



TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT PFAS SITE INVESTIGATION

Taxiway Z East Expansion Project Area

ADEC File Number: TBD

ADEC Hazard Identification Number: TBD

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RSE Project No. 21-2369

February 3, 2022

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ACRONYMS AND ABBREVIATIONS

ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation & Public Facilities
ANC	Ted Stevens Anchorage International Airport
AOA	Airport Operations Area
Bgs	below ground surface
° C	degrees Celsius
COC	chain of custody
COPC	Contaminant of Potential Concern
CRW	CRW Engineering Group, LLC
EPA	Environmental Protection Agency
GAC	Granular activated carbon
mg/Kg	milligram per kilogram
MTG	Migration to Groundwater
PFAS	per- and polyfluoroalkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
QEP	Qualified Environmental Professional
RSE	Restoration Science & Engineering, LLC
SGS	SGS North America Inc.

1.0 INTRODUCTION

1.1 Objectives

On behalf of the Alaska Department of Transportation & Public Facilities (ADOT&PF) and CRW Engineering Group, LLC (CRW), Restoration Science & Engineering, LLC (RSE) prepared the following subsurface per- and polyfluoroalkyl substances (PFAS) site investigation report at the Taxiway Z East Expansion project areas (Figures 1, 2, 3 and 4). The objectives of this investigation were to determine whether PFAS related compounds are present in soil within the proposed Taxiway Z East Expansion project areas. This investigation is intended to inform Ted Stevens Anchorage International Airport (ANC) engineers and managers of PFAS contamination which may impact the construction phase of the taxiway expansion project. Soil sample data from the 99 soil borings installed during this investigation indicates PFAS impacted soil above the ADEC Method 2 Migration to Groundwater (MTG) cleanup levels within the Taxiway Z East Expansion project area. ANC engineers and managers will use data from this investigation to discern areas impacted by PFAS contamination from areas not impacted by PFAS contamination within the Taxiway Z East Expansion project areas.

1.2 Site History

At least two prior investigations pertaining to PFAS overlap or adjoin the eastern portion of this phase of the Taxiway Z Expansion project. Both investigations were at the Former Kulis Air National Guard Base (ANGB). In both instances, PFAS related compounds were detected in subsurface soils. In October 2018, RSE collected 22 PFAS soil samples during a geotechnical investigation. RSE reported Perfluorooctanesulfonic acid (PFOS) and/or Perfluorooctanoic acid (PFOA) detections in 14 of the soil samples. PFOA concentrations in shallow subsurface soil ranged from non-detect to 0.00139 mg/Kg. PFOS concentrations in shallow subsurface soil ranged from non-detect to 0.110 mg/Kg (RSE, 2018). In 2016 and 2017, AeroStar SES LLC (AeroStar) collected PFAS soil samples from numerous soil borings at the Former Kulis ANGB. AeroStar reported PFOS and/or PFOA detections in five soil samples at AFFF Area 4 (Fire Rescue Building) and AFF Area 10. PFOA concentrations in shallow subsurface soil ranged from 1.11 ng/Kg to 41.5 ng/Kg. PFOS concentrations in shallow subsurface soil ranged from non-detect to 85.8 ng/Kg to 911 ng/Kg (AeroStar, 2018).

1.3 Project Location

The ANC Taxiway Z Expansion east project area is shown on Figures 2, 3 and 4(Appendix A). The project area is located south of Runway 7R/25L and north of the South Airpark. The entire project area is located inside of the secured Airport Operations Area (AOA) and inaccessible to the public.

Using Google Earth, RSE determined the Taxiway Z Expansion East project area is generally located at (using WGS 84):

Latitude 61° 09' 59.72" N
Longitude 149° 58' 26.50" W

2.0 FIELD WORK

2.1 Field Work Narrative

During September and November 2021, RSE collected discrete soil samples from 99 soil boring locations within the Taxiway Z East Expansion project area. RSE environmental scientists Kyle Wiseman, QEP and Lisa Koeneman, QEP, collected each sample for PFAS compounds in soil in accordance with the ADEC approved work plan (RSE, 2021).

Soil boring locations shown on Figure 2 (South Tug Road Area), Figure 3 (Taxiway Z East Expansion Area) and Figure 4 (East Tug Road Demo Area) were intended to identify PFAS-impacted soil to support the Taxiway Z East Expansion engineering phase by characterizing soils that might be excavated during construction without further characterization.

Prior to drilling, the CRW Engineering Group (CRW) survey team marked the soil boring locations shown on attached figures (Appendix A). CRW used a survey grade GPS to record the location of each soil boring within the project area.

RSE contracted Discovery Drilling (Discovery) to install 119 soil boring using direct push methods. However, 10 soil borings (TXY-88, TXY-117, TUG-53, TUG-54, TUG-55, TUG-56, TUG-57, TUG-67, DEMO-1 and DEMO-7) were eliminated as they overlapped other soil borings within the project area. Discovery used a Geoprobe 6712DT and MC 5 tooling to collect continuous drive samples. Soil samples were contained within a five-foot plastic sleeve. Depth below ground surface was measured from beneath the asphalt when asphalt was present.

The RSE QEP collected one (1) discrete soil sample directly from the soil sample sleeve using a clean stainless-steel spoon. Generally, RSE collected one (1) discrete soil sample from each soil boring completed at 5 feet bgs; two (2) discrete soil samples from each soil boring completed at 10 feet bgs; three (3) discrete soil sample from each soil boring completed at 15 feet bgs, four (4) discrete soil samples from each soil boring completed at 20 feet bgs; and five (5) discrete soil samples from each soil boring completed at 25 feet bgs. RSE placed the soil into a polycarbonate laboratory-provided method-specific container. Each sample container was labeled with a unique sample ID, sample time and sample date. The RSE QEP placed each sample container into a project-specific sample cooler provided by SGS containing PFAS-free gel ice packs. Generally, the internal sample cooler temperature was maintained between 0° C and 6° C. RSE delivered the sample cooler to SGS Anchorage under chain of custody (COC). SGS Anchorage shipped all PFAS soil samples to SGS Orlando where the lab analysis was performed. SGS Orlando analyzed the soil samples using EPA Method 537M for 24 PFAS compounds.

2.2 Work Plan Deviations

Minor work plan deviations include the following:

- Soil boring location adjustments because of buried utility conflicts – often with 20 feet of the proposed soil boring location. The soil boring locations shown on Figures 2, 3 and 4 shows the actual soil boring locations.
- Soil borings TXY-88, TXY-117, TUG-53, TUG-54, TUG-55, TUG-56, TUG-57, TUG-67, DEMO-1 and DEMO-7 were eliminated as they overlapped or were immediately adjacent to other soil borings within the project area once the soil borings were located in the field.

The above work plan deviations do not impact the data quality objectives described in the ADEC-approved work plan. Further the minor work plan deviations do not impact data usability, comparing project area soil PFOA and PFOS concentrations to ADEC MTG and Human Health cleanup levels for PFOA and PFOS.

3.0 RESULTS AND FINDINGS

Tables 1A – 1O (Appendix B) show soil sample results for all 24 PFAS compounds for soil borings TXY-87 through TXY-141. Tables 2A – 2F (Appendix B) show soil sample results for all 24 PFAS compounds for soil borings TUG-58 through TUG-84. Tables 3A – 3C (Appendix B) show soil sample results for all 24 PFAS compounds for soil borings DEMO-2 through DEMO-31. Soil sample results for PFOA and PFOS above ADEC MTG cleanup levels are shown on Figures 2, 3 and 4 (Appendix A).

3.1 South Tug Road Project Area

PFOA was detected below ADEC MTG cleanup levels in nine (9) of the 29 soil borings (TUG-58, TUG-59, TUG-60, TUG-62, TUG-63, TUG-65, TUG-69, TUG-70 and TUG-72) within the South Tug Road project area (Figure 2). However, PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in nine (9) additional soil borings (TUG-61, TUG-68, TUG-71, TUG-74, TUG-76, TUG-77, TUG-78, TUG-80 and TUG-84) within the South Tug Road project area (Figure 2): soil sample TUG-61/FD-13 exhibited 0.0032/0.0046 mg/Kg for PFOA; soil sample TUG-68C exhibited 0.0071 mg/Kg for PFOA; soil sample TUG-71B exhibited 0.0043 mg/Kg for PFOA; soil sample TUG-74C exhibited 0.0019 mg/Kg for PFOA; TUG-76B exhibited 0.0164 mg/Kg for PFOA; soil sample TUG-76C exhibited 0.00526 mg/Kg for PFOA; soil sample TUG-76D exhibited 0.221 mg/Kg for PFOA; soil sample TUG-77A exhibited 0.0037 mg/Kg for PFOA; soil sample TUG-77B exhibited 0.0333 mg/Kg for PFOA; soil sample TUG-77C exhibited 0.0263 mg/Kg for PFOA; soil sample TUG-78B exhibited 0.0571 mg/Kg for PFOA; and soil sample TUG-84 exhibited 0.0041 mg/Kg for PFOA (Table 2A – 2F).

PFOS was detected below ADEC MTG cleanup levels in six (6) of the 29 soil borings (TUG-59, TUG-64, TUG-66, TUG-69, TUG-70 and TUG-81) within the South Tug Road project area (Figure 2). However, PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in 15 additional soil borings (TUG-61, TUG-62, TUG-63, TUG-65, TUG-68, TUG-72, TUG-73, TUG-74, TUG-76, TUG-77, TUG-78, TUG-79, TUG-82, TUG-83 and TUG-84) within the South Tug Road project area (Figure 2): soil sample TUG-61/FD-13 exhibited 0.221/0.453 mg/Kg for PFOS; soil sample TUG-62 exhibited 0.0367 mg/Kg for PFOS; soil sample TUG-63 exhibited 0.201 mg/Kg for PFOS; soil sample TUG-65 exhibited 0.0418 mg/Kg for PFOS; TUG-68A exhibited 0.129 mg/Kg for PFOS; soil sample TUG-72A exhibited 0.0419 mg/Kg for PFOS; soil sample TUG-73A exhibited 0.101 mg/Kg for PFOS; soil sample TUG-76A exhibited 0.0220 mg/Kg for PFOS; soil sample TUG-76B exhibited 0.0887 mg/Kg for PFOS; soil sample TUG-77A exhibited 0.0175 mg/Kg for PFOS; soil sample TUG-78A exhibited 0.0370 mg/Kg for PFOS; soil sample TUG-79 exhibited 0.0109 mg/Kg for PFOS; soil sample TUG-80 exhibited 0.0900 mg/Kg for PFOS; soil sample TUG-82 exhibited 0.0202 mg/Kg for PFOS; soil sample TUG-83 exhibited 0.0277 mg/Kg for PFOS; and soil sample TUG-84 exhibited 0.253 mg/Kg for PFOS (Table 2A – 2F).

3.2 Taxiway Z East Expansion Area

PFOA was detected below ADEC MTG cleanup levels in 14 of the 53 soil borings (TXY-102, TXY-105, TXY-107, TXY-110, TXY-114, TXY-115, TXY-116, TXY-121, TXY-123, TXY-125, TXY-126, TXY-136, TXY-137 and TXY-139) within the Taxiway Z East Expansion project area (Figure 3). However, PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in 11 additional soil borings (TXY-100, TXY-103,

TXY-111, TXY-112, TXY-113, TXY-118, TXY-122, TXY-123, TXY-124, TXY-127 and TXY-128) within the Taxiway Z East Expansion project area (Figure 3): soil sample TXY-100A exhibited 0.0020 mg/Kg for PFOA; soil sample TXY-103A exhibited 0.0164 mg/Kg for PFOA; soil sample TXY-111B exhibited 0.0027 mg/Kg for PFOA; soil sample TXY-112B exhibited 0.0017 mg/Kg for PFOA; soil sample TXY-113A exhibited 0.0245 mg/Kg for PFOA; soil sample TXY-118 exhibited 0.0085 mg/Kg for PFOA; soil sample TXY-122B exhibited 0.0133 mg/Kg for PFOA; soil sample TXY-124B exhibited 0.0088mg/Kg for PFOA; soil sample TXY-127D exhibited 0.0055 mg/Kg for PFOA; and soil sample TXY-128B exhibited 0.0067 mg/Kg for PFOA (Table 1A – 10).

