	
M4PFHpA	839461.3	3.186933	637,955.00	3.195017	132	50 - 150	-0.0081	+/-0.50	
M8PFOA	763236.4	3.469917	553,550.00	3.469917	138	50 - 150	0.0000	+/-0.50	
M8PFOS	113801.2	3.660133	91,091.00	3.660133	125	50 - 150	0.0000	+/-0.50	
M9PFNA	602847.9	3.661183	464,517.00	3.661183	130	50 - 150	0.0000	+/-0.50	
MPFDoA	960187.5	4.08865	721,060.00	4.08865	133	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	200188.2	3.9615	147,554.00	3.9615	136	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	239010.9	3.88175	178,646.00	3.889733	134	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-W (D) (2110272-11)			Lab File ID: 21I02	72-11.d		Analyzed: 09/1:	5/21 21:02		
M8FOSA	310412.4	4.00455	264,454.00	4.01255	117	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	90951.89	2.505033	106,035.00	2.51325	86	50 - 150	-0.0082	+/-0.50	
M2PFTA	1196705	4.329683	979,713.00	4.329683	122	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	83626.63	3.810767	62,559.00	3.810767	134	50 - 150	0.0000	+/-0.50	
MPFBA	498610.6	1.0917	467,144.00	1.0917	107	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	325987.1	2.847483	196,636.00	2.847483	166	50 - 150	0.0000	+/-0.50	*
M6PFDA	668466.6	3.811283	506,494.00	3.811283	132	50 - 150	0.0000	+/-0.50	
M3PFBS	152214.3	1.911533	117,013.00	1.911533	130	50 - 150	0.0000	+/-0.50	
M7PFUnA	969397.4	3.954033	708,269.00	3.954033	137	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	54751.54	3.453267	56,462.00	3.461417	97	50 - 150	-0.0082	+/-0.50	
M5PFPeA	547760.6	1.741117	454,641.00	1.741117	120	50 - 150	0.0000	+/-0.50	
M5PFHxA	862710.7	2.588767	675,515.00	2.596983	128	50 - 150	-0.0082	+/-0.50	
M3PFHxS	105444	3.226417	83,413.00	3.226417	126	50 - 150	0.0000	+/-0.50	
M4PFHpA	808228.1	3.186933	637,955.00	3.195017	127	50 - 150	-0.0081	+/-0.50	
M8PFOA	730460.9	3.469917	553,550.00	3.469917	132	50 - 150	0.0000	+/-0.50	
M8PFOS	107973.6	3.66015	91,091.00	3.660133	119	50 - 150	0.0000	+/-0.50	
M9PFNA	595885.1	3.661183	464,517.00	3.661183	128	50 - 150	0.0000	+/-0.50	
MPFDoA	928199.2	4.08865	721,060.00	4.08865	129	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	181761.7	3.9615	147,554.00	3.9615	123	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	244814.5	3.88175	178,646.00	3.889733	137	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-W (DD) (21I0272-12)			Lab File ID: 21I02	72-12.d		Analyzed: 09/1:	5/21 21:10		
M8FOSA	270363.4	4.01255	264,454.00	4.01255	102	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	87783.14	2.51325	106,035.00	2.51325	83	50 - 150	0.0000	+/-0.50	
M2PFTA	1058376	4.329683	979,713.00	4.329683	108	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	81073.42	3.810767	62,559.00	3.810767	130	50 - 150	0.0000	+/-0.50	
MPFBA	459943.9	1.0917	467,144.00	1.0917	98	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	305925.4	2.847483	196,636.00	2.847483	156	50 - 150	0.0000	+/-0.50	*
M6PFDA	671831	3.811283	506,494.00	3.811283	133	50 - 150	0.0000	+/-0.50	
M3PFBS	140938.9	1.911533	117,013.00	1.911533	120	50 - 150	0.0000	+/-0.50	
M7PFUnA	853307.9	3.954033	708,269.00	3.954033	120	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	51128.85	3.461417	56,462.00	3.461417	91	50 - 150	0.0000	+/-0.50	
M5PFPeA	503185.6	1.741117	454,641.00	1.741117	111	50 - 150	0.0000	+/-0.50	
M5PFHxA	792750.4	2.596983	675,515.00	2.596983	117	50 - 150	0.0000	+/-0.50	
M3PFHxS	100838.7	3.226417	83,413.00	3.226417	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	766305.8	3.195017	637,955.00	3.195017	120	50 - 150	0.0000	+/-0.50	
M8PFOA	702833.9	3.469917	553,550.00	3.469917	127	50 - 150	0.0000	+/-0.50	
M8PFOS	108453.6	3.66015	91,091.00	3.660133	119	50 - 150	0.0000	+/-0.50	
M9PFNA	571555.8	3.661183	464,517.00	3.661183	123	50 - 150	0.0000	+/-0.50	
MPFDoA	787356.1	4.08865	721,060.00	4.08865	109	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	169257.5	3.9615	147,554.00	3.9615	115	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	217455.5	3.889733	178,646.00	3.889733	122	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
RB-1 (S) (21I0272-13)			Lab File ID: 21I02	72-13.d		Analyzed: 09/1:	5/21 21:17		
M8FOSA	283110.8	4.00455	264,454.00	4.01255	107	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	161844.3	2.51325	106,035.00	2.51325	153	50 - 150	0.0000	+/-0.50	*
M2PFTA	1240045	4.329683	979,713.00	4.329683	127	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	129303.7	3.810767	62,559.00	3.810767	207	50 - 150	0.0000	+/-0.50	*
MPFBA	442701.9	1.100017	467,144.00	1.0917	95	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	351307.8	2.847483	196,636.00	2.847483	179	50 - 150	0.0000	+/-0.50	*
M6PFDA	711697.5	3.811283	506,494.00	3.811283	141	50 - 150	0.0000	+/-0.50	
M3PFBS	151092	1.911533	117,013.00	1.911533	129	50 - 150	0.0000	+/-0.50	
M7PFUnA	1031265	3.954033	708,269.00	3.954033	146	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	87268.15	3.453267	56,462.00	3.461417	155	50 - 150	-0.0082	+/-0.50	*
M5PFPeA	500641.4	1.741117	454,641.00	1.741117	110	50 - 150	0.0000	+/-0.50	
M5PFHxA	849007.1	2.596983	675,515.00	2.596983	126	50 - 150	0.0000	+/-0.50	
M3PFHxS	111391.5	3.226417	83,413.00	3.226417	134	50 - 150	0.0000	+/-0.50	
M4PFHpA	827929.5	3.195017	637,955.00	3.195017	130	50 - 150	0.0000	+/-0.50	
M8PFOA	742313.1	3.469917	553,550.00	3.469917	134	50 - 150	0.0000	+/-0.50	
M8PFOS	113613	3.66015	91,091.00	3.660133	125	50 - 150	0.0000	+/-0.50	
M9PFNA	591611.8	3.661183	464,517.00	3.661183	127	50 - 150	0.0000	+/-0.50	
MPFDoA	921918.3	4.08865	721,060.00	4.08865	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	187403.5	3.9615	147,554.00	3.9615	127	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	192585.4	3.88175	178,646.00	3.889733	108	50 - 150	-0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
RB-1 (M) (21I0272-14)			Lab File ID: 21I02	72-14.d		Analyzed: 09/1:	5/21 21:24		
M8FOSA	289529.4	4.00455	264,454.00	4.01255	109	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	89379.09	2.51325	106,035.00	2.51325	84	50 - 150	0.0000	+/-0.50	
M2PFTA	1232775	4.329683	979,713.00	4.329683	126	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	82389.35	3.810767	62,559.00	3.810767	132	50 - 150	0.0000	+/-0.50	
MPFBA	465910.5	1.0917	467,144.00	1.0917	100	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	331068.6	2.847483	196,636.00	2.847483	168	50 - 150	0.0000	+/-0.50	*
M6PFDA	657409.3	3.811283	506,494.00	3.811283	130	50 - 150	0.0000	+/-0.50	
M3PFBS	148611.7	1.911533	117,013.00	1.911533	127	50 - 150	0.0000	+/-0.50	
M7PFUnA	891875.3	3.954033	708,269.00	3.954033	126	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	53467.79	3.453267	56,462.00	3.461417	95	50 - 150	-0.0082	+/-0.50	
M5PFPeA	532905.7	1.741117	454,641.00	1.741117	117	50 - 150	0.0000	+/-0.50	
M5PFHxA	830523.7	2.596983	675,515.00	2.596983	123	50 - 150	0.0000	+/-0.50	
M3PFHxS	100949.2	3.226417	83,413.00	3.226417	121	50 - 150	0.0000	+/-0.50	
M4PFHpA	775586.9	3.195017	637,955.00	3.195017	122	50 - 150	0.0000	+/-0.50	
M8PFOA	696066.9	3.469917	553,550.00	3.469917	126	50 - 150	0.0000	+/-0.50	
M8PFOS	115372.6	3.660133	91,091.00	3.660133	127	50 - 150	0.0000	+/-0.50	
M9PFNA	575569.4	3.661183	464,517.00	3.661183	124	50 - 150	0.0000	+/-0.50	
MPFDoA	920930.7	4.08865	721,060.00	4.08865	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	181635.1	3.9615	147,554.00	3.9615	123	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	212475.2	3.88175	178,646.00	3.889733	119	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-U (S) (2110272-15)			Lab File ID: 21I02	72-15.d		Analyzed: 09/1:	5/21 21:31		
M8FOSA	279458.7	4.00455	264,454.00	4.01255	106	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	98214.15	2.505033	106,035.00	2.51325	93	50 - 150	-0.0082	+/-0.50	
M2PFTA	1161002	4.329683	979,713.00	4.329683	119	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	86765.73	3.810767	62,559.00	3.810767	139	50 - 150	0.0000	+/-0.50	
MPFBA	397154.8	1.0917	467,144.00	1.0917	85	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	356373.8	2.847483	196,636.00	2.847483	181	50 - 150	0.0000	+/-0.50	*
M6PFDA	626317	3.811283	506,494.00	3.811283	124	50 - 150	0.0000	+/-0.50	
M3PFBS	134409	1.911533	117,013.00	1.911533	115	50 - 150	0.0000	+/-0.50	
M7PFUnA	899666.6	3.954033	708,269.00	3.954033	127	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	64686.79	3.453267	56,462.00	3.461417	115	50 - 150	-0.0082	+/-0.50	
M5PFPeA	471792.3	1.741117	454,641.00	1.741117	104	50 - 150	0.0000	+/-0.50	
M5PFHxA	771887.2	2.588767	675,515.00	2.596983	114	50 - 150	-0.0082	+/-0.50	
M3PFHxS	96556.68	3.226417	83,413.00	3.226417	116	50 - 150	0.0000	+/-0.50	
M4PFHpA	746481.8	3.195017	637,955.00	3.195017	117	50 - 150	0.0000	+/-0.50	
M8PFOA	657785.4	3.469917	553,550.00	3.469917	119	50 - 150	0.0000	+/-0.50	
M8PFOS	104280.1	3.660133	91,091.00	3.660133	114	50 - 150	0.0000	+/-0.50	
M9PFNA	525848.3	3.661183	464,517.00	3.661183	113	50 - 150	0.0000	+/-0.50	
MPFDoA	893642.3	4.08865	721,060.00	4.08865	124	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	172556.3	3.9615	147,554.00	3.9615	117	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	193779.1	3.88175	178,646.00	3.889733	108	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-U (M) (2110272-16RE1)			Lab File ID: 21I02	72-16RE1.d		Analyzed: 09/1	7/21 20:38		
M8FOSA	319766.1	4.00455	369,591.00	4.00455	87	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	106447.2	2.496817	158,816.00	2.496817	67	50 - 150	0.0000	+/-0.50	
M2PFTA	1351295	4.32155	1,328,511.00	4.32155	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	115976.3	3.8028	92,666.00	3.810767	125	50 - 150	-0.0080	+/-0.50	
MPFBA	591217.9	1.0917	585,136.00	1.0917	101	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	258252.8	2.8393	198,070.00	2.8393	130	50 - 150	0.0000	+/-0.50	
M6PFDA	785519.8	3.803317	707,695.00	3.803317	111	50 - 150	0.0000	+/-0.50	
M3PFBS	167565.3	1.90325	165,269.00	1.90325	101	50 - 150	0.0000	+/-0.50	
M7PFUnA	1101372	3.946033	942,111.00	3.946033	117	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	57986.18	3.453267	79,940.00	3.453267	73	50 - 150	0.0000	+/-0.50	
M5PFPeA	601227.4	1.731383	583,615.00	1.731383	103	50 - 150	0.0000	+/-0.50	
M5PFHxA	935981	2.58055	912,809.00	2.588767	103	50 - 150	-0.0082	+/-0.50	
M3PFHxS	115044.8	3.218333	118,966.00	3.218333	97	50 - 150	0.0000	+/-0.50	
M4PFHpA	904151.6	3.186933	872,221.00	3.186933	104	50 - 150	0.0000	+/-0.50	
M8PFOA	832990.2	3.461933	754,054.00	3.469917	110	50 - 150	-0.0080	+/-0.50	
M8PFOS	121956.1	3.65215	125,235.00	3.65215	97	50 - 150	0.0000	+/-0.50	
M9PFNA	706821	3.6532	634,069.00	3.6532	111	50 - 150	0.0000	+/-0.50	
MPFDoA	1039733	4.08065	983,581.00	4.08065	106	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	202735.8	3.9535	188,700.00	3.9535	107	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	263460.2	3.88175	272,416.00	3.88175	97	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-U (D) (2110272-17RE1)			Lab File ID: 21I02	72-17RE1.d		Analyzed: 09/20	0/21 16:23		
M8FOSA	220696.7	4.00455	218,614.00	4.01255	101	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	60819.24	2.562517	103,259.00	2.57895	59	50 - 150	-0.0164	+/-0.50	
M2PFTA	980892.8	4.362167	915,422.00	4.3703	107	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	77217.14	3.835017	71,083.00	3.842967	109	50 - 150	-0.0079	+/-0.50	
MPFBA	432064.4	1.116633	362,574.00	1.116633	119	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	154896.2	2.8884	128,250.00	2.904767	121	50 - 150	-0.0164	+/-0.50	
M6PFDA	523897.2	3.8355	458,138.00	3.843467	114	50 - 150	-0.0080	+/-0.50	
M3PFBS	116021.5	1.95315	94,406.00	1.969733	123	50 - 150	-0.0166	+/-0.50	
M7PFUnA	704266.4	3.986	656,922.00	3.986	107	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	48928.57	3.485367	48,940.00	3.493333	100	50 - 150	-0.0080	+/-0.50	
M5PFPeA	463654.3	1.7826	370,457.00	1.791367	125	50 - 150	-0.0088	+/-0.50	
M5PFHxA	666113	2.646767	551,718.00	2.663233	121	50 - 150	-0.0165	+/-0.50	
M3PFHxS	81618.85	3.250667	65,016.00	3.25875	126	50 - 150	-0.0081	+/-0.50	
M4PFHpA	651256.6	3.219533	534,996.00	3.227617	122	50 - 150	-0.0081	+/-0.50	
M8PFOA	584782.8	3.493867	486,421.00	3.50185	120	50 - 150	-0.0080	+/-0.50	
M8PFOS	89799.98	3.6841	73,070.00	3.6841	123	50 - 150	0.0000	+/-0.50	
M9PFNA	476846.7	3.685133	399,608.00	3.685133	119	50 - 150	0.0000	+/-0.50	
MPFDoA	701359.5	4.120767	673,085.00	4.1288	104	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	129354.7	3.993467	138,654.00	4.001467	93	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	174484	3.9139	175,092.00	3.921883	100	50 - 150	-0.0080	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B289938-BLK1)			Lab File ID: B2899	938-BLK1.d		Analyzed: 09/1	7/21 12:08		
M8FOSA	295559.5	4.01255	369,591.00	4.01255	80	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	140015.4	2.505033	158,816.00	2.505033	88	50 - 150	0.0000	+/-0.50	
M2PFTA	1229168	4.32155	1,328,511.00	4.32155	93	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	95579.13	3.810767	92,666.00	3.810767	103	50 - 150	0.0000	+/-0.50	
MPFBA	616233.4	1.0917	585,136.00	1.0917	105	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	254309.8	2.847483	198,070.00	2.847483	128	50 - 150	0.0000	+/-0.50	
M6PFDA	667717.1	3.811283	707,695.00	3.811283	94	50 - 150	0.0000	+/-0.50	
M3PFBS	153411	1.911533	165,269.00	1.911533	93	50 - 150	0.0000	+/-0.50	
M7PFUnA	947319.6	3.954033	942,111.00	3.954033	101	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	69899.54	3.453267	79,940.00	3.453267	87	50 - 150	0.0000	+/-0.50	
M5PFPeA	578430.9	1.741117	583,615.00	1.741117	99	50 - 150	0.0000	+/-0.50	
M5PFHxA	883944.3	2.588767	912,809.00	2.588767	97	50 - 150	0.0000	+/-0.50	
M3PFHxS	104795.1	3.226417	118,966.00	3.226417	88	50 - 150	0.0000	+/-0.50	
M4PFHpA	856884.3	3.186933	872,221.00	3.186933	98	50 - 150	0.0000	+/-0.50	
M8PFOA	770368.5	3.469917	754,054.00	3.469917	102	50 - 150	0.0000	+/-0.50	
M8PFOS	105649.8	3.660133	125,235.00	3.660133	84	50 - 150	0.0000	+/-0.50	
M9PFNA	612347.1	3.661183	634,069.00	3.661183	97	50 - 150	0.0000	+/-0.50	
MPFDoA	1014217	4.08865	983,581.00	4.08865	103	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	200843.3	3.9615	188,700.00	3.9615	106	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	233108.7	3.88175	272,416.00	3.88175	86	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q			
LCS (B289938-BS1)		Lab File ID: B289938-BS1.d					Analyzed: 09/17/21 11:54					
M8FOSA	301793.5	4.01255	369,591.00	4.01255	82	50 - 150	0.0000	+/-0.50				
M2-4:2FTS	143820.6	2.51325	158,816.00	2.505033	91	50 - 150	0.0082	+/-0.50				
M2PFTA	1187806	4.32155	1,328,511.00	4.32155	89	50 - 150	0.0000	+/-0.50				
M2-8:2FTS	85227.05	3.810767	92,666.00	3.810767	92	50 - 150	0.0000	+/-0.50				
MPFBA	520104	1.0917	585,136.00	1.0917	89	50 - 150	0.0000	+/-0.50				
M3HFPO-DA	182087.3	2.847483	198,070.00	2.847483	92	50 - 150	0.0000	+/-0.50				
M6PFDA	633355.8	3.811283	707,695.00	3.811283	89	50 - 150	0.0000	+/-0.50				
M3PFBS	144776.9	1.911533	165,269.00	1.911533	88	50 - 150	0.0000	+/-0.50				
M7PFUnA	883287.4	3.954033	942,111.00	3.954033	94	50 - 150	0.0000	+/-0.50				
M2-6:2FTS	69216.52	3.453267	79,940.00	3.453267	87	50 - 150	0.0000	+/-0.50				
M5PFPeA	517160.1	1.741117	583,615.00	1.741117	89	50 - 150	0.0000	+/-0.50				
M5PFHxA	796757.7	2.596983	912,809.00	2.588767	87	50 - 150	0.0082	+/-0.50				
M3PFHxS	100206.2	3.226417	118,966.00	3.226417	84	50 - 150	0.0000	+/-0.50				
M4PFHpA	757900.6	3.195017	872,221.00	3.186933	87	50 - 150	0.0081	+/-0.50				
M8PFOA	696942	3.469917	754,054.00	3.469917	92	50 - 150	0.0000	+/-0.50				
M8PFOS	109105.3	3.660133	125,235.00	3.660133	87	50 - 150	0.0000	+/-0.50				
M9PFNA	573617.5	3.6532	634,069.00	3.661183	90	50 - 150	-0.0080	+/-0.50				
MPFDoA	895083.6	4.08865	983,581.00	4.08865	91	50 - 150	0.0000	+/-0.50				
d5-NEtFOSAA	177687.6	3.9615	188,700.00	3.9615	94	50 - 150	0.0000	+/-0.50				
d3-NMeFOSAA	244807.3	3.88175	272,416.00	3.88175	90	50 - 150	0.0000	+/-0.50				



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q			
LCS Dup (B289938-BSD1)		Lab File ID: B289938-BSD1.d					Analyzed: 09/17/21 12:01					
M8FOSA	300678.1	4.01255	369,591.00	4.01255	81	50 - 150	0.0000	+/-0.50				
M2-4:2FTS	140517.7	2.51325	158,816.00	2.505033	88	50 - 150	0.0082	+/-0.50				
M2PFTA	1146976	4.32155	1,328,511.00	4.32155	86	50 - 150	0.0000	+/-0.50				
M2-8:2FTS	85322.66	3.810767	92,666.00	3.810767	92	50 - 150	0.0000	+/-0.50				
MPFBA	526236.3	1.0917	585,136.00	1.0917	90	50 - 150	0.0000	+/-0.50				
M3HFPO-DA	185853.3	2.847483	198,070.00	2.847483	94	50 - 150	0.0000	+/-0.50				
M6PFDA	589551.6	3.811283	707,695.00	3.811283	83	50 - 150	0.0000	+/-0.50				
M3PFBS	144897.4	1.911533	165,269.00	1.911533	88	50 - 150	0.0000	+/-0.50				
M7PFUnA	843116.2	3.954033	942,111.00	3.954033	89	50 - 150	0.0000	+/-0.50				
M2-6:2FTS	74148.76	3.453267	79,940.00	3.453267	93	50 - 150	0.0000	+/-0.50				
M5PFPeA	520775.8	1.741117	583,615.00	1.741117	89	50 - 150	0.0000	+/-0.50				
M5PFHxA	797373.1	2.596983	912,809.00	2.588767	87	50 - 150	0.0082	+/-0.50				
M3PFHxS	103045.6	3.226417	118,966.00	3.226417	87	50 - 150	0.0000	+/-0.50				
M4PFHpA	773294.8	3.186933	872,221.00	3.186933	89	50 - 150	0.0000	+/-0.50				
M8PFOA	667804.4	3.469917	754,054.00	3.469917	89	50 - 150	0.0000	+/-0.50				
M8PFOS	97716.94	3.660133	125,235.00	3.660133	78	50 - 150	0.0000	+/-0.50				
M9PFNA	569593	3.6532	634,069.00	3.661183	90	50 - 150	-0.0080	+/-0.50				
MPFDoA	909621.3	4.08865	983,581.00	4.08865	92	50 - 150	0.0000	+/-0.50				
d5-NEtFOSAA	194390.5	3.9615	188,700.00	3.9615	103	50 - 150	0.0000	+/-0.50				
d3-NMeFOSAA	214739.7	3.88175	272,416.00	3.88175	79	50 - 150	0.0000	+/-0.50				



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B290193-BLK1)			Analyzed: 09/17/21 19:48						
M8FOSA	345722.7	4.00455	369,591.00	4.00455	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	153518.1	2.496817	158,816.00	2.496817	97	50 - 150	0.0000	+/-0.50	
M2PFTA	1257450	4.32155	1,328,511.00	4.32155	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	121288.2	3.8028	92,666.00	3.810767	131	50 - 150	-0.0080	+/-0.50	
MPFBA	699285.9	1.0917	585,136.00	1.0917	120	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	227540.6	2.8393	198,070.00	2.8393	115	50 - 150	0.0000	+/-0.50	
M6PFDA	855219.2	3.803317	707,695.00	3.803317	121	50 - 150	0.0000	+/-0.50	
M3PFBS	167270.5	1.911533	165,269.00	1.90325	101	50 - 150	0.0083	+/-0.50	
M7PFUnA	1073297	3.946033	942,111.00	3.946033	114	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	83873.37	3.453267	79,940.00	3.453267	105	50 - 150	0.0000	+/-0.50	
M5PFPeA	651597.8	1.731383	583,615.00	1.731383	112	50 - 150	0.0000	+/-0.50	
M5PFHxA	973016.9	2.58055	912,809.00	2.588767	107	50 - 150	-0.0082	+/-0.50	
M3PFHxS	113064.6	3.218333	118,966.00	3.218333	95	50 - 150	0.0000	+/-0.50	
M4PFHpA	959413.6	3.186933	872,221.00	3.186933	110	50 - 150	0.0000	+/-0.50	
M8PFOA	871315.8	3.461933	754,054.00	3.469917	116	50 - 150	-0.0080	+/-0.50	
M8PFOS	126071.3	3.65215	125,235.00	3.65215	101	50 - 150	0.0000	+/-0.50	
M9PFNA	720073.1	3.653183	634,069.00	3.6532	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1036180	4.08065	983,581.00	4.08065	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	245184.2	3.9535	188,700.00	3.9535	130	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	305551.9	3.88175	272,416.00	3.88175	112	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B290193-BS1)			Analyzed: 09/17/21 19:33						
M8FOSA	288324.7	4.00455	369,591.00	4.00455	78	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	146211.1	2.505033	158,816.00	2.496817	92	50 - 150	0.0082	+/-0.50	
M2PFTA	1128587	4.32155	1,328,511.00	4.32155	85	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	104509.1	3.810767	92,666.00	3.810767	113	50 - 150	0.0000	+/-0.50	
MPFBA	665400.7	1.0917	585,136.00	1.0917	114	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	273163.2	2.8393	198,070.00	2.8393	138	50 - 150	0.0000	+/-0.50	
M6PFDA	826576.9	3.803317	707,695.00	3.803317	117	50 - 150	0.0000	+/-0.50	
M3PFBS	156984.5	1.911533	165,269.00	1.90325	95	50 - 150	0.0083	+/-0.50	
M7PFUnA	1066784	3.946033	942,111.00	3.946033	113	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	77403.84	3.453267	79,940.00	3.453267	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	611097.9	1.741117	583,615.00	1.731383	105	50 - 150	0.0097	+/-0.50	
M5PFHxA	939046.4	2.588767	912,809.00	2.588767	103	50 - 150	0.0000	+/-0.50	
M3PFHxS	109178.4	3.218333	118,966.00	3.218333	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	892269.8	3.186933	872,221.00	3.186933	102	50 - 150	0.0000	+/-0.50	
M8PFOA	785627.6	3.469917	754,054.00	3.469917	104	50 - 150	0.0000	+/-0.50	
M8PFOS	124172.2	3.65215	125,235.00	3.65215	99	50 - 150	0.0000	+/-0.50	
M9PFNA	671046.3	3.653183	634,069.00	3.6532	106	50 - 150	0.0000	+/-0.50	
MPFDoA	947818.8	4.08065	983,581.00	4.08065	96	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	190612.5	3.9535	188,700.00	3.9535	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	273729.5	3.88175	272,416.00	3.88175	100	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B290193-BSD1)				Analyzed: 09/17/21 19:41					
M8FOSA	325373.4	4.00455	369,591.00	4.00455	88	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148906.6	2.496817	158,816.00	2.496817	94	50 - 150	0.0000	+/-0.50	
M2PFTA	1283329	4.32155	1,328,511.00	4.32155	97	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	112040.1	3.810767	92,666.00	3.810767	121	50 - 150	0.0000	+/-0.50	
MPFBA	658822.6	1.0917	585,136.00	1.0917	113	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	230800.8	2.8393	198,070.00	2.8393	117	50 - 150	0.0000	+/-0.50	
M6PFDA	763013.8	3.803317	707,695.00	3.803317	108	50 - 150	0.0000	+/-0.50	
M3PFBS	149789.6	1.911533	165,269.00	1.90325	91	50 - 150	0.0083	+/-0.50	
M7PFUnA	980950.6	3.946033	942,111.00	3.946033	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	78224.07	3.453267	79,940.00	3.453267	98	50 - 150	0.0000	+/-0.50	
M5PFPeA	613204.1	1.731383	583,615.00	1.731383	105	50 - 150	0.0000	+/-0.50	
M5PFHxA	932257.4	2.588767	912,809.00	2.588767	102	50 - 150	0.0000	+/-0.50	
M3PFHxS	103605	3.218333	118,966.00	3.218333	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	875828.1	3.186933	872,221.00	3.186933	100	50 - 150	0.0000	+/-0.50	
M8PFOA	850063	3.461933	754,054.00	3.469917	113	50 - 150	-0.0080	+/-0.50	
M8PFOS	121188.9	3.65215	125,235.00	3.65215	97	50 - 150	0.0000	+/-0.50	
M9PFNA	640080.3	3.653183	634,069.00	3.6532	101	50 - 150	0.0000	+/-0.50	
MPFDoA	1079706	4.08065	983,581.00	4.08065	110	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	224172.5	3.9535	188,700.00	3.9535	119	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	254087.3	3.88175	272,416.00	3.88175	93	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B290250-BLK1)			Analyzed: 09/20/21 15:01						
M8FOSA	246270	4.00455	218,614.00	4.01255	113	50 - 150	-0.0080	+/-0.50	
M2-4:2FTS	121954	2.57895	103,259.00	2.57895	118	50 - 150	0.0000	+/-0.50	
M2PFTA	1135108	4.362167	915,422.00	4.3703	124	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	94424.71	3.842967	71,083.00	3.842967	133	50 - 150	0.0000	+/-0.50	
MPFBA	473479.2	1.116633	362,574.00	1.116633	131	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	139615.6	2.904767	128,250.00	2.904767	109	50 - 150	0.0000	+/-0.50	
M6PFDA	602965.4	3.843467	458,138.00	3.843467	132	50 - 150	0.0000	+/-0.50	
M3PFBS	120793.4	1.969733	94,406.00	1.969733	128	50 - 150	0.0000	+/-0.50	
M7PFUnA	853585.2	3.986	656,922.00	3.986	130	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	68212.74	3.48535	48,940.00	3.493333	139	50 - 150	-0.0080	+/-0.50	
M5PFPeA	479382.5	1.791367	370,457.00	1.791367	129	50 - 150	0.0000	+/-0.50	
M5PFHxA	706016.4	2.663233	551,718.00	2.663233	128	50 - 150	0.0000	+/-0.50	
M3PFHxS	80174.94	3.25875	65,016.00	3.25875	123	50 - 150	0.0000	+/-0.50	
M4PFHpA	686232.4	3.227617	534,996.00	3.227617	128	50 - 150	0.0000	+/-0.50	
M8PFOA	608650	3.50185	486,421.00	3.50185	125	50 - 150	0.0000	+/-0.50	
M8PFOS	89875.19	3.6841	73,070.00	3.6841	123	50 - 150	0.0000	+/-0.50	
M9PFNA	510085.8	3.685133	399,608.00	3.685133	128	50 - 150	0.0000	+/-0.50	
MPFDoA	903746.1	4.120767	673,085.00	4.1288	134	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	176412.8	3.993467	138,654.00	4.001467	127	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	223498.5	3.921883	175,092.00	3.921883	128	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B290250-BS1)		Analyzed: 09/20/21 14:47							
M8FOSA	216953	4.01255	218,614.00	4.01255	99	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	111586.7	2.58715	103,259.00	2.57895	108	50 - 150	0.0082	+/-0.50	
M2PFTA	944136.3	4.362167	915,422.00	4.3703	103	50 - 150	-0.0081	+/-0.50	
M2-8:2FTS	86695.16	3.842967	71,083.00	3.842967	122	50 - 150	0.0000	+/-0.50	
MPFBA	432445.3	1.12495	362,574.00	1.116633	119	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	126738.8	2.91295	128,250.00	2.904767	99	50 - 150	0.0082	+/-0.50	
M6PFDA	530007.3	3.843467	458,138.00	3.843467	116	50 - 150	0.0000	+/-0.50	
M3PFBS	110656.6	1.978033	94,406.00	1.969733	117	50 - 150	0.0083	+/-0.50	
M7PFUnA	719668.4	3.986	656,922.00	3.986	110	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	58143.82	3.493333	48,940.00	3.493333	119	50 - 150	0.0000	+/-0.50	
M5PFPeA	442976.5	1.79965	370,457.00	1.791367	120	50 - 150	0.0083	+/-0.50	
M5PFHxA	655456.3	2.672333	551,718.00	2.663233	119	50 - 150	0.0091	+/-0.50	
M3PFHxS	77303.56	3.25875	65,016.00	3.25875	119	50 - 150	0.0000	+/-0.50	
M4PFHpA	648610.3	3.2357	534,996.00	3.227617	121	50 - 150	0.0081	+/-0.50	
M8PFOA	574815.5	3.50185	486,421.00	3.50185	118	50 - 150	0.0000	+/-0.50	
M8PFOS	85630.51	3.6841	73,070.00	3.6841	117	50 - 150	0.0000	+/-0.50	
M9PFNA	481267.4	3.693117	399,608.00	3.685133	120	50 - 150	0.0080	+/-0.50	
MPFDoA	718903.6	4.1288	673,085.00	4.1288	107	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	148340.4	3.993467	138,654.00	4.001467	107	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	194316.8	3.921883	175,092.00	3.921883	111	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q			
LCS Dup (B290250-BSD1)		Lab File ID: B290250-BSD1.d					Analyzed: 09/20/21 14:54					
M8FOSA	237499.6	4.01255	218,614.00	4.01255	109	50 - 150	0.0000	+/-0.50				
M2-4:2FTS	120063.2	2.57895	103,259.00	2.57895	116	50 - 150	0.0000	+/-0.50				
M2PFTA	1115013	4.362167	915,422.00	4.3703	122	50 - 150	-0.0081	+/-0.50				
M2-8:2FTS	87125.77	3.842967	71,083.00	3.842967	123	50 - 150	0.0000	+/-0.50				
MPFBA	468107.4	1.116633	362,574.00	1.116633	129	50 - 150	0.0000	+/-0.50				
M3HFPO-DA	183444.9	2.904767	128,250.00	2.904767	143	50 - 150	0.0000	+/-0.50				
M6PFDA	588055.9	3.843467	458,138.00	3.843467	128	50 - 150	0.0000	+/-0.50				
M3PFBS	116616.1	1.969733	94,406.00	1.969733	124	50 - 150	0.0000	+/-0.50				
M7PFUnA	792121.1	3.986	656,922.00	3.986	121	50 - 150	0.0000	+/-0.50				
M2-6:2FTS	63092.25	3.48535	48,940.00	3.493333	129	50 - 150	-0.0080	+/-0.50				
M5PFPeA	471670.7	1.791367	370,457.00	1.791367	127	50 - 150	0.0000	+/-0.50				
M5PFHxA	707703.9	2.663233	551,718.00	2.663233	128	50 - 150	0.0000	+/-0.50				
M3PFHxS	79145.32	3.25875	65,016.00	3.25875	122	50 - 150	0.0000	+/-0.50				
M4PFHpA	671136.1	3.227617	534,996.00	3.227617	125	50 - 150	0.0000	+/-0.50				
M8PFOA	597741.1	3.50185	486,421.00	3.50185	123	50 - 150	0.0000	+/-0.50				
M8PFOS	92977.35	3.6841	73,070.00	3.6841	127	50 - 150	0.0000	+/-0.50				
M9PFNA	496842.4	3.685133	399,608.00	3.685133	124	50 - 150	0.0000	+/-0.50				
MPFDoA	809441.1	4.1288	673,085.00	4.1288	120	50 - 150	0.0000	+/-0.50				
d5-NEtFOSAA	160368.1	3.993467	138,654.00	4.001467	116	50 - 150	-0.0080	+/-0.50				
d3-NMeFOSAA	202907.8	3.921883	175,092.00	3.921883	116	50 - 150	0.0000	+/-0.50				



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B290484-BLK1)				Analyzed: 09/21/21 16:51					
M8FOSA	289249.2	4.01255	298,565.00	4.01255	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	147796.5	2.529667	152,461.00	2.537883	97	50 - 150	-0.0082	+/-0.50	
M2PFTA	1228980	4.3378	1,205,326.00	4.3378	102	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	116071.1	3.818733	111,876.00	3.827067	104	50 - 150	-0.0083	+/-0.50	
MPFBA	584318.4	1.100017	500,132.00	1.100017	117	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	229879.7	2.86385	168,519.00	2.872033	136	50 - 150	-0.0082	+/-0.50	
M6PFDA	660333.9	3.81925	618,239.00	3.81925	107	50 - 150	0.0000	+/-0.50	
M3PFBS	136968.5	1.928117	128,141.00	1.9364	107	50 - 150	-0.0083	+/-0.50	
M7PFUnA	889704.7	3.962017	896,694.00	3.970017	99	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	85591.25	3.469383	84,421.00	3.469383	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	562388.4	1.757717	507,610.00	1.757717	111	50 - 150	0.0000	+/-0.50	
M5PFHxA	833699.6	2.6134	753,606.00	2.621617	111	50 - 150	-0.0082	+/-0.50	
M3PFHxS	97520.66	3.2345	96,253.00	3.242583	101	50 - 150	-0.0081	+/-0.50	
M4PFHpA	780552.9	3.203083	712,666.00	3.203083	110	50 - 150	0.0000	+/-0.50	
M8PFOA	726578.8	3.4779	632,450.00	3.4779	115	50 - 150	0.0000	+/-0.50	
M8PFOS	103354.1	3.668133	100,319.00	3.668133	103	50 - 150	0.0000	+/-0.50	
M9PFNA	601919.8	3.669167	536,176.00	3.669167	112	50 - 150	0.0000	+/-0.50	
MPFDoA	905811.6	4.096633	882,883.00	4.104633	103	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	177262.4	3.969483	184,789.00	3.977483	96	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	242070.9	3.897717	221,851.00	3.897717	109	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B290484-BS1)			Analyzed: 09/21/21 16:37						
M8FOSA	281386.3	4.01255	298,565.00	4.01255	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	146616.5	2.537883	152,461.00	2.537883	96	50 - 150	0.0000	+/-0.50	
M2PFTA	1135431	4.3378	1,205,326.00	4.3378	94	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	100667.6	3.818733	111,876.00	3.827067	90	50 - 150	-0.0083	+/-0.50	
MPFBA	558219.1	1.108317	500,132.00	1.100017	112	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	231284.8	2.872033	168,519.00	2.872033	137	50 - 150	0.0000	+/-0.50	
M6PFDA	658893.5	3.81925	618,239.00	3.81925	107	50 - 150	0.0000	+/-0.50	
M3PFBS	138726.2	1.9364	128,141.00	1.9364	108	50 - 150	0.0000	+/-0.50	
M7PFUnA	889428.7	3.962017	896,694.00	3.970017	99	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	79579.59	3.4694	84,421.00	3.469383	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	572924.6	1.766017	507,610.00	1.757717	113	50 - 150	0.0083	+/-0.50	
M5PFHxA	835389.5	2.621617	753,606.00	2.621617	111	50 - 150	0.0000	+/-0.50	
M3PFHxS	100131.3	3.242583	96,253.00	3.242583	104	50 - 150	0.0000	+/-0.50	
M4PFHpA	785186.9	3.203083	712,666.00	3.203083	110	50 - 150	0.0000	+/-0.50	
M8PFOA	713810.9	3.4779	632,450.00	3.4779	113	50 - 150	0.0000	+/-0.50	
M8PFOS	104435.9	3.668133	100,319.00	3.668133	104	50 - 150	0.0000	+/-0.50	
M9PFNA	572149.1	3.669167	536,176.00	3.669167	107	50 - 150	0.0000	+/-0.50	
MPFDoA	826277.9	4.104633	882,883.00	4.104633	94	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	178377.5	3.9695	184,789.00	3.977483	97	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	236585	3.897717	221,851.00	3.897717	107	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B290484-BSD1)			Lab File ID: B2904	184-BSD1.d		Analyzed: 09/2	1/21 16:44		•
M8FOSA	304009.5	4.01255	298,565.00	4.01255	102	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	157065.8	2.529667	152,461.00	2.537883	103	50 - 150	-0.0082	+/-0.50	
M2PFTA	1306598	4.3378	1,205,326.00	4.3378	108	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	118657.4	3.818733	111,876.00	3.827067	106	50 - 150	-0.0083	+/-0.50	
MPFBA	597853.7	1.100017	500,132.00	1.100017	120	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	261035.7	2.86385	168,519.00	2.872033	155	50 - 150	-0.0082	+/-0.50	*
M6PFDA	720888.6	3.81925	618,239.00	3.81925	117	50 - 150	0.0000	+/-0.50	
M3PFBS	144415.8	1.9364	128,141.00	1.9364	113	50 - 150	0.0000	+/-0.50	
M7PFUnA	984650.3	3.962017	896,694.00	3.970017	110	50 - 150	-0.0080	+/-0.50	
M2-6:2FTS	84851.72	3.469383	84,421.00	3.469383	101	50 - 150	0.0000	+/-0.50	
M5PFPeA	581841.9	1.757717	507,610.00	1.757717	115	50 - 150	0.0000	+/-0.50	
M5PFHxA	852231.7	2.6134	753,606.00	2.621617	113	50 - 150	-0.0082	+/-0.50	
M3PFHxS	104259.6	3.2345	96,253.00	3.242583	108	50 - 150	-0.0081	+/-0.50	
M4PFHpA	823020.1	3.203083	712,666.00	3.203083	115	50 - 150	0.0000	+/-0.50	
M8PFOA	701906.8	3.4779	632,450.00	3.4779	111	50 - 150	0.0000	+/-0.50	
M8PFOS	109516.9	3.668133	100,319.00	3.668133	109	50 - 150	0.0000	+/-0.50	
M9PFNA	601166	3.669167	536,176.00	3.669167	112	50 - 150	0.0000	+/-0.50	
MPFDoA	890216.7	4.096633	882,883.00	4.104633	101	50 - 150	-0.0080	+/-0.50	
d5-NEtFOSAA	200662.3	3.969483	184,789.00	3.977483	109	50 - 150	-0.0080	+/-0.50	
d3-NMeFOSAA	250656.3	3.897717	221,851.00	3.897717	113	50 - 150	0.0000	+/-0.50	



CERTIFICATIONS

Certified Analyses included in this Report

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



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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

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Prepackaged Cooler? Y / N Glassware in freezer? Y / N esponsible for missing samples analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace Analytical values your partnership on each project and will try to assist with missing information, but will Disclaimer: Pace Analytical 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 Glassware in the fridge? Matrix Codes:

GW = Ground Water

WW = Waste Water

DW = Drinking Water *Pace Analytical is not from prepacked coolers Istal Number On Preservation Codes: X = Sodium Hydroxide Courrier Use Only O = Other (please define) B = Sodium Bisulfate PLASTIC 2 O = Other (please define) Preservation Code S = Sulfuric Acid N = Nitric Acid BACTERIA St. = Sludge ENCORE M = Methanol VIALS GLASS T = Sodium Thiosulfate SOL = Solid A = Air S = Soil H = HCL possible sample concentration within the Conc H - High; M - Medium; L - Low; C - Clean; U -Please use the following codes to indicate NELAC and Alta-LAP, LLC Accredited Chromatogram AIHA-LAP, LLC TRI preserved, run isotope dilution method not be held accountable. Code column above: ANALYSIS REQUESTED Doc # 381 Rev 5_07/13/2021 CT RCP Required MA MCP Required MCP Certification Form Required RCP Certification Form Required MA State DW Required SYTH XX X × X × X X × 39 Spruce Street East Longmeadow, MA 01028 ENCORE BACTERIA Field Filtered Field Filtered PCB ONL) Lab to Filter Lab to Filter VIALS GLASS PLASTIC 7 L لم N Ŋ School 7 4 4 EMBIT TO: brosso Charamunithen SCXHLET SOXHLET CHAIN OF CUSTODY RECORD 0 0 0 0 Conc Code http://www.pacelabs.com Σ Municipality Brownfield Due Date: Matrix <u>ユ</u>り 10-Day PWSID # 3-Day 4-Day EXCEL CLP Like Data Pkg Required: COMP/GRAB State Oracle] [2 PFAS 10-Day (std) PP 7:30 17:00 Ending Date/Time 20:12 14:30 00:3 18:15 9/5/17:30 9/2/14:30 ₩:9 8.9 Government ax To #: Party Tize 14.1 Gient Comments: ormat: Federal Other: 7-Day 1-Day -Day City 1001 Project Entity 7/6 9/2 2/6 Beginning Date/Time 9/3 9/3 5 ठे Access COC's and Support Requests ۵ Jitten Graye 14.18 14.18 100 8.00 B.00 CHOTIC Date/Time: Client Sample 10 / Description Phone: 413-525-2332 Address: 90 Rte 6A Unit I Sandwich Fax: 413-525-6405 Date/Time: Date/Time 2 HW-SCM HM-300 SN-1965 ON-19(m) HW-WC Project Manager: Bryon Mosec HW-302 HW-5(s) Y-MH 8-833-6600 HM-3 7-MH HY CUNITY Pace Analytical * Company Vames Consider t C (signature) Pace Quote Name/Number: finquished by Signature Relinquished by: (signature) Received by: (signature) Received by: (signature) Sampled By: HW Work Orders Project Location: Invoice Recipient: Project Number: Comments

Table of Contents Glassware in freezer? Y / N Prepackaged Cooler? Y / N missing samples from prepacked *Contest is not responsible for 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 b Chain of Custody is a legal document that must be complete and accurate and is used to determine what Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Glassware in the fridge? ² Preservation Codes: | = Iced H = HCL 1 Matrix Codes: GW = Ground Water WW = Waste Water DW = Drinking Water Total Number Of: B = Sodium Bisulfate X = Sodium Hydroxide S = Soil SL = Sludge SOL = Solid O = Other (please define) PLASTIC 14 Thiosulfate O = Other (please Non Soxhlet PCB ONLY S .: Sulfuric Acid M = Methanol N = Nitric Acid coolers Page 2 of . Preservation Code BACTERIA GLASS ENCORE VIALS T = Sodium A = Air define) possible sample concentration within the Conc H - High; M - Medium; L - Low; C - Clean; U -Please use the following codes to indicate NELAC and AlHA-LAP, LLC Accredited Chromatogram AIHA-LAP, LLC TRI preserved, run isotope dilution Code column above: ANALYSIS REQUESTED held accountable. Doc # 381 Rev 2_06262019 WRTA Certification Form Requir MA MUP Requir 2K=19 × × × X \times X CT RCF Hwg 39 Spruce Street East Longmeadow, MA 01028 broasses@herspywitten.com GLASS PLASTIC BACTERIA EXCEL Field Fittered method Field Filtered Lab to Filter Lab to Filter N 4 4 School H 4 MWRA MBTA CHAIN OF CUSTODY RECORD VIALS MAL 0 0 0 0 Matrix Conc Code Code http://www.contestlabs.com PDF Municipality Brownfield Due Date: 10-Day 3-Day 4-Day 9/5 17:00 Grab GM 21 3 CLP Like Data Pkg Required: COMP/GRAB PFAS 10-Day (std) 16:30 23.38 0.81 5/6 18:30 Beginning Ending Date/Time Date/Time 9/5/19:30 <u>a</u> Government mail To: ax To #: ormat: Federal Other: 2-Day -Day -Day City 12/5, 14:15 GW-Project Entity 3/6 3/8 Sandwich, MA 9/5 SCOULS Email: info@contestlabs.com 7 2° 8.4 Date/Time: 90 Rte 6A Unit-1 Scurdwig 508-853-6600 afe/Time: Client Sample ID / Description Fax: 413-525-6405 Date/Time: Date/Time: Date/Time: HN-W(dd چ RB-1 (m) ठ FW-MA HW-0(s RB-16 171/6 Project Manager: BNOM Massed N - M H HW- U Project Location: Hydnn's SOUNDS Con-Test Quote Name/Number (1) 7 TAPES STATES Relinquished by: (signature) (eceived by: (signature) Received by: (signature) uished by: Asign Sampled By: HIN Work Order# Con-Test Invoice Recipient: Project Number: Address:

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I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

How were the samples In Cooler Tooler Tooler Tooler Tooler Tooler Teceived? Direct from Sampling Ambient Melted Ice Were samples within Temperature? 2-6°C By Blank # Actual Temp - Ac		ey Wilton C	guera	Data	(N) (N) (N)		Time	75.17	
Were samples within Temperature? 2-6°C Was Custody Seal Intact? Was COC Relinquished? Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Toes Chain Agree With Samples? Toes Sample Name Toes Chain Agree With Samples? Toes Sample Name Toes Chain Agree With Samples? Toes Sample Name Toes Sample Name Toes Chain Agree With Samples? Toes Sample Name Toes Sample Name Toes Sample Name Toes Sample Name Toes Sample Name Toes Name Toes Sample Name Toes	•	- fl	N-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	-	91162		·		
Were samples within Temperature? 2-6°C Was Custody Seal Intact? Was Coc Relinquished? Actual Temp- Was Coc Relinquished? Actual Temp- Was Coc Relinquished? Actual Temp- Was Coc Relinquished? Are there broken/leaking/loose caps on any samples? Is CoC in ink/ Legible? Tobic Coc Include all Did CoC include all Client Analysis Sampler Name Toble •	In Cooler		No Cooler		On Ice	T	No Ice		
Temperature? 2-6°C Was Custody Seal Intact? Was COC Relinquished? Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Did COC include all Client pertinent Information? Are Sample labels filled out and legible? Are there Lab to Filters? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there Headspace where applicable? Froper Media/Containers Used? Were samples received within holding time? Analysis	received?	Direct from Samp	oling			Ambient		Melted Ice	
Temperature? 2-6°C By Blank # Actual Temp Was Custody Seal Intact? Was COC Relinquished? Toose Chain Agree With Samples? Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Were samples received within holding time? Did COC include all pertinent Information? Project Told Client Told Collection Dates/Times Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Project Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include all pertinent Information? Told Coc Include Information? Told Coc Include Information Information? Told Coc Include Information Information? Told Coc Include Information Include Information Inf	Were samples within		By Gun #	5		Actual Tem	8,6 - q		
Was Custody Seal Intact? Was COC Relinquished? Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Joint COC include all Client pertinent Information? Are Sample labels filled out and legible? Are there Lab to Filters? Are there Lab to Filters? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there enough Volume? Is there Headspace where applicable? Are there Headspace where applicable? Analysis ———————————————————————————————————	•	<u> </u>	By Blank #			Actual Tem	p -	_	
Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Did COC include all pertinent Information? Project Are Sample labels filled out and legible? Are Sample labels filled out and legible? Are there Lab to Filters? Are there Rushes? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Acid Mare Plastic Flashpoint Col./Bacteria Di- Other Glass Thiosulfate- SOC Kit Plastic Base Frozen: •	eal Intact?	N/X		re Sample:	s Tampered	with?	nla		
Are there broken/leaking/loose caps on any samples? Is COC in ink/ Legible? Did COC include all Client Project Analysis T Collection Dates/Times T Who was notified? Who was n	Was COC Relin	quished?		Does	s Chain Ag	ree With Sar	mples?	1	
Did COC include all pertinent Information? Project T ID's T Collection Dates/Times T Collection			on any sam	ples?	F		·		
pertinent Information? Project Are Sample labels filled out and legible? Are there Lab to Filters? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there enough Volume? Is there Headspace where applicable? Are they proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Wils Containers: ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Unp- ## 1 Liter Plastic ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Containers ## Unp- ## 1 Liter Plastic ## Amb. ## Containers ## Containers ## Unp- ## 1 Liter Amb. ## Containers ## Contai	Is COC in ink/ Legible?	T .	-	Were san	nples recei	ved within ho	olding time?	-	
Are Sample labels filled out and legible? Are there Lab to Filters? Are there Rushes? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Acid Mary Base Mary Wials # Containers: # # # # # # # # # # # # # # # # # # #	Did COC include all	Client	1	Analysis	T	Sample	er Name	7	
Are there Lab to Filters? Are there Rushes? Are there Short Holds? Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Do all samples have the proper pH? Vials Wood Media Filter Amb. Filter Plastic Filosulfate- DI-	pertinent Information?	Project	T	ID's	4	Collection	Dates/Times		
Are there Rushes? Are there Short Holds? Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Unp- 1 Liter Amb. HCL- Soo mL Amb. Disulfate- Di- Other Glass Containers Containers: Unp- 1 Liter Amb. HCL- Di- Other Glass Containers Unp- Di- Di- Di- Di- Di- Di- Di- Di- Di- Di	Are Sample labels filled	d out and legible?	T						
Are there Short Holds? Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Vials # Containers: Unp- 1 Liter Amb. 1 Liter Plastic 500 mL Amb. 500 mL Plastic 500 mL Plastic 101- Other Glass Unp- Other Glass Unp- Other Glass Unp- 1 Liter Amb. 1 Liter Plastic 500 mL Amb. 250 mL Plastic 500 mL Plastic Thiosulfate- SoC Kit Perchlorate Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media Vials # Containers: # Unused Media # Unused Media Vials # Unused Media Vials # Unused Media	Are there Lab to Filters?	?	F	•	Who was	s notified?			
Is there enough Volume? Is there Headspace where applicable? Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Vials Unp- 1 Liter Amb. HCL- 500 mL Amb. MS/MSD? Is splitting samples required? On COC? Acid Acid Acid Acid Acid Acid Acid Acid	Are there Rushes?		j	-	Who was	s notified?			
Is there Headspace where applicable? Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Vials # Containers: Unp- 1 Liter Amb. HCL- 500 mL Amb. Bisulfate- DI- Other Glass Unfuric- Perchlorate Vials # Containers: # # # Containers: # # # Containers: # # # Containers: # # # Containers: # # # Containers: # # # Containers: # # # Containers: # # # Containers: # # Containers: # # Containers: Unp- HCL- Soo mL Amb. DI- Other Glass Other Plastic Perchlorate Vials # Containers: # # Containers: Unused Media Vials # Containers: # # C	Are there Short Holds?			•	Who was	s notified?			
Proper Media/Containers Used? Were trip blanks received? Do all samples have the proper pH? Vials Unp- 1 Liter Amb. HCL- 500 mL Amb. Book Meoh- Bisulfate- DI- Thiosulfate- Sulfuric- Vials Vials Containers: Unp- 1 Liter Amb. 1 Liter Plastic Book Amb/Clear Col./Bacteria Col./B	Is there enough Volume	?	T	"					
Were trip blanks received? Do all samples have the proper pH? Vials Words Containers: Unp- 1 Liter Amb. 1 Liter Plastic 500 mL Amb. 500 mL Plastic 602 Amb. HCL- 500 mL Amb. 250 mL Plastic 602 Amb/Clear Meoh- 250 mL Amb. 1 Liter Plastic 602 Amb/Clear Meoh- 1 Liter Plastic 602 Amb/Clear Meoh- 1 Liter Plastic 603 Amb/Clear Col./Bacteria 604 Aoz Amb/Clear Col./Bacteria 605 Amb/Clear Col./Bacteria 706 Dear Media Col./Bacteria 707 Dear Media Vials Vials Vials Containers: Words	Is there Headspace who	ere applicable?	N ¹ α	-	MS/MSD?	F		_	
Do all samples have the proper pH? Acid	Proper Media/Container	rs Used?	7	•	Is splitting	samples req	uired?	F	
Vials # Containers: # # 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Boz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Flashpoint Col./Bacteria 2oz Amb/Clear DI- Other Glass Other Plastic Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock Unused Media Vials # Containers: # Unp- 1 Liter Amb. 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Heoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock <td>Were trip blanks receive</td> <td>ed?</td> <td>F</td> <td>-</td> <td>On CQC?</td> <td>F</td> <td></td> <td>,</td> <td></td>	Were trip blanks receive	ed?	F	-	On CQC?	F		,	
Thiosulfate- Soo mL Amb. 1 Liter Plastic 16 oz Amb.	Do all samples have the	proper pH?	***************************************	Acid	Na		Base	1 1	
Unp-	Vials I #	Containers:	#			#			#
HCL-				1 Liter	Plastic		16 oz	Amb.	
Bisulfate-		500 mL Amb.		500 mL	Plastic		8oz Am	b/Clear	
DI- Other Glass Other Plastic Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Unused Media Vials # Containers: # # Unp- 1 Liter Amb. 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock	Meoh-	250 mL Amb.		250 mL	Plastic	34	4oz Am	b/Clear	
Thiosulfate-Sulfuric-Sulfuric-Sulfuric-Perchlorate SOC Kit Plastic Bag Frozen: Unused Media Vials # Containers: # Discrete Plastic # Discrete Plastic 16 oz Amb. Unp-		Flashpoint		Col./Ba	acteria				
Sulfuric- Perchlorate Ziplock Unused Media Vials # Containers: # # Unp- 1 Liter Amb. 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock							~~~	ore	
Unused Media Vials # Containers: # #							Frozen:		
Vials # Containers: # # Unp- 1 Liter Amb. 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock	Sulfuric-	Perchlorate		Zipl	ock				
Unp- 1 Liter Amb. 1 Liter Plastic 16 oz Amb. HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock				Unused I	Vledia				
HCL- 500 mL Amb. 500 mL Plastic 8oz Amb/Clear Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock	Viais #	Containers:	#			#			#
Meoh- 250 mL Amb. 250 mL Plastic 4oz Amb/Clear Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock	Unp-	1 Liter Amb.		<u>. </u>					
Bisulfate- Col./Bacteria Flashpoint 2oz Amb/Clear DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Sulfuric- Perchlorate Ziplock		500 mL Amb.		500 mL	Plastic				
DI- Other Plastic Other Glass Encore Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock				 	***************************************				
Thiosulfate- SOC Kit Plastic Bag Frozen: Sulfuric- Perchlorate Ziplock								******	
Sulfuric- Perchlorate Ziplock				-				core	
		L,					Frozen:		
Comments:		Perchlorate		Zipi:	оск				
	Comments:		·····						