PFOS was detected below ADEC MTG cleanup levels in four (4) of the 53 soil borings (TXY-108, TXY-112, TXY-116 and TXY-125) within the Taxiway Z East Expansion project area (Figure 3). However, PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in 23 additional soil borings (TXY-100, TXY-102, TXY-103, TXY-104, TXY-105, TXY-110, TXY-113, TXY-118, TXY-119, TXY-120, TXY-122, TXY-123, TXY-124, TXY-126, TXY-127, TXY-128, TXY-129, TXY-130, TXY-131, TXY-134, TXY-136, TXY-137 and TXY-139) within the Taxiway Z East Expansion project area (Figure 3): soil sample TXY-100A exhibited 0.054 mg/Kg for PFOS; soil sample TXY-102A exhibited 0.0242 mg/Kg for PFOS; soil sample TXY-103A exhibited 0.0036 mg/Kg for PFOS; soil sample TXY-104A exhibited 0.0032 mg/Kg for PFOS; soil sample TXY-105A exhibited 0.0042 mg/Kg for PFOS; soil sample TXY-110A exhibited 0.352 mg/Kg for PFOS; soil sample TXY-110B exhibited 0.115 mg/Kg for PFOS; soil sample TXY-113B exhibited 0.0448 mg/Kg for PFOS; soil sample TXY-118 exhibited 0.0494 mg/Kg for PFOS; soil sample TXY-119A exhibited 0.0095 mg/Kg for PFOS; soil sample TXY-119B exhibited 0.0565 mg/Kg for PFOS; soil sample TXY-120B exhibited 0.0325 mg/Kg for PFOS; soil sample TXY-122A exhibited 0.0085 mg/Kg for PFOS; soil sample TXY-122D exhibited 0.0035 mg/Kg for PFOS; soil sample TXY-123A/FD-11 exhibited 0.0030/0.0458 mg/Kg for PFOS; soil sample TXY-123C exhibited 0.0223 mg/Kg for PFOS; soil sample TXY-124A exhibited 0.0181 mg/Kg for PFOS; soil sample TXY-126B exhibited 0.0047 mg/Kg for PFOS; soil sample TXY-126C exhibited 0.0301 mg/Kg for PFOS; soil sample TXY-127A exhibited 0.0832 mg/Kg for PFOS; soil sample TXY-127B exhibited 0.0318 mg/Kg for PFOS; soil sample TXY-128A exhibited 0.0075 mg/Kg for PFOS; soil sample TXY-128B exhibited 0.0344 mg/Kg for PFOS; soil sample TXY-129A exhibited 0.0212 mg/Kg for PFOS; soil sample TXY-130A exhibited 0.0086 mg/Kg for PFOS; soil sample TXY-130B exhibited 0.0067 mg/Kg for PFOS; soil sample TXY-131A exhibited 0.018 mg/Kg for PFOS; soil sample TXY-134B exhibited 0.0131 mg/Kg for PFOS; soil sample TXY-136A exhibited 0.0625 mg/Kg for PFOS; soil sample TXY-136B exhibited 0.0770 mg/Kg for PFOS; soil sample TXY-136C exhibited 0.0064 mg/Kg for PFOS; soil sample TXY-137A exhibited 0.0920 mg/Kg for PFOS; soil sample TXY-137B exhibited 0.0650 mg/Kg for PFOS; soil sample TXY-139A exhibited 0.0092mg/Kg for PFOS; and soil sample TXY-139B exhibited 0.0080 mg/Kg for PFOS (Table 1A – 10).

3.3 Tug Road Demo Project Area

PFOA was detected below ADEC MTG cleanup levels in 10 of the 29 soil borings (DEMO-2, DEMO-13, DEMO-14, DEMO-17, DEMO-19, DEMO-21, DEMO-23, DEMO-24, DEMO-26 and DEMO-27) within the Tug Road Demo project area (Figure 4). However, PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in five (5) additional soil borings within the Tug Road Demo project area (Figure 4): soil sample DEMO-4 exhibited 0.0025 mg/Kg for PFOA, soil sample DEMO-9 exhibited 0.0029 mg/Kg for PFOA, soil sample DEMO-11 exhibited 0.0017 mg/Kg for PFOA, soil sample DEMO-15 exhibited 0.0022 mg/Kg for PFOA, and soil sample DEMO-25 exhibited 0.0030 mg/Kg for PFOA (Table 3A – 3B).

PFOS was detected below ADEC MTG cleanup levels in seven (7) of the 29 soil borings (DEMO-2, DEMO-5, DEMO-12, DEMO-13, DEMO-19, DEMO-23 and DEMO-25) within the Tug Road Demo project area (Figure 4). However, PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in six (6) additional soil borings within the Tug Road Demo project area (Figure 4): soil sample DEMO-15 exhibited 0.0100 mg/Kg for PFOS, soil sample DEMO-20 exhibited 0.0133 mg/Kg for PFOS, soil sample DEMO-26 exhibited 0.0794 mg/Kg for PFOS, soil sample DEMO-27 exhibited 0.0064 mg/Kg for PFOS, soil sample DEMO-31 exhibited 0.0034 mg/Kg for PFOS, and soil sample FD-25 exhibited 0.146 mg/Kg for PFOS (Table 3A – 3B).

4.0 Quality Assurance Assessment

4.1 Data Quality

The limit of quantitation (LOQ) exceeded the ADEC MTG cleanup level for PFOA in eight (8) soil samples: TXY-87C, TXY130B, TXY-131A, TXY-131B, TXY-132D, TXY-133B, TXY-134B, TXY-135B. These eight samples routinely exhibited low percent solids, often near 50%. The remaining 266 PFAS soil samples (239 parent and 27 blind duplicate sample) exhibited LOQs less than the ADEC MTG cleanup level for both PFOA and PFOS. Tables 4A – 4C (Appendix B) show soil sample results for all 24 PFAS compounds for blind field duplicates FD-1 through FD-26. In some cases, the parent sample and the blind duplicate were both non-detect. RSE was unable to calculate the relative percent difference (RPD) for these samples. RPD calculations for the remaining parent samples and corresponding blind duplicate sample are provided in Table 5 (Appendix B). RSE completed the ADEC Laboratory Data Review Checklist for all SGS Work Orders. The checklists are provided in Appendix E.

The data from this investigation is representative of PFAS impacts in soil at the soil boring locations within the Taxiway Z West Expansion project areas during the site investigation.

4.2 Data Usability

The soil sample data is complete and meets the data quality objectives described in the work plan. The PFAS soil sample results are usable for the intended purpose of comparison to ADEC MTG and Human Health cleanup levels for PFOA and PFOS.

5.0 INVESTIGATIVE DERIVED WASTE (IDW) MANAGEMENT

5.1 Soil

After the QEP collected the required volume of soil for the lab sample, all excess soil was placed back down the soil boring of origin. There was no soil investigative derived waste (IDW) generated during this project.

5.2 Decon Water

Discovery generated approximately 1 gallon of decon water daily. All water IDW was treated using a 5-gallon granular activated carbon (GAC) canister and discharged at the edge of the Taxiway Z or proposed tug road project areas.

5.3 Other IDW

Consumable field items such as plastic bags and nitrile gloves were placed in a dumpster or other trash bin for disposal. Non-consumables such as stainless-steel spoons and other field equipment was washed using Alconox and hot water at the RSE field equipment room.

6.0 CONCLUSIONS

6.1 South Tug Road Project Area

PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in at least one soil sample at nine (9) soil borings South Tug Road project area (Figure 2): TUG-61, TUG-68, TUG-71, TUG-74, TUG-76, TUG-77, TUG-78, TUG-80 and TUG-84.

PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in at least one soil sample at 15 soil borings within the South Tug Road project area (Figure 2): TUG-61, TUG-62, TUG-63, TUG-65, TUG-68, TUG-72, TUG-73, TUG-74, TUG-76, TUG-77, TUG-78, TUG-79, TUG-82, TUG-83 and TUG-84.

6.2 Taxiway Z East Expansion Project Area

PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in at least one soil sample at 11 soil borings within the Taxiway Z East Expansion project area (Figure 3): TXY-100, TXY-103, TXY-111, TXY-112, TXY-113, TXY-118, TXY-122, TXY-123, TXY-124, TXY-127 and TXY-128.

PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in at least one soil sample at 23 soil borings within the Taxiway Z East Expansion project area (Figure 3): TXY-100, TXY-102, TXY-103, TXY-104, TXY-105, TXY-110, TXY-113, TXY-118, TXY-119, TXY-120, TXY-122, TXY-123, TXY-124, TXY-126, TXY-127, TXY-128, TXY-129, TXY-130, TXY-131, TXY-134, TXY-136, TXY-137 and TXY-139.

6.3 Tug Road Demo Project Area

PFOA was detected above the ADEC Method 2 MTG cleanup level of 0.0017 mg/Kg in five (5) soil borings within the Tug Road Demo project area (Figure 4): DEMO-4, DEMO-9, DEMO-11, DEMO-15 and DEMO-25.

PFOS was detected above the ADEC Method 2 MTG cleanup level of 0.0030 mg/Kg in six (6) soil borings within the Tug Road Demo project area (Figure 4): DEMO-15, DEMO-20, DEMO-25, DEMO-26, DEMO-27 and DEMO-31.

7.0 RECOMMENDATIONS

On behalf of the ADOT&PF and CRW, RSE concludes that soil sample data within Taxiway Z East Expansion project area suggests PFAS contamination is present above ADEC Method 2 MTG cleanup levels. RSE recommends no future PFAS sampling to further characterize the soil for disposal or reuse provided the excavated soil is limited to the horizontal and vertical extent specified in this report and remains on ANC property and not used or placed in a "sensitive area".

This site investigation report was prepared by Lucas Gamble, QEP. Mr. Gamble satisfies the QEP requirements described in 18 AAC 75.

APPENDICES

Appendix A – Figures

Figure 1. Vicinity Map

Figure 2. South Tug Road Project Area PFAS Soil Sample Location Map

Figure 3. Taxiway Z East Expansion Area PFAS Soil Sample Location Map

Figure 4. Tug Road Demo Project Area PFAS Soil Sample Location Map

Appendix B – Tables

Appendix C – Photo Pages

Appendix D – SGS North America Inc. Laboratory Soil Sample Data Report

Appendix E – ADEC Laboratory Data Review Checklist

Appendix F – Copies of RSE Field Notes

Appendix G – Soil Boring Survey Data

REFERENCES

AeroStar SES LLC (AeroStar), 2018. Site Investigation Report for Aqueous Film Forming Foam Areas at Former Kulis Air National Guard Base. May 2018.

Restoration Science & Engineering, LLC (RSE), 2018. ANC Taxiway Zulu Expansion Project Environmental Assessment Letter Report. December 3, 2018.

Restoration Science & Engineering, LLC (RSE), 2021, Ted Stevens Anchorage International Airport PFAS Investigation Work Plan, ANC Taxiway Z East Expansion Project Area. August 13, 2021.

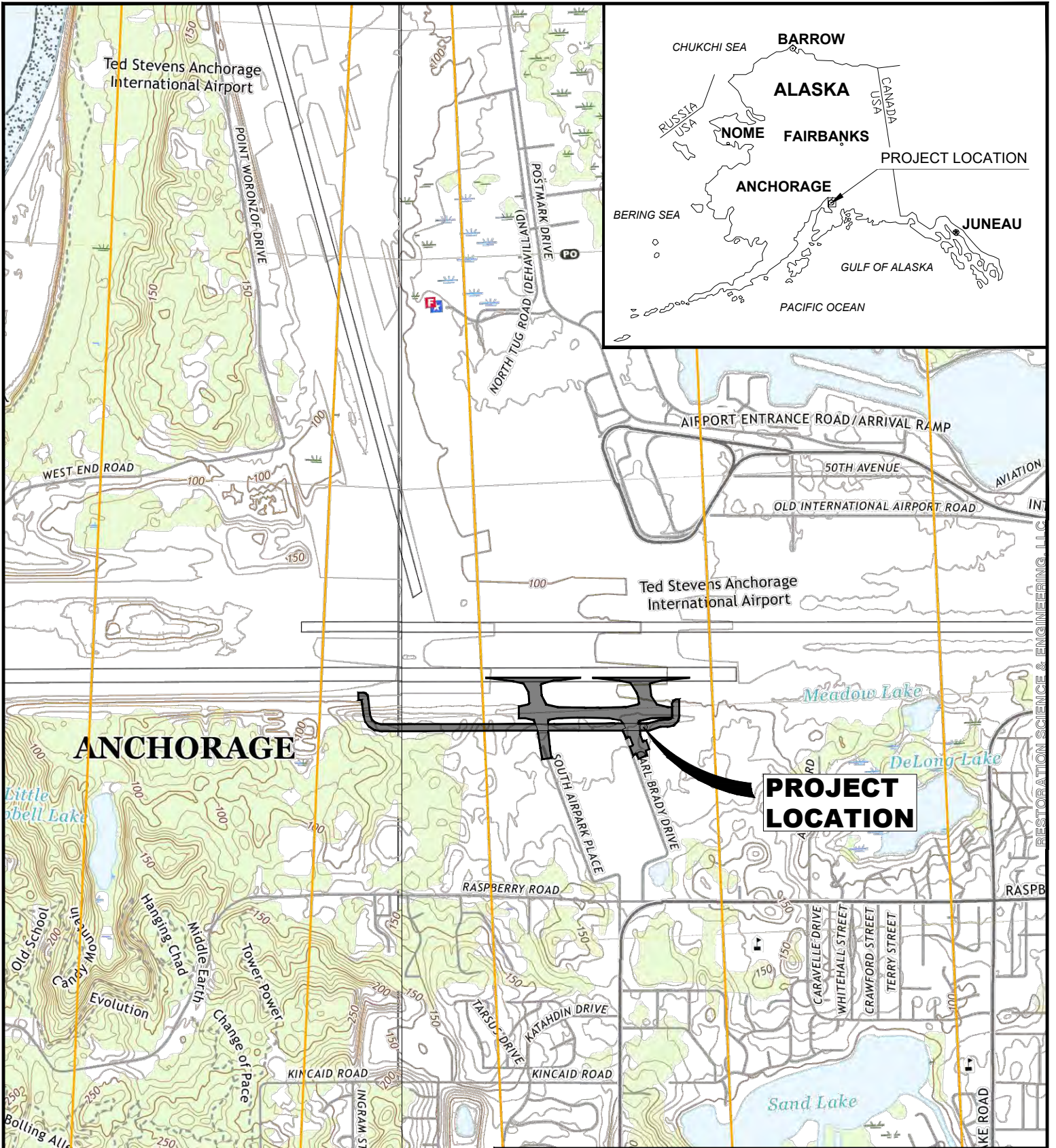
Appendix A – Figures

Figure 1. Vicinity Map

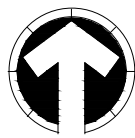
Figure 2. South Tug Road PFAS Soil Sample Location Map

Figure 3. Taxiway Z East Expansion Area PFAS Soil Sample Location Map

Figure 4. East Tug Road Demo PFAS Soil Sample Location Map



RESTORATION SCIENCE & ENGINEERING, LLC



N.T.S.