September 28, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21I0575

Enclosed are results of analyses for samples received by the laboratory on September 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Matthew J Beaupre Project Manager

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Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

PURCHASE ORDER NUMBER:

REPORT DATE: 9/28/2021

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0575

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HW-R(s)	21I0575-01	Ground Water		SOP-454 PFAS	
HW-J	2110575-02	Ground Water		SOP-454 PFAS	
HW-E	21I0575-03	Ground Water		SOP-454 PFAS	
HW-F	21I0575-04	Ground Water		SOP-454 PFAS	
HW-P(s)	2110575-05	Ground Water		SOP-454 PFAS	
HW-P(m)	2110575-06	Ground Water		SOP-454 PFAS	
HW-I(s)	21I0575-07	Ground Water		SOP-454 PFAS	
HW-I(m)	2110575-08	Ground Water		SOP-454 PFAS	
HW-I(d)	2110575-09	Ground Water		SOP-454 PFAS	
OW-19(d)	21I0575-10	Ground Water		SOP-454 PFAS	
HW-X(s)	21I0575-11	Ground Water		SOP-454 PFAS	
HW-X(m)	21I0575-12	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.

bias is on the high side.

Analyte & Samples(s) Qualified:

M3HFPO-DA

2110575-01[HW-R(s)], 2110575-02[HW-J], 2110575-03[HW-E], 2110575-04[HW-F], 2110575-05[HW-P(s)], 2110575-08[HW-I(m)], 2110575-09[HW-I(d)], 2110575-09[HW-I(d)], 2110575-09[HW-I(m)], 2110575-09[HW-I(

21I0575-10[OW-19(d)], 21I0575-11[HW-X(s)], 21I0575-12[HW-X(m)]

PF-18

Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.

Analyte & Samples(s) Qualified:

M2PFTA

2110575-05[HW-P(s)], 2110575-05RE1[HW-P(s)], 2110575-06[HW-P(m)], 2110575-06RE1[HW-P(m)], 2110575-06[HW-P(m)], 2

M3HFPO-DA

21I0575-06[HW-P(m)], 21I0575-06RE1[HW-P(m)], 21I0575-07[HW-I(s)], 21I0575-07RE1[HW-I(s)]

M8FOSA

21I0575-05[HW-P(s)], 21I0575-05RE1[HW-P(s)]

MPFDoA

21I0575-05[HW-P(s)], 21I0575-05RE1[HW-P(s)]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:

d5-NEtFOSAA

21I0575-05[HW-P(s)], 21I0575-06RE1[HW-P(m)]

M7PFUnA

21I0575-06RE1[HW-P(m)]

M8FOSA

21I0575-06RE1[HW-P(m)]

MPFDoA

21I0575-06RE1[HW-P(m)]

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.

Lisa A. Worthington
Technical Representative

Jua Watshington



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-R(s)

Sampled: 9/8/2021 12:45

Sample ID: 21I0575-01
Sample Matrix: Ground Water

		2	semivolatile	Organic Coi	mpounds by - 1	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	24	2.0	0.74	ng/L	1	<u> </u>	SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoropentanoic acid (PFPeA)	100	2.0	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorohexanoic acid (PFHxA)	93	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.64	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.61	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.49	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.44	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.93	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
N-EtFOSAA	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
N-MeFOSAA	ND	2.0	0.76	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.31	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorohexanesulfonic acid (PFHxS)	4.6	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	3.0	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.26	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluoroheptanoic acid (PFHpA)	21	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorooctanoic acid (PFOA)	4.0	2.0	0.68	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorooctanesulfonic acid (PFOS)	5.3	2.0	0.60	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC
Perfluorononanoic acid (PFNA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 15:53	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0575

Date Received: 9/13/2021
Field Sample #: HW-J

Sampled: 9/10/2021 13:30

Sample ID: 2110575-02
Sample Matrix: Ground Water

			Semivolatile	Organic Con	npounus by - 1	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	31	2.0	0.76	ng/L	1	g	SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorobutanesulfonic acid (PFBS)	1.5	2.0	0.29	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoropentanoic acid (PFPeA)	120	2.0	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorohexanoic acid (PFHxA)	63	2.0	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	24	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
N-EtFOSAA	ND	2.0	0.64	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
N-MeFOSAA	ND	2.0	0.78	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	4.4	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.87	2.0	0.19	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorohexanesulfonic acid (PFHxS)	10	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.42	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	130	2.0	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoropetanesulfonic acid (PFPeS)	2.2	2.0	0.26	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluoroheptanoic acid (PFHpA)	20	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorooctanoic acid (PFOA)	9.1	2.0	0.70	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorooctanesulfonic acid (PFOS)	80	2.0	0.61	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC
Perfluorononanoic acid (PFNA)	15	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:00	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021
Field Sample #: HW-E

Sampled: 9/8/2021 11:45

Sample ID: 2110575-03

Sample Matrix: Ground Water

		2	semivolatile	Organic Coi	mpounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	2.0	2.1	0.79	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoropentanoic acid (PFPeA)	5.2	2.1	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorohexanoic acid (PFHxA)	2.6	2.1	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.1	0.68	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
9Cl-PF3ONS (F53B Major)	ND	2.1	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.64	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorodecanoic acid (PFDA)	ND	2.1	0.52	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.47	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.1	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	0.99	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
N-EtFOSAA	ND	2.1	0.67	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
N-MeFOSAA	ND	2.1	0.80	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.44	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.1	0.18	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	0.20	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.88	2.1	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	0.44	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.1	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluoroheptanoic acid (PFHpA)	1.8	2.1	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorooctanoic acid (PFOA)	0.94	2.1	0.72	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	0.64	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC
Perfluorononanoic acid (PFNA)	ND	2.1	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:07	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021
Field Sample #: HW-F

Sampled: 9/8/2021 12:15

Sample ID: 21I0575-04
Sample Matrix: Ground Water

			cinivolatiic	Organic Con	iipoulius by - 1	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	27	2.2	0.81	ng/L	1	riag/Quai	SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	2.2	0.31	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoropentanoic acid (PFPeA)	85	2.2	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorohexanoic acid (PFHxA)	37	2.2	0.42	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.2	0.70	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
9Cl-PF3ONS (F53B Major)	ND	2.2	0.42	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.2	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.2	0.26	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.2	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorodecanoic acid (PFDA)	ND	2.2	0.53	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.2	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.2	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.2	1.0	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
N-EtFOSAA	ND	2.2	0.68	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
N-MeFOSAA	ND	2.2	0.82	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.2	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.2	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.2	0.31	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.2	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.2	0.46	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.2	0.18	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.2	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.2	0.21	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorohexanesulfonic acid (PFHxS)	ND	2.2	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.2	0.45	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.2	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	4.9	2.2	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	2.2	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.2	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.2	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluoroheptanoic acid (PFHpA)	5.1	2.2	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorooctanoic acid (PFOA)	ND	2.2	0.74	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	2.2	0.65	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC
Perfluorononanoic acid (PFNA)	ND	2.2	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:14	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-P(s)

Sampled: 9/8/2021 13:15

Sample ID: 21I0575-05
Sample Matrix: Ground Water

Semivolatile	Organic	Compounds	by - L	C/MS-MS

		5	Semivolatile	Organic Cor	mpounds by - l	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	8.5	1.8	0.67	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorobutanoic acid (PFBA)	9.1	2.0	0.73	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorobutanesulfonic acid (PFBS)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoropentanoic acid (PFPeA)	20	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoropentanoic acid (PFPeA)	18	1.8	0.36	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorohexanoic acid (PFHxA)	12	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorohexanoic acid (PFHxA)	12	1.8	0.35	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	1.8	0.58	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
9Cl-PF3ONS (F53B Major)	ND	1.8	0.35	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
(ADONA) 4,8-dioxa-3H-perfluorononanoic acid	ND	1.8	0.32	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.8	0.22	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.8	0.55	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorodecanoic acid (PFDA)	ND	1.8	0.44	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.8	0.40	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.8	0.21	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	0.85	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
N-EtFOSAA	ND	1.8	0.57	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
N-MeFOSAA	ND	2.0	0.74	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
N-MeFOSAA	ND	1.8	0.69	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.8	0.33	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	0.29	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 21I0575

Date Received: 9/13/2021

Field Sample #: HW-P(s)

Sampled: 9/8/2021 13:15

Sample ID: 2110575-05
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS $\,$

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorononanesulfonic acid (PFNS)	ND	1.8	0.15	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.8	0.28	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.8	0.17	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.56	2.0	0.33	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorohexanesulfonic acid (PFHxS)	0.56	1.8	0.31	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.8	0.38	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.8	0.31	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	1.4	2.0	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.91	1.8	0.33	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.8	0.23	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluoroundecanoic acid (PFUnA)	0.49	2.0	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoroundecanoic acid (PFUnA)	0.52	1.8	0.33	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.8	0.25	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoroheptanoic acid (PFHpA)	4.0	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluoroheptanoic acid (PFHpA)	4.0	1.8	0.31	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorooctanoic acid (PFOA)	1.7	2.0	0.67	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorooctanoic acid (PFOA)	1.5	1.8	0.62	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorooctanesulfonic acid (PFOS)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	0.54	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH
Perfluorononanoic acid (PFNA)	1.3	2.0	0.34	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:22	JFC
Perfluorononanoic acid (PFNA)	1.3	1.8	0.31	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:44	BLH



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-P(m)

Sampled: 9/8/2021 13:30

Sample ID: 21I0575-06

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

		S	Semivolatile	Organic Cor	npounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	23	2.0	0.73	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorobutanoic acid (PFBA)	23	1.9	0.72	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorobutanesulfonic acid (PFBS)	0.42	2.0	0.28	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorobutanesulfonic acid (PFBS)	0.38	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluoropentanoic acid (PFPeA)	59	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluoropentanoic acid (PFPeA)	59	1.9	0.38	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorohexanoic acid (PFHxA)	31	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorohexanoic acid (PFHxA)	32	1.9	0.37	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.62	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
9Cl-PF3ONS (F53B Major)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
4,8-dioxa-3H-perfluorononanoic acid	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
(ADONA) 4,8-dioxa-3H-perfluorononanoic acid	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
(ADONA) Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.48	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.92	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.91	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
N-MeFOSAA	ND	2.0	0.74	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC



Project Location: Hyannis, MA

Sample Description:

8.3

1.9

0.34

ng/L

1

Work Order: 21I0575

SOP-454 PFAS

9/24/21

Date Received: 9/13/2021 Field Sample #: HW-P(m)

Sampled: 9/8/2021 13:30

Sample ID: 21I0575-06 Sample Matrix: Ground Water

Perfluorononanoic acid (PFNA)

Semivolatile Organic Compounds by - LC/MS-MS												
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst		
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoro-1-butanesulfonamide (FBSA)	ND	1.9	0.19	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluorohexanesulfonic acid (PFHxS)	1.3	2.0	0.33	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluorohexanesulfonic acid (PFHxS)	1.3	1.9	0.33	ng/L	1	J	SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoropetanesulfonic acid (PFPeS)	ND	2.0	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluoroheptanoic acid (PFHpA)	16	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluoroheptanoic acid (PFHpA)	16	1.9	0.34	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluorooctanoic acid (PFOA)	10	2.0	0.67	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluorooctanoic acid (PFOA)	11	1.9	0.66	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluorooctanesulfonic acid (PFOS)	3.0	2.0	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		
Perfluorooctanesulfonic acid (PFOS)	3.0	1.9	0.58	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:51	BLH		
Perfluorononanoic acid (PFNA)	9.9	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:29	JFC		

BLH

9/27/21 14:51

Work Order: 21I0575



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

Project Location: Hyannis, MA Sample Description:

Date Received: 9/13/2021
Field Sample #: HW-I(s)

Sampled: 9/8/2021 10:30

Sample ID: 21I0575-07
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

		S	Semivolatile	Organic Co	mpounds by - l	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	47	1.9	0.72	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorobutanesulfonic acid (PFBS)	2.0	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoropentanoic acid (PFPeA)	190	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorohexanoic acid (PFHxA)	130	1.9	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	47	5.6	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:58	BLH
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	0.92	1.9	0.59	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.47	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoroheptanesulfonic acid (PFHpS)	3.2	1.9	0.91	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	0.62	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	3.5	1.9	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoro-1-butanesulfonamide (FBSA)	3.7	1.9	0.18	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorohexanesulfonic acid (PFHxS)	36	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2100	47	8.6	ng/L	1		SOP-454 PFAS	9/24/21	9/27/21 14:58	BLH
Perfluoropetanesulfonic acid (PFPeS)	3.1	1.9	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluoroheptanoic acid (PFHpA)	97	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorooctanoic acid (PFOA)	63	1.9	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorooctanesulfonic acid (PFOS)	20	1.9	0.58	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC
Perfluorononanoic acid (PFNA)	33	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:36	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-I(m)

Sampled: 9/8/2021 10:55

Sample ID: 21I0575-08
Sample Matrix: Ground Water

			semivoiatne	Organic Con	inpounds by - 1	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	0.90	2.0	0.76	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorobutanesulfonic acid (PFBS)	0.36	2.0	0.29	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoropentanoic acid (PFPeA)	1.7	2.0	0.40	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorohexanoic acid (PFHxA)	2.0	2.0	0.39	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.50	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.45	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.0	0.96	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
N-EtFOSAA	ND	2.0	0.65	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
N-MeFOSAA	ND	2.0	0.78	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.17	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.20	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorohexanesulfonic acid (PFHxS)	7.8	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoropetanesulfonic acid (PFPeS)	0.32	2.0	0.26	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluoroheptanoic acid (PFHpA)	1.4	2.0	0.35	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorooctanoic acid (PFOA)	1.6	2.0	0.70	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorooctanesulfonic acid (PFOS)	16	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC
Perfluorononanoic acid (PFNA)	0.46	2.0	0.35	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 16:58	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-I(d)

Sampled: 9/8/2021 11:10

Sample ID: 21I0575-09
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

								Date	Date/Time	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	9.2	2.0	0.73	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorobutanesulfonic acid (PFBS)	1.6	2.0	0.28	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoropentanoic acid (PFPeA)	28	2.0	0.39	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorohexanoic acid (PFHxA)	21	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.0	0.63	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
9Cl-PF3ONS (F53B Major)	ND	2.0	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.0	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	0.60	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorodecanoic acid (PFDA)	ND	2.0	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.0	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.0	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoroheptanesulfonic acid (PFHpS)	0.99	2.0	0.92	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
N-EtFOSAA	ND	2.0	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
N-MeFOSAA	ND	2.0	0.75	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.0	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.0	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.0	0.19	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorohexanesulfonic acid (PFHxS)	50	2.0	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	0.54	2.0	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoropetanesulfonic acid (PFPeS)	2.1	2.0	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.0	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.0	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluoroheptanoic acid (PFHpA)	8.3	2.0	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorooctanoic acid (PFOA)	5.3	2.0	0.67	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorooctanesulfonic acid (PFOS)	39	2.0	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC
Perfluorononanoic acid (PFNA)	0.84	2.0	0.34	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:05	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: OW-19(d)

Sampled: 9/11/2021 17:30

Sample ID: 2110575-10
Sample Matrix: Ground Water

		2	semivolatile	Organic Coi	mpounds by - I	LC/MS-MS				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	24	1.9	0.72	ng/L	1	<u> </u>	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorobutanesulfonic acid (PFBS)	1.5	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoropentanoic acid (PFPeA)	100	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorohexanoic acid (PFHxA)	75	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorodecanoic acid (PFDA)	ND	1.9	0.48	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoroheptanesulfonic acid (PFHpS)	0.98	1.9	0.91	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
N-EtFOSAA	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
N-MeFOSAA	ND	1.9	0.74	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	1.9	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.41	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.63	1.9	0.19	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorohexanesulfonic acid (PFHxS)	28	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.9	1.9	0.25	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluoroheptanoic acid (PFHpA)	22	1.9	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorooctanoic acid (PFOA)	7.0	1.9	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorooctanesulfonic acid (PFOS)	53	1.9	0.59	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC
Perfluorononanoic acid (PFNA)	0.88	1.9	0.34	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:12	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-X(s)

Sampled: 9/10/2021 10:55

Sample ID: 2110575-11
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

			emivolatiic	Organic Con	iipoulius by - 1	20/14/5-14/5				
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	6.9	2.1	0.77	ng/L	1	r rag/Quar	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorobutanesulfonic acid (PFBS)	2.3	2.1	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoropentanoic acid (PFPeA)	17	2.1	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorohexanoic acid (PFHxA)	14	2.1	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
11Cl-PF3OUdS (F53B Minor)	ND	2.1	0.66	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
9Cl-PF3ONS (F53B Major)	ND	2.1	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	2.1	0.36	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	2.1	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	0.63	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorodecanoic acid (PFDA)	ND	2.1	0.50	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorododecanoic acid (PFDoA)	ND	2.1	0.45	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	2.1	0.24	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoroheptanesulfonic acid (PFHpS)	1.7	2.1	0.97	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
N-EtFOSAA	ND	2.1	0.65	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
N-MeFOSAA	ND	2.1	0.78	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorotetradecanoic acid (PFTA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	0.29	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	0.34	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorooctanesulfonamide (FOSA)	ND	2.1	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorononanesulfonic acid (PFNS)	ND	2.1	0.17	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	1.5	2.1	0.32	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.42	2.1	0.20	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorohexanesulfonic acid (PFHxS)	47	2.1	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	0.43	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	2.0	2.1	0.38	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoropetanesulfonic acid (PFPeS)	1.8	2.1	0.27	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoroundecanoic acid (PFUnA)	ND	2.1	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	2.1	0.28	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluoroheptanoic acid (PFHpA)	6.1	2.1	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorooctanoic acid (PFOA)	13	2.1	0.70	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorooctanesulfonic acid (PFOS)	68	2.1	0.62	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC
Perfluorononanoic acid (PFNA)	0.49	2.1	0.36	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:19	JFC



Project Location: Hyannis, MA Sample Description: Work Order: 2110575

Date Received: 9/13/2021

Field Sample #: HW-X(m)

Sampled: 9/10/2021 11:15

Sample ID: 21I0575-12
Sample Matrix: Ground Water

Semivolatile Organic Compounds by - LC/MS-MS

			, ciiii voiatiit	Organic Con	iipoulius by - 1	LC/MS-MS		D-4-	D-4-/T:	
Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	7.1	1.9	0.71	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorobutanesulfonic acid (PFBS)	1.4	1.9	0.27	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoropentanoic acid (PFPeA)	22	1.9	0.38	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorohexanoic acid (PFHxA)	17	1.9	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
11Cl-PF3OUdS (F53B Minor)	ND	1.9	0.61	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
9Cl-PF3ONS (F53B Major)	ND	1.9	0.37	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	1.9	0.23	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
8:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	1.9	0.58	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorodecanoic acid (PFDA)	4.2	1.9	0.47	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorododecanoic acid (PFDoA)	ND	1.9	0.42	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	0.22	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.9	0.90	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
N-EtFOSAA	ND	1.9	0.60	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
N-MeFOSAA	ND	1.9	0.73	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorotetradecanoic acid (PFTA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorotridecanoic acid (PFTrDA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	1.9	0.27	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorodecanesulfonic acid (PFDS)	0.44	1.9	0.31	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorooctanesulfonamide (FOSA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorononanesulfonic acid (PFNS)	ND	1.9	0.16	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	1.9	0.30	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoro-1-butanesulfonamide (FBSA)	0.41	1.9	0.18	ng/L	1	J	SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorohexanesulfonic acid (PFHxS)	2.1	1.9	0.32	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	1.9	0.40	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
6:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoropetanesulfonic acid (PFPeS)	ND	1.9	0.25	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoroundecanoic acid (PFUnA)	ND	1.9	0.35	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	0.26	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluoroheptanoic acid (PFHpA)	3.4	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorooctanoic acid (PFOA)	6.2	1.9	0.65	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorooctanesulfonic acid (PFOS)	34	1.9	0.58	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC
Perfluorononanoic acid (PFNA)	2.0	1.9	0.33	ng/L	1		SOP-454 PFAS	9/16/21	9/23/21 17:26	JFC



Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date	
21I0575-01 [HW-R(s)]	B290193	251	1.00	09/16/21	
21I0575-02 [HW-J]	B290193	245	1.00	09/16/21	
21I0575-03 [HW-E]	B290193	237	1.00	09/16/21	
21I0575-04 [HW-F]	B290193	231	1.00	09/16/21	
21I0575-05 [HW-P(s)]	B290193	256	1.00	09/16/21	
21I0575-06 [HW-P(m)]	B290193	256	1.00	09/16/21	
21I0575-07 [HW-I(s)]	B290193	259	1.00	09/16/21	
21I0575-08 [HW-I(m)]	B290193	245	1.00	09/16/21	
21I0575-09 [HW-I(d)]	B290193	255	1.00	09/16/21	
21I0575-10 [OW-19(d)]	B290193	257	1.00	09/16/21	
21I0575-11 [HW-X(s)]	B290193	243	1.00	09/16/21	
21I0575-12 [HW-X(m)]	B290193	261	1.00	09/16/21	

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0575-05RE1 [HW-P(s)]	B290910	277	1.00	09/24/21
21I0575-06RE1 [HW-P(m)]	B290910	257	1.00	09/24/21
21I0575-07RE1 [HW-I(s)]	B290910	10.6	1.00	09/24/21



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 B290193 - SOP 454-PFAAS										
Blank (B290193-BLK1)				Prepared: 09)/16/21 Analy	zed: 09/17/	21			
Perfluorobutanoic acid (PFBA)	ND	2.1	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	2.1	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	2.1	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	2.1	ng/L							
11Cl-PF3OUdS (F53B Minor)	ND	2.1	ng/L							
PCI-PF3ONS (F53B Major)	ND	2.1	ng/L							
l,8-dioxa-3H-perfluorononanoic acid ADONA)	ND	2.1	ng/L							
Hexafluoropropylene oxide dimer acid HFPO-DA)	ND	2.1	ng/L							
3:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.1	ng/L							
erfluorodecanoic acid (PFDA)	ND	2.1	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	2.1	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	2.1	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	2.1	ng/L							
N-EtFOSAA	ND	2.1	ng/L							
N-MeFOSAA	ND	2.1	ng/L							
Perfluorotetradecanoic acid (PFTA)	ND	2.1	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	2.1	ng/L							
4:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.1	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	2.1	ng/L							
Perfluorooctanesulfonamide (FOSA)	ND	2.1	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	2.1	ng/L							
Perfluoro-1-hexanesulfonamide (FHxSA)	ND	2.1	ng/L							
Perfluoro-1-butanesulfonamide (FBSA)	ND	2.1	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	2.1	ng/L							
Perfluoro-4-oxapentanoic acid (PFMPA)	ND	2.1	ng/L							
Perfluoro-5-oxahexanoic acid (PFMBA)	ND	2.1	ng/L							
5:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.1	ng/L							
Perfluoropetanesulfonic acid (PFPeS)	ND	2.1	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	2.1	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid NFDHA)	ND	2.1	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	2.1	ng/L							
Perfluorooctanoic acid (PFOA)	ND	2.1	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	2.1	ng/L							
Perfluorononanoic acid (PFNA)	ND	2.1	ng/L							
LCS (B290193-BS1) Perfluorobutanoic acid (PFBA)	0.12	2.0	ng/L		0/16/21 Analy					
Perfluorobutanesulfonic acid (PFBS)	9.12		-	9.88		92.3	73-129			
Perfluoropentanoic acid (PFPeA)	8.08	2.0	ng/L	8.74		92.4	72-130			
Perfluoropentanoic acid (PFPeA)	8.84	2.0 2.0	ng/L	9.88		89.5	72-129			
1Cl-PF3OUdS (F53B Minor)	8.73	2.0	ng/L	9.88		88.4	72-129 50-150			
CI-PF3OUdS (F53B Major)	8.28	2.0	ng/L ng/L	9.31		88.9	50-150			
	8.28			9.21		89.9	50-150			
,8-dioxa-3H-perfluorononanoic acid ADONA)	8.15	2.0	ng/L	9.31		87.5	50-150			
Hexafluoropropylene oxide dimer acid HFPO-DA)	7.44	2.0	ng/L	9.88		75.3	50-150			
3:2 Fluorotelomersulfonic acid (8:2FTS A)	10.3	2.0	ng/L	9.49		109	67-138			
Perfluorodecanoic acid (PFDA)	8.05	2.0	ng/L	9.88		81.5	71-129			
Perfluorododecanoic acid (PFDoA) Perfluoro(2-ethoxyethane)sulfonic acid	9.34 10.1	2.0 2.0	ng/L ng/L	9.88 8.79		94.5 115	72-134 50-150			



QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290193 - SOP 454-PFAAS										
.CS (B290193-BS1)				Prepared: 09	/16/21 Anal	yzed: 09/17/2	21			
erfluoroheptanesulfonic acid (PFHpS)	8.62	2.0	ng/L	9.44		91.4	69-134			
I-EtFOSAA	11.2	2.0	ng/L	9.88		113	61-135			
I-MeFOSAA	10.4	2.0	ng/L	9.88		105	65-136			
erfluorotetradecanoic acid (PFTA)	8.09	2.0	ng/L	9.88		81.9	71-132			
erfluorotridecanoic acid (PFTrDA)	9.73	2.0	ng/L	9.88		98.4	65-144			
:2 Fluorotelomersulfonic acid (4:2FTS A)	8.76	2.0	ng/L	9.24		94.8	63-143			
erfluorodecanesulfonic acid (PFDS)	8.71	2.0	ng/L	9.53		91.4	53-142			
erfluorooctanesulfonamide (FOSA)	9.40	2.0	ng/L	9.88		95.1	67-137			
erfluorononanesulfonic acid (PFNS)	9.74	2.0	ng/L	9.49		103	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	8.23	2.0	ng/L	9.88		83.3	50-150			
erfluoro-1-butanesulfonamide (FBSA)	9.48	2.0	ng/L	9.88		95.9	50-150			
erfluorohexanesulfonic acid (PFHxS)	8.34	2.0	ng/L	8.99		92.8	68-131			
erfluoro-4-oxapentanoic acid (PFMPA)	10.4	2.0	ng/L	9.88		106	50-150			
erfluoro-5-oxahexanoic acid (PFMBA)	11.1	2.0	ng/L	9.88		112	50-150			
:2 Fluorotelomersulfonic acid (6:2FTS A)	8.69	2.0	ng/L	9.39		92.6	64-140			
erfluoropetanesulfonic acid (PFPeS)	8.18	2.0	ng/L	9.29		88.1	71-127			
erfluoroundecanoic acid (PFUnA)	7.60	2.0	ng/L	9.88		76.9	69-133			
Jonafluoro-3,6-dioxaheptanoic acid NFDHA)	9.32	2.0	ng/L	9.88		94.4	50-150			
erfluoroheptanoic acid (PFHpA)	9.23	2.0	ng/L	9.88		93.4	72-130			
erfluorooctanoic acid (PFOA)	8.53	2.0	ng/L	9.88		86.3	71-133			
erfluorooctanesulfonic acid (PFOS)	8.35	2.0	ng/L	9.14		91.4	65-140			
erfluorononanoic acid (PFNA)	9.09	2.0	ng/L	9.88		92.0	69-130			
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.CS Dup (B290193-BSD1)				Prepared: 09	/16/21 Anal	yzed: 09/17/2	21			
erfluorobutanoic acid (PFBA)	8.44	2.0	ng/L	9.87		85.5	73-129	7.72	30	
erfluorobutanesulfonic acid (PFBS)	7.38	2.0	ng/L	8.73		84.5	72-130	9.10	30	
erfluoropentanoic acid (PFPeA)	8.18	2.0	ng/L	9.87		82.9	72-129	7.71	30	
erfluorohexanoic acid (PFHxA)	8.11	2.0	ng/L	9.87		82.2	72-129	7.40	30	
1Cl-PF3OUdS (F53B Minor)	7.84	2.0	ng/L	9.30		84.4	50-150	5.39	30	
Cl-PF3ONS (F53B Major)	7.37	2.0	ng/L	9.20		80.2	50-150	11.6	30	
,8-dioxa-3H-perfluorononanoic acid ADONA)	7.75	2.0	ng/L	9.30		83.4	50-150	4.95	30	
Iexafluoropropylene oxide dimer acid HFPO-DA)	8.40	2.0	ng/L	9.87		85.2	50-150	12.1	30	
:2 Fluorotelomersulfonic acid (8:2FTS A)	9.27	2.0	ng/L	9.47		97.9	67-138	10.5	30	
erfluorodecanoic acid (PFDA)	8.71	2.0	ng/L	9.87		88.2	71-129	7.84	30	
erfluorododecanoic acid (PFDoA)	7.65	2.0	ng/L	9.87		77.6	72-134	19.8	30	
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	9.53	2.0	ng/L	8.78		108	50-150	5.66	30	
erfluoroheptanesulfonic acid (PFHpS)	7.86	2.0	ng/L	9.42		83.4	69-134	9.26	30	
I-EtFOSAA	9.11	2.0	ng/L	9.87		92.3	61-135	20.5	30	
I-MeFOSAA	10.8	2.0	ng/L	9.87		109	65-136	3.33	30	
erfluorotetradecanoic acid (PFTA)	7.80	2.0	ng/L	9.87		79.0	71-132	3.64	30	
			ng/L	9.87		83.9	65-144	16.1	30	
` '	8.28	2.0						9.32	30	
:2 Fluorotelomersulfonic acid (4:2FTS A)	8.28 7.98	2.0	ng/L	9.23		86.5	63-143	7.52	50	
:2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS)				9.23 9.52		86.5 90.3	63-143 53-142	1.29	30	
:2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA)	7.98	2.0 2.0 2.0	ng/L							
erfluorotridecanoic acid (PFTrDA) :2 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS)	7.98 8.60	2.0 2.0	ng/L ng/L	9.52		90.3	53-142	1.29	30	
:2 Fluorotelomersulfonic acid (4:2FTS A) terfluorodecanesulfonic acid (PFDS) terfluorooctanesulfonamide (FOSA) terfluorononanesulfonic acid (PFNS)	7.98 8.60 8.10	2.0 2.0 2.0	ng/L ng/L ng/L	9.52 9.87		90.3 82.0	53-142 67-137	1.29 14.9	30 30	
22 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluorooctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS) erfluoro-1-hexanesulfonamide (FHxSA) erfluoro-1-butanesulfonamide (FBSA)	7.98 8.60 8.10 8.32	2.0 2.0 2.0 2.0	ng/L ng/L ng/L ng/L	9.52 9.87 9.47		90.3 82.0 87.9	53-142 67-137 69-127	1.29 14.9 15.7	30 30 30	
:2 Fluorotelomersulfonic acid (4:2FTS A) terfluorodecanesulfonic acid (PFDS) terfluorooctanesulfonamide (FOSA)	7.98 8.60 8.10 8.32 7.13	2.0 2.0 2.0 2.0 2.0	ng/L ng/L ng/L ng/L	9.52 9.87 9.47 9.87		90.3 82.0 87.9 72.2	53-142 67-137 69-127 50-150	1.29 14.9 15.7 14.4	30 30 30 30	
22 Fluorotelomersulfonic acid (4:2FTS A) terfluorodecanesulfonic acid (PFDS) terfluorooctanesulfonamide (FOSA) terfluorononanesulfonic acid (PFNS) terfluoro-1-hexanesulfonamide (FHxSA) terfluoro-1-butanesulfonamide (FBSA)	7.98 8.60 8.10 8.32 7.13 8.85	2.0 2.0 2.0 2.0 2.0 2.0	ng/L ng/L ng/L ng/L ng/L	9.52 9.87 9.47 9.87 9.87		90.3 82.0 87.9 72.2 89.7	53-142 67-137 69-127 50-150 50-150	1.29 14.9 15.7 14.4 6.87	30 30 30 30 30	
22 Fluorotelomersulfonic acid (4:2FTS A) erfluorodecanesulfonic acid (PFDS) erfluoroctanesulfonamide (FOSA) erfluorononanesulfonic acid (PFNS) erfluoro-1-hexanesulfonamide (FHxSA) erfluoro-1-butanesulfonamide (FBSA) erfluorohexanesulfonic acid (PFHxS)	7.98 8.60 8.10 8.32 7.13 8.85 7.40	2.0 2.0 2.0 2.0 2.0 2.0 2.0	ng/L ng/L ng/L ng/L ng/L ng/L ng/L	9.52 9.87 9.47 9.87 9.87 8.98		90.3 82.0 87.9 72.2 89.7 82.4	53-142 67-137 69-127 50-150 50-150 68-131	1.29 14.9 15.7 14.4 6.87 12.0	30 30 30 30 30 30	



QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
eatch B290193 - SOP 454-PFAAS										
.CS Dup (B290193-BSD1)				Prepared: 09	0/16/21 Anal	yzed: 09/17/2	21			
:2 Fluorotelomersulfonic acid (6:2FTS A)	8.87	2.0	ng/L	9.37		94.6	64-140	2.05	30	
erfluoropetanesulfonic acid (PFPeS)	7.62	2.0	ng/L	9.28		82.2	71-127	7.07	30	
erfluoroundecanoic acid (PFUnA)	8.49	2.0	ng/L	9.87		86.0	69-133	11.0	30	
Ionafluoro-3,6-dioxaheptanoic acid	8.75	2.0	ng/L	9.87		88.7	50-150	6.35	30	
NFDHA)			_							
erfluoroheptanoic acid (PFHpA)	8.69	2.0	ng/L	9.87		88.0	72-130	6.09	30	
erfluorooctanoic acid (PFOA)	7.14	2.0	ng/L	9.87		72.4	71-133	17.7	30	
erfluorooctanesulfonic acid (PFOS)	7.89	2.0	ng/L	9.13		86.5	65-140	5.66	30	
erfluorononanoic acid (PFNA)	9.27	2.0	ng/L	9.87		93.9	69-130	1.98	30	
satch B290910 - SOP 454-PFAAS										
Blank (B290910-BLK1)				Prepared: 09	0/24/21 Anal	yzed: 09/27/2	21			
erfluorobutanoic acid (PFBA)	ND	2.0	ng/L							
erfluorobutanesulfonic acid (PFBS)	ND	2.0	ng/L							
erfluoropentanoic acid (PFPeA)	ND	2.0	ng/L							
erfluorohexanoic acid (PFHxA)	ND	2.0	ng/L							
1Cl-PF3OUdS (F53B Minor)	ND	2.0	ng/L							
Cl-PF3ONS (F53B Major)	ND	2.0	ng/L							
,8-dioxa-3H-perfluorononanoic acid ADONA)	ND	2.0	ng/L							
lexafluoropropylene oxide dimer acid HFPO-DA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (8:2FTS A)	ND	2.0	ng/L							
erfluorodecanoic acid (PFDA)	ND	2.0	ng/L							
erfluorododecanoic acid (PFDoA)	ND	2.0	ng/L							
erfluoro(2-ethoxyethane)sulfonic acid PFEESA)	ND	2.0	ng/L							
erfluoroheptanesulfonic acid (PFHpS)	ND	2.0	ng/L							
I-EtFOSAA	ND	2.0	ng/L							
I-MeFOSAA	ND	2.0	ng/L							
erfluorotetradecanoic acid (PFTA)	ND	2.0	ng/L							
erfluorotridecanoic acid (PFTrDA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (4:2FTS A)	ND	2.0	ng/L							
erfluorodecanesulfonic acid (PFDS)	ND	2.0	ng/L							
erfluorooctanesulfonamide (FOSA)	ND	2.0	ng/L							
erfluorononanesulfonic acid (PFNS)	ND	2.0	ng/L							
erfluoro-1-hexanesulfonamide (FHxSA)	ND	2.0	ng/L							
erfluoro-1-butanesulfonamide (FBSA)	ND	2.0	ng/L							
erfluorohexanesulfonic acid (PFHxS)	ND	2.0	ng/L							
erfluoro-4-oxapentanoic acid (PFMPA)	ND	2.0	ng/L							
erfluoro-5-oxahexanoic acid (PFMBA)	ND	2.0	ng/L							
:2 Fluorotelomersulfonic acid (6:2FTS A)	ND	2.0	ng/L							
erfluoropetanesulfonic acid (PFPeS)	ND	2.0	ng/L							
erfluoroundecanoic acid (PFUnA)	ND	2.0	ng/L							
Ionafluoro-3,6-dioxaheptanoic acid NFDHA)	ND	2.0	ng/L							
erfluoroheptanoic acid (PFHpA)	ND	2.0	ng/L							
erfluorooctanoic acid (PFOA)	ND	2.0	ng/L							
erfluorooctanesulfonic acid (PFOS)	ND	2.0	ng/L							
erfluorononanoic acid (PFNA)	ND	2.0	ng/L							



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

QUALITY CONTROL

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B290910 - SOP 454-PFAAS										
LCS (B290910-BS1)				Prepared: 09	0/24/21 Analy	zed: 09/27/2	21			
Perfluorobutanoic acid (PFBA)	9.12	2.0	ng/L	9.86		92.5	73-129			
Perfluorobutanesulfonic acid (PFBS)	7.86	2.0	ng/L	8.73		90.0	72-130			
Perfluoropentanoic acid (PFPeA)	8.31	2.0	ng/L	9.86		84.3	72-129			
Perfluorohexanoic acid (PFHxA)	8.66	2.0	ng/L	9.86		87.9	72-129			
1Cl-PF3OUdS (F53B Minor)	7.99	2.0	ng/L	9.29		86.0	50-150			
PCI-PF3ONS (F53B Major)	8.65	2.0	ng/L	9.19		94.2	50-150			
l,8-dioxa-3H-perfluorononanoic acid ADONA)	8.10	2.0	ng/L	9.29		87.2	50-150			
Hexafluoropropylene oxide dimer acid HFPO-DA)	8.06	2.0	ng/L	9.86		81.8	50-150			
3:2 Fluorotelomersulfonic acid (8:2FTS A)	8.33	2.0	ng/L	9.47		88.0	67-138			
Perfluorodecanoic acid (PFDA)	7.62	2.0	ng/L	9.86		77.2	71-129			
Perfluorododecanoic acid (PFDoA)	7.60	2.0	ng/L	9.86		77.1	72-134			
Perfluoro(2-ethoxyethane)sulfonic acid PFEESA)	9.57	2.0	ng/L	8.78		109	50-150			
Perfluoroheptanesulfonic acid (PFHpS)	9.33	2.0	ng/L	9.42		99.1	69-134			
N-EtFOSAA	9.47	2.0	ng/L	9.86		96.0	61-135			
N-MeFOSAA	10.8	2.0	ng/L	9.86		109	65-136			
Perfluorotetradecanoic acid (PFTA)	8.05	2.0	ng/L	9.86		81.6	71-132			
Perfluorotridecanoic acid (PFTrDA)	8.22	2.0	ng/L	9.86		83.4	65-144			
:2 Fluorotelomersulfonic acid (4:2FTS A)	8.89	2.0	ng/L	9.22		96.4	63-143			
Perfluorodecanesulfonic acid (PFDS)	7.60	2.0	ng/L	9.52		79.8	53-142			
erfluorooctanesulfonamide (FOSA)	8.76	2.0	ng/L	9.86		88.8	67-137			
erfluorononanesulfonic acid (PFNS)	8.26	2.0	ng/L	9.47		87.3	69-127			
erfluoro-1-hexanesulfonamide (FHxSA)	8.78	2.0	ng/L	9.86		89.0	50-150			
erfluoro-1-butanesulfonamide (FBSA)	10.2	2.0	ng/L	9.86		103	50-150			
erfluorohexanesulfonic acid (PFHxS)	7.78	2.0	ng/L	8.97		86.7	68-131			
erfluoro-4-oxapentanoic acid (PFMPA)	10.8	2.0	ng/L	9.86		110	50-150			
Perfluoro-5-oxahexanoic acid (PFMBA)	10.6	2.0	ng/L	9.86		108	50-150			
:2 Fluorotelomersulfonic acid (6:2FTS A)	8.57	2.0	ng/L	9.37		91.5	64-140			
Perfluoropetanesulfonic acid (PFPeS)	7.80	2.0	ng/L	9.27		84.1	71-127			
Perfluoroundecanoic acid (PFUnA)	8.32	2.0	ng/L	9.86		84.4	69-133			
Nonafluoro-3,6-dioxaheptanoic acid NFDHA)	9.66	2.0	ng/L	9.86		97.9	50-150			
Perfluoroheptanoic acid (PFHpA)	9.51	2.0	ng/L	9.86		96.4	72-130			
Perfluorooctanoic acid (PFOA)	8.57	2.0	ng/L	9.86		86.9	71-133			
Perfluorooctanesulfonic acid (PFOS)	8.80	2.0	ng/L	9.12		96.5	65-140			
Perfluorononanoic acid (PFNA)	8.34	2.0	ng/L	9.86		84.5	69-130			
CCS Dup (B290910-BSD1) Perfluorobutanoic acid (PFBA)	0.00	1.0	no/I		0/24/21 Analy			2.51	20	
	8.89	1.9	ng/L	9.72		91.6	73-129	2.51	30	
Perfluorobutanesulfonic acid (PFBS)	7.73	1.9	ng/L	8.60		89.9	72-130	1.62	30	
Perfluoropentanoic acid (PFPeA) Perfluorohexanoic acid (PFHxA)	8.30	1.9 1.9	ng/L	9.72		85.5 87.6	72-129	0.116	30	
1Cl-PF3OUdS (F53B Minor)	8.51	1.9	ng/L	9.72		87.6	72-129 50 150	1.74	30	
Cl-PF3OUdS (F53B Minor)	7.31	1.9	ng/L	9.15		79.9	50-150	8.89	30	
,8-dioxa-3H-perfluorononanoic acid	7.55	1.9	ng/L	9.05		83.4	50-150	13.6	30	
,8-dioxa-3H-periliorononanoic acid ADONA) Iexafluoropropylene oxide dimer acid	8.02	1.9	ng/L	9.15		87.6	50-150	1.03	30	
HFPO-DA) :2 Fluorotelomersulfonic acid (8:2FTS A)	7.22	1.9	ng/L	9.72		74.3	50-150	11.0	30	
	8.56		ng/L	9.33		91.8	67-138	2.79	30	
Perfluorodecanoic acid (PFDA) Perfluorododecanoic acid (PFDoA)	8.33	1.9 1.9	ng/L	9.72		85.8	71-129	8.95	30	
erfluoro(2-ethoxyethane)sulfonic acid	8.41 9.69	1.9	ng/L ng/L	9.72 8.65		86.6 112	72-134 50-150	10.1 1.23	30 30	



QUALITY CONTROL

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B290910 - SOP 454-PFAAS										
LCS Dup (B290910-BSD1)				Prepared: 09	9/24/21 Analy	yzed: 09/27/2	21			
Perfluoroheptanesulfonic acid (PFHpS)	8.61	1.9	ng/L	9.28		92.8	69-134	8.12	30	
N-EtFOSAA	10.1	1.9	ng/L	9.72		104	61-135	6.00	30	
N-MeFOSAA	10.6	1.9	ng/L	9.72		110	65-136	1.37	30	
Perfluorotetradecanoic acid (PFTA)	7.97	1.9	ng/L	9.72		82.0	71-132	1.02	30	
Perfluorotridecanoic acid (PFTrDA)	9.20	1.9	ng/L	9.72		94.7	65-144	11.2	30	
4:2 Fluorotelomersulfonic acid (4:2FTS A)	8.83	1.9	ng/L	9.08		97.3	63-143	0.579	30	
Perfluorodecanesulfonic acid (PFDS)	7.06	1.9	ng/L	9.38		75.4	53-142	7.25	30	
Perfluorooctanesulfonamide (FOSA)	8.73	1.9	ng/L	9.72		89.8	67-137	0.367	30	
Perfluorononanesulfonic acid (PFNS)	8.13	1.9	ng/L	9.33		87.2	69-127	1.66	30	
Perfluoro-1-hexanesulfonamide (FHxSA)	9.11	1.9	ng/L	9.72		93.8	50-150	3.74	30	
Perfluoro-1-butanesulfonamide (FBSA)	10.3	1.9	ng/L	9.72		106	50-150	1.30	30	
Perfluorohexanesulfonic acid (PFHxS)	7.72	1.9	ng/L	8.84		87.4	68-131	0.761	30	
Perfluoro-4-oxapentanoic acid (PFMPA)	10.6	1.9	ng/L	9.72		109	50-150	2.30	30	
Perfluoro-5-oxahexanoic acid (PFMBA)	10.6	1.9	ng/L	9.72		109	50-150	0.245	30	
6:2 Fluorotelomersulfonic acid (6:2FTS A)	8.80	1.9	ng/L	9.23		95.3	64-140	2.55	30	
Perfluoropetanesulfonic acid (PFPeS)	8.18	1.9	ng/L	9.13		89.6	71-127	4.82	30	
Perfluoroundecanoic acid (PFUnA)	8.93	1.9	ng/L	9.72		91.9	69-133	7.06	30	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	9.49	1.9	ng/L	9.72		97.6	50-150	1.81	30	
Perfluoroheptanoic acid (PFHpA)	9.29	1.9	ng/L	9.72		95.6	72-130	2.35	30	
Perfluorooctanoic acid (PFOA)	9.09	1.9	ng/L	9.72		93.6	71-133	5.92	30	
Perfluorooctanesulfonic acid (PFOS)	7.66	1.9	ng/L	8.99		85.2	65-140	13.9	30	
Perfluorononanoic acid (PFNA)	8.83	1.9	ng/L	9.72		90.9	69-130	5.74	30	



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.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
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-18	Duplicate analysis confirmed Extracted Internal Standard failure due to matrix effects.
S-29	Extracted Internal Standard is outside of control limits.



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-R(s) (2110575-01)			Lab File ID: 21I05	75-01.d		Analyzed: 09/2	3/21 15:53		
M8FOSA	243368.7	4.01255	298,657.00	4.01255	81	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	147716.9	2.496817	157,413.00	2.496817	94	50 - 150	0.0000	+/-0.50	
M2PFTA	950033.7	4.329683	1,047,075.00	4.32155	91	50 - 150	0.0081	+/-0.50	
M2-8:2FTS	100117.8	3.810767	115,702.00	3.810767	87	50 - 150	0.0000	+/-0.50	
MPFBA	264977.5	1.0917	462,886.00	1.0917	57	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	302109	2.831117	174,842.00	2.831117	173	50 - 150	0.0000	+/-0.50	*
M6PFDA	604709.9	3.811283	559,977.00	3.811283	108	50 - 150	0.0000	+/-0.50	
M3PFBS	144084.8	1.90325	132,517.00	1.90325	109	50 - 150	0.0000	+/-0.50	
M7PFUnA	809729.3	3.954033	748,300.00	3.954033	108	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	90678.39	3.453267	83,643.00	3.453267	108	50 - 150	0.0000	+/-0.50	
M5PFPeA	455460.9	1.731383	458,004.00	1.731383	99	50 - 150	0.0000	+/-0.50	
M5PFHxA	790747.2	2.58055	708,527.00	2.58055	112	50 - 150	0.0000	+/-0.50	
M3PFHxS	100439.7	3.226417	94,231.00	3.218333	107	50 - 150	0.0081	+/-0.50	
M4PFHpA	741769.6	3.186933	686,035.00	3.186933	108	50 - 150	0.0000	+/-0.50	
M8PFOA	658330.4	3.469917	601,545.00	3.469917	109	50 - 150	0.0000	+/-0.50	
M8PFOS	108398.2	3.66015	95,404.00	3.65215	114	50 - 150	0.0080	+/-0.50	
M9PFNA	541766.1	3.661183	478,794.00	3.6532	113	50 - 150	0.0080	+/-0.50	
MPFDoA	783051.9	4.08865	796,851.00	4.08865	98	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	172040.5	3.9615	196,218.00	3.9535	88	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	193152	3.88175	203,643.00	3.88175	95	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-J (2110575-02)			Lab File ID: 21I05	75-02.d		Analyzed: 09/2	3/21 16:00	•	
M8FOSA	297923.3	4.01255	298,657.00	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	138543.8	2.496817	157,413.00	2.496817	88	50 - 150	0.0000	+/-0.50	
M2PFTA	1230742	4.32155	1,047,075.00	4.32155	118	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	153720.2	3.810767	115,702.00	3.810767	133	50 - 150	0.0000	+/-0.50	
MPFBA	502249.9	1.0917	462,886.00	1.0917	109	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	276887.5	2.831117	174,842.00	2.831117	158	50 - 150	0.0000	+/-0.50	*
M6PFDA	693810.5	3.811283	559,977.00	3.811283	124	50 - 150	0.0000	+/-0.50	
M3PFBS	167676.2	1.90325	132,517.00	1.90325	127	50 - 150	0.0000	+/-0.50	
M7PFUnA	945674.8	3.954033	748,300.00	3.954033	126	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	115839.4	3.453267	83,643.00	3.453267	138	50 - 150	0.0000	+/-0.50	
M5PFPeA	542393.1	1.731383	458,004.00	1.731383	118	50 - 150	0.0000	+/-0.50	
M5PFHxA	866943.6	2.58055	708,527.00	2.58055	122	50 - 150	0.0000	+/-0.50	
M3PFHxS	112608	3.226417	94,231.00	3.218333	120	50 - 150	0.0081	+/-0.50	
M4PFHpA	838458.4	3.186933	686,035.00	3.186933	122	50 - 150	0.0000	+/-0.50	
M8PFOA	771891	3.469917	601,545.00	3.469917	128	50 - 150	0.0000	+/-0.50	
M8PFOS	125225.9	3.66015	95,404.00	3.65215	131	50 - 150	0.0080	+/-0.50	
M9PFNA	614773.3	3.661183	478,794.00	3.6532	128	50 - 150	0.0080	+/-0.50	
MPFDoA	970085.8	4.08865	796,851.00	4.08865	122	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	212885	3.9615	196,218.00	3.9535	108	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	244398.6	3.88175	203,643.00	3.88175	120	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-E (2110575-03)			Lab File ID: 21I05	75-03.d		Analyzed: 09/2	3/21 16:07		
M8FOSA	257753	4.01255	298,657.00	4.01255	86	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	107384	2.496817	157,413.00	2.496817	68	50 - 150	0.0000	+/-0.50	
M2PFTA	1116164	4.32155	1,047,075.00	4.32155	107	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	114133.3	3.810767	115,702.00	3.810767	99	50 - 150	0.0000	+/-0.50	
MPFBA	470364.1	1.0917	462,886.00	1.0917	102	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	316742.5	2.831117	174,842.00	2.831117	181	50 - 150	0.0000	+/-0.50	*
M6PFDA	641443.7	3.811283	559,977.00	3.811283	115	50 - 150	0.0000	+/-0.50	
M3PFBS	150028.1	1.90325	132,517.00	1.90325	113	50 - 150	0.0000	+/-0.50	
M7PFUnA	840696.3	3.954033	748,300.00	3.954033	112	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	78490.56	3.453267	83,643.00	3.453267	94	50 - 150	0.0000	+/-0.50	
M5PFPeA	492123.1	1.731383	458,004.00	1.731383	107	50 - 150	0.0000	+/-0.50	
M5PFHxA	785775.9	2.58055	708,527.00	2.58055	111	50 - 150	0.0000	+/-0.50	
M3PFHxS	105339.5	3.226417	94,231.00	3.218333	112	50 - 150	0.0081	+/-0.50	
M4PFHpA	732972.8	3.186933	686,035.00	3.186933	107	50 - 150	0.0000	+/-0.50	
M8PFOA	676044	3.469917	601,545.00	3.469917	112	50 - 150	0.0000	+/-0.50	
M8PFOS	108188.3	3.660133	95,404.00	3.65215	113	50 - 150	0.0080	+/-0.50	
M9PFNA	532566.3	3.661183	478,794.00	3.6532	111	50 - 150	0.0080	+/-0.50	
MPFDoA	850375.3	4.08865	796,851.00	4.08865	107	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	168217	3.9615	196,218.00	3.9535	86	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	214897.5	3.88175	203,643.00	3.88175	106	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-F (2110575-04)			Lab File ID: 21I05	75-04.d		Analyzed: 09/2	3/21 16:14		
M8FOSA	288663.5	4.01255	298,657.00	4.01255	97	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	147888	2.496817	157,413.00	2.496817	94	50 - 150	0.0000	+/-0.50	
M2PFTA	1192830	4.32155	1,047,075.00	4.32155	114	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	149456.7	3.810767	115,702.00	3.810767	129	50 - 150	0.0000	+/-0.50	
MPFBA	515019.8	1.0917	462,886.00	1.0917	111	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	292796.1	2.831117	174,842.00	2.831117	167	50 - 150	0.0000	+/-0.50	*
M6PFDA	724172.5	3.811283	559,977.00	3.811283	129	50 - 150	0.0000	+/-0.50	
M3PFBS	166846	1.90325	132,517.00	1.90325	126	50 - 150	0.0000	+/-0.50	
M7PFUnA	931317.9	3.954033	748,300.00	3.954033	124	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	89086.95	3.453267	83,643.00	3.453267	107	50 - 150	0.0000	+/-0.50	
M5PFPeA	551633.9	1.731383	458,004.00	1.731383	120	50 - 150	0.0000	+/-0.50	
M5PFHxA	881581	2.58055	708,527.00	2.58055	124	50 - 150	0.0000	+/-0.50	
M3PFHxS	118692	3.218333	94,231.00	3.218333	126	50 - 150	0.0000	+/-0.50	
M4PFHpA	812446.8	3.186933	686,035.00	3.186933	118	50 - 150	0.0000	+/-0.50	
M8PFOA	745724.4	3.469917	601,545.00	3.469917	124	50 - 150	0.0000	+/-0.50	
M8PFOS	118109.6	3.660133	95,404.00	3.65215	124	50 - 150	0.0080	+/-0.50	
M9PFNA	633185.6	3.661183	478,794.00	3.6532	132	50 - 150	0.0080	+/-0.50	
MPFDoA	971733.8	4.08865	796,851.00	4.08865	122	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	186968.9	3.9615	196,218.00	3.9535	95	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	246787.5	3.88175	203,643.00	3.88175	121	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-P(s) (21I0575-05)	•	•	Lab File ID: 21I05	75-05.d		Analyzed: 09/2	3/21 16:22	•	
M8FOSA	49528.88	4.01255	298,657.00	4.01255	17	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	134065.7	2.4886	157,413.00	2.496817	85	50 - 150	-0.0082	+/-0.50	
M2PFTA	138411.8	4.32155	1,047,075.00	4.32155	13	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	100696.5	3.810767	115,702.00	3.810767	87	50 - 150	0.0000	+/-0.50	
MPFBA	491144.3	1.100017	462,886.00	1.0917	106	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	280382.1	2.831117	174,842.00	2.831117	160	50 - 150	0.0000	+/-0.50	*
M6PFDA	473519.6	3.811283	559,977.00	3.811283	85	50 - 150	0.0000	+/-0.50	
M3PFBS	157059.3	1.90325	132,517.00	1.90325	119	50 - 150	0.0000	+/-0.50	
M7PFUnA	398051.8	3.954033	748,300.00	3.954033	53	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	75612.03	3.453267	83,643.00	3.453267	90	50 - 150	0.0000	+/-0.50	
M5PFPeA	525628.8	1.731383	458,004.00	1.731383	115	50 - 150	0.0000	+/-0.50	
M5PFHxA	834630.4	2.572333	708,527.00	2.58055	118	50 - 150	-0.0082	+/-0.50	
M3PFHxS	103786.7	3.218333	94,231.00	3.218333	110	50 - 150	0.0000	+/-0.50	
M4PFHpA	769658.7	3.186933	686,035.00	3.186933	112	50 - 150	0.0000	+/-0.50	
M8PFOA	668589.3	3.469917	601,545.00	3.469917	111	50 - 150	0.0000	+/-0.50	
M8PFOS	86168.62	3.660133	95,404.00	3.65215	90	50 - 150	0.0080	+/-0.50	
M9PFNA	515944.3	3.661183	478,794.00	3.6532	108	50 - 150	0.0080	+/-0.50	
MPFDoA	137201.7	4.08865	796,851.00	4.08865	17	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	86358.25	3.9615	196,218.00	3.9535	44	50 - 150	0.0080	+/-0.50	*
d3-NMeFOSAA	153101.7	3.88175	203,643.00	3.88175	75	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-P(s) (2110575-05RE1)			Lab File ID: 21I05	75-05RE1.d		Analyzed: 09/2	7/21 14:44		
M8FOSA	36069.07	4.00455	250,282.00	4.00455	14	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	117249.1	2.4804	138,662.00	2.472183	85	50 - 150	0.0082	+/-0.50	
M2PFTA	60786.98	4.32155	993,935.00	4.32155	06	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	88102.85	3.8028	115,726.00	3.8028	76	50 - 150	0.0000	+/-0.50	
MPFBA	425973.4	1.0917	387,274.00	1.0834	110	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	187517	2.81475	135,191.00	2.81475	139	50 - 150	0.0000	+/-0.50	
M6PFDA	466039.1	3.803317	491,648.00	3.803317	95	50 - 150	0.0000	+/-0.50	
M3PFBS	145820.3	1.886683	108,781.00	1.878383	134	50 - 150	0.0083	+/-0.50	
M7PFUnA	447207.3	3.946033	703,950.00	3.946033	64	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	64346.23	3.445283	83,444.00	3.445283	77	50 - 150	0.0000	+/-0.50	
M5PFPeA	474007.4	1.714833	388,897.00	1.706567	122	50 - 150	0.0083	+/-0.50	
M5PFHxA	724405.5	2.564133	581,904.00	2.555917	124	50 - 150	0.0082	+/-0.50	
M3PFHxS	96209.87	3.218333	77,212.00	3.21025	125	50 - 150	0.0081	+/-0.50	
M4PFHpA	689292.6	3.178867	573,666.00	3.178867	120	50 - 150	0.0000	+/-0.50	
M8PFOA	616748.9	3.461933	511,135.00	3.461933	121	50 - 150	0.0000	+/-0.50	
M8PFOS	87506.3	3.65215	82,431.00	3.65215	106	50 - 150	0.0000	+/-0.50	
M9PFNA	454969.3	3.6532	431,895.00	3.653183	105	50 - 150	0.0000	+/-0.50	
MPFDoA	245960.5	4.08065	724,624.00	4.08065	34	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	104277.6	3.9535	164,452.00	3.9535	63	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	154143.4	3.873767	197,279.00	3.873767	78	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-P(m) (2110575-06)			Lab File ID: 21I05	75-06.d		Analyzed: 09/2	3/21 16:29		
M8FOSA	258410.9	4.01255	298,657.00	4.01255	87	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	141026.9	2.4886	157,413.00	2.496817	90	50 - 150	-0.0082	+/-0.50	
M2PFTA	397625.6	4.32155	1,047,075.00	4.32155	38	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	144809.9	3.810767	115,702.00	3.810767	125	50 - 150	0.0000	+/-0.50	
MPFBA	523835.8	1.100017	462,886.00	1.0917	113	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	326876.4	2.831117	174,842.00	2.831117	187	50 - 150	0.0000	+/-0.50	*
M6PFDA	637910.6	3.811283	559,977.00	3.811283	114	50 - 150	0.0000	+/-0.50	
M3PFBS	171489.9	1.90325	132,517.00	1.90325	129	50 - 150	0.0000	+/-0.50	
M7PFUnA	777601.4	3.954033	748,300.00	3.954033	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	87339.53	3.453267	83,643.00	3.453267	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	568429.9	1.731383	458,004.00	1.731383	124	50 - 150	0.0000	+/-0.50	
M5PFHxA	909134.6	2.572333	708,527.00	2.58055	128	50 - 150	-0.0082	+/-0.50	
M3PFHxS	119156.1	3.218333	94,231.00	3.218333	126	50 - 150	0.0000	+/-0.50	
M4PFHpA	863190.8	3.186933	686,035.00	3.186933	126	50 - 150	0.0000	+/-0.50	
M8PFOA	766526.1	3.469917	601,545.00	3.469917	127	50 - 150	0.0000	+/-0.50	
M8PFOS	121432.4	3.66015	95,404.00	3.65215	127	50 - 150	0.0080	+/-0.50	
M9PFNA	575287.3	3.661183	478,794.00	3.6532	120	50 - 150	0.0080	+/-0.50	
MPFDoA	700874.5	4.08865	796,851.00	4.08865	88	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	182196.6	3.9615	196,218.00	3.9535	93	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	208958.7	3.88175	203,643.00	3.88175	103	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-P(m) (2110575-06RE1)			Lab File ID: 21I05	75-06RE1.d		Analyzed: 09/2	7/21 14:51		
M8FOSA	55700.27	4.00455	250,282.00	4.00455	22	50 - 150	0.0000	+/-0.50	*
M2-4:2FTS	117542.9	2.4804	138,662.00	2.472183	85	50 - 150	0.0082	+/-0.50	
M2PFTA	27163.71	4.32155	993,935.00	4.32155	03	50 - 150	0.0000	+/-0.50	*
M2-8:2FTS	86535.38	3.8028	115,726.00	3.8028	75	50 - 150	0.0000	+/-0.50	
MPFBA	434236.7	1.0917	387,274.00	1.0834	112	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	210349.1	2.822933	135,191.00	2.81475	156	50 - 150	0.0082	+/-0.50	*
M6PFDA	401143.1	3.803317	491,648.00	3.803317	82	50 - 150	0.0000	+/-0.50	
M3PFBS	143806	1.886667	108,781.00	1.878383	132	50 - 150	0.0083	+/-0.50	
M7PFUnA	323107.7	3.946033	703,950.00	3.946033	46	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	63088	3.445283	83,444.00	3.445283	76	50 - 150	0.0000	+/-0.50	
M5PFPeA	475647.1	1.7231	388,897.00	1.706567	122	50 - 150	0.0165	+/-0.50	
M5PFHxA	719970.2	2.564117	581,904.00	2.555917	124	50 - 150	0.0082	+/-0.50	
M3PFHxS	97124.66	3.218333	77,212.00	3.21025	126	50 - 150	0.0081	+/-0.50	
M4PFHpA	680426	3.178867	573,666.00	3.178867	119	50 - 150	0.0000	+/-0.50	
M8PFOA	572705.1	3.461933	511,135.00	3.461933	112	50 - 150	0.0000	+/-0.50	
M8PFOS	80841.93	3.65215	82,431.00	3.65215	98	50 - 150	0.0000	+/-0.50	
M9PFNA	450431	3.6532	431,895.00	3.653183	104	50 - 150	0.0000	+/-0.50	
MPFDoA	112948.2	4.08065	724,624.00	4.08065	16	50 - 150	0.0000	+/-0.50	*
d5-NEtFOSAA	76883.97	3.9535	164,452.00	3.9535	47	50 - 150	0.0000	+/-0.50	*
d3-NMeFOSAA	117436.8	3.88175	197,279.00	3.873767	60	50 - 150	0.0080	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-I(s) (2110575-07)	•		Lab File ID: 21I05	75-07.d		Analyzed: 09/2	3/21 16:36		Щ
M8FOSA	284450.2	4.01255	298,657.00	4.01255	95	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	158581.1	2.4886	157,413.00	2.496817	101	50 - 150	-0.0082	+/-0.50	
M2PFTA	1251383	4.32155	1,047,075.00	4.32155	120	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	151147.1	3.810767	115,702.00	3.810767	131	50 - 150	0.0000	+/-0.50	
MPFBA	502266.8	1.0917	462,886.00	1.0917	109	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	289359.4	2.831117	174,842.00	2.831117	165	50 - 150	0.0000	+/-0.50	*
M6PFDA	712970.5	3.811283	559,977.00	3.811283	127	50 - 150	0.0000	+/-0.50	
M3PFBS	171523.9	1.90325	132,517.00	1.90325	129	50 - 150	0.0000	+/-0.50	
M7PFUnA	916816.9	3.954033	748,300.00	3.954033	123	50 - 150	0.0000	+/-0.50	
M5PFPeA	544871.7	1.731383	458,004.00	1.731383	119	50 - 150	0.0000	+/-0.50	
M5PFHxA	888112.5	2.58055	708,527.00	2.58055	125	50 - 150	0.0000	+/-0.50	
M3PFHxS	114127.4	3.226417	94,231.00	3.218333	121	50 - 150	0.0081	+/-0.50	
M4PFHpA	846709.4	3.186933	686,035.00	3.186933	123	50 - 150	0.0000	+/-0.50	
M8PFOA	723768.4	3.469917	601,545.00	3.469917	120	50 - 150	0.0000	+/-0.50	
M8PFOS	125050.4	3.66015	95,404.00	3.65215	131	50 - 150	0.0080	+/-0.50	
M9PFNA	606351.9	3.661183	478,794.00	3.6532	127	50 - 150	0.0080	+/-0.50	
MPFDoA	1021820	4.08865	796,851.00	4.08865	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	204891.7	3.9615	196,218.00	3.9535	104	50 - 150	0.0080	+/-0.50	
d3-NMeFOSAA	221353.3	3.88175	203,643.00	3.88175	109	50 - 150	0.0000	+/-0.50	
HW-I(s) (2110575-07RE1)	Lab File ID: 2110575-07RE1.d					Analyzed: 09/2	7/21 14:58		
M3HFPO-DA	216769.3	2.81475	135,191.00	2.81475	160	50 - 150	0.0000	+/-0.50	*
M2-6:2FTS	78193.45	3.445283	83,444.00	3.445283	94	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-I(m) (2110575-08)			Lab File ID: 21I05	75-08.d		Analyzed: 09/2	3/21 16:58		
M8FOSA	299367.8	4.01255	298,657.00	4.01255	100	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	132607.3	2.496817	157,413.00	2.4886	84	50 - 150	0.0082	+/-0.50	
M2PFTA	1317053	4.32155	1,047,075.00	4.32155	126	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	132671.5	3.810767	115,702.00	3.810767	115	50 - 150	0.0000	+/-0.50	
MPFBA	512920.5	1.100017	462,886.00	1.0917	111	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	305098.9	2.8393	174,842.00	2.831117	174	50 - 150	0.0082	+/-0.50	*
M6PFDA	765189.3	3.811283	559,977.00	3.811283	137	50 - 150	0.0000	+/-0.50	
M3PFBS	168055.7	1.90325	132,517.00	1.90325	127	50 - 150	0.0000	+/-0.50	
M7PFUnA	986424.8	3.954033	748,300.00	3.954033	132	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	92235.89	3.453267	83,643.00	3.453267	110	50 - 150	0.0000	+/-0.50	
M5PFPeA	559891.8	1.731383	458,004.00	1.731383	122	50 - 150	0.0000	+/-0.50	
M5PFHxA	897813.6	2.58055	708,527.00	2.572333	127	50 - 150	0.0082	+/-0.50	
M3PFHxS	116764.4	3.226417	94,231.00	3.218333	124	50 - 150	0.0081	+/-0.50	
M4PFHpA	853985.2	3.186933	686,035.00	3.186933	124	50 - 150	0.0000	+/-0.50	
M8PFOA	761896.4	3.469917	601,545.00	3.469917	127	50 - 150	0.0000	+/-0.50	
M8PFOS	122130.1	3.660133	95,404.00	3.660133	128	50 - 150	0.0000	+/-0.50	
M9PFNA	658086.3	3.661183	478,794.00	3.661183	137	50 - 150	0.0000	+/-0.50	
MPFDoA	1019942	4.08865	796,851.00	4.08865	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	212942	3.9615	196,218.00	3.9615	109	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	248642.3	3.88175	203,643.00	3.88175	122	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-I(d) (2110575-09)			Lab File ID: 21I05	75-09.d		Analyzed: 09/2	3/21 17:05		
M8FOSA	265095.5	4.01255	298,657.00	4.01255	89	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	119456	2.4886	157,413.00	2.4886	76	50 - 150	0.0000	+/-0.50	
M2PFTA	869482.8	4.32155	1,047,075.00	4.32155	83	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	117409.3	3.810767	115,702.00	3.810767	101	50 - 150	0.0000	+/-0.50	
MPFBA	476059.7	1.100017	462,886.00	1.0917	103	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	268445.9	2.831117	174,842.00	2.831117	154	50 - 150	0.0000	+/-0.50	*
M6PFDA	664862.3	3.811283	559,977.00	3.811283	119	50 - 150	0.0000	+/-0.50	
M3PFBS	163088.2	1.90325	132,517.00	1.90325	123	50 - 150	0.0000	+/-0.50	
M7PFUnA	825967.9	3.954033	748,300.00	3.954033	110	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	86748.25	3.453267	83,643.00	3.453267	104	50 - 150	0.0000	+/-0.50	
M5PFPeA	546620.9	1.731383	458,004.00	1.731383	119	50 - 150	0.0000	+/-0.50	
M5PFHxA	861759.6	2.572333	708,527.00	2.572333	122	50 - 150	0.0000	+/-0.50	
M3PFHxS	109607	3.226417	94,231.00	3.218333	116	50 - 150	0.0081	+/-0.50	
M4PFHpA	813225.6	3.186933	686,035.00	3.186933	119	50 - 150	0.0000	+/-0.50	
M8PFOA	756609.3	3.469917	601,545.00	3.469917	126	50 - 150	0.0000	+/-0.50	
M8PFOS	119062.8	3.66015	95,404.00	3.660133	125	50 - 150	0.0000	+/-0.50	
M9PFNA	579231.4	3.661183	478,794.00	3.661183	121	50 - 150	0.0000	+/-0.50	
MPFDoA	887678.9	4.08865	796,851.00	4.08865	111	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	173693.8	3.9615	196,218.00	3.9615	89	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	214176	3.88175	203,643.00	3.88175	105	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
OW-19(d) (21I0575-10)			Lab File ID: 21I05	75-10.d		Analyzed: 09/2	3/21 17:12		
M8FOSA	330461.1	4.01255	298,657.00	4.01255	111	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	144494.7	2.4886	157,413.00	2.4886	92	50 - 150	0.0000	+/-0.50	
M2PFTA	1346356	4.32155	1,047,075.00	4.32155	129	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	159443.2	3.810767	115,702.00	3.810767	138	50 - 150	0.0000	+/-0.50	
MPFBA	548237.7	1.0917	462,886.00	1.0917	118	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	667321.8	2.831117	174,842.00	2.831117	382	50 - 150	0.0000	+/-0.50	*
M6PFDA	743141.6	3.811283	559,977.00	3.811283	133	50 - 150	0.0000	+/-0.50	
M3PFBS	177440	1.90325	132,517.00	1.90325	134	50 - 150	0.0000	+/-0.50	
M7PFUnA	1055196	3.954033	748,300.00	3.954033	141	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	93556.4	3.453267	83,643.00	3.453267	112	50 - 150	0.0000	+/-0.50	
M5PFPeA	580976.8	1.731383	458,004.00	1.731383	127	50 - 150	0.0000	+/-0.50	
M5PFHxA	938804.8	2.572333	708,527.00	2.572333	133	50 - 150	0.0000	+/-0.50	
M3PFHxS	122746	3.226417	94,231.00	3.218333	130	50 - 150	0.0081	+/-0.50	
M4PFHpA	900026.8	3.186933	686,035.00	3.186933	131	50 - 150	0.0000	+/-0.50	
M8PFOA	799472	3.469917	601,545.00	3.469917	133	50 - 150	0.0000	+/-0.50	
M8PFOS	123760.4	3.660133	95,404.00	3.660133	130	50 - 150	0.0000	+/-0.50	
M9PFNA	640463	3.661183	478,794.00	3.661183	134	50 - 150	0.0000	+/-0.50	
MPFDoA	1013215	4.08865	796,851.00	4.08865	127	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	205666.7	3.9615	196,218.00	3.9615	105	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	241482.7	3.88175	203,643.00	3.88175	119	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-X(s) (2110575-11)			Lab File ID: 21I05	75-11.d		Analyzed: 09/2	3/21 17:19		
M8FOSA	307244.8	4.01255	298,657.00	4.01255	103	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	137717.2	2.4886	157,413.00	2.4886	87	50 - 150	0.0000	+/-0.50	
M2PFTA	1357043	4.32155	1,047,075.00	4.32155	130	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	144574.7	3.810767	115,702.00	3.810767	125	50 - 150	0.0000	+/-0.50	
MPFBA	572703.8	1.0917	462,886.00	1.0917	124	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	348733.8	2.831117	174,842.00	2.831117	199	50 - 150	0.0000	+/-0.50	*
M6PFDA	787145.8	3.811283	559,977.00	3.811283	141	50 - 150	0.0000	+/-0.50	
M3PFBS	180121.5	1.90325	132,517.00	1.90325	136	50 - 150	0.0000	+/-0.50	
M7PFUnA	1015399	3.954033	748,300.00	3.954033	136	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	91340.73	3.453267	83,643.00	3.453267	109	50 - 150	0.0000	+/-0.50	
M5PFPeA	602812.8	1.731383	458,004.00	1.731383	132	50 - 150	0.0000	+/-0.50	
M5PFHxA	970981.6	2.572333	708,527.00	2.572333	137	50 - 150	0.0000	+/-0.50	
M3PFHxS	120194.3	3.226417	94,231.00	3.218333	128	50 - 150	0.0081	+/-0.50	
M4PFHpA	893931.6	3.186933	686,035.00	3.186933	130	50 - 150	0.0000	+/-0.50	
M8PFOA	809268.8	3.469917	601,545.00	3.469917	135	50 - 150	0.0000	+/-0.50	
M8PFOS	130610.4	3.66015	95,404.00	3.660133	137	50 - 150	0.0000	+/-0.50	
M9PFNA	684523.3	3.661183	478,794.00	3.661183	143	50 - 150	0.0000	+/-0.50	
MPFDoA	1016728	4.08865	796,851.00	4.08865	128	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	187834.3	3.9615	196,218.00	3.9615	96	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	273221.3	3.88175	203,643.00	3.88175	134	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
HW-X(m) (21I0575-12)			Lab File ID: 21I05	75-12.d		Analyzed: 09/2	3/21 17:26		
M8FOSA	278474.7	4.01255	298,657.00	4.01255	93	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	128153.1	2.4886	157,413.00	2.4886	81	50 - 150	0.0000	+/-0.50	
M2PFTA	1134451	4.32155	1,047,075.00	4.32155	108	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	136827	3.810767	115,702.00	3.810767	118	50 - 150	0.0000	+/-0.50	
MPFBA	486585.4	1.100017	462,886.00	1.0917	105	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	302946.5	2.831117	174,842.00	2.831117	173	50 - 150	0.0000	+/-0.50	*
M6PFDA	658470.2	3.811283	559,977.00	3.811283	118	50 - 150	0.0000	+/-0.50	
M3PFBS	159220.3	1.90325	132,517.00	1.90325	120	50 - 150	0.0000	+/-0.50	
M7PFUnA	956657.3	3.954033	748,300.00	3.954033	128	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	80089.95	3.453267	83,643.00	3.453267	96	50 - 150	0.0000	+/-0.50	
M5PFPeA	532171.6	1.731383	458,004.00	1.731383	116	50 - 150	0.0000	+/-0.50	
M5PFHxA	853666.1	2.572333	708,527.00	2.572333	120	50 - 150	0.0000	+/-0.50	
M3PFHxS	112201.5	3.226417	94,231.00	3.218333	119	50 - 150	0.0081	+/-0.50	
M4PFHpA	827011.3	3.186933	686,035.00	3.186933	121	50 - 150	0.0000	+/-0.50	
M8PFOA	726155.6	3.469917	601,545.00	3.469917	121	50 - 150	0.0000	+/-0.50	
M8PFOS	112376.6	3.660133	95,404.00	3.660133	118	50 - 150	0.0000	+/-0.50	
M9PFNA	571065.2	3.661183	478,794.00	3.661183	119	50 - 150	0.0000	+/-0.50	
MPFDoA	920113.5	4.08865	796,851.00	4.08865	115	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	179170.5	3.9615	196,218.00	3.9615	91	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	217431.5	3.88175	203,643.00	3.88175	107	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B290193-BLK1)			Lab File ID: B2901	93-BLK1.d		Analyzed: 09/1	7/21 19:48		
M8FOSA	345722.7	4.00455	369,591.00	4.00455	94	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	153518.1	2.496817	158,816.00	2.496817	97	50 - 150	0.0000	+/-0.50	
M2PFTA	1257450	4.32155	1,328,511.00	4.32155	95	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	121288.2	3.8028	92,666.00	3.810767	131	50 - 150	-0.0080	+/-0.50	
MPFBA	699285.9	1.0917	585,136.00	1.0917	120	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	227540.6	2.8393	198,070.00	2.8393	115	50 - 150	0.0000	+/-0.50	
M6PFDA	855219.2	3.803317	707,695.00	3.803317	121	50 - 150	0.0000	+/-0.50	
M3PFBS	167270.5	1.911533	165,269.00	1.90325	101	50 - 150	0.0083	+/-0.50	
M7PFUnA	1073297	3.946033	942,111.00	3.946033	114	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	83873.37	3.453267	79,940.00	3.453267	105	50 - 150	0.0000	+/-0.50	
M5PFPeA	651597.8	1.731383	583,615.00	1.731383	112	50 - 150	0.0000	+/-0.50	
M5PFHxA	973016.9	2.58055	912,809.00	2.588767	107	50 - 150	-0.0082	+/-0.50	
M3PFHxS	113064.6	3.218333	118,966.00	3.218333	95	50 - 150	0.0000	+/-0.50	
M4PFHpA	959413.6	3.186933	872,221.00	3.186933	110	50 - 150	0.0000	+/-0.50	
M8PFOA	871315.8	3.461933	754,054.00	3.469917	116	50 - 150	-0.0080	+/-0.50	
M8PFOS	126071.3	3.65215	125,235.00	3.65215	101	50 - 150	0.0000	+/-0.50	
M9PFNA	720073.1	3.653183	634,069.00	3.6532	114	50 - 150	0.0000	+/-0.50	
MPFDoA	1036180	4.08065	983,581.00	4.08065	105	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	245184.2	3.9535	188,700.00	3.9535	130	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	305551.9	3.88175	272,416.00	3.88175	112	50 - 150	0.0000	+/-0.50	