CRW ANC TAXIWAY Z PFAS INVESTIGATION

VICINITY MAP

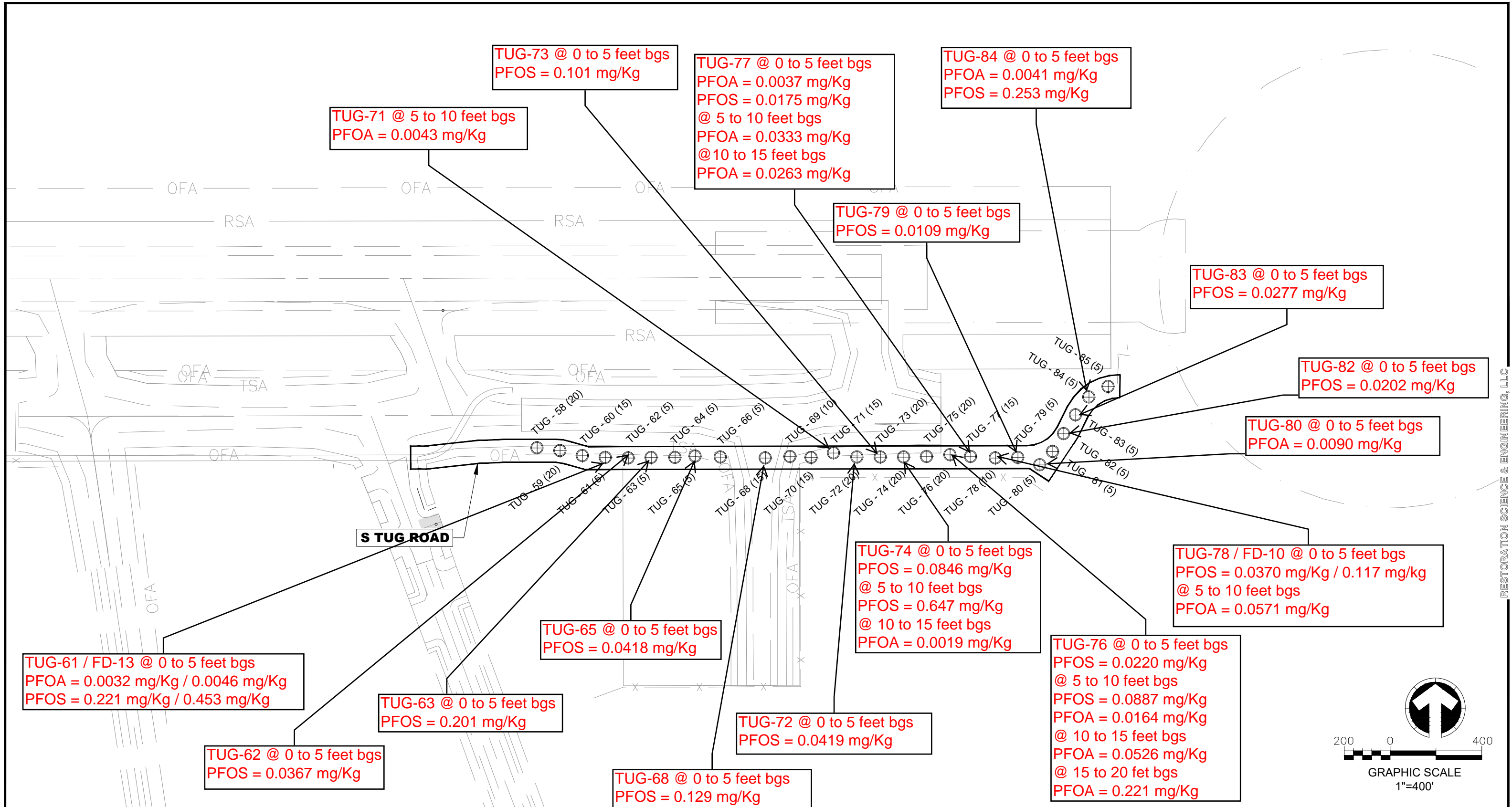
ANCHORAGE, ALASKA

JOB NO: 21.2332
DATE: 5.12.2021

DRAWN: MSB
CHECKED: LG

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FIGURE 1



TUG-61 / FD-13 @ 0 to 5 feet bgs
PFOA = 0.0032 mg/Kg / 0.0046 mg/Kg
PFOS = 0.221 mg/Kg / 0.453 mg/Kg

TUG-62 @ 0 to 5 feet bgs
PFOS = 0.0367 mg/Kg

TUG-63 @ 0 to 5 feet bgs
PFOS = 0.201 mg/Kg

TUG-65 @ 0 to 5 feet bgs
PFOS = 0.0418 mg/Kg

TUG-68 @ 0 to 5 feet bgs
@ 10 to 15 feet bgs
PFOA = 0.0071 mg/Kg
PFOS = 0.129 mg/Kg

TUG-71 @ 5 to 10 feet bgs
PFOA = 0.0043 mg/Kg

TUG-77 @ 0 to 5 feet bgs
@ 5 to 10 feet bgs
@ 10 to 15 feet bgs
PFOA = 0.0263 mg/Kg
PFOA = 0.0333 mg/Kg
PFOS = 0.0175 mg/Kg

TUG-74 @ 0 to 5 feet bgs
@ 5 to 10 feet bgs
@ 10 to 15 feet bgs
PFOA = 0.0019 mg/Kg
PFOS = 0.647 mg/Kg
PFOS = 0.0846 mg/Kg

TUG-72 @ 0 to 5 feet bgs
PFOS = 0.0419 mg/Kg

TUG-84 @ 0 to 5 feet bgs
PFOA = 0.0041 mg/Kg
PFOS = 0.253 mg/Kg

TUG-79 @ 0 to 5 feet bgs
PFOS = 0.0109 mg/Kg

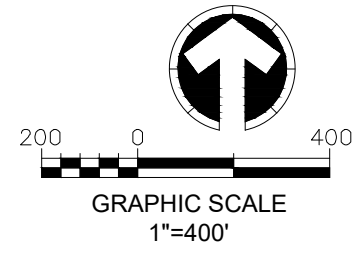
TUG-78 / FD-10 @ 0 to 5 feet bgs
@ 5 to 10 feet bgs
PFOA = 0.0571 mg/Kg
PFOS = 0.0370 mg/Kg / 0.117 mg/kg

TUG-80 @ 0 to 5 feet bgs
PFOA = 0.0090 mg/Kg

TUG-82 @ 0 to 5 feet bgs
PFOS = 0.0202 mg/Kg

TUG-83 @ 0 to 5 feet bgs
PFOS = 0.0277 mg/Kg

TUG-76 @ 0 to 5 feet bgs
@ 5 to 10 feet bgs
@ 10 to 15 feet bgs
@ 15 to 20 feet bgs
PFOA = 0.0526 mg/Kg
PFOA = 0.0164 mg/Kg
PFOS = 0.0887 mg/Kg
PFOS = 0.0220 mg/Kg



LEGEND
 BORING & SAMPLE LOCATIONS
DRILLING LOCATION / BOREHOLE NUMBER → TUG - 68 (15) ← TERMINAL DEPTH

CRW ANC TAXIWAY Z PFAS INVESTIGATION SOIL BORING LOCATION MAP	
S TUG ROAD SOIL BORING & SAMPLE LOCATION	 <small>911 West 8th Avenue, Suite 100 Anchorage, Alaska 99501 PH: (907) 278-1023 FAX: (907) 277-5718</small>
ANCHORAGE, ALASKA	
JOB NO: 21.2369	DRAWN: MSB
DATE: 9.17.2021	CHECKED: LG
FIGURE 2	

RESTORATION SCIENCE & ENGINEERING, LLC

TXY-127 / FD -12 @ 0 to 5 feet bgs
 PFOS = 0.0832 mg/Kg / 0.0192 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0318 mg/Kg
 @ 15 to 20 feet bgs
 PFOA = 0.0055 mg/Kg

TXY-131A @ 0 to 5 feet bgs
 PFOS = 0.018 mg/Kg

TXY-130 @ 0 to 5 feet bgs
 PFOS = 0.0086 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0067 mg/Kg

TXY-129 @ 0 to 5 feet bgs
 PFOS = 0.0212 mg/Kg

TXY-126 @ 5 to 10 feet bgs
 PFOS = 0.0047 mg/Kg
 @ 10 to 15 feet bgs
 PFOS = 0.0301 mg/Kg

TXY-134 @ 0 to 5 feet bgs
 PFOS = 0.0131 mg/Kg

TXY-128 @ 5 to 10 feet bgs
 PFOS = 0.0075mg/Kg
 @ 10 to 15 feet bgs
 PFOA = 0.067 mg/Kg
 PFOS = 0.0344 mg/Kg

TXY-123 / FD-11 @ 0 to 5 feet bgs
 PFOS = 0.0030 mg/Kg / 0.0458 mg/Kg
 @ 10 to 15 feet bgs
 PFOA = 0.0223 mg/Kg

TXY-136 @ 0 to 5 feet bgs
 PFOS = 0.0625 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0770 mg/Kg
 @ 10 to 15 feet bgs
 PFOS = 0.0064 mg/Kg

TXY-137 @ 0 to 5 feet bgs
 PFOS = 0.0920 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0650 mg/Kg

TXY-122 @ 0 to 5 feet bgs
 PFOS = 0.0085 mg/Kg
 @ 5 to 10 feet bgs
 PFOA = 0.0133 mg/Kg
 @ 15 to 20 feet bgs
 PFOS = 0.0035 mg/Kg

TXY-139 @ 0 to 5 feet bgs
 PFOS = 0.0092 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0080 mg/Kg

TXY-102 @ 0 to 5 feet bgs
 PFOS = 0.0242 mg/Kg

TXY-124 @ 0 to 5 feet bgs
 PFOS = 0.0181 mg/Kg
 @ 5 to 10 feet bgs
 PFOA = 0.0088 mg/Kg

TXY-100 / FD-5 @ 0 to 5 feet bgs
 PFOA = 0.0020 mg/Kg / 0.0018 mg/Kg
 PFOS = 0.0054 mg/Kg

TXY-118 @ 0 to 5 feet bgs
 PFOA = 0.0085 mg/Kg
 PFOS = 0.0494 mg/Kg

TXY-120 @ 5 to 10 feet bgs
 PFOS = 0.0325 mg/Kg

TXY-104 / FD-17 @ 0 to 5 feet bgs
 PFOS = 0.0032 mg/Kg / 0.0030 mg/Kg

TXY-119 / FD-15 @ 0 to 5 feet bgs
 PFOS = 0.0095 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.0565 mg/Kg

TXY-103 / FD-16 @ 0 to 5 feet bgs
 PFOA = 0.0164 mg/Kg / 0.0064 mg/Kg
 PFOS = 0.0036 mg/Kg

TXY-110 @ 0 to 5 feet bgs
 PFOS = 0.352 mg/Kg
 @ 5 to 10 feet bgs
 PFOS = 0.115 mg/Kg

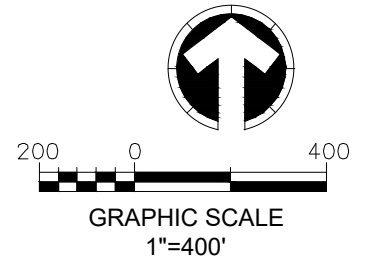
TXY-111 @ 5 to 10 feet bgs
 PFOA = 0.0027 mg/Kg

TXY-112 @ 5 to 10 feet bgs
 PFOA = 0.0017 mg/Kg

TXY-105 @ 0 to 5 feet bgs
 PFOS = 0.0042 mg/Kg

DRILLING LOCATION / BOREHOLE NUMBER → TXY - 109 (10) ← TERMINAL DEPTH

LEGEND
 ⊕ BORING & SAMPLE LOCATIONS



CRW ANC TAXIWAY Z PFAS INVESTIGATION
 SOIL BORING LOCATION MAP

TAXIWAYS Z & C, KULIS TAXIWAY
 SOIL BORING & SAMPLE
 LOCATION

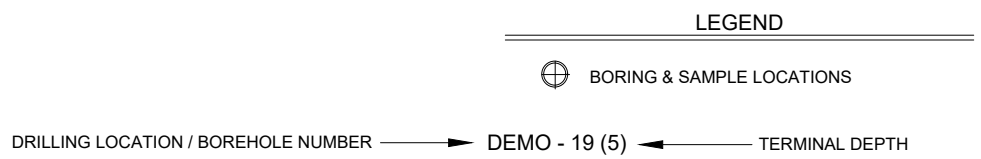
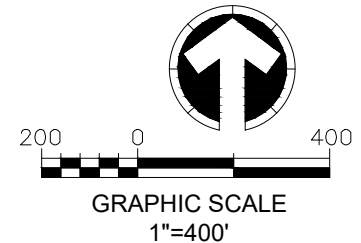
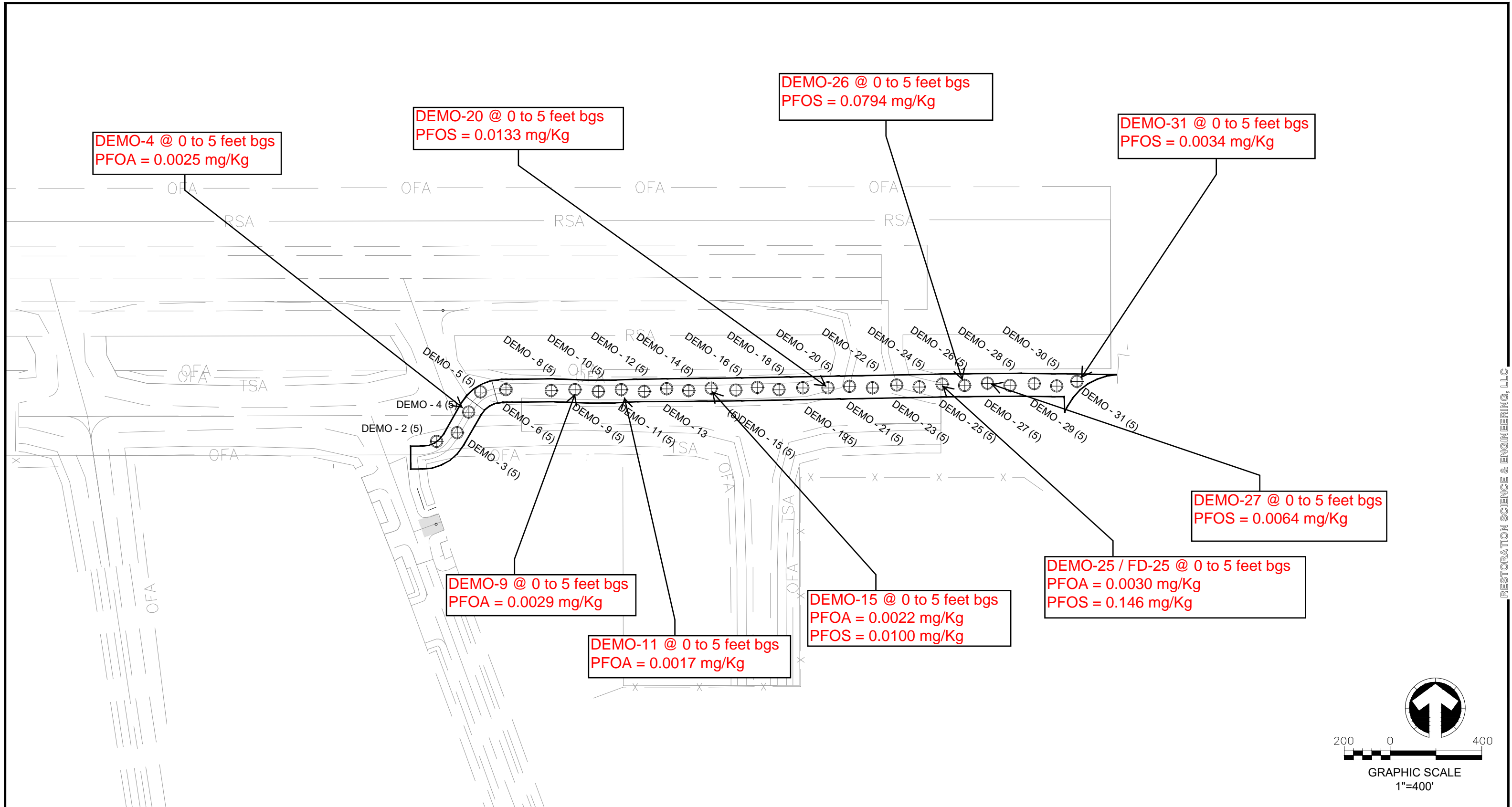
ANCHORAGE, ALASKA

JOB NO: 21.2369
 DATE: 9.20.2021

DRAWN: MSB
 CHECKED: LG

RESTORATION
 Science & Engineering, LLC
 911 West 8th Avenue, Suite 100
 Anchorage, Alaska 99501
 PH: (907) 278-1023 FAX: (907) 277-5718

FIGURE 3



CRW ANC TAXIWAY Z PFAS INVESTIGATION SOIL BORING LOCATION MAP	
EAST TUG ROAD DEMOLITION SOIL BORING & SAMPLE LOCATION	RESTORATION Science & Engineering, LLC <small>911 West 8th Avenue, Suite 100 Anchorage, Alaska 99501 PH. (907) 278-1023 FAX (907) 277-5718</small>
ANCHORAGE, ALASKA	
<small>JOB NO: 21.2369</small>	<small>DRAWN: MSB</small>
<small>DATE: 9.17.2021</small>	<small>CHECKED: LG</small>
FIGURE 4	