${\bf INTERNAL\,STANDARD\,AREA\,AND\,RT\,SUMMARY}$

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B290193-BS1)	Lab File ID: B290193-BS1.d			Analyzed: 09/17/21 19:33					
M8FOSA	288324.7	4.00455	369,591.00	4.00455	78	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	146211.1	2.505033	158,816.00	2.496817	92	50 - 150	0.0082	+/-0.50	
M2PFTA	1128587	4.32155	1,328,511.00	4.32155	85	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	104509.1	3.810767	92,666.00	3.810767	113	50 - 150	0.0000	+/-0.50	
MPFBA	665400.7	1.0917	585,136.00	1.0917	114	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	273163.2	2.8393	198,070.00	2.8393	138	50 - 150	0.0000	+/-0.50	
M6PFDA	826576.9	3.803317	707,695.00	3.803317	117	50 - 150	0.0000	+/-0.50	
M3PFBS	156984.5	1.911533	165,269.00	1.90325	95	50 - 150	0.0083	+/-0.50	
M7PFUnA	1066784	3.946033	942,111.00	3.946033	113	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	77403.84	3.453267	79,940.00	3.453267	97	50 - 150	0.0000	+/-0.50	
M5PFPeA	611097.9	1.741117	583,615.00	1.731383	105	50 - 150	0.0097	+/-0.50	
M5PFHxA	939046.4	2.588767	912,809.00	2.588767	103	50 - 150	0.0000	+/-0.50	
M3PFHxS	109178.4	3.218333	118,966.00	3.218333	92	50 - 150	0.0000	+/-0.50	
M4PFHpA	892269.8	3.186933	872,221.00	3.186933	102	50 - 150	0.0000	+/-0.50	
M8PFOA	785627.6	3.469917	754,054.00	3.469917	104	50 - 150	0.0000	+/-0.50	
M8PFOS	124172.2	3.65215	125,235.00	3.65215	99	50 - 150	0.0000	+/-0.50	
M9PFNA	671046.3	3.653183	634,069.00	3.6532	106	50 - 150	0.0000	+/-0.50	
MPFDoA	947818.8	4.08065	983,581.00	4.08065	96	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	190612.5	3.9535	188,700.00	3.9535	101	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	273729.5	3.88175	272,416.00	3.88175	100	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS Dup (B290193-BSD1)	Lab File ID: B290193-BSD1.d			Analyzed: 09/17/21 19:41					
M8FOSA	325373.4	4.00455	369,591.00	4.00455	88	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	148906.6	2.496817	158,816.00	2.496817	94	50 - 150	0.0000	+/-0.50	
M2PFTA	1283329	4.32155	1,328,511.00	4.32155	97	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	112040.1	3.810767	92,666.00	3.810767	121	50 - 150	0.0000	+/-0.50	
MPFBA	658822.6	1.0917	585,136.00	1.0917	113	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	230800.8	2.8393	198,070.00	2.8393	117	50 - 150	0.0000	+/-0.50	
M6PFDA	763013.8	3.803317	707,695.00	3.803317	108	50 - 150	0.0000	+/-0.50	
M3PFBS	149789.6	1.911533	165,269.00	1.90325	91	50 - 150	0.0083	+/-0.50	
M7PFUnA	980950.6	3.946033	942,111.00	3.946033	104	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	78224.07	3.453267	79,940.00	3.453267	98	50 - 150	0.0000	+/-0.50	
M5PFPeA	613204.1	1.731383	583,615.00	1.731383	105	50 - 150	0.0000	+/-0.50	
M5PFHxA	932257.4	2.588767	912,809.00	2.588767	102	50 - 150	0.0000	+/-0.50	
M3PFHxS	103605	3.218333	118,966.00	3.218333	87	50 - 150	0.0000	+/-0.50	
M4PFHpA	875828.1	3.186933	872,221.00	3.186933	100	50 - 150	0.0000	+/-0.50	
M8PFOA	850063	3.461933	754,054.00	3.469917	113	50 - 150	-0.0080	+/-0.50	
M8PFOS	121188.9	3.65215	125,235.00	3.65215	97	50 - 150	0.0000	+/-0.50	
M9PFNA	640080.3	3.653183	634,069.00	3.6532	101	50 - 150	0.0000	+/-0.50	
MPFDoA	1079706	4.08065	983,581.00	4.08065	110	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	224172.5	3.9535	188,700.00	3.9535	119	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	254087.3	3.88175	272,416.00	3.88175	93	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Blank (B290910-BLK1)	Lab File ID: B290910-BLK1.d			Analyzed: 09/27/21 14:36					
M8FOSA	290964.8	4.00455	250,282.00	4.00455	116	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	173574.7	2.472183	138,662.00	2.472183	125	50 - 150	0.0000	+/-0.50	
M2PFTA	1163232	4.32155	993,935.00	4.32155	117	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	134833.6	3.8028	115,726.00	3.8028	117	50 - 150	0.0000	+/-0.50	
MPFBA	535824.4	1.0834	387,274.00	1.0834	138	50 - 150	0.0000	+/-0.50	
M3HFPO-DA	172868.6	2.81475	135,191.00	2.81475	128	50 - 150	0.0000	+/-0.50	
M6PFDA	632471.4	3.803317	491,648.00	3.803317	129	50 - 150	0.0000	+/-0.50	
M3PFBS	142590.8	1.878383	108,781.00	1.878383	131	50 - 150	0.0000	+/-0.50	
M7PFUnA	861437.9	3.946033	703,950.00	3.946033	122	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	110641.5	3.445283	83,444.00	3.445283	133	50 - 150	0.0000	+/-0.50	
M5PFPeA	514168.9	1.714833	388,897.00	1.706567	132	50 - 150	0.0083	+/-0.50	
M5PFHxA	760222.6	2.555917	581,904.00	2.555917	131	50 - 150	0.0000	+/-0.50	
M3PFHxS	100070.5	3.21025	77,212.00	3.21025	130	50 - 150	0.0000	+/-0.50	
M4PFHpA	749311	3.178867	573,666.00	3.178867	131	50 - 150	0.0000	+/-0.50	
M8PFOA	696939.8	3.461933	511,135.00	3.461933	136	50 - 150	0.0000	+/-0.50	
M8PFOS	100875.5	3.65215	82,431.00	3.65215	122	50 - 150	0.0000	+/-0.50	
M9PFNA	545483.2	3.653183	431,895.00	3.653183	126	50 - 150	0.0000	+/-0.50	
MPFDoA	829980.3	4.08065	724,624.00	4.08065	115	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	197879.5	3.9535	164,452.00	3.9535	120	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	230459.6	3.873767	197,279.00	3.873767	117	50 - 150	0.0000	+/-0.50	



INTERNAL STANDARD AREA AND RT SUMMARY

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
LCS (B290910-BS1)	Lab File ID: B290910-BS1.d			Analyzed: 09/27/21 14:22					
M8FOSA	292935	4.00455	250,282.00	4.00455	117	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	164609.4	2.4804	138,662.00	2.472183	119	50 - 150	0.0082	+/-0.50	
M2PFTA	1106448	4.321567	993,935.00	4.32155	111	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	134377.3	3.8028	115,726.00	3.8028	116	50 - 150	0.0000	+/-0.50	
MPFBA	517644.5	1.0917	387,274.00	1.0834	134	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	199553	2.822933	135,191.00	2.81475	148	50 - 150	0.0082	+/-0.50	
M6PFDA	678474.3	3.803317	491,648.00	3.803317	138	50 - 150	0.0000	+/-0.50	
M3PFBS	140707.4	1.886667	108,781.00	1.878383	129	50 - 150	0.0083	+/-0.50	
M7PFUnA	857572.3	3.946033	703,950.00	3.946033	122	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	98875.19	3.453267	83,444.00	3.445283	118	50 - 150	0.0080	+/-0.50	
M5PFPeA	511004.3	1.7231	388,897.00	1.706567	131	50 - 150	0.0165	+/-0.50	
M5PFHxA	762711.8	2.564117	581,904.00	2.555917	131	50 - 150	0.0082	+/-0.50	
M3PFHxS	98289.29	3.218333	77,212.00	3.21025	127	50 - 150	0.0081	+/-0.50	
M4PFHpA	743176.8	3.178867	573,666.00	3.178867	130	50 - 150	0.0000	+/-0.50	
M8PFOA	682188.5	3.461933	511,135.00	3.461933	133	50 - 150	0.0000	+/-0.50	
M8PFOS	100311.6	3.65215	82,431.00	3.65215	122	50 - 150	0.0000	+/-0.50	
M9PFNA	588048.9	3.6532	431,895.00	3.653183	136	50 - 150	0.0000	+/-0.50	
MPFDoA	909008.3	4.08065	724,624.00	4.08065	125	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	196021.8	3.9535	164,452.00	3.9535	119	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	231359.5	3.88175	197,279.00	3.873767	117	50 - 150	0.0080	+/-0.50	



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 (B290910-BSD1)			Lab File ID: B2909	010-BSD1.d		Analyzed: 09/2	7/21 14:29		
M8FOSA	246948.9	4.00455	250,282.00	4.00455	99	50 - 150	0.0000	+/-0.50	
M2-4:2FTS	151703.3	2.4804	138,662.00	2.472183	109	50 - 150	0.0082	+/-0.50	
M2PFTA	834743.1	4.321567	993,935.00	4.32155	84	50 - 150	0.0000	+/-0.50	
M2-8:2FTS	124165.5	3.8028	115,726.00	3.8028	107	50 - 150	0.0000	+/-0.50	
MPFBA	487590.6	1.0917	387,274.00	1.0834	126	50 - 150	0.0083	+/-0.50	
M3HFPO-DA	202268.2	2.81475	135,191.00	2.81475	150	50 - 150	0.0000	+/-0.50	
M6PFDA	556689.7	3.803317	491,648.00	3.803317	113	50 - 150	0.0000	+/-0.50	
M3PFBS	124331.6	1.886667	108,781.00	1.878383	114	50 - 150	0.0083	+/-0.50	
M7PFUnA	740258.3	3.946033	703,950.00	3.946033	105	50 - 150	0.0000	+/-0.50	
M2-6:2FTS	90632.34	3.453267	83,444.00	3.445283	109	50 - 150	0.0080	+/-0.50	
M5PFPeA	461520.3	1.714833	388,897.00	1.706567	119	50 - 150	0.0083	+/-0.50	
M5PFHxA	694947.3	2.564133	581,904.00	2.555917	119	50 - 150	0.0082	+/-0.50	
M3PFHxS	86675.34	3.218333	77,212.00	3.21025	112	50 - 150	0.0081	+/-0.50	
M4PFHpA	680081.9	3.178867	573,666.00	3.178867	119	50 - 150	0.0000	+/-0.50	
M8PFOA	610742.9	3.461933	511,135.00	3.461933	119	50 - 150	0.0000	+/-0.50	
M8PFOS	92554.88	3.65215	82,431.00	3.65215	112	50 - 150	0.0000	+/-0.50	
M9PFNA	506076.2	3.6532	431,895.00	3.653183	117	50 - 150	0.0000	+/-0.50	
MPFDoA	701240.9	4.08065	724,624.00	4.08065	97	50 - 150	0.0000	+/-0.50	
d5-NEtFOSAA	169586	3.9535	164,452.00	3.9535	103	50 - 150	0.0000	+/-0.50	
d3-NMeFOSAA	207519.4	3.88175	197,279.00	3.873767	105	50 - 150	0.0080	+/-0.50	



CERTIFICATIONS

Certified Analyses included in this Report

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



CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SOP-454 PFAS in Water	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	NH-P
Perfluoroheptanesulfonic acid (PFHpS)	NH-P
N-EtFOSAA	NH-P
N-MeFOSAA	NH-P
Perfluorotetradecanoic acid (PFTA)	NH-P
Perfluorotridecanoic acid (PFTrDA)	NH-P
4:2 Fluorotelomersulfonic acid (4:2FTS A)	NH-P
Perfluorodecanesulfonic acid (PFDS)	NH-P
Perfluorooctanesulfonamide (FOSA)	NH-P
Perfluorononanesulfonic acid (PFNS)	NH-P
Perfluoro-1-hexanesulfonamide (FHxSA)	NH-P
Perfluoro-1-butanesulfonamide (FBSA)	NH-P
Perfluorohexanesulfonic acid (PFHxS)	NH-P
Perfluoro-4-oxapentanoic acid (PFMPA)	NH-P
Perfluoro-5-oxahexanoic acid (PFMBA)	NH-P
6:2 Fluorotelomersulfonic acid (6:2FTS A)	NH-P
Perfluoropetanesulfonic acid (PFPeS)	NH-P
Perfluoroundecanoic acid (PFUnA)	NH-P
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P
Perfluoroheptanoic acid (PFHpA)	NH-P
Perfluorooctanoic acid (PFOA)	NH-P
Perfluorooctanesulfonic acid (PFOS)	NH-P
Perfluorononanoic acid (PFNA)	NH-P

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2022

	Pageof	² Preservation Code	Courier Use Only	30(31 X18 X18 X18 X18 X18 X18 X18 X18 X18 X1	STA	GLASS_X	OZ JILSVIG	BACTERIA.	E. B. C. R. C. Marine Construence		Glassware in the fridge?	Glassware in freezer? Y / N	Prepackaged Cooler? Y / N	*Pace Analytical is not	responsible for missing samples from prepacked coolers	Matrix Codes	GW = Ground Water	DW = Drinking Water	S=Soil	SOL = Solid	define)	2 Preservation Codes:	# T	M = Methanol	nc N = Nitric Acid	S = Sulfuric Acid	B = Sodium Bisulfate	X = Sodium Hydroxide	T = Sodium	Thiosulfate	0 ≈ Other (please define)	www.	n on the Chain of Custody. The	iboratory's responsibility. Pace	th missing information, but will
5_07/13/2021	ANALYSIS REQUESTED																					I preserved;	ways,	Please use the following rades to indicate	possible sample concentration within the Conc	Code column above:	Unknown	***************************************	MELAC and Allia LAP, LLC Accredited		☐ AIHA-LAP,LLC		ponsible for any omitted information that must be complete and accurate	Any missing information is not the le	each project and will try to assist wi not be held accountable.
Doc # 381 Rev 5_07/13/2021	East Longmeadow, MA 01028 문제스러드 기메이드	Field Filtered	Lab to Filter	Field Filtered	Lab to Filter		PCB UNLY		2		PLASTIC BACTERIA ENCORE 9	X	7 × ×	× ×		×		× ×	× ×	× 2	×	ON TRI DR	£	d Carrier Management	MCP Certification Form Required DOSS	~~~	RCP Certification Form Required	MA State DW Required		WWRA [] WRTA []	School MBTA	Distribution Dance Analysis is and	Disclaimer: Pace Analytical 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 when	analyses the laboratory will perform. Any missing information is not the laboratory's responsibility. Pace	not be held accountable. The held accountable.
	N OF CUSTODY RECORD	<u> </u>	0) 11		4-Day	74 113 113 12 12 12 12 12 12 12 12 12 12 12 12 12	>	SOXHLET	Email To: byong so @ Worsewall Ithen Com	NON SOXHILE	Matrix Conc. Code VIALS GLASS	СķЭ	A	A							>	bottles	Run isotope met	N Saecial Regi				MALE EL TELEFONS	7 YOLV #	cipality	Brownfield M	ANNOTATION AND AND AND AND AND AND AND AND AND AN			
		Vests 7-Day	A Report	1-Day	2.Day	Format: DOE (V)	Ţ	CLP Like Data Pkg Required;	Email To: by SSO	Fax To #:	Beginning Ending COMP/GRAB Date/Time Date/Time	9/8 12:45 Grap	013:30	~	3/8 15:15	80 	80	• •	9/8 10:55	9/8 11:10	- OS: LI 1886	MA MCP P	GW-1 R	Detection ulmit Requirements (NA)					Project Entity	Government	City				
40.		Access COC's and Support Requests	Unit I Scholich, M	Ω99	4	XX.	Mosses	7		TAX	Cilent Sample ID / Description	HW-R(s)	HM-5	HW-E	HM-F	HW-P(s)	Hill-P(m)	HW-I(s)	HW-ICM)	(OM-19(4) 9/1/6	3,0	1030 INCO	2 4/1321 /536	ime:	153 IEE 1931 1535	Date:	Date/Time:	Date/Time:	Date (Time:	The state of the s				
R	Face Analytical	- Control of the Cont	ddress: 90 Pte 6A	Thorne: 508-833-		roject Location: Tigory V	roject Manager: BMM	ace Quote Name/Number:	nvoice Recipient:	ampled By:	Pace Work Order#	10	3	50	ろ		0,0		30	2		Secretary (Signature)	Steinen Dy Bratile	elinquished by: (sturiture)	eceiyed by: (signature)	11180	emquisited by: (signature)	eceived by: (signature)	elinquished by: (signature)	eceived by: (signature)	The second secon	b Comments:			

Programme of the Control of the Cont	Total Humber Of: VMLS CLISS PLASTIC BACTERIA ENCORE	Classware in freezer? Y / N Preparchaged Couler? Y / N Contact is not responsible for mistry samples from preparched coolers	Watth Cotte: OV - Ground Water WW - Watte Water No W - Drinking Water A. Ar S. Solid St. Stude Stl. Stude Stl. Solid O - Other (plane	2 Preservation Codes: 1 = Iced 1 = Iced 1 = ICI. M = ICI. M = ICI. M = McLauck N = Nutric Acid S = Sulfuric Acid S = Sulfuric Acid S = Sulfuric Acid S = Sulfuric Acid T = Sulfuric Acid T = Sulfuric Acid T = Sulfuric Acid	ECE DOILY Subject How Souther The Chain of Custody. The d is used to determine what suboy's responsibility. Con-
ANALYSS REQUESTED				Please use the following codes to indicate possible sample concentration within the Conc. Code column above: H + High; A - Assistant: L - Low; C - Clean; U - Unknown	Cheer Chromatogram AMA-LAP_LLC
		-/ ××		AMC Required The Required The Required The Required The Required The Required The Required The Required	wrth.
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yeconoxy (1)	Curtic Corts Fig. 8. Corts Fig	4/10 10:55 G	Client Comments		Project Entity Government Federal City
(13-213-2111 13-523-4-03 With Security (13-2)	Hychology Hychology T Plassoc	HM-X(s)	Dage // nee:	9 13 pt 10.30	Date-Time:
	Phone: S. S. S. S. S. S. S. S. S. S. S. S. S.	Anti-Oriental An	ethogstypes Sr; teignetyrell	/M/	teceved by: (signature) The Comments:

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client How	dey w	Hea (Date)	1.2.12.1	Time	12-34-5	ATW 12 - 12 - 12 - 12 - 12 - 12 - 12 - 12
How were the samples					113191	_ IIIIIE 	<u></u>	t
received?	•		No Cooler		On Ice		No Ice	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Direct from Samp	_			Ambient		Melted Ice	***************************************
Were samples within		By Gun #	3		Actual Tem	1 <u>p - (9 c</u>		
Temperature? 2-6°C		By Blank #			Actual Tem	ıp -		
Was Custody S	eal Intact?	H	Wei	re Sample	s Tampered	with?	FILE	
Was COC Relin	quished?		Does	Chain Ag	ree With Sa	mples?		
Are there broken/l	eaking/loose caps	on any sam	ples? 1					
Is COC in ink/ Legible?			Were sam	ples rece	ived within h	olding time?	>	
Did COC include all	Client	7	Analysis	T		er Name		
pertinent Information?	Project		iD's	7	Collection	Dates/Time	es	
Are Sample labels filled								
Are there Lab to Filters?	?	\	•		s notified?	**************************************		
Are there Rushes?		E		-	s notified?			
Are there Short Holds?	_	<u> </u>	•	Who wa	s notified?			
Is there enough Volume	-	7						
Is there Headspace who	· · · · · · · · · · · · · · · · · · ·	<u> 19</u>	,	MS/MSD?	***************************************			
Proper Media/Container	-				samples rec	quired?	-	
Were trip blanks receive	-	<u> </u>		On COC?	1			
Do all samples have the	proper pH?		Acid _	LA	•	Base	<u> </u>	
Vials #	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter F				oz Amb.	
HCL-	500 mL Amb.		500 mL				mb/Clear	
Meoh-	250 mL Amb.		250 mL		P6_		mb/Clear	
Bisulfate-	Flashpoint		Col./Ba				mb/Clear	
DI- Thiosulfate-	Other Glass		Other P				ncore	
Sulfuric-	SOC Kit Perchlorate		Plastic Ziplo			Frozen:		
Sulfuric-	reichlorate							
			Unused N	ledia				
Vials #	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter F				oz Amb.	
HCL- Meoh-	500 mL Amb.		500 mL l	_			mb/Clear	
Bisulfate-	250 mL Amb. Col./Bacteria		250 mL l				mb/Clear	
DI-	Other Plastic		Flashp Other 0				mb/Clear	
Thiosulfate-	SOC Kit		Plastic			Frozen:	ncore	
Sulfuric-	Perchlorate		Ziplo			riozeii.		
Comments:	· oromoroto		#.p.o	, OK				

September 16, 2021

Bryan Massa Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563

Project Location: Hyannis, MA

Client Job Number: Project Number: 20102

Laboratory Work Order Number: 21I0577

Enclosed are results of analyses for samples received by the laboratory on September 13, 2021. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Matthew J Beaupre Project Manager

Table of Contents

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1,4-Dioxane by isotope dilution GC/MS	10
B290145	10
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Horsley Witten Group 90 Route 6A Unit #1 Sandwich, MA 02563 ATTN: Bryan Massa

REPORT DATE: 9/16/2021

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20102

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 21I0577

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

PROJECT LOCATION: Hyannis, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
HW-E	21I0577-01	Ground Water		SW-846 8270D-E	
HW-J	21I0577-02	Ground Water		SW-846 8270D-E	
HW-X(s)	21I0577-03	Ground Water		SW-846 8270D-E	
HW-X(m)	21I0577-04	Ground Water		SW-846 8270D-E	



CASE NARRATIVE SUMMARY

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

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.

Lisa A. Worthington
Technical Representative



Project Location: Hyannis, MA Sample Description: Work Order: 2110577

Date Received: 9/13/2021
Field Sample #: HW-E

Sampled: 9/10/2021 13:45

Sample ID: 21I0577-01
Sample Matrix: Ground Water

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,4-Dioxane	ND	0.20	μg/L	1		SW-846 8270D-E	9/14/21	9/15/21 10:04	IMR
Surrogates		% Recovery	Recovery Limits	s	Flag/Qual				
1,4-Dioxane-d8	_	25.0	15-110		_			9/15/21 10:04	



Project Location: Hyannis, MA Sample Description: Work Order: 2110577

Date Received: 9/13/2021
Field Sample #: HW-J

Sampled: 9/10/2021 13:30

Sample ID: 2110577-02
Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
1,4-Dioxane	ND	0.20	$\mu g/L$	1		SW-846 8270D-E	9/14/21	9/15/21 10:24	IMR
Surrogates		% Recovery	Recovery Limit	s	Flag/Qual				
1,4-Dioxane-d8		16.1	15-110			_		9/15/21 10:24	



Project Location: Hyannis, MA Sample Description: Work Order: 2110577

Date Received: 9/13/2021

Field Sample #: HW-X(s)

Sampled: 9/10/2021 10:55

Sample ID: 2110577-03

Sample Matrix: Ground Water

							Date	Date/Time	
Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
1,4-Dioxane	ND	0.19	$\mu g/L$	1		SW-846 8270D-E	9/14/21	9/15/21 10:45	IMR
Surrogates		% Recovery	Recovery Limit	s	Flag/Qual				
1,4-Dioxane-d8		21.5	15-110					9/15/21 10:45	



Project Location: Hyannis, MA Sample Description: Work Order: 2110577

Date Received: 9/13/2021

Field Sample #: HW-X(m)

Sampled: 9/10/2021 11:15

Sample ID: 21I0577-04

Sample Matrix: Ground Water

								Date	Date/Time	
An	nalyte	Results	RL	Units	Dilution	Flag/Qual	Method	Prepared	Analyzed	Analyst
1,4-Dioxane		ND	0.22	μg/L	1		SW-846 8270D-E	9/14/21	9/15/21 11:05	IMR
Surr	rogates		% Recovery	Recovery Limits	3	Flag/Qual				
1,4-Dioxane-d8			16.9	15-110					9/15/21 11:05	



Sample Extraction Data

Prep Method: SW-846 3510C Analytical Method: SW-846 8270D-E

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
21I0577-01 [HW-E]	B290145	1020	1.00	09/14/21
21I0577-02 [HW-J]	B290145	1000	1.00	09/14/21
21I0577-03 [HW-X(s)]	B290145	1040	1.00	09/14/21
21I0577-04 [HW-X(m)]	B290145	930	1.00	09/14/21



QUALITY CONTROL

1,4-Dioxane by isotope dilution GC/MS - Quality Control

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch B290145 - SW-846 3510C										
Blank (B290145-BLK1)				Prepared: 09	0/14/21 Anal	yzed: 09/15/2	21			
1,4-Dioxane	ND	0.20	$\mu g/L$							
Surrogate: 1,4-Dioxane-d8	2.03		μg/L	10.0		20.3	15-110			
LCS (B290145-BS1)				Prepared: 09	0/14/21 Anal	yzed: 09/15/2	21			
1,4-Dioxane	9.19	0.20	μg/L	10.0		91.9	40-140			
Surrogate: 1,4-Dioxane-d8	1.54		μg/L	10.0		15.4	15-110			
LCS Dup (B290145-BSD1)				Prepared: 09	0/14/21 Anal	yzed: 09/15/2	21			
1,4-Dioxane	9.60	0.20	μg/L	10.0		96.0	40-140	4.33	30	
Surrogate: 1,4-Dioxane-d8	1.78		μg/L	10.0		17.8	15-110			



FLAG/QUALIFIER SUMMARY

*	QC result is outs	side of established	l limits.
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† 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.