Appendix B – Tables

TABLE 1A
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-87A	TXY-87B	TXY-87C	TXY-89A	TXY-89B	TXY-90A	TXY-90B	TXY-91A	TXY-91B	TXY-91C	
DATE	9/18/2021	9/18/2021	9/18/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	
SGS WORK ORDER	1216187	1216187	121687	1217416	1217416	1217416	1217416	1217416	1217416	1217416	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	66.1	89.1	46.6	84.4	79.5	78.6	84.8	84.5	81.6	87.9	
PERFLUOROALKYLCARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoropentanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorohexanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoroheptanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorooctanoic acid (PFOA)	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorononanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorodecanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoroundecanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorododecanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorotridecanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorotetradecanoic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoropentanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorohexanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00047 J	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoroheptanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorooctanesulfonic acid (PFOS)	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluoronanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
Perfluorodecanesulfonic acid	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
PERFLUOROACTANESULFONAMIDES											
PFOSA	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0038 U	0.0028 U	0.0053 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	
EtFOSAA	0.0038 U	0.0028 U	0.0053 U	0.0012 U	0.0012 U	0.0013 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
6:2 Fluorotelomer sulfonate	0.0015 U	0.0011 U	0.0021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	
8:2 Fluorotelomer sulfonate	0.0015 U	0.0011 U	0.021 U	0.00059 U	0.00060 U	0.00064 U	0.00059 U	0.00059 U	0.00060 U	0.00057 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1B
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL												ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-92	TXY-93A	TXY-93B	TXY-93C	TXY-94A	TXY-94B	TXY-94C	TXY-95A	TXY-95B	TXY-95C	TXY-95D	
DATE	11/12/21	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	
SGS WORK ORDER	1217506	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	15 to 20	
PERCENT SOLIDS (%)	96.4	86.5	91.8	90.9	80	88.7	85.7	83.3	86.2	90.3	75.2	
PERFLUOROALKYL CARBOXYLIC ACIDS												0.0017
Perfluorobutanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluoropentanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorohexanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluoroheptanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorooctanoic acid (PFOA)	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorononanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorodecanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluoroundecanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorododecanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorotridecanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorotetradecanoic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
PERFLUOROALKYL SULFONATES												0.0030
Perfluorobutanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluoropentanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorohexanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluoroheptanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorooctanesulfonic acid (PFOS)	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorononanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
Perfluorodecanesulfonic acid	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
PERFLUOROCTANESULFONAMIDES												
PFOSA	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS												
MeFOSAA	0.0010 U	0.0028 U	0.0027 U	0.0027 U	0.0030 U	0.0027 U	0.0029 U	0.0029 U	0.0029 U	0.0027 U	0.0033 U	
EtFOSAA	0.0010 U	0.0028 U	0.0027 U	0.0027 U	0.0030 U	0.0027 U	0.0029 U	0.0029 U	0.0029 U	0.0027 U	0.0033 U	
FLUOROTELOMER SULFONATES												
4:2 Fluorotelomer sulfonate	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
6:2 Fluorotelomer sulfonate	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	
8:2 Fluorotelomer sulfonate	0.00052 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1C
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
SAMPLE ID	TXY-96A	TXY-96B	TXY-96C	TXY-96D	TXY-97A	TXY-97B	TXY-97C	TXY-97D	TXY-98A	TXY-98B		
DATE	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021		
SGS WORK ORDER	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10		
PERCENT SOLIDS (%)	83.4	83.9	82.1	83.4	79.9	89.4	87.9	83.5	86	87.6		
PERFLUOROALKYLCARBOXYLIC ACIDS											0.0017	
Perfluorobutanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoropentanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorohexanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoroheptanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorooctanoic acid (PFOA)	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorononanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorodecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoroundecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorododecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorotridecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorotetradecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
PERFLUOROALKYLSULFONATES												0.0030
Perfluorobutanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoropentanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorohexanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoroheptanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorooctanesulfonic acid (PFOS)	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluoronanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
Perfluorodecanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
PERFLUOROCTANESULFONAMIDES											0.0030	
PFOSA	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											0.0030	
MeFOSAA	0.0029 U	0.0029 U	0.0030 U	0.0029 U	0.0031 U	0.0027 U	0.0028 U	0.0029 U	0.0029 U	0.0028 U		
EtFOSAA	0.0029 U	0.0029 U	0.0030 U	0.0029 U	0.0031 U	0.0027 U	0.0028 U	0.0029 U	0.0029 U	0.0028 U		
FLUOROTELOMER SULFONATES											0.0030	
4:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U		
6:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U		
8:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1D
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-98C	TXY-98D	TXY-99A	TXY-99B	TXY-99C	TXY-99D	TXY-100A	TXY-100B	TXY-100C	TXY-100D	
DATE	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	
SGS WORK ORDER	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	
PERCENT SOLIDS (%)	82.8	83	83.6	79.3	87	87.2	81.4	95.2	77.5	88.8	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluoropentanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorohexanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0017	0.0010 U	0.0013 U	0.0011 U	
Perfluoroheptanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorooctanoic acid (PFOA)	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0020	0.0010 U	0.0013 U	0.0011 U	
Perfluorononanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorodecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluoroundecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorododecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorotridecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorotetradecanoic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluoropentanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorohexanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0102	0.0010 U	0.0013 U	0.0011 U	
Perfluoroheptanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0031	0.0010 U	0.0013 U	0.0011 U	
Perfluorooctanesulfonic acid (PFOS)	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0054	0.0010 U	0.0013 U	0.0011 U	
Perfluoronanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
Perfluorodecanesulfonic acid	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
PERFLUOROCTANESULFONAMIDES											0.0030
PFOSA	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											0.0030
MeFOSAA	0.0030 U	0.0030 U	0.0029 U	0.0030 U	0.0027 U	0.0029 U	0.0030 U	0.0025 U	0.0032 U	0.0028 U	
EtFOSAA	0.0030 U	0.0030 U	0.0029 U	0.0030 U	0.0027 U	0.0029 U	0.0030 U	0.0025 U	0.0032 U	0.0028 U	
FLUOROTELOMER SULFONATES											0.0030
4:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
6:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	
8:2 Fluorotelomer sulfonate	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0011 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1E
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-100E	TXY-101A	TXY-101B	TXY-101C	TXY-102A	TXY-102B	TXY-102C	TXY-103A	TXY-103B	TXY-103C	
DATE	9/19/2021	11/8/2021	11/8/2021	11/8/2021	11/10/2021	11/10/2021	11/10/2021	11/11/2021	11/11/2021	11/11/2-21	
SGS WORK ORDER	1216187	1217416	1217416	1217416	1217461	1217461	1217461	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	20 to 25	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	80.2	81.3	86.9	94.5	84.9	80.1	78	85.1	77.8	88.5	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluoropentanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00035 J	0.00063 U	0.00048 J	
Perfluorohexanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00030 J	0.00033 J	0.0013	
Perfluoroheptanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00092 J	0.00063 U	0.00056 U	
Perfluorooctanoic acid (PFOA)	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00053 J	0.0013	0.0164	0.00063 U	0.00056 U	
Perfluorononanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorodecanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.0027	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluoroundecanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorododecanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorotridecanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorotetradecanoic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluoropentanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorohexanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00068 J	0.00087 J	0.00077 J	0.00063 U	0.00056 U	
Perfluoroheptanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00048 J	0.00063 U	0.00056 U	
Perfluorooctanesulfonic acid (PFOS)	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.0242	0.00051 J	0.00061 U	0.0036	0.00063 U	0.00056 U	
Perfluorononanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00055 J	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
Perfluorodecanesulfonic acid	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00036 J	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0029 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0011 U	
EtFOSAA	0.0029 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0013 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	
6:2 Fluorotelomer sulfonate	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.00059 U	0.00049 J	0.00078 J	0.00058 U	0.00063 U	0.00056 U	
8:2 Fluorotelomer sulfonate	0.0012 U	0.00059 U	0.00057 U	0.00053 U	0.0102	0.00061 U	0.00061 U	0.00058 U	0.00063 U	0.00056 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1F
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-104A	TXY-104B	TXY-104C	TXY-105A	TXY-105B	TXY-106A	TXY-106B	TXY-107A	TXY-107B	TXY-108A	
DATE	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/10/2021	
SGS WORK ORDER	1217461	1217461	1217461	1217506	1217506	1217506	1217506	1217506	1217506	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	
PERCENT SOLIDS (%)	82.7	82	84.5	85.1	86.5	97.2	84.9	96.8	90	85.7	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluoropentanoic acid	0.00060 U	0.00060 U	0.00059 U	0.0011 J	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorohexanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00066 J	0.0010 J	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluoroheptanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00070 J	0.00090 J	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorooctanoic acid (PFOA)	0.00060 U	0.00060 U	0.00059 U	0.0163	0.00058 U	0.00051 U	0.00058 U	0.00042 J	0.00048 J	0.00057 U	
Perfluorononanoic acid	0.00060 U	0.00060 U	0.00059 U	0.0011 J	0.00058 U	0.00051 U	0.00058 U	0.00032 J	0.00053 U	0.00057 U	
Perfluorodecanoic acid	0.00060 U	0.00060 U	0.00059 U	0.0014 J	0.00058 U	0.00051 U	0.00058 U	0.0021	0.00053 U	0.00057 U	
Perfluoroundecanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.0018	0.00053 U	0.00057 U	
Perfluorododecanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.0022	0.00053 U	0.00057 U	
Perfluorotridecanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorotetradecanoic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluoropentanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorohexanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00085 J	0.00051 U	0.00032 J	0.00050 U	0.00035 J	0.00057 U	
Perfluoroheptanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorooctanesulfonic acid (PFOS)	0.0032	0.00060 U	0.00059 U	0.0042	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.0012	
Perfluorononanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
Perfluorodecanesulfonic acid	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	
EtFOSAA	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
6:2 Fluorotelomer sulfonate	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	
8:2 Fluorotelomer sulfonate	0.00060 U	0.00060 U	0.00059 U	0.00058 U	0.00058 U	0.00051 U	0.00058 U	0.00050 U	0.00053 U	0.00057 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1G
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-108B	TXY-109A	TXY-109B	TXY-110A	TXY-110B	TXY-111A	TXY-111B	TXY-112A	TXY-112B	TXY-113A	
DATE	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/12/2021	11/12/2021	11/12/2021	
SGS WORK ORDER	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217506	1217506	1217506	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	
PERCENT SOLIDS (%)	85.9	98.4	87.9	96.3	80.5	97.7	85.8	97.6	83.9	97.2	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00072 J	
Perfluoropentanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.0027	0.0021	0.00051 U	0.00060 U	0.0028	
Perfluorohexanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.0048	0.00075 J	0.00051 U	0.00073 J	0.0034	
Perfluoroheptanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.0070	0.00073 J	0.00051 U	0.00060 U	0.0055	
Perfluorooctanoic acid (PFOA)	0.00058 U	0.00050 U	0.00055 U	0.00079 J	0.00061 U	0.0016	0.0027	0.0010	0.0017	0.0245	
Perfluorononanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00042 J	
Perfluorodecanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00045 J	
Perfluoroundecanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluorododecanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluorotridecanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluorotetradecanoic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluoropentanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluorohexanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.0019	0.00072 J	0.00051 U	0.00056 U	0.00048 J	0.0016	0.00041 J	
Perfluoroheptanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.0023	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.0012	0.00051 U	
Perfluorooctanesulfonic acid (PFOS)	0.00058 U	0.00050 U	0.00055 U	0.352	0.115	0.00051 U	0.00056 U	0.0167	0.00060 U	0.0025	
Perfluoronanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
Perfluorodecanesulfonic acid	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0010 U	0.0011 U	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0010 U	0.0012 U	0.0010 U	
EtFOSAA	0.0012 U	0.0010 U	0.0011 U	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0010 U	0.0012 U	0.0010 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
6:2 Fluorotelomer sulfonate	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	
8:2 Fluorotelomer sulfonate	0.00058 U	0.00050 U	0.00055 U	0.00050 U	0.00061 U	0.00051 U	0.00056 U	0.00051 U	0.00060 U	0.00051 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1H
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-113B	TXY-114A	TXY-114B	TXY-114C	TXY-115A	TXY-115B	TXY-115C	TXY-116A	TXY-116B	TXY-116C	
DATE	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	
SGS WORK ORDER	1217506	1217506	1217506	1217506	1217506	1217506	1217506	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	5 to 10	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	93.4	85.3	91.8	88	97.8	86.2	94.3	94.4	82.9	84.5	
PERFLUOROALKYLCARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluoropentanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00045 J	0.00029 J	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorohexanoic acid	0.00053 U	0.00056 U	0.00027 J	0.00057 U	0.00049 U	0.00056 J	0.00052 J	0.00051 U	0.00059 U	0.00059 U	
Perfluoroheptanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00042 J	0.00086 J	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorooctanoic acid (PFOA)	0.00085 J	0.00056 U	0.00054 U	0.00039 J	0.0011	0.00056 U	0.00053 U	0.00051 U	0.0011 J	0.00059 U	
Perfluorononanoic acid	0.0151	0.00056 U	0.00054 U	0.00057 U	0.00068 J	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorodecanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00071 J	0.00059 U	0.00059 U	
Perfluoroundecanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00050 J	0.00059 U	0.00059 U	
Perfluorododecanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00023	0.00059 U	0.00059 U	
Perfluorotridecanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorotetradecanoic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluoropentanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorohexanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00036 J	0.00059 U	
Perfluoroheptanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorooctanesulfonic acid (PFOS)	0.0448	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00075 J	0.00059 U	0.00059 U	
Perfluorononanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
Perfluorodecanesulfonic acid	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.00098 U	0.0011 U	0.0011 U	0.0010 U	0.0012 U	0.0012 U	
EtFOSAA	0.0011 U	0.0011 U	0.0011 U	0.0011 U	0.00098 U	0.0011 U	0.0011 U	0.0010 U	0.0012 U	0.0012 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
6:2 Fluorotelomer sulfonate	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	
8:2 Fluorotelomer sulfonate	0.00053 U	0.00056 U	0.00054 U	0.00057 U	0.00049 U	0.00056 U	0.00053 U	0.00051 U	0.00059 U	0.00059 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 11
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-118	TXY-119A	TXY-119B	TXY-119C	TXY-120A	TXY-120B	TXY-120C	TXY-121A	TXY-121B	TXY-121C	
DATE	11/8/2021	11/11/2021	11/11/2021	11/11/2021	9/18/2021	9/18/2021	9/18/2021	11/9/2021	11/9/2021	11/9/2021	
SGS WORK ORDER	1217416	1217461	1217461	1217461	1216187	1216187	1216187	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	78.5	97.2	83.7	75.8	98.3	82.1	73.6	89.3	88.2	88.5	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluoropentanoic acid	0.00047 J	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorohexanoic acid	0.00058 J	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.0029	0.00024	
Perfluoroheptanoic acid	0.00067 J	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.0013	0.00056 U	
Perfluorooctanoic acid (PFOA)	0.0085	0.00050 U	0.00053 J	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00070 J	0.00035 J	0.00056 U	
Perfluorononanoic acid	0.0046	0.00050 U	0.00074 J	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorodecanoic acid	0.00063 U	0.00050 U	0.00075 J	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluoroundecanoic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorododecanoic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorotridecanoic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorotetradecanoic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00033 J	
Perfluoropentanesulfonic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.0018	0.00076 J	
Perfluorohexanesulfonic acid	0.0059	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0023	0.0021	0.0018	0.0037	0.00056 U	
Perfluoroheptanesulfonic acid	0.00074 J	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorooctanesulfonic acid (PFOS)	0.0494	0.0095	0.0565	0.00066 U	0.0010 U	0.0325	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluoronanesulfonic acid	0.00063 U	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
Perfluorodecanesulfonic acid	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
PERFLUOROACTANESULFONAMIDES											
PFOSA	0.00063 U	0.00050 U	0.00060 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0013 U	0.0010 U	0.0012 U	0.0013 U	0.0025 U	0.0030 U	0.0033 U	0.0011 U	0.0011 U	0.0011 U	
EtFOSAA	0.0013 U	0.0010 U	0.0012 U	0.0013 U	0.0025 U	0.0030 U	0.0033 U	0.0011 U	0.0011 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.0032	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
6:2 Fluorotelomer sulfonate	0.00093 J	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	
8:2 Fluorotelomer sulfonate	0.00063 U	0.00050 U	0.00030 U	0.00066 U	0.0010 U	0.0012 U	0.0013 U	0.00056 U	0.00055 U	0.00056 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1J
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-121D	TXY-122A	TXY-122B	TXY-122C	TXY-122D	TXY-123A	TXY-123B	TXY-123C	TXY-123D	TXY-124A	
DATE	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	
SGS WORK ORDER	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	
PERCENT SOLIDS (%)	82.4	95.5	81.7	86.7	88.2	79	73.7	74.4	82.7	96.4	
PERFLUOROALKYL CARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluoropentanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluorohexanoic acid	0.0018	0.00071 J	0.0039	0.0010 J	0.00093 J	0.00033 J	0.0016	0.0016	0.0010 J	0.00052 U	
Perfluoroheptanoic acid	0.00059 U	0.00051 U	0.00035 J	0.00095 J	0.0014	0.00063 U	0.00066 U	0.00066 U	0.00033 J	0.00052 U	
Perfluorooctanoic acid (PFOA)	0.00059 U	0.00051 U	0.0133	0.00058 U	0.00048 J	0.00063 U	0.00067 J	0.00061 J	0.00034 J	0.00052 U	
Perfluorononanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluorodecanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluoroundecanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluorododecanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluorotridecanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluorotetradecanoic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
Perfluoropentanesulfonic acid	0.00052 J	0.00051 U	0.00059 U	0.0027	0.00081 J	0.00063 U	0.00066 U	0.00066 U	0.00053 J	0.00052 U	
Perfluorohexanesulfonic acid	0.00059 U	0.00032 J	0.0800	0.00029 J	0.0236	0.00063 U	0.0073	0.0060	0.0034	0.0030	
Perfluoroheptanesulfonic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.0021	0.0022	0.00060 U	0.00052 U	
Perfluorooctanesulfonic acid (PFOS)	0.00059 U	0.0085	0.00059 U	0.00058 U	0.0035	0.0030	0.00066 U	0.0223	0.00060 U	0.0181	
Perfluorononanesulfonic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00032 J	
Perfluorodecanesulfonic acid	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00052 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00066 U	0.00066 U	0.00060 U	0.00061 J	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0010 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0010 U	
EtFOSAA	0.0012 U	0.0010 U	0.0012 U	0.0012 U	0.0011 U	0.0013 U	0.0013 U	0.0013 U	0.0012 U	0.0010 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00063 U	0.00063 U	0.00060 U	0.00052 U	
6:2 Fluorotelomer sulfonate	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00063 U	0.00063 U	0.00060 U	0.00052 U	
8:2 Fluorotelomer sulfonate	0.00059 U	0.00051 U	0.00059 U	0.00058 U	0.00056 U	0.00063 U	0.00063 U	0.00063 U	0.00060 U	0.00052 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1K
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-124B	TXY-124C	TXY-124D	TXY-125A	TXY-125B	TXY-125C	TXY-125D	TXY-126A	TXY-126B	TXY-126C	
DATE	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/10/2021	11/10/2021	11/10/2021	
SGS WORK ORDER	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	92.8	82.1	79.2	97.8	85.3	85.1	82.7	95.7	83.2	82.4	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluoropentanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorohexanoic acid	0.00040 J	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluoroheptanoic acid	0.00040 J	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00035 J	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorooctanoic acid (PFOA)	0.0088	0.00043 J	0.00060 U	0.00051 U	0.00045 J	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.0014	
Perfluorononanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00050 J	
Perfluorodecanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00085 J	0.00058 U	
Perfluoroundecanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorododecanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorotridecanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorotetradecanoic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluoropentanesulfonic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
Perfluorohexanesulfonic acid	0.0259	0.0023	0.00060 U	0.00051 U	0.00053 J	0.00055 U	0.00040 J	0.00031 J	0.00032 J	0.0028	
Perfluoroheptanesulfonic acid	0.0017	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.0021	
Perfluorooctanesulfonic acid (PFOS)	0.00089 J	0.00059 U	0.00060 U	0.0019	0.00056 U	0.00055 U	0.00060 U	0.00052 J	0.0047	0.0301	
Perfluoronanesulfonic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00051 J	0.00058 U	
Perfluorodecanesulfonic acid	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.0074	0.0064	0.00058 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.00053 U	0.0012 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	
EtFOSAA	0.0011 U	0.0012 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.00058 U	
6:2 Fluorotelomer sulfonate	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00059 U	0.0013	
8:2 Fluorotelomer sulfonate	0.00053 U	0.00059 U	0.00060 U	0.00051 U	0.00056 U	0.00055 U	0.00060 U	0.00053 U	0.00070 J	0.00058 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1M
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
SAMPLE ID	TXY-130B	TXY-131A	TXY-131B	TXY-132A	TXY-132B	TXY-133A	TXY-133B	TXY-134A	TXY-134B	TXY-135A		
DATE	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021	9/18/2021		
SGS WORK ORDER	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187	1216187		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5	5 to 10	0 to 5		
PERCENT SOLIDS (%)	41.2	54.8	55.6	63.7	45.9	64.3	49	66.2	51.3	61.0		
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017	
Perfluorobutanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluoropentanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorohexanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluoroheptanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorooctanoic acid (PFOA)	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorononanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorodecanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluoroundecanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorododecanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorotridecanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorotetradecanoic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
PERFLUOROALKYL SULFONATES												0.0030
Perfluorobutanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluoropentanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorohexanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluoroheptanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorooctanesulfonic acid (PFOS)	0.0067	0.018	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0131	0.0016 U		
Perfluoronanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
Perfluorodecanesulfonic acid	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
PERFLUOROCTANESULFONAMIDES												
PFOSA	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS												
MeFOSAA	0.0060 U	0.0044 U	0.0044 U	0.0039 U	0.0051 U	0.0038 U	0.0051 U	0.0038 U	0.0047 U	0.0041 U		
EtFOSAA	0.0060 U	0.0044 U	0.0044 U	0.0039 U	0.0051 U	0.0038 U	0.0051 U	0.0038 U	0.0047 U	0.0041 U		
FLUOROTELOMER SULFONATES												
4:2 Fluorotelomer sulfonate	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
6:2 Fluorotelomer sulfonate	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		
8:2 Fluorotelomer sulfonate	0.0024 U	0.0018 U	0.0018 U	0.0015 U	0.0021 U	0.0015 U	0.0020 U	0.0015 U	0.0019 U	0.0016 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 1N
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TXY-135B	TXY-136A	TXY-136B	TXY-136C	TXY-137A	TXY-137B	TXY-137C	TXY-138A	TXY-138B	TXY-138C	
DATE	9/18/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	9/18/2021	9/18/2021	9/18/2021	
SGS WORK ORDER	1216187	1217461	1217461	1217461	1217461	1217461	1217461	1216187	1216187	1216187	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	5 to 10	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	51.8	88.2	89.0	83.8	88.5	83	81.6	97.5	79.6	80.2	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluoropentanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorohexanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00048 J	0.00051 J	0.00053 J	0.0010 U	0.0012 U	
Perfluoroheptanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorooctanoic acid (PFOA)	0.0019 U	0.00062 J	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00057 J	0.0010 U	0.0012 U	0.0012 U	
Perfluorononanoic acid	0.0019 U	0.00033 J	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorodecanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluoroundecanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorododecanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorotridecanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorotetradecanoic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluoropentanesulfonic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorohexanesulfonic acid	0.0019 U	0.0085	0.0039	0.0021	0.0038	0.0062	0.0074	0.0010 U	0.0012	0.0012 U	
Perfluoroheptanesulfonic acid	0.0019 U	0.00041 J	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.0072	0.0010 U	0.0012 U	0.0012 U	
Perfluorooctanesulfonic acid (PFOS)	0.0019 U	0.0625	0.0770	0.0064	0.0920	0.0650	0.0012	0.0010 U	0.0012 U	0.0012 U	
Perfluorononanesulfonic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00046 J	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
Perfluorodecanesulfonic acid	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.0020	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0048 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0025 U	0.0031 U	0.0030 U	
EtFOSAA	0.0048 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0025 U	0.0031 U	0.0030 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
6:2 Fluorotelomer sulfonate	0.0019 U	0.00057 U	0.00054 U	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	
8:2 Fluorotelomer sulfonate	0.0019 U	0.00057 U	0.00032 J	0.00059 U	0.00055 U	0.00059 U	0.00062 U	0.0010 U	0.0012 U	0.0012 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 10
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL										ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
SAMPLE ID	TXY-139A	TXY-139B	TXY-139C	TXY-140A	TXY-140B	TXY-141A	TXY-141B	TXY-141C	TXY-141D		
DATE	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021		
SGS WORK ORDER	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	0 to 5	5 to 10	10 to 15	15 to 20		
PERCENT SOLIDS (%)	81.1	77.2	78.8	85	90.3	79.4	90.3	87.6	82.2		
PERFLUOROALKYL CARBOXYLIC ACIDS										0.0017	
Perfluorobutanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluoropentanoic acid	0.00034 J	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorohexanoic acid	0.00039 J	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluoroheptanoic acid	0.00044 J	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorooctanoic acid (PFOA)	0.00040 J	0.00045 J	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorononanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorodecanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluoroundecanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorododecanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorotridecanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorotetradecanoic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
PERFLUOROALKYL SULFONATES											0.0030
Perfluorobutanesulfonic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluoropentanesulfonic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorohexanesulfonic acid	0.00099 J	0.00056 J	0.00043 J	0.00063 J	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluoroheptanesulfonic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorooctanesulfonic acid (PFOS)	0.0092	0.0080	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorononanesulfonic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
Perfluorodecanesulfonic acid	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
PERFLUOROCTANESULFONAMIDES											
PFOSA	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	<i>0.0012 U</i>	<i>0.0013 U</i>	<i>0.0013 U</i>	<i>0.0012 U</i>	<i>0.0011 U</i>	<i>0.0013 U</i>	<i>0.0011 U</i>	<i>0.0011 U</i>	<i>0.0012 U</i>		
EtFOSAA	<i>0.0012 U</i>	<i>0.0013 U</i>	<i>0.0013 U</i>	<i>0.0012 U</i>	<i>0.0011 U</i>	<i>0.0013 U</i>	<i>0.0011 U</i>	<i>0.0011 U</i>	<i>0.0012 U</i>		
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
6:2 Fluorotelomer sulfonate	<i>0.00062 U</i>	0.00091 J	0.0011 J	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		
8:2 Fluorotelomer sulfonate	<i>0.00062 U</i>	<i>0.00063 U</i>	<i>0.00065 U</i>	<i>0.00059 U</i>	<i>0.00055 U</i>	<i>0.00063 U</i>	<i>0.00056 U</i>	<i>0.00057 U</i>	<i>0.00060 U</i>		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2A
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TUG-58A	TUG-58B	TUG-58C	TUG-58D	TUG-59A	TUG-59B	TUG-59C	TUG-59D	TUG-60A	TUG-60B	
DATE	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	11/8/2021	
SGS WORK ORDER	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	
PERCENT SOLIDS (%)	86.4	74.2	76.3	88	82.2	83.4	81.9	80.7	82.8	82.9	
PERFLUOROALKYL CARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluoropentanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00030 J	0.00061 U	
Perfluorohexanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00068 J	0.00061 U	
Perfluoroheptanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.0013	0.00061 U	
Perfluorooctanoic acid (PFOA)	0.00058 U	0.00064 J	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00036 J	0.00087 J	0.00061 U	
Perfluorononanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorodecanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluoroundecanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorododecanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorotridecanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorotetradecanoic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluoropentanesulfonic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorohexanesulfonic acid	0.00058 U	0.00033 J	0.00062 U	0.00052 U	0.00072 J	0.00057 U	0.00058 U	0.00059 J	0.0026	0.00061 U	
Perfluoroheptanesulfonic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorooctanesulfonic acid (PFOS)	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.0012	0.0014	0.0017	0.00061 U	0.00057 U	0.00061 U	
Perfluorononanesulfonic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
Perfluorodecanesulfonic acid	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0013 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	
EtFOSAA	0.0012 U	0.0013 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
6:2 Fluorotelomer sulfonate	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	
8:2 Fluorotelomer sulfonate	0.00058 U	0.00064 U	0.00062 U	0.00052 U	0.00056 U	0.00057 U	0.00058 U	0.00061 U	0.00057 U	0.00061 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2B
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TUG-60C	TUG-61	TUG-62	TUG-63	TUG-64	TUG-65	TUG-66	TUG-68A	TUG-68B	TUG-68C	
DATE	11/8/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/11/2021	11/11/2021	11/11/2021	
SGS WORK ORDER	1217416	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	10 to 15	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	5 to 10	10 to 15	
PERCENT SOLIDS (%)	81.7	82.4	95.0	87.7	94.7	96.6	86.0	84.4	79.8	87.2	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00062 U	0.00059 U	0.00052 U	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluoropentanoic acid	0.00062 U	0.00066 J	0.00049 J	0.00046 J	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorohexanoic acid	0.00039 J	0.0017	0.00078 J	0.00041 J	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluoroheptanoic acid	0.00062 U	0.0015	0.00052 U	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00044 J	
Perfluorooctanoic acid (PFOA)	0.00062 U	0.0032	0.00047 J	0.00063 J	0.00053 U	0.00034 J	0.00057 U	0.00041 J	0.00055 J	0.0071	
Perfluorononanoic acid	0.00062 U	0.00076 J	0.00052 U	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00042 J	0.00061 U	0.00057 U	
Perfluorodecanoic acid	0.00062 U	0.00059 U	0.00088 J	0.00056 U	0.00037 J	0.0045	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluoroundecanoic acid	0.00062 U	0.00059 U	0.00068 J	0.00056 U	0.0013	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorododecanoic acid	0.00062 U	0.00059 U	0.0019	0.00056 U	0.00065 J	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorotridecanoic acid	0.00062 U	0.00059 U	0.00052 U	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorotetradecanoic acid	0.00062 U	0.00059 U	0.00040 J	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00062 U	0.00059 U	0.00066 J	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluoropentanesulfonic acid	0.00062 U	0.00032 J	0.00061 J	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorohexanesulfonic acid	0.00062 U	0.0102	0.0034	0.0011	0.00053 U	0.00051 U	0.00030 J	0.00059 J	0.00061 U	0.0074	
Perfluoroheptanesulfonic acid	0.00062 U	0.00059 U	0.00067 J	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorooctanesulfonic acid (PFOS)	0.00062 U	0.221	0.0367	0.201	0.0025	0.0418	0.0021	0.129	0.00061 U	0.00057 U	
Perfluorononanesulfonic acid	0.00062 U	0.00099 J	0.0018	0.00056 U	0.00053 U	0.0014	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
Perfluorodecanesulfonic acid	0.00062 U	0.00059 U	0.002	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
PERFLUOROACTANESULFONAMIDES											
PFOSA	0.00062 U	0.00059 U	0.0014	0.00056 U	0.00053 U	0.00051 U	0.00030 J	0.00059 U	0.00061 U	0.00057 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	
EtFOSAA	0.0012 U	0.0012 U	0.0010 U	0.0011 U	0.0011 U	0.0010 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00062 U	0.00059 U	0.00052 U	0.00056 U	0.00053 U	0.00051 U	0.00057 U	0.00059 U	0.00061 U	0.00057 U	
6:2 Fluorotelomer sulfonate	0.00062 U	0.0075	0.0092	0.0234	0.0017	0.00084 J	0.00057 U	0.00055 J	0.00041 J	0.00055 J	
8:2 Fluorotelomer sulfonate	0.00062 U	0.0089	0.035	0.0145	0.0027	0.0220	0.00057 U	0.0053	0.00061 U	0.00057 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2C
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TUG-69A	TUG-69B	TUG-70A	TUG-70B	TUG-70C	TUG-71A	TUG-71B	TUG-71C	TUG-72A	TUG-72B	
DATE	11/11/2021	11/11/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	
SGS WORK ORDER	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	5 to 10	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	10 to 15	0 to 5	5 to 10	
PERCENT SOLIDS (%)	96.8	82.9	83.5	85.5	87.2	89.2	84	82.3	88.4	82.0	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluoropentanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00045 J	
Perfluorohexanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00052 J	
Perfluoroheptanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorooctanoic acid (PFOA)	0.00052 U	0.00048 J	0.00060 U	0.00069 J	0.00057 U	0.00055 U	0.0043	0.0016	0.00054 U	0.00060 J	
Perfluorononanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorodecanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluoroundecanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorododecanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorotridecanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorotetradecanoic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluoropentanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorohexanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.0011 J	0.00057 U	0.00055 U	0.0046	0.0017	0.00035 J	0.0016	
Perfluoroheptanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.0017	
Perfluorooctanesulfonic acid (PFOS)	0.00085 J	0.0016	0.0020	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.0419	0.00061 U	
Perfluorononanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
Perfluorodecanesulfonic acid	0.00052 U	0.00058 U	0.00060 U	0.00058 U	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00052 U	0.00058 U	0.00060 U	0.00058 J	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0010 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	
EtFOSAA	0.0010 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0012 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00052 U	0.00058 U	0.00060 U	0.00058 J	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	
6:2 Fluorotelomer sulfonate	0.00052 U	0.00058 U	0.00060 U	0.00058 J	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.0021	0.00061 U	
8:2 Fluorotelomer sulfonate	0.00052 U	0.00058 U	0.00060 U	0.00058 J	0.00057 U	0.00055 U	0.00057 U	0.00060 U	0.00054 U	0.00061 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2D
 CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
SAMPLE ID	TUG-72C	TUG-72D	TUG-73A	TUG-73B	TUG-73C	TUG-73D	TUG-74A	TUG-74B	TUG-74C	TUG-74D		
DATE	11/9/2021	11/9/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021	11/10/2021		
SGS WORK ORDER	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217461		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20		
PERCENT SOLIDS (%)	87	82.9	96.1	77.7	78.5	92.4	83.9	83.9	78.9	87.2		
PERFLUOROALKYLCARBOXYLIC ACIDS											0.0017	
Perfluorobutanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluoropentanoic acid	0.00050 J	0.00086 J	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluorohexanoic acid	0.00054 J	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00045 J	0.00044 J	0.00052 J		
Perfluoroheptanoic acid	0.00057 U	0.00073 J	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00040 J		
Perfluorooctanoic acid (PFOA)	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00092 J	0.0019	0.00056 U		
Perfluorononanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluorodecanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluoroundecanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluorododecanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluorotridecanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluorotetradecanoic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
PERFLUOROALKYLSULFONATES												0.0030
Perfluorobutanesulfonic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00043 J	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
Perfluoropentanesulfonic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00046 J		
Perfluorohexanesulfonic acid	0.0195	0.00060 U	0.0045	0.0024	0.00064 U	0.00053 U	0.0017	0.0102	0.0024	0.0039		
Perfluoroheptanesulfonic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00046 J	0.0040	0.00093 J	0.00056 U		
Perfluorooctanesulfonic acid (PFOS)	0.00057 U	0.00060 U	0.101	0.00064 U	0.00064 U	0.00053 U	0.0846	0.647	0.00087 J	0.00056 U		
Perfluoronanesulfonic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.0109	0.00058 U	0.00063 U	0.00056 U		
Perfluorodecanesulfonic acid	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
PERFLUOROACTANESULFONAMIDES												
PFOSA	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.0084	0.00058 U	0.00063 U	0.00056 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS												
MeFOSAA	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U	0.0013 U	0.0011 U		
EtFOSAA	0.0011 U	0.0012 U	0.0010 U	0.0013 U	0.0013 U	0.0011 U	0.0012 U	0.0012 U	0.0013 U	0.0011 U		
FLUOROTELOMER SULFONATES												
4:2 Fluorotelomer sulfonate	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
6:2 Fluorotelomer sulfonate	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		
8:2 Fluorotelomer sulfonate	0.00057 U	0.00060 U	0.00052 U	0.00064 U	0.00064 U	0.00053 U	0.00058 U	0.00058 U	0.00063 U	0.00056 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2E
 CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TUG-75A	TUG-75B	TUG-75C	TUG-75D	TUG-76A	TUG-76B	TUG-76C	TUG-76D	TUG-77A	TUG-77B	
DATE	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/9/2021	
SGS WORK ORDER	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	1217416	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	10 to 15	15 to 20	0 to 5	5 to 10	
PERCENT SOLIDS (%)	96.5	83.4	85.1	83.2	81.7	81.6	93.2	83.5	80.9	83.7	
PERFLUOROALKYL CARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluoropentanoic acid	0.00050 U	0.00058 J	0.00059 J	0.00087 J	0.00081 J	0.00094 J	0.00037 J	0.0014	0.00061 U	0.00058 U	
Perfluorohexanoic acid	0.00050 U	0.00048 J	0.00061 J	0.00039 J	0.0011 J	0.0019	0.0027	0.0024	0.00050 J	0.00050 J	
Perfluoroheptanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00035 J	0.0054	0.0094	0.00061 U	0.00058 U	
Perfluorooctanoic acid (PFOA)	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00069 J	0.0164	0.0526	0.221	0.0037 J	0.0333	
Perfluorononanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00036 J	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluorodecanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluoroundecanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluorododecanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluorotridecanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluorotetradecanoic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluoropentanesulfonic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00036 J	0.0045	0.0017	0.00035 J	0.00036 J	
Perfluorohexanesulfonic acid	0.00028 J	0.00060 U	0.00058 U	0.00054 U	0.0014	0.0065	0.0347	0.0663	0.0198	0.0337	
Perfluoroheptanesulfonic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00080 J	0.0117	0.00052 U	0.00059 U	0.0022	0.0013	
Perfluorooctanesulfonic acid (PFOS)	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.0220	0.0887	0.00052 U	0.00059 U	0.0175	0.00058 U	
Perfluorononanesulfonic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
Perfluorodecanesulfonic acid	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
PERFLUOROACTANESULFONAMIDES											
PFOSA	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0010 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0010 U	0.0012 U	0.0012 U	
EtFOSAA	0.0010 U	0.0012 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0010 U	0.0012 U	0.0012 U	0.0012 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00061 U	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
6:2 Fluorotelomer sulfonate	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.0051	0.00052 U	0.00059 U	0.00061 U	0.00058 U	
8:2 Fluorotelomer sulfonate	0.00050 U	0.00060 U	0.00058 U	0.00054 U	0.00060 U	0.00066 J	0.00052 U	0.00059 U	0.00061 U	0.00058 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 2F
 CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	TUG-77C	TUG-78A	TUG-78B	TUG-79	TUG-80	TUG-81	TUG-82	TUG-83	TUG-84	TUG-85	
DATE	11/9/2021	11/9/2021	11/9/2021	11/9/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/10/2021	11/13/2021	
SGS WORK ORDER	1217416	1217416	1217416	1217416	1217506	1217506	1217506	1217506	1217461	1217506	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	10 to 15	0 to 5	5 to 10	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	
PERCENT SOLIDS (%)	84	90.4	83.6	92.6	83.1	93.7	80.5	83.1	88.4	87.3	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
Perfluoropentanoic acid	0.00058 U	0.00030 J	0.00041 J	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00097 J	0.00056 U	
Perfluorohexanoic acid	0.00038 J	0.00054 U	0.0022	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.0014	0.00056 U	
Perfluoroheptanoic acid	0.00058 U	0.00054 U	0.0014	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00084 J	0.00056 U	
Perfluorooctanoic acid (PFOA)	0.0263	0.00048 J	0.0571	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.0041	0.00056 U	
Perfluorononanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00085 J	0.00056 U	
Perfluorodecanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
Perfluoroundecanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
Perfluorododecanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
Perfluorotridecanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
Perfluorotetradecanoic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00041 J	0.00056 U	
Perfluoropentanesulfonic acid	0.00058 U	0.00054 U	0.00053 J	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00076 J	0.00056 U	
Perfluorohexanesulfonic acid	0.0482	0.0045	0.0325	0.00051 U	0.00060 U	0.00053 U	0.00042 J	0.00060 U	0.0177	0.00030 J	
Perfluoroheptanesulfonic acid	0.00058 U	0.00054 U	0.00037 J	0.00051 U	0.00060 U	0.00053 U	0.00042 J	0.00060 U	0.00059 J	0.00056 U	
Perfluorooctanesulfonic acid (PFOS)	0.00058 U	0.0370	0.00071 J	0.0109	0.0090	0.00092 J	0.0202	0.0277	0.253	0.00056 U	
Perfluorononanesulfonic acid	0.00058 U	0.0036	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00098 J	0.00056 U	
Perfluorodecanesulfonic acid	0.00058 U	0.00029 J	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
PERFLUORO OCTANESULFONAMIDES											
PFOSA	0.0058 U	0.00058 J	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0011 U	0.0011 U	0.0010 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	
EtFOSAA	0.0012 U	0.0011 U	0.0011 U	0.0010 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
6:2 Fluorotelomer sulfonate	0.00058 U	0.00054 U	0.0026	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	
8:2 Fluorotelomer sulfonate	0.00058 U	0.00054 U	0.00056 U	0.00051 U	0.00060 U	0.00053 U	0.00062 U	0.00060 U	0.00057 U	0.00056 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 3A
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											
SAMPLE ID	DEMO-2	DEMO-3	DEMO-4	DEMO-5	DEMO-6	DEMO-8	DEMO-9	DEMO-10	DEMO-11	ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
DATE	11/8/2021	11/8/2021	11/8/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021		
SGS WORK ORDER	1217416	1217416	1217416	1217506	1217506	1217506	1217506	1217506	1217506		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5		
PERCENT SOLIDS (%)	81.2	83	82.3	73.4	83	85.7	86.9	85.4	85.9		
PERFLUOROALKYL CARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U	0.0017	
Perfluoropentanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00033 J	0.00058 U	0.00058 U		
Perfluorohexanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00035 J	0.00058 U	0.00058 U		
Perfluoroheptanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00077 J	0.00058 U	0.00058 U		
Perfluorooctanoic acid (PFOA)	0.00047 J	0.00059 U	0.0025 J	0.00067 U	0.00060 U	0.00057 U	0.0029	0.00058 U	0.0017		
Perfluorononanoic acid	0.00066 J	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorodecanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluoroundecanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorododecanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorotridecanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorotetradecanoic acid	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
PERFLUOROALKYL SULFONATES											
Perfluorobutanesulfonic acid	0.00061 U	0.00059 U	0.00057 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		0.0030
Perfluoropentanesulfonic acid	0.00061 U	0.00059 U	0.00057 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorohexanesulfonic acid	0.00061 U	0.00059 U	0.00039 J	0.0012 J	0.00030 J	0.00057 U	0.0094	0.00058 U	0.0027		
Perfluoroheptanesulfonic acid	0.00061 U	0.00059 U	0.00057 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorooctanesulfonic acid (PFOS)	0.00065 J	0.00059 U	0.00057 U	0.0028	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorononanesulfonic acid	0.00061 U	0.00059 U	0.00057 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
Perfluorodecanesulfonic acid	0.00061 U	0.00059 U	0.00057 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0012 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U		
EtFOSAA	0.0012 U	0.0012 U	0.0011 U	0.0013 U	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U		
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
6:2 Fluorotelomer sulfonate	0.00061 U	0.00059 U	0.0029 U	0.0030	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		
8:2 Fluorotelomer sulfonate	0.00061 U	0.00059 U	0.0029 U	0.00067 U	0.00060 U	0.00057 U	0.00058 U	0.00058 U	0.00058 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 3B
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	DEMO-12	DEMO-13	DEMO-14	DEMO-15	DEMO-16	DEMO-17	DEMO-18	DEMO-19	DEMO-20	DEMO-21	
DATE	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/11/2021	9/18/2021	11/13/2021	
SGS WORK ORDER	1217506	1217506	1217506	1217506	1217506	1217506	1217506	1217461	1216187	1217506	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	
PERCENT SOLIDS (%)	87	95.8	86.9	83	86.4	87.2	81	84.6	97	87.6	
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluoropentanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00040 J	0.00062 U	0.00057 U	0.00099 U	0.00028 J	
Perfluorohexanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00062 J	0.00057 U	0.00040 J	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluoroheptanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00036 J	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorooctanoic acid (PFOA)	0.00057 U	0.00048 J	0.00035 J	0.0022	0.00057 U	0.0016	0.00062 U	0.00042 J	0.00099 U	0.00082 J	
Perfluorononanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorodecanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluoroundecanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorododecanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorotridecanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorotetradecanoic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00057 U	0.00052 U	0.00057 U	0.00036 J	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluoropentanesulfonic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorohexanesulfonic acid	0.00030 J	0.0011	0.00040 J	0.0039	0.00056 J	0.0044	0.00052 J	0.00094 J	0.00099 U	0.0018	
Perfluoroheptanesulfonic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00044 J	0.00059 J	0.00099 U	0.00039 J	
Perfluorooctanesulfonic acid (PFOS)	0.0018	0.0016	0.00057 U	0.0100	0.00057 U	0.00057 U	0.00062 U	0.0022	0.0133	0.00056 U	
Perfluoronanesulfonic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
Perfluorodecanesulfonic acid	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0011 U	0.0010 U	0.0010 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0025 U	0.0011 U	
EtFOSAA	0.0010 U	0.0010 U	0.0010 U	0.0012 U	0.0011 U	0.0011 U	0.0012 U	0.0011 U	0.0025 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00061 U	0.00057 U	0.00099 U	0.00056 U	
6:2 Fluorotelomer sulfonate	0.00057 U	0.00052 U	0.00057 U	0.00058 U	0.00057 U	0.00057 U	0.00033 J	0.00057 U	0.00099 U	0.00056 U	
8:2 Fluorotelomer sulfonate	0.00057 U	0.00052 U	0.00057 U	0.00033 J	0.00057 U	0.00057 U	0.00062 U	0.00057 U	0.00099 U	0.00056 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 3C
 CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	DEMO-22	DEMO-23	DEMO-24	DEMO-25	DEMO-26	DEMO-27	DEMO-28	DEMO-29	DEMO-30	DEMO-31	
DATE	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	11/13/2021	
SGS WORK ORDER	1217506	1217506	1217506	1217506	1217506	1217506	1217506	1217506	1217506	1217506	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	
PERCENT SOLIDS (%)	81.3	87.8	81.8	82.4	86.4	94	93.1	87.1	85.8		
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017
Perfluorobutanoic acid	0.00061 U	0.0011	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluoropentanoic acid	0.00061 U	0.0087	0.0015	0.00078 J	0.00072 J	0.00052 J	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorohexanoic acid	0.00061 U	0.0041	0.00071 J	0.00049 J	0.00063 J	0.00044 J	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluoroheptanoic acid	0.00061 U	0.0017	0.00034 J	0.0014	0.00031 J	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorooctanoic acid (PFOA)	0.00061 U	0.00052 J	0.0012	0.0030	0.00058 J	0.00067 J	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorononanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.0011 J	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorodecanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluoroundecanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorododecanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorotridecanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorotetradecanoic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluoropentanesulfonic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorohexanesulfonic acid	0.00061 U	0.0019	0.0010 J	0.0033	0.0018	0.0016	0.00048 J	0.00054 U	0.00055 U	0.00056 U	
Perfluoroheptanesulfonic acid	0.00061 U	0.00038 J	0.00036 J	0.0014	0.00060 U	0.00066 J	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorooctanesulfonic acid (PFOS)	0.00061 U	0.0023	0.00059 U	0.0015	0.0794	0.0064	0.00053 U	0.00054 U	0.00055 U	0.0034	
Perfluoronanesulfonic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
Perfluorodecanesulfonic acid	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
PERFLUOROACTANESULFONAMIDES											
PFOSA	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	
EtFOSAA	0.0012 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0011 U	0.0011 U	0.0011 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00060 U	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
6:2 Fluorotelomer sulfonate	0.00061 U	0.0784	0.00059 U	0.00059 U	0.00053 J	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	
8:2 Fluorotelomer sulfonate	0.00061 U	0.00057 U	0.00059 U	0.00059 U	0.00052 J	0.00058 U	0.00053 U	0.00054 U	0.00055 U	0.00056 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.