CERTIFICATIONS

Certified Analyses included in this Report

Analyte Certifications

SW-846 8270D-E in Water

1,4-Dioxane

NY

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2022
CT	Connecticut Department of Publilc Health	PH-0165	12/31/2022
NY	New York State Department of Health	10899 NELAP	04/1/2022
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2022
RI	Rhode Island Department of Health	LAO00112	12/30/2021
NC	North Carolina Div. of Water Quality	652	12/31/2021
NJ	New Jersey DEP	MA007 NELAP	06/30/2022
FL	Florida Department of Health	E871027 NELAP	06/30/2022
VT	Vermont Department of Health Lead Laboratory	LL720741	07/30/2022
ME	State of Maine	MA00100	06/9/2023
VA	Commonwealth of Virginia	460217	12/14/2021
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2022
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2022
NC-DW	North Carolina Department of Health	25703	07/31/2022
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2022
MI	Dept. of Env, Great Lakes, and Energy	9100	09/6/2021

LLOOTIO

Table of Contents Glassware in freezer? Y / N Prepackaged Cooler? Y / N "Contest is not responsible for missing samples from prepacked 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 b Chain of Custody is a legal document that must be complete and accurate and is used to determine what Disclaimer: Con-Test Labs is not responsible for any omitted information on the Chain of Custody. The Glassware in the fridge? 1 Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water Total Number Of: Preservation Codes: X = Sodium Hydroxide S = Sulfuric Acid B = Sodium Bisulfate SL = Sludge SOL = Solid O = Other (please define) VIALS GLASS 8 0 = Other (please Non Soxhlet H = HCL M = Methanol N = Nitric Acid PCB ONL) coolers Preservation Code BACTERIA PLASTIC ENCORE T = Sodium Thiosulfate Page of A = Air S = Soit define) possible sample concentration within the Conc H · High; M · Medium; L · Low; C · Clean; U · Please use the following codes to indicate NELAC and AlHA-LAP, LLC Accredited Chromatogram
AIHA-LAP,LLC Code column above: ANALYSIS REQUESTED held accountable, Other Doc # 381 Rev 2_06262019 5-day Turnaround Ting WRTA A.A. Store DW Requires MA MLP Regui Moskár MEP LEIVINGALION FOUR REGIS X 39 Spruce Street East Longmeadow, MA 01028 Email Tob McCSSa@hors ley wither Com ENCORE BOC PLASTIC BACTERIA EXCEL Field Filtered Field Filtered Lab to Filter Lab to Filter School MWRA MBTA رآب GLASS N 4 CHAIN OF CUSTODY RECORD VIALS 100 0 0 0 0 *Matrix Conc Code http://www.contestlabs.com 50 Municipality Brownfield Due Date: ე 3 10-Day 3-Day 4-Day 21 J CLP Like Data Pkg Required: COMP/GRAB 9/10/13/45/6/2015 PFAS 10-Day (std) 9/13/10:30 MAMCP Ending Date/Time 9/10/13 20 35:01:01/6 9/10/11:15 Government ax To #: Format: Other; Federal -Day 2-Day -Day -2 9 City Project Entity Beginning Date/Time Sundivic mary) Date/Time: Email: info@contestiabs.com 13th (08c Spr 15% Client Sample ID / Description Phone: 413-525-2332 Fax: 413-525-6405 STACE OF Date/Time: Date/Time: Date/Time: Project Manager: Revice MM & SS CA. ₹ Address: 90 P-16 (-1) ーシェ C 1000 Table Hersland 1 とうないがって Ì TODD-KEST Relinquished by: (signature) elinquished by: (signature) 0 03 Received by: (signature) ō eceived by: (signature) 3 Work Order# Con-Test Invoice Recipient: Project Location: Project Number: omments: elinguished Sampled By: teceived by: Page 13 of 15

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples_____



Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Staten	nent will be broug				- State True	e or False		
	Stey WIL	ten G	CHON		**			
Received By		F	Date`	91	13121	Time	1535	>
How were the samples	In Cooler		No Cooler	•	On Ice	T	No Ice	
received?	Direct from Samp	oling		_	Ambient		Melted Ice	-
Were samples within		By Gun #	_3	•	Actual Tem	p-3,8	<u></u>	
Temperature? 2-6°C	7	By Blank #			Actual Tem			•
Was Custody Se	eal Intact?	A.		ere Samples				•
Was COC Relin	quished?	7		s Chain Agr				•
Are there broken/l	eaking/loose caps	on any sam	ples?	Ţ-		,	***************************************	
Is COC in ink/ Legible?	7		Were sar	mples receiv	ved within h	olding time?	T	
Did COC include all	Client	7	Analysis	7	Sampl	er Name		
pertinent Information?	Project	T	ID's		Collection	Dates/Time	s T	
Are Sample labels filled	out and legible?							
Are there Lab to Filters?	•	F		Who was	notified?			
Are there Rushes?	•	<u> </u>		Who was	notified?	-		
Are there Short Holds?	•	<u>r</u>		Who was	notified?		· · · · ·	
Is there enough Volume	?	of						
Is there Headspace whe	ere applicable?	- VA		MS/MSD?	F			
Proper Media/Container	s Used?	7		-	samples rec	uired?	F	
Were trip blanks receive	ed?	E		On COC?		•		
Do all samples have the	proper pH?		Acid	_ NA		Base	NA .	
Viais #	Containers:	#			#			4
Unp-	1 Liter Amb.	8	1 Liter	Plastic		16 c	z Amb.	
HCL-	500 mL Amb.			. Plastic			mb/Clear	
Meoh-	250 mL Amb.		250 mL	Plastic		4oz A	mb/Clear	
Bisulfate-	Flashpoint		Col./Ba	acteria		2oz A	mb/Clear	
DI-	Other Glass		Other	Plastic		Er	ncore	·
Thiosulfate-	SOC Kit		Plasti	c Bag		Frozen:		
Sulfuric-	Perchlorate		Zipl	ock				
			Unused I	Media				
	Containers:	#			#			#
Unp-	1 Liter Amb.		1 Liter	Plastic		16 o	z Amb.	
HCL-	500 mL Amb.		500 mL			8oz A	mb/Clear	
Meoh-	250 mL Amb.		250 mL				mb/Clear	
Bisulfate-	Col./Bacteria	**************************************	Flash				mb/Clear	
DI-	Other Plastic		Other			Er	ncore	
Thiosulfate-	SOC Kit		Plasti			Frozen:		
Sulfuric-	Perchlorate		Zipl	ock				
Comments:								

		MADE	P MCP Analytical N	Method Report Cer	tification Form		
Labo	ratory Name	: Con-Test, a F	Pace Analytical Labor	atory	Project #: 21I0)577	
Proje	ect Location:	Hyannis, MA			RTN:		
This F	orm provide	s certifications for t	the following data set	:: [list Laboratory Sa	mple ID Number(s)]		
2110	0577-01 thru	2110577-04					
Matri	ces:	Water					
CA	AM Protoco	I (check all that	below)				
	260 VOC 7470/7471 Hg MassDEP VPH 8082 PCB 9014 Total CAM IIIB () CAM IV A () CAM V A () CAM VI A ()		6860 Perchlo CAM V	orate /III B ()			
	SVOC II B (X)	7010 Metals CAM III C ()	MassDEP VPH CAM IV C ()	8081 Pesticides CAM V B ()	7196 Hex Cr CAM VI B ()	MassD CAM IX	EP APH
			.,	.,	,,		
	Metals III A ()	6020 Metals CAM III D ()	MassDEP EPH CAM IV B ()	8151 Herbicides CAM V C ()	8330 Explosives CAM VIII A ()	TO-15 CAM IX	
	A	ffirmative response	to Questions A throu	ghF is required for "	Presumptive Certainty"	' status	
Α		erved (including temper	tion consistent with those ature) in the field or labor			☑ Yes	□No¹
B Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed?						□No¹	
Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?						☑ Yes	□No¹
D	Does the labor	ratory report comply wi	th all the reporting require of Guidlines for the Acquis	ements specified in CAN		☑ Yes	□No¹
Еa			Was each method conductual method(s) for a list of).	☐Yes	□No¹
Εb			the complete analyte list r			☐Yes	□No¹
F		•	C and performance standancluding all No responses			☑ Yes	No¹
			and I below is require				
G	protocol(s)?		all CAM reporting limits s			☑ Yes	□No¹
			resumptive Certainty" described in 310 CMI		ssarily meet the data u	sability	
Н	Were all QC p	erfomance standards s	specified in the CAM proto	ocol(s) achieved?		☑ _{Yes}	\square_{No^1}
I	Were results re	eported for the comple	te analyte list specified in	the selected CAM proto	ocol(s)?	☑ Yes	□No¹
¹ All	Negative resp	onses must be addre	essed in an attached Er	nvironmental Laborato	ory case narrative.		
thos	se responsible		nformation, the mater		upon my personal inqui analytical report is, to t		
Sigi	nature:	hisa W	forthungton_	Position:	Technical Represen	tative	
Prin	Printed Name: Lisa A. Worthington Date: 09/16/21						



ANALYTICAL REPORT

Lab Number: L2148623

Client: Horseley & Witten, Inc.

Sextant Hill Office Park

90 Route 6A

Sandwich, MA 02563

ATTN: Brian Massa
Phone: (508) 833-6600

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified Report Date: 09/19/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806 508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com



Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

 Lab Number:
 L2148623

 Report Date:
 09/19/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2148623-01	HW-X(M) 5-7	SOIL	HYANNIS	09/07/21 09:05	09/09/21
L2148623-02	HW-X(M) 7-9	SOIL	HYANNIS	09/07/21 09:15	09/09/21



Project Name:CAPE COD GATEWAY AIRPORTLab Number:L2148623Project Number:Not SpecifiedReport Date:09/19/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.	



Serial_No:09192120:38

Project Name:CAPE COD GATEWAY AIRPORTLab Number:L2148623Project Number:Not SpecifiedReport Date:09/19/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Perfluorinated Alkyl Acids by Isotope Dilution

L2148623-02: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details. The Extracted Internal Standard is less than 10% for d3-NMeFOSAA and d3-NMeFOSAA; however, the results are confirmed by the batch QC performed on this sample.

The WG1545564-1 Method Blank, associated with L2148623-02, has a concentration above the reporting limit for PFNA PFUnA & PFTrDA. Since the associated sample concentrations are non-detect to the reporting limit, no corrective action is required.

WG1545564-3 and WG1545564-4: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Luxen & Med Susan O' Neil

Title: Technical Director/Representative Date: 09/19/21



ORGANICS



SEMIVOLATILES



Serial_No:09192120:38

L2148623

09/19/21

Project Name: CAPE COD GATEWAY AIRPORT

L2148623-02

HW-X(M) 7-9

HYANNIS

Project Number: Not Specified

SAMPLE RESULTS

Date Collected: 09/07/21 09:15

Date Received: 09/09/21

Lab Number:

Report Date:

Field Prep: Not Specified

Sample Depth:

Sample Location:

Lab ID:

Client ID:

Matrix: Soil

Analytical Method: 134,LCMSMS-ID Analytical Date: 09/14/21 10:28

Analyst: HT Percent Solids: 97%

Extraction Method: ALPHA 23528
Extraction Date: 09/13/21 10:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution	on - Mansfiel	d Lab				
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.477	0.022	1
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.477	0.044	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.239	0.037	1
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND		ng/g	0.955	0.062	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.477	0.050	1
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	0.955	0.080	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.239	0.043	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.239	0.058	1
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.239	0.040	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/g	0.477	0.171	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.477	0.130	1
Perfluorononanoic Acid (PFNA)	ND		ng/g	0.239	0.072	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.239	0.124	1
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.239	0.064	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/g	0.477	0.274	1
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	0.955	0.285	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/g	0.477	0.192	1
Perfluoroundecanoic Acid (PFUnA)	0.139	JB	ng/g	0.477	0.045	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.477	0.146	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.477	0.094	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/g	0.477	0.081	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.477	0.067	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/g	0.477	0.195	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/g	0.477	0.052	1



Serial_No:09192120:38

Project Name: Lab Number: CAPE COD GATEWAY AIRPORT L2148623

Project Number: Report Date: Not Specified 09/19/21

SAMPLE RESULTS

Lab ID: Date Collected: 09/07/21 09:15 L2148623-02

Date Received: Client ID: 09/09/21 HW-X(M) 7-9 Sample Location: Field Prep: **HYANNIS** Not Specified

Sample Depth:

Result Qualifier Units RL MDL **Dilution Factor** Parameter

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		61-135	
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		58-150	
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		74-139	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	65		14-167	
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		66-128	
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68	Q	71-129	
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	76	Q	78-139	
Perfluoro[13C8]Octanoic Acid (M8PFOA)	68	Q	75-130	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		20-154	
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	70	Q	72-140	
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78	Q	79-136	
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	69	Q	75-130	
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		19-175	
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	3	Q	31-134	
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		61-155	
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	76		10-117	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	5	Q	34-137	
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		54-150	
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	31		24-159	



L2148623

Project Name: CAPE COD GATEWAY AIRPORT Lab Number:

Project Number: Not Specified Report Date: 09/19/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID Extraction Method

Analyst: HT

09/14/21 08:32

Analytical Date:

Extraction Method: ALPHA 23528
Extraction Date: 09/13/21 10:38

Parameter	Result	Qualifier	Units	RL		MDL	
Perfluorinated Alkyl Acids by Isotope	Dilution -	Mansfield	Lab for	sample(s):	02	Batch:	WG1545564-1
Perfluorobutanoic Acid (PFBA)	ND		ng/g	0.500		0.023	3
Perfluoropentanoic Acid (PFPeA)	ND		ng/g	0.500		0.046	3
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/g	0.250		0.039)
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	d ND		ng/g	1.00		0.065	5
Perfluorohexanoic Acid (PFHxA)	ND		ng/g	0.500		0.053	3
Perfluoropentanesulfonic Acid (PFPeS)	ND		ng/g	1.00		0.084	ļ
Perfluoroheptanoic Acid (PFHpA)	ND		ng/g	0.250		0.045	5
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/g	0.250		0.061	
Perfluorooctanoic Acid (PFOA)	ND		ng/g	0.250		0.042	2
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	l ND		ng/g	0.500		0.180)
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/g	0.500		0.136)
Perfluorononanoic Acid (PFNA)	0.697		ng/g	0.250		0.075	5
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/g	0.250		0.130)
Perfluorodecanoic Acid (PFDA)	ND		ng/g	0.250		0.067	7
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	d ND		ng/g	0.500		0.287	7
Perfluorononanesulfonic Acid (PFNS)	ND		ng/g	1.00		0.299)
N-Methyl Perfluorooctanesulfonamidoaceti Acid (NMeFOSAA)	c 0.322	J	ng/g	0.500		0.202	2
Perfluoroundecanoic Acid (PFUnA)	2.12		ng/g	0.500		0.047	7
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/g	0.500		0.153	3
Perfluorooctanesulfonamide (FOSA)	ND		ng/g	0.500		0.098	3
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	0.442	J	ng/g	0.500		0.085	j.
Perfluorododecanoic Acid (PFDoA)	ND		ng/g	0.500		0.070)
Perfluorotridecanoic Acid (PFTrDA)	1.92		ng/g	0.500		0.204	1
Perfluorotetradecanoic Acid (PFTA)	0.066	J	ng/g	0.500		0.054	1



Project Name: CAPE COD GATEWAY AIRPORT Lab Number: L2148623

Project Number: Not Specified Report Date: 09/19/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID Extraction Method: ALPHA 23528
Analytical Date: 09/14/21 08:32 Extraction Date: 09/13/21 10:38

Analyst: HT

Parameter Result Qualifier Units RL MDL

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 02 Batch: WG1545564-1

Surrogate (Extracted Internal Standard)	%Recovery	cceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	92	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	87	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	86	14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	98	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	97	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	96	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	100	20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	95	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	104	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	99	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	107	19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	76	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97	61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	83	10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	80	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	91	54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65	24-159



Lab Control Sample Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number: L2148623

Report Date: 09/19/21

arameter	LCS %Recovery	LCSD Qual %Recovery	%Recovery Qual Limits	RPD	RPD Qual Limits
Perfluorinated Alkyl Acids by Isotope Dilution	n - Mansfield Lab	Associated sample(s): 02	Batch: WG1545564-2		
Perfluorobutanoic Acid (PFBA)	97	-	71-135	-	30
Perfluoropentanoic Acid (PFPeA)	92	-	69-132	-	30
Perfluorobutanesulfonic Acid (PFBS)	96	-	72-128	-	30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	104	-	62-145	-	30
Perfluorohexanoic Acid (PFHxA)	95	-	70-132	-	30
Perfluoropentanesulfonic Acid (PFPeS)	100	-	73-123	-	30
Perfluoroheptanoic Acid (PFHpA)	94	-	71-131	-	30
Perfluorohexanesulfonic Acid (PFHxS)	98	-	67-130	-	30
Perfluorooctanoic Acid (PFOA)	98	-	69-133	-	30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	107	-	64-140	-	30
Perfluoroheptanesulfonic Acid (PFHpS)	91	-	70-132	-	30
Perfluorononanoic Acid (PFNA)	103	-	72-129	-	30
Perfluorooctanesulfonic Acid (PFOS)	100	•	68-136	-	30
Perfluorodecanoic Acid (PFDA)	95	-	69-133	-	30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	98	-	65-137	-	30
Perfluorononanesulfonic Acid (PFNS)	91	-	69-125	-	30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	106	-	63-144	-	30
Perfluoroundecanoic Acid (PFUnA)	116	-	64-136	-	30
Perfluorodecanesulfonic Acid (PFDS)	89	-	59-134	-	30
Perfluorooctanesulfonamide (FOSA)	95	-	67-137	-	30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	92	-	61-139	-	30
Perfluorododecanoic Acid (PFDoA)	99	-	69-135	-	30



Lab Control Sample Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

OAI E OOD GATEWAT AIRT OF

Project Number: Not Specified

Lab Number: L2148623

Report Date: 09/19/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Perfluorinated Alkyl Acids by Isotope Dilution	n - Mansfield Lab	Associated s	sample(s): 02	Batch: WG	1545564-2				
Perfluorotridecanoic Acid (PFTrDA)	130		-		66-139	-		30	
Perfluorotetradecanoic Acid (PFTA)	107		-		69-133	-		30	

LCS		LCSD		Acceptance
%Recovery	Qual	%Recovery	Qual	Criteria
98				61-135
92				58-150
100				74-139
101				14-167
106				66-128
103				71-129
101				78-139
102				75-130
105				20-154
102				72-140
111				79-136
106				75-130
117				19-175
74				31-134
106				61-155
83				10-117
80				34-137
98				54-150
65				24-159
	98 92 100 101 106 103 101 102 105 102 111 106 117 74 106 83 80 98	98 92 100 101 106 103 101 102 105 102 111 106 117 74 106 83 80 98	98 92 100 101 106 103 101 102 105 102 111 106 117 74 106 83 80 98	98 92 100 101 106 103 101 102 105 102 111 106 117 74 106 83 80 98



Matrix Spike Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number:

L2148623

Report Date:

09/19/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Recover Qual Limits		Qual	RPD Limits
Perfluorinated Alkyl Acids by Is	sotope Dilution	- Mansfield	Lab Associ	ated sample(s):	02 QC	Batch ID:	WG1545564-3	QC Sample: -	Client II	D: -	
Perfluorobutanoic Acid (PFBA)	ND	4.58	4.45	97		-	-	71-135	-		30
Perfluoropentanoic Acid (PFPeA)	ND	4.58	4.32	93		-	-	69-132	-		30
Perfluorobutanesulfonic Acid (PFBS)	ND	4.07	3.95	97		-	-	72-128	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	4.29	4.34	101		-	-	62-145	-		30
Perfluorohexanoic Acid (PFHxA)	ND	4.58	4.51	97		-	-	70-132	-		30
Perfluoropentanesulfonic Acid (PFPeS)	ND	4.31	4.28	99		-	-	73-123	-		30
Perfluoroheptanoic Acid (PFHpA)	ND	4.58	4.53	97		-	-	71-131	-		30
Perfluorohexanesulfonic Acid (PFHxS)	ND	4.19	4.43	96		-	-	67-130	-		30
Perfluorooctanoic Acid (PFOA)	ND	4.58	4.62	99		-	-	69-133	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	4.36	4.79	110		-	-	64-140	-		30
Perfluoroheptanesulfonic Acid	ND	4.36	4.01	92		-	-	70-132	-		30
Perfluorononanoic Acid (PFNA)	ND	4.58	4.53	96		-	-	72-129	-		30
Perfluorooctanesulfonic Acid (PFOS)	ND	4.25	4.48	102		-	-	68-136	-		30
Perfluorodecanoic Acid (PFDA)	ND	4.58	4.28	93		-	-	69-133	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	4.4	4.89	111		-	-	65-137	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	4.41	4.04	92		-	-	69-125	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	4.58	4.50F	98		-	-	63-144	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	4.58	4.70	99		-	-	64-136	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	4.42	3.89	88		-	-	59-134	-		30
Perfluorooctanesulfonamide (FOSA)	ND	4.58	4.37	95		-	-	67-137	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	4.58	3.54	77		-	-	61-139	-		30
Perfluorododecanoic Acid (PFDoA)	ND	4.58	4.51	98		-	-	69-135	-		30



Matrix Spike Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number:

L2148623

Report Date: 09/19/21

	Native	MS	MS	MS		MSD	MSD		Recovery	,		RPD	
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits	
Perfluorinated Alkyl Acids by	Isotope Dilution	- Mansfield L	ab Associa	ated sample(s):	02 QC	Batch ID:	WG1545564-3	QC :	Sample: -	Client IE	D: -		
Perfluorotridecanoic Acid (PFTrDA)	ND	4.58	5.33	116		-	-		66-139	-		30	
Perfluorotetradecanoic Acid (PFTA)	ND	4.58	4.38	96		-	-		69-133	-		30	

	MS	6	MS	SD	Acceptance
Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	% Recovery	Qualifier	Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	108				19-175
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	97				14-167
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	101				20-154
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	22	Q			34-137
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	21	Q			31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	92				61-155
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89				75-130
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	72				66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73				71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102				78-139
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	85				54-150
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	65				24-159
Perfluoro[13C4]Butanoic Acid (MPFBA)	61				61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	60				58-150
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	45				10-117
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	108				79-136
Perfluoro[13C8]Octanoic Acid (M8PFOA)	76				75-130
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	81				72-140
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	99				74-139



Lab Duplicate Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number:

L2148623

Report Date: 09/19/21

Parameter	Native Sample	Duplicate Sample	Units	RPD		PD imits	
Perfluorinated Alkyl Acids by Isotope Dilution HW-X(M) 7-9	- Mansfield Lab Associated sam	nple(s): 02 QC Batch II	D: WG1545564-4	QC	Sample: L21486	623-02	Client ID:
Perfluorobutanoic Acid (PFBA)	ND	ND	ng/g	NC		30	
Perfluoropentanoic Acid (PFPeA)	ND	ND	ng/g	NC		30	
Perfluorobutanesulfonic Acid (PFBS)	ND	ND	ng/g	NC		30	
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/g	NC		30	
Perfluorohexanoic Acid (PFHxA)	ND	ND	ng/g	NC		30	
Perfluoropentanesulfonic Acid (PFPeS)	ND	ND	ng/g	NC		30	
Perfluoroheptanoic Acid (PFHpA)	ND	ND	ng/g	NC		30	
Perfluorohexanesulfonic Acid (PFHxS)	ND	ND	ng/g	NC		30	
Perfluorooctanoic Acid (PFOA)	ND	ND	ng/g	NC		30	
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/g	NC		30	
Perfluoroheptanesulfonic Acid (PFHpS)	ND	ND	ng/g	NC		30	
Perfluorononanoic Acid (PFNA)	ND	ND	ng/g	NC		30	
Perfluorooctanesulfonic Acid (PFOS)	ND	ND	ng/g	NC		30	
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/g	NC		30	
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/g	NC		30	
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/g	NC		30	
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/g	NC		30	
Perfluoroundecanoic Acid (PFUnA)	0.139JB	0.114JF	ng/g	NC		30	
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/g	NC		30	
Perfluorooctanesulfonamide (FOSA)	ND	ND	ng/g	NC		30	



Lab Duplicate Analysis Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Lab Number:

L2148623

Project Number: Not Specified Report Date: 09/19/21

Accentance

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Qual Limits	
Perfluorinated Alkyl Acids by Isotope Dilution - Mans HW-X(M) 7-9	field Lab Associated sa	ample(s): 02 QC Batch	ID: WG1545	564-4 QC Sai	mple: L2148623-02 C	Client ID:
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/g	NC	30	
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/g	NC	30	
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/g	NC	30	
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/g	NC	30	

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	66		60	Q	61-135
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	62		57	Q	58-150
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	76		72	Q	74-139
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	65		62		14-167
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	68		63	Q	66-128
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	68	Q	61	Q	71-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	76	Q	71	Q	78-139
Perfluoro[13C8]Octanoic Acid (M8PFOA)	68	Q	62	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	73		64		20-154
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	70	Q	62	Q	72-140
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	78	Q	74	Q	79-136
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	69	Q	63	Q	75-130
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	74		65		19-175
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	3	Q	4	Q	31-134
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	69		62		61-155
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	76		44		10-117
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	5	Q	4	Q	34-137
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	60		54		54-150



Lab Duplicate Analysis
Batch Quality Control

Lab Number: **Project Name:** CAPE COD GATEWAY AIRPORT L2148623

Project Number: Report Date: 09/19/21 Not Specified

RPD **Parameter Native Sample Duplicate Sample** Units RPD Qual Limits

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1545564-4 QC Sample: L2148623-02 Client ID:

HW-X(M) 7-9

			Acceptance
Surrogate (Extracted Internal Standard)	%Recovery Qua	alifier %Recovery Qualit	ier Criteria
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	31	29	24-159



INORGANICS & MISCELLANEOUS



Serial_No:09192120:38

Project Name: CAPE COD GATEWAY AIRPORT Lab Number: L2148623

Project Number: Not Specified Report Date: 09/19/21

SAMPLE RESULTS

Lab ID: L2148623-02 Date Collected: 09/07/21 09:15

Client ID: HW-X(M) 7-9 Date Received: 09/09/21 Sample Location: HYANNIS Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - M	Mansfield Lab									
Solids, Total	97.2		%	0.100	0.100	1	-	09/10/21 15:05	121,2540G	NG



Lab Duplicate Analysis

Batch Quality Control

Project Name: CAPE COD GATEWAY AIRPORT

Project Number: Not Specified

Lab Number:

L2148623

Report Date:

09/19/21

Parameter	Native Sample	Duplicate Sample	Units	RPD (Qual RPD Limits
General Chemistry - Mansfield Lab Associated sample(s): 02 QC Batch ID:	WG1545091-1 QC Sample:	: L2147340-11	Client ID	: DUP Sample
Solids, Total	41.1	39.5	%	4	10



Serial_No:09192120:38

Project Name: CAPE COD GATEWAY AIRPORT

Lab Number: L2148623

Project Number: Not Specified Report Date: 09/19/21

Sample Receipt and Container Information

Were project specific reporting limits specified?