TABLE 4A
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)
SAMPLE ID	FD-1	FD-2	FD-3	FD-4	FD-5	FD-6	FD-7	FD-8	FD-9	FD-10	
DATE	9/18/2021	9/19/2021	9/19/2021	9/19/2021	9/19/2021	9/20/2021	11/8/2021	11/8/2021	11/8/2021	11/9/2021	
SGS WORK ORDER	1216187	1216187	1216187	1216187	1216187	1216187	1217416	1217416	1217416	1217416	
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
DEPTH (FT)	0 to 5	0 to 5	15 to 20	15 to 20	0 to 5	5 to 10	0 to 5	0 to 5	0 to 5	0 to 5	
PERCENT SOLIDS (%)	67.7	82.9	76.8	84.6	82.7	84.7	83	83.7	83.9	85.2	
PERFLUOROALKYL CARBOXYLIC ACIDS											
Perfluorobutanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluoropentanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00042 J	
Perfluorohexanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0021	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00053 J	
Perfluoroheptanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorooctanoic acid (PFOA)	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0018	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00046 J	
Perfluorononanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorodecanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluoroundecanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorododecanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorotridecanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorotetradecanoic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
PERFLUOROALKYLSULFONATES											
Perfluorobutanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluoropentanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00039 J	
Perfluorohexanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0120	0.0012 U	0.00060 U	0.00053 J	0.00042 J	0.00058	
Perfluoroheptanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0028	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
Perfluorooctanesulfonic acid (PFOS)	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0020	0.0012 U	0.00060 U	0.00092 J	0.00060 U	0.117	
Perfluorononanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00074 J	
Perfluorodecanesulfonic acid	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
PERFLUOROCTANESULFONAMIDES											
PFOSA	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
PERFLUOROACTANESULFONAMIDOACETIC ACIDS											
MeFOSAA	0.0037 U	0.0029 U	0.0031 U	0.0030 U	0.0030 U	0.0029 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	
EtFOSAA	0.0037 U	0.0029 U	0.0031 U	0.0030 U	0.0030 U	0.0029 U	0.0012 U	0.0011 U	0.0012 U	0.0011 U	
FLUOROTELOMER SULFONATES											
4:2 Fluorotelomer sulfonate	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
6:2 Fluorotelomer sulfonate	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	
8:2 Fluorotelomer sulfonate	0.0015 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.0012 U	0.00060 U	0.00054 U	0.00060 U	0.00057 U	