Cooler Information

Cooler Custody Seal

A Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L2148623-01A	Plastic 8oz unpreserved	А	NA		3.0	Υ	Absent		-
L2148623-01B	Plastic 2oz unpreserved for TS	Α	NA		3.0	Υ	Absent		-
L2148623-02A	Plastic 8oz unpreserved	Α	NA		3.0	Υ	Absent		A2-537-ISOTOPE(14)
L2148623-02B	Plastic 2oz unpreserved for TS	Α	NA		3.0	Υ	Absent		A2-TS(7)



Project Name: CAPE COD GATEWAY AIRPORT

Project Number:

Lab Number: L2148623 **Report Date:** 09/19/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11CI-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9CI-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6
Tonanaoro 0,0 Dioxanopianoio Aola	NI DIIA	131772-30-0



Project Name: Lab Number: CAPE COD GATEWAY AIRPORT L2148623 **Report Date: Project Number:** Not Specified 09/19/21

GLOSSARY

Acronyms

LOD

LOQ

MS

RPD

SRM

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments

from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis

of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats

MDI - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

> - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile

Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the

associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEO - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers



Project Name:CAPE COD GATEWAY AIRPORTLab Number:L2148623Project Number:Not SpecifiedReport Date:09/19/21

Footnotes

 The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

1

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA, this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

- A -Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.
- The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- F The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.
- G The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.
- H The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- The lower value for the two columns has been reported due to obvious interference.
- Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- $\label{eq:main_equation} \textbf{M} \qquad \text{-Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.}$
- ND Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers



Project Name:CAPE COD GATEWAY AIRPORTLab Number:L2148623Project Number:Not SpecifiedReport Date:09/19/21

Data Qualifiers

- NJ Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P The RPD between the results for the two columns exceeds the method-specified criteria.
- Q -The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- **R** Analytical results are from sample re-analysis.
- **RE** Analytical results are from sample re-extraction.
- S Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers



Serial_No:09192120:38

Project Name:CAPE COD GATEWAY AIRPORTLab Number:L2148623Project Number:Not SpecifiedReport Date:09/19/21

REFERENCES

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

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Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene

EPA 625/625.1: alpha-Terpineol

EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene;

EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene,

3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE,

EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B

EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.

Microbiology: SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, EPA 351.1, SM4500NO3-F, EPA 353.2: Nitrate-N, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate. EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan II, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.

Microbiology: SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. EPA 200.8: Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. EPA 245.1 Hg. EPA 522, EPA 537.1.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Document Type: Form

(A) DL: A	CHAIN (OF CU	STO)Y	GE	of	Date Re	c'd in L	ab:	aja	121			ALF	PHA J	ob #: (214	8623
A DALLY I CAL		Project	Informat	ion	11/91		Repor	t Inforr	natio	n - Data	a Deli	veral	oles	Bill	ling In	formati	on	BER LUIS
8 Walkup Drive Westboro, MA (Tel: 508-898-93	320 Forbes Blvd 01581 Mansfield, MA 02048 220 Tel: 508-822-9300	Project N	lame: ('= p	د دها	GARN	out Aug	ADE	×	61	EMAIL				□ Sa	ame as	Client inf	fo PO	¥:
Client Information			ocation: (-				Regul	atory R	equir	rement	s &	Pro	oject I			Require		
Client: Acresie-	Z*11+	Project #	:				Yes I	No Ma	A MCF	Analyti	cal Me	thods	SDG				r RCP Ar norganics	alytical Methods
Address: QO No		Project N	lanager: "B	Man	Mass	C ₁	☐ Yes □	No G	W1 Sta	andards	(Info F	Requir	ed for	Metals	& EPH	with Targ	gets)	
Sanz Wich			Quote #:		•		☐ Yes ☐								Crit	eria		
	43-1527	Turn-A	round Tir	ne	10.50			1 /		25 / 55	13	/_/	7	7	//	7	/ /	/
Additional F	Project Information:	Date I		I RUSH (only)	oonlinned if pro-app	proved!)	A 158	D PAH	METALS: DRCP 13 DMCP 14	EPH: DRanges & Targets DRCR48 DPP/3	D PCB Targets C Targets C P	r Kanges On	PEAS IN DEINBORPHINE	tsuppe diles.		///	//,	SAMPLE INFO
ALPHA Lab ID (Lab Use Only)	Sample ID		Coll	ection Time	Sample Matrix	Sampler Initials	VOC: D 8260 L	METALS: D. ABN	METALS: C. RC	EPH: CRanges &	D PCB	TPH: County	1645 L	1/	//		/ 6	Lab to do Preservation Lab to do
18623-01	HW-X(m) 5-7	-	9/7/21	0905	5014	800												
-03	HW-X(m) 7-9		9/7/21	0915	1	V							X					
F FIRE																		
Market Ind																		
													T					
									7			\neg		\top				
									\neg									
A Life of									\neg									
	mc	1 st	bz.	9/9/	N	(623												
Container Type	Preservative A= None		7		Conta	ainer Type							P					
A= Amber glass V= Vial	B= HCI C= HNO ₃				Pr	eservative										\perp		
G= Glass B= Bacteria cup C= Cube O= Other	D= H ₂ SO ₄ E= NBOH F= MeOH G= NaHSO ₄	Relinq	uished By:		91912	e/Time	MC	A	ceive		AC		Da C/2	te/Time				itted are subject d Conditions.
E= Encore D= BOD Bottle age 28 of 28	H = Na ₂ S ₂ O ₃ I= Ascorbic Acid J = NH ₄ Cl K= Zn Acetate	SALA			19/2/21	122	3 Par	20	04	المند ،	-	- 4	99		20	See reve	erse side.	12-Mar-2012)

APPENDIX B

Recient Monitoring Well/Soil Boring Logs

Can	e Cod Tes	t Boring		Project		Boring No.	HW-U(s)		
		ans, MA 02653		Horsley Witten (- Froun	DOTTING INO.	1100-0(3)		
-	(508) 240-1		Por	norsiey witten c nstable, 480 Barns		Sheet 1 of	1		
		Drilling, Inc.	Dal	Hyannis, MA		OHECK I UI			
Driller:		Drilling, Inc. Desmond		ryaillis, Mi	Boring location:	Wendy's			
Helper:	Sean Mo				Ground Surface Elevati	•			
Inspector:	Sarah Ba				Date start: 4/5/2021	J	Date end: 4/8/2021		
Sampler cons			Notes:		2 dio 3 di i. 7/0/2021	Auger Size: 6 1/4			
spoon driven u		•				Casing Size:	2"x20' SCH40 PVC FJT		
falling thirty in	-					Screen Size:	2"x10'X.010 SCH40 PVC FJT		
Depth			Sample			•			
(FT)	NO	PEN/REC	DEPTH/FT	BLOWS 6"	Sample De	scription	Well Installation		
2									
0			0 - 30		F-M-C brown sand.				
-2							_		
-4					1				
-6					Drilled with hollow sten	n augers to 30'	z z		
-8	 				and set well as directed	-	Z Z		
-0 -10	+				and set went as un delec	•			
-10 -12	 						, , , , , , , , , , , , , , , , , , ,		
	\vdash				1				
-14 16	\vdash				-				
-16	\vdash								
-18	\vdash								
-20	\vdash								
-22	\vdash								
-24									
-26									
-28	$\vdash \vdash$								
-30							_		
-32									
-34									
-36									
-38									
-40									
-42									
-44									
-46									
-48					1		Not to scale		
-50					1		Well Depth: 28.8'		
-52					1		Static: 23.69'		
-54					1		Well screen: 18.8' to 28.8'		
-56					1		Native: 0' to 13'		
-58							Bentonite grout: n/a		
-60					1		Bentonite seal: 13' to 16'		
-62	\vdash				1		Sand pack: 16' to 28.8'		
-64	\vdash				1		End of boring: 30'		
-66	+				1		End of borning. 30 End of sample: n/a		
	I I Granular S	Soils	Cohesi	ve Soils			Well Installation Key		
BLOWS		DENSITY	BLOWS/FT	DENSITY	Proportion	s Used	- CONCRETE		
0 - 4		V. LOOSE		V. SOFT	Trace 0	- 10%	- SAND PACK		
4 - 10		LOOSE		SOFT			1		
10 - 30		M. DENSE		M. STIFF			_		
30 - 50	0	DENSE	8 - 15	STIFF			- BENTONITE - SCREEN		
> 50		V. DENSE	15 - 30	V. STIFF			☐ - SCREEN - APPROX. WATER		
			> 30	HARD			V LEVEL		
		T BORING				BORING NO.	HW-U(s)		

0	- O- IT	4 Danis v		Desirat		Davis s Na	LIVAZ LIZA AN		
-	e Cod Tes	-		Project	D	Boring No.	HW-U(M)		
-		ans, MA 02653	,	Horsley Witten (Shoot 4 of	1		
	(508) 240-		Bal	rnstable, 480 Barns		Sheet 1 of	I		
Driller:		Drilling, Inc. Desmond		Hyannis, M	Boring location:	Wendy's			
Helper:	Sean Mo				Ground Surface Elevation	•			
Inspector:	Sarah Ba				Date start: 4/5/2021	л.	Date end: 4/8/2021		
Sampler cons			Notes:		Date start: 1/6/2021	Auger Size: 6 1/4			
spoon driven u		•				Casing Size:	2"x35' SCH40 PVC FJT		
falling thirty in						Screen Size:	2"x5'X.010 SCH40 PVC FJT		
Depth			Sample		Sample Des	ariation	Well Installation		
(FT)	NO	PEN/REC	DEPTH/FT	BLOWS 6"	Sample Des	scription	vven instanation		
2									
0			0 - 40		F-M-C brown sand.				
-2									
-4									
-6					Drilled with hollow stem	augers to 40'			
-8					and set well as directed.	-	- -		
-10]				
-12]				
-14]				
-16					1				
-18									
-20									
-22									
-24									
-26									
-28									
-30									
-32									
-34									
-36									
-38					1				
-40					1				
-42					1				
-44					1				
-46					1				
-48					1		Not to scale		
-50					1		Well Depth: 38.93'		
-52					1		Static: 23.61'		
-54					1		Well screen: 18.61' to 23.61'		
-56					1		Native: 0' to 2'		
-58					1		Bentonite grout: 2' to 25'		
-60					1		Bentonite seal: 25' to 28.93'		
-62					1		Sand pack: 28.93' to 38.93'		
-64]		End of boring: 40'		
-66					1		End of sample: n/a		
	Granular S	Soils	Cohesi	ve Soils	Proportion:	e l lead	Well Installation Key		
BLOWS		DENSITY	BLOWS/FT	DENSITY	•		- CONCRETE		
0 - 4		V. LOOSE		V. SOFT			- SAND PACK		
4 - 10		LOOSE		SOFT			Z - SOIL BACKFILL		
10 - 30		M. DENSE		M. STIFF			BENTONITE		
30 - 50		DENSE		STIFF		- 50%	用 - SCREEN		
> 50	l	V. DENSE		V. STIFF			7 - APPROX. WATER		
CARE	COD TEC	T PODING	> 30	HARD	<u> </u>	PODING NO	LDA/ LI(m)		
CAPE	פשו מסט	T BORING				BORING NO.	HW-U(m)		

	O 1T		1			In · N	104/14/14
	oe Cod Tes	-		Project	`	Boring No.	HW-W(M)
		ans, MA 02653	_	Horsley Witten C		0	
	(508) 240-1		Ba	rnstable, 480 Barns		Sheet 1 of	1
		Drilling, Inc.		Hyannis, MA		Matarahad ====	
Driller: Helper:	Sean Mo	Desmond			Boring location: Ground Surface Elevation	Watershed area	
Inspector:	Sean Mo				Date start: 4/5/2021	11.	Date end: 4/8/2021
Sampler cons			Notes:		Dato 3tart. 4/3/2021	Auger Size: 6 1/4'	
spoon driven		•				Casing Size:	2"x45' SCH40 PVC FJT
falling thirty in	-					Screen Size:	2"x5'X.010 SCH40 PVC FJT
Depth			Sample		0 1 5	•	
(FT)	NO	PEN/REC	DEPTH/FT	BLOWS 6"	Sample Des	cription	Well Installation
2							
0			0 - 50		F-M-C brown sand.		
-2							
-4							
-6				_	Drilled with hollow stem	augers to 50'	
-8					and set well as directed.		_
-10							
-12							
-14							
-16							
-18							
-20							
-22							
-24							
-26							
-28							
-30							_
-32							
-34							
-36							
-38							
-40							
-42							
-44	\vdash						
-46							
-48	\vdash						Not to scale
-50	\vdash						Well Depth: 52.01'
-52	\vdash						Static: 28.90'
-54	\vdash						Well screen: 47.01' to 52.01'
-56	\vdash						Native: 0' to 5'
-58	 						Bentonite grout: 5' to 39'
-60	-						Bentonite seal: 39' to 42'
-62	 						Sand pack: 42' to 52.01'
-64 66	+						End of boring: 50'
-66	Granular S	Soils	Cahaa	ve Soils			End of sample: n/a Well Installation Key
BLOWS			BLOWS/FT	DENSITY	Proportions	Used	- CONCRETE
0 - 4		V. LOOSE		V. SOFT	Trace 0-	10%	
4 - 10		LOOSE		SOFT			Z - SOIL BACKFILL
10 - 3		M. DENSE		M. STIFF		35%	Z - SOIL BACKFILL - BENTONITE
30 - 5		DENSE		STIFF		50%	- SCREEN
> 50)	V. DENSE		V. STIFF			- APPROX. WATER
			> 30	HARD		T	V LEVEL
CAPE (COD TES	T BORING				BORING NO.	HW-W(M)

Cane	e Cod Tes	t Boring		Project		Boring No.	HW-W(D)		
		ans, MA 02653		Horsley Witten	Group	Domig No.	114V-VV(D)		
	508) 240-1		Rai	rnstable, 480 Barns		Sheet 1 of	1		
		Drilling, Inc.	Sai	Hyannis, M.		5550 1 51	•		
Driller:		Desmond	1	y ca ii ii o , 1VI.	Boring location:	Watershed area			
Helper:	Sean Mo				Ground Surface Elevation				
Inspector:	Sarah Ba				Date start: 4/5/2021		Date end: 4/8/2021		
Sampler consi			Notes:			Auger Size: 6 1/4	l" x 4" H.S.A		
spoon driven u) lb. hammer				Casing Size:	2"x55' SCH40 PVC FJT		
falling thirty ind	ches					Screen Size:	2"x5'X.010 SCH40 PVC FJT		
Depth			Sample		Sample Des	scription	Well Installation		
(FT)	NO	PEN/REC	DEPTH/FT	BLOWS 6"					
2									
0			0 - 60		F-M-C brown sand.				
-2									
-4									
-6	igsquare				Drilled with hollow stem	-			
-8	$\sqcup \bot$				and set well as directed				
-10	oxed				1				
-12	oxed				1				
-14	igsquare								
-16	oxed				1				
-18	oxed				1				
-20									
-22									
-24									
-26									
-28									
-30							_		
-32									
-34									
-36	\perp								
-38									
-40									
-42									
-44									
-46	\longmapsto				1				
-48	\longmapsto				1		Not to scale		
-50	\longmapsto				4		Well Depth: 61.77'		
-52	\vdash				4		Static: 28.67'		
-54	\vdash				4		Well screen: 56.77' to 61.77'		
-56	\vdash				ĺ		Native: 0' to 5'		
-58	\vdash				4		Bentonite grout: 5' to 48'		
-60	\vdash				4		Bentonite seal: 48' to 51'		
-62	\vdash				-		Sand pack: 51' to 56.77'		
-64	\vdash				4		End of boring: 60'		
-66	بلبي	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \					End of sample: n/a		
	Granular S			ve Soils	Proportion	s Used	Well Installation Key		
BLOWS/ 0 - 4	FI	DENSITY V. LOOSE	BLOWS/FT > 2	DENSITY V. SOFT	-		- CONCRETE		
4 - 10		V. LOOSE LOOSE		V. SOFT			- SAND PACK		
10 - 30		M. DENSE		M. STIFF			Z - SOIL BACKFILL		
30 - 50		DENSE	_	STIFF			BENTONITE		
> 50		V. DENSE		V. STIFF			- SCREEN		
			> 30	HARD			- APPROX. WATER LEVEL		
CAPE C	OD TES	T BORING				BORING NO.	HW-W(D)		

Can	e Cod Tes	st Boring		Project		Boring No.	HW-W(DD)		
		ans, MA 02653		Horsley Witten 0			1100-00(00)		
(508) 240-1000			Ва	rnstable, 480 Barns			1		
	. ,	Drilling, Inc.		Hyannis, MA					
Driller: Tommy Desmond					Boring location:	Watershed area			
Helper:	Sean Mo	organ			Ground Surface Elevati	on:			
Inspector:	Sarah Ba				Date start: 4/5/2021		Date end: 4/8/2021		
Sampler cons		•	Notes:			Auger Size: 6 1/4			
spoon driven	-	0 lb. hammer				Casing Size:	2"x67' SCH40 PVC FJT		
falling thirty in	nches				1	Screen Size:	2"x5'X.010 SCH40 PVC FJT		
Depth			Sample	T	Sample De	scription	Well Installation		
(FT)	NO	PEN/REC	DEPTH/FT	BLOWS 6"	·				
2									
0									
-2									
-4	1	24/19	3 - 5	7-8-8-14	F-M-C brown sand; tra	ce gravel. Dry.			
-6							Z Z		
-8	2	24/16	8 - 10	2-5-7-7	F-M brown sand. Dry.				
-10	\vdash								
-12									
-14	3	24/8	13 - 15	4-4-8-7	F-M-C brown sand; litt	le gravel. Dry.			
-16									
-18	4	24/13	18 - 20	3-5-7-9	F-M-C brown sand; so	me gravel. Dry.			
-20									
-22									
-24	5	24/16	23 - 25	4-5-6-4	F-M brown sand. Dry.				
-26									
-28	6	24/10	28 - 30	1-4-4-6	F-M-C brown sand. W	et.			
-30							•		
-32									
-34	7	24/12	33 - 35	2-3-3-4	F-M-C brown sand. W	et.			
-36									
-38	8	DHH	38 - 40	DHH	F-M-C brown sand. W	et.			
-40									
-42									
-44	9	DHH	43 - 45	DHH	F-M-C brown sand. W	et.			
-46									
-48	10	DHH	48 - 50	DHH	F-M-C brown sand; M-	C brown sand.	Not to scale		
-50				ļ	Wet.		Well Depth: 72.05'		
-52	\sqcup						Static: 28.59'		
-54	11	DHH	53 - 55	DHH	F-M brown sand; M-C	brown sand; some	Well screen: 67.05' to 72.05'		
-56	\vdash			ļ	gravel. Wet.		Native: 0' to 5'		
-58	12	DHH	58 - 60	DHH	F-M-C brown sand. W	et.	Bentonite grout: 5' to 59'		
-60	\vdash			ļ			Bentonite seal: 59' to 62'		
-62	\sqcup			ļ			Sand pack: 62' to 72.05'		
-64	13	DHH	63 - 65	DHH	F-M brown sand. Wet.		End of boring: 70'		
-66	14	DHH	68 - 70	DHH	No sample. Set well.		End of sample: 70'		
Granular Soils		Cohesive Soils		Proportions Used		Well Installation Key			
BLOWS			BLOWS/FT	DENSITY	·		- CONCRETE		
0 - 4		V. LOOSE		V. SOFT			SAND PACK		
4 - 10 10 - 3		LOOSE M. DENSE	2 - 4 4 - 8	SOFT M. STIFF			Z - SOIL BACKFILL		
30 - 5		DENSE	8 - 15	M. STIFF STIFF			- BENTONITE		
> 50		V. DENSE		V. STIFF		3070	- SCREEN		
			> 30	HARD			- APPROX. WATER LEVEL		
CAPE (COD TES	ST BORING				BORING NO.	HW-W(DD)		
							\ /		



BORING LOG: HW-X(s)

Project: 21084 **Date:** 9/7/2021

Client: Cape Cod Gateway Airport Completion Depth: 30.00'

Drilling Contractor: New England Geotech. Elevation: N/A Inspector: VA Depth to Water: 24.80 BGS **Drilling Equipment:** Direct Push

Drilling Location: North Ramp, Adjacent to Former ARFFF/SRE Building

Diming	Timing Education: North Kamp, Aujacent to Former ARTT/5KE Bunding										
<u>Proportions</u>		<u>Color</u>	USCS	Size	Misc.						
trace (trc)	0 - 10%	Blue (Bl)	Well-Graded Gravel (GW)	Inorganic Clays of High Plasticity, Fat	Fine = (f)	Fragments (frag.)					
little (li)	10 - 20%	Red (R)	Poorly-Graded Gravel (GP)	Clays, Sandy Clays of High Plasticity (CH)	Medium = (m)	Cement (cem.)					
some (so)	20 - 35%	Light (lt)	Silty Gravels, Gravel-Sand-Silt Mixtures (GM)	Organic Silts and Clays of Low to Medium	Coarse = (c)	Below Ground Surface (BGS)					
and	35 - 50%	Dark (dk)	Clayey Gravels, Gravel-Sand-Clay Mixtures (GC)	Plasticity, Sandy Organic Silts, and Clays (OL)	Dark = (dk)	Total Organic Vapors (TOV)					
		Rust (Ru)	Well-Graded Sand (SW)	Organic Silts and Clays of High Plasticity,	Fine to Coarse $=$ $(f-c)$	Parts per million (PPM)					
		Brown (Br)	Poorly-Graded Sand (SP)	Sandy Organic Silts and Clays (OH)	Very = (v)	Not Available (N/A)					
		Orange (Or)	Silty Sands, Sand Silt Mixtures (SM)	Peat (PT)	More/Less = (+/-)	Depth to Water (DTW)					
		Black (Blk)	Clayey Sands, Sand-Clay Mixtures (SC)								
		<u>Angular</u>	Inorganic Silts, Clayey Silts of Low to Medium Plasticity (ML)								
Round (r		Round (rnd.)	Inorganic Silts, Micaceous, or Diatomaceous Silty Soils, Elastic Silts (MH)								
		Angular (ang.)	Inorganic Clays of Low to Medium Plasticity, Gravely, Sandy, and Silty Clays (CL)								

Depth Feet	Description	TOV (PPM)	Recovery	USCS Code	Color	Comments	Well Details	Depth Feet
0-2	0-8" asphalt followed by dry, tan fine sand and gravel	<0.1	54/62	SP	lt		Anna anna anna anna anna anna anna anna	0-2' feet concrete collar and road box
2-4	Dry, tan fine sand and gravel	<0.1						
4-6	Dry, fine to medium tan sand with trace gravel	<0.1						
6-8	Dry, fine to medium tan sand with trace gravel	<0.1	62/62	SP	lt			
8-10	Dry, fine to medium tan sand with trace gravel	<0.1						Sand pack 2'-16'
10-12	Dry, fine to medium tan sand with trace gravel	<0.1	62/62	SP	lt			
12-14	Dry, fine to medium tan sand with trace gravel	<0.1						
14-16	Dry, fine to medium tan sand with trace gravel	<0.1	62/62	SP	lt			
16-18	Dry, fine to medium tan sand with trace gravel	<0.1	(2)(2	G.D.	1.			Bentonite pack 16'- 18'
18-20	Moist, fine to medium tan sand with trace gravel	<0.1	62/62	SP	lt	Hole collapse at 20'. Hammer casing to		
20-22	NA					30' and set well.		Sand pack 18'-30'
22-24	NA	поливания				DTW: 24.80'		Sana pack 10-50
24-26	NA					D1w. 24.00		
26-28	NA					2-inch 0.010 slot PVC screen		
28-30	NA					Screen Interval: 25'-30' BGS		



BORING LOG: HW-X(m)

Project: 21084 Date: 9/7/2021

Client: Cape Cod Gateway Airport

Completion Depth: 37.00'

Drilling Contractor: New England Geotech.

Completion Depth: 37.00'

Elevation: N/A

Drilling Equipment: Direct Push

Inspector: VA

Inspector: VA

Drilling Location: North Ramp, Adjacent to Former ARFFF/SRE Building

Depth to Water: 25.15 BGS

Di liling	brining Location: North Ramp, Adjacent to Former ARFFF/SRE Building Depth to water: 25.15 BG										
Proportions		<u>Color</u>	USCS	Size	Misc.						
trace (trc)	0 - 10%	Blue (Bl)	Well-Graded Gravel (GW)	Inorganic Clays of High Plasticity, Fat	Fine = (f)	Fragments (frag.)					
little (li)	10 - 20%	Red (R)	Poorly-Graded Gravel (GP)	Clays, Sandy Clays of High Plasticity (CH)	Medium = (m)	Cement (cem.)					
some (so)	20 - 35%	Light (lt)	Silty Gravels, Gravel-Sand-Silt Mixtures (GM)	Organic Silts and Clays of Low to Medium	Coarse = (c)	Below Ground Surface (BGS)					
and	35 - 50%	Dark (dk)	Clayey Gravels, Gravel-Sand-Clay Mixtures (GC)	Plasticity, Sandy Organic Silts, and Clays (OL)	Dark = (dk)	Total Organic Vapors (TOV)					
		Rust (Ru)	Well-Graded Sand (SW)	Organic Silts and Clays of High Plasticity,	Fine to Coarse = (f-c)	Parts per million (PPM)					
		Brown (Br)	Poorly-Graded Sand (SP)	Sandy Organic Silts and Clays (OH)	Very = (v)	Not Available (N/A)					
		Orange (Or)	Silty Sands, Sand Silt Mixtures (SM)	Peat (PT)	More/Less = (+/-)	Depth to Water (DTW)					
		Black (Blk)	Clayey Sands, Sand-Clay Mixtures (SC)								
		<u>Angular</u>	Inorganic Silts, Clayey Silts of Low to Medium Plasticity (ML)								
		Round (rnd.)	Inorganic Silts, Micaceous, or Diatomaceous Silty Soils, Elastic Silts (MH)								
		Angular (ang.)	Inorganic Clays of Low to Medium Plasticity, Gravely, Sandy, and Silty Clays (CL)								

Depth Feet	Description	TOV (PPM)	Recovery	USCS Code	Color	Comments	Well Details	Depth Feet
0-2	NA					Installed adjacent to HW-X(s). 1.5" prepacked stainless steel screen with PVC Riser.		0-2' feet concrete collar and road box
2-4	NA							
4-6	NA							
6-8	NA							
8-10	NA							Sand pack 2'-28'
10-12	NA							1
12-14	NA							
14-16	NA							
16-18	NA							
18-20	NA							
20-22	NA							
22-24	NA							
24-26	NA					DTW: 25.15'		
26-28	NA							
28-30	NA							Bentonite pack 28-
	NA							30'
	NA							Sand pack 30'-37'
						1.5-inch 0.010 slot stainless steel screen		запи раск 50-3 /°
	NA					Screen Interval: 32'-37' BGS		
36-37	NA							
				T. San San San San San San San San San San				