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.
- 8) FD-1 blind duplicate of TXY-133A; FD-2 blind duplicate of TXY-93A; FD-3 blind duplicate of TXY-95D; FD-4 blind duplicate of TXY-96D; FD-5 blind duplicate of TXY-100A; FD-6 blind duplicate of TXY-98B; FD-7 blind duplicate of TXY-89A; FD-8 blind duplicate of TUG-59A; FD-9 blind duplicate of TXY-141A; FD-10 blind duplicate of TUG-78A; FD-11 blind duplicate of TXY-123A; FD-12 blind duplicate of TUG-70A; FD-12** blind duplicate of TXY-127A; FD-13 blind duplicate of TUG-61; FD-14 blind duplicate of TUG-69A; FD-15 blind duplicate of TXY-119B; FD-16 blind duplicate of TXY-103A; FD-17 blind duplicate of TXY-104A; FD-18 blind duplicate of TXY-115A; FD-19 blind duplicate of TXY-112A; FD-20 blind duplicate of TXY-101; FD-21 blind duplicate of DEMO-5; FD-22 blind duplicate of TXY-92; FD-23 blind duplicate of DEMO-14; FD-24 blind duplicate of DEMO-21; FD-25 blind duplicate of DEMO-2

TABLE 4B
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL											ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
SAMPLE ID	FD-11	FD-12	FD-12**	FD-13	FD-14	FD-15	FD-16	FD-17	FD-18	FD-19		
DATE	11/9/2021	11/9/2021	11/10/2021	11/10/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/11/2021	11/12/2021		
SGS WORK ORDER	1217416	1217461	1217461	1217461	1217461	1217461	1217461	1217461	1217506	1217506		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	5 to 10	0 to 5	0 to 5	0 to 5	0 to 5		
PERCENT SOLIDS (%)	72.4	82.3	82.2	86.5	97.1	95.3	85.2	82.4	97.5	96.7		
PERFLUOROALKYL CARBOXYLIC ACIDS											0.0017	
Perfluorobutanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluoropentanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00050 J	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00036 J	0.00051 U		
Perfluorohexanoic acid	0.00067 U	0.00061 U	0.00061 U	0.0015	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00028 J	0.00051 U		
Perfluoroheptanoic acid	0.00067 U	0.00061 U	0.00061 U	0.002	0.00051 U	0.00052 U	0.00043 J	0.00060 U	0.00034 J	0.00051 U		
Perfluorooctanoic acid (PFOA)	0.00067 U	0.00061 U	0.00061 U	0.0046	0.00051 U	0.00052 U	0.0064	0.00060 U	0.00051 J	0.0015		
Perfluorononanoic acid	0.00067 U	0.00061 U	0.00061 U	0.0016	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00041 J	0.00051 U		
Perfluorodecanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00070 J	0.00058 U	0.00060 U	0.00051 U	0.00028 J		
Perfluoroundecanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00060 J	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluorododecanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.0022	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluorotridecanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluorotetradecanoic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
PERFLUOROALKYL SULFONATES												0.0030
Perfluorobutanesulfonic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluoropentanesulfonic acid	0.00067 U	0.00061 U	0.00061 U	0.00079 J	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluorohexanesulfonic acid	0.00069 J	0.00061 U	0.0012	0.0134	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00066 J		
Perfluoroheptanesulfonic acid	0.00067 U	0.00061 U	0.00061 U	0.00047 J	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
Perfluorooctanesulfonic acid (PFOS)	0.0458	0.0018	0.0192	0.453	0.00096 J	0.00083 J	0.0025	0.0030	0.00051 U	0.0156		
Perfluorononanesulfonic acid	0.00067 U	0.00061 U	0.00061 U	0.0019	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00035 J		
Perfluorodecanesulfonic acid	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
PERFLUOROACTANESULFONAMIDES												
PFOSA	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS												
MeFOSAA	0.0013 U	0.0012 U	0.0012 U	0.0011 U	0.0010 U	0.0010 U	0.0012 U	0.0012 U	0.0010 U	0.0010 U		
EtFOSAA	0.0013 U	0.0012 U	0.0012 U	0.0011 U	0.0010 U	0.0010 U	0.0012 U	0.0012 U	0.0010 U	0.0010 U		
FLUOROTELOMER SULFONATES												
4:2 Fluorotelomer sulfonate	0.00067 U	0.00061 U	0.00061 U	0.00056 U	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
6:2 Fluorotelomer sulfonate	0.00067 U	0.00061 U	0.00061 U	0.0108	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		
8:2 Fluorotelomer sulfonate	0.00067 U	0.00061 U	0.00061 U	0.0141	0.00051 U	0.00052 U	0.00058 U	0.00060 U	0.00051 U	0.00051 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
- 3) **Bold** font indicates the analyte was detected above the laboratory Detection Limit (DL).
- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.
- 8) FD-1 blind duplicate of TXY-133A; FD-2 blind duplicate of TXY-93A; FD-3 blind duplicate of TXY-95D; FD-4 blind duplicate of TXY-96D; FD-5 blind duplicate of TXY-100A; FD-6 blind duplicate of TXY-98B; FD-7 blind duplicate of TXY-89A; FD-8 blind duplicate of TUG-59A; FD-9 blind duplicate of TXY-141A; FD-10 blind duplicate of TUG-78A; FD-11 blind duplicate of TXY-123A; FD-12 blind duplicate of TUG-70A; FD-12** blind duplicate of TXY-127A; FD-13 blind duplicate of TUG-61; FD-14 blind duplicate of TUG-69A; FD-15 blind duplicate of TXY-119B; FD-16 blind duplicate of TXY-103A; FD-17 blind duplicate of TXY-104A; FD-18 blind duplicate of TXY-115A; FD-19 blind duplicate of TXY-112A; FD-20 blind duplicate of TXY-101; FD-21 blind duplicate of DEMO-5; FD-22 blind duplicate of TXY-92; FD-23 blind duplicate of DEMO-14; FD-24 blind duplicate of DEMO-21; FD-25 blind duplicate of DEMO-2

TABLE 4C
CRW ENGINEERING GROUP, LLC
CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
PFAS CONCENTRATIONS IN SOIL

PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) CONCENTRATIONS IN SOIL									
SAMPLE ID	FD-20	FD-21	FD-22	FD-23	FD-24	FD-25	FD-26	ADEC TABLE B1 METHOD 2 MIGRATION TO GROUNDWATER CLEANUP LEVELS (mg/Kg)	
DATE	11/12/2021	11/12/2021	11/12/2021	11/12/2021	11/13/2021	11/13/2021	11/13/2021		
SGS WORK ORDER	1217506	1217506	1217506	1217506	1217506	1217506	1217506		
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg		
DEPTH (FT)	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5	0 to 5		
PERCENT SOLIDS (%)	97.4	80.8	96.5	86.7	85.7	83	84.6		
PERFLUOROALKYLCARBOXYLIC ACIDS									
Perfluorobutanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U	0.0017	
Perfluoropentanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00079 J	0.00059 U		
Perfluorohexanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00064 J	0.00059 U		
Perfluoroheptanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00035 J	0.00059 U		
Perfluorooctanoic acid (PFOA)	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00079 J	0.00059 J	0.00059 U		
Perfluorononanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00069 J	0.00059 U		
Perfluorodecanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluoroundecanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluorododecanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluorotridecanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluorotetradecanoic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
PERFLUOROALKYLSULFONATES									
Perfluorobutanesulfonic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		0.0030
Perfluoropentanesulfonic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluorohexanesulfonic acid	0.00051 U	0.0010 J	0.00051 U	0.00032 J	0.0019	0.0020	0.00059 U		
Perfluoroheptanesulfonic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00081 J	0.00059 U	0.00059 U		
Perfluorooctanesulfonic acid (PFOS)	0.00051 U	0.0025	0.00051 U	0.00057 U	0.00058 U	0.146	0.0023		
Perfluorononanesulfonic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
Perfluorodecanesulfonic acid	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
PERFLUOROCTANESULFONAMIDES									
PFOSA	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
PERFLUOROACTANESULFONAMIDOACETIC ACIDS									
MeFOSAA	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U		
EtFOSAA	0.0010 U	0.0012 U	0.0010 U	0.0011 U	0.0012 U	0.0012 U	0.0012 U		
FLUOROTELOMER SULFONATES									
4:2 Fluorotelomer sulfonate	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.00059 U	0.00059 U		
6:2 Fluorotelomer sulfonate	0.00051 U	0.0026	0.00051 U	0.00057 U	0.00072 J	0.00046 J	0.00059 U		
8:2 Fluorotelomer sulfonate	0.00051 U	0.00061 U	0.00051 U	0.00057 U	0.00058 U	0.0028	0.00059 U		

NOTES:

- 1) PFAS analysis by EPA 537M
- 2) "mg/Kg" means "milligrams per kilogram".
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- 4) *Italicized* font with a U-qualifier indicates the analyte was not detected above the DL; the value presented is the limit of detection.
- 5) J flag indicates the result is an estimated value.
- 6) Yellow highlighting indicates the analyte was detected above the ADEC Table B1 Cleanup Level.
- 7) Blue highlighting indicates the analyte was non-detected but the limit of detection was above the ADEC Table B1 Cleanup Level.
- 8) FD-1 blind duplicate of TXY-133A; FD-2 blind duplicate of TXY-93A; FD-3 blind duplicate of TXY-95D; FD-4 blind duplicate of TXY-96D; FD-5 blind duplicate of TXY-100A; FD-6 blind duplicate of TXY-98B; FD-7 blind duplicate of TXY-89A; FD-8 blind duplicate of TUG-59A; FD-9 blind duplicate of TXY-141A; FD-10 blind duplicate of TUG-78A; FD-11 blind duplicate of TXY-123A; FD-12 blind duplicate of TUG-70A; FD-12** blind duplicate of TXY-127A; FD-13 blind duplicate of TUG-61; FD-14 blind duplicate of TUG-69A; FD-15 blind duplicate of TXY-119B; FD-16 blind duplicate of TXY-103A; FD-17 blind duplicate of TXY-104A; FD-18 blind duplicate of TXY-115A; FD-19 blind duplicate of TXY-112A; FD-20 blind duplicate of TXY-106A; FD-21 blind duplicate of DEMO-5; FD-22 blind duplicate of TXY-92; FD-23 blind duplicate of DEMO-14; FD-24 blind duplicate of DEMO-21; FD-25 blind duplicate of DEMO-25; FD-26 blind duplicate of TUG-80

TABLE 5
 CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 RELATIVE PERCENT DIFFERENCE (RPD) CALCULATIONS

	FD-1	TXY-133A	RPD (%)	FD-2	TXY-93A	RPD (%)	FD-3	TXY-95D	RPD (%)	FD-4	TXY-96D	RPD (%)	FD-5	TXY-100A	RPD (%)	FD-6	TXY-98B	RPD (%)	FD-7	TXY-89A	RPD (%)	FD-8	TUG-59A	RPD (%)	FD-9	TXY-141A	RPD (%)	FD-10	TUG-78A	RPD (%)
PFOA	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	0.0018	0.002	10.52632	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	0.00046	0.00048	4.255319
PFOS	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	0.002	0.0054	91.89189	ND	ND	#VALUE!	ND	ND	#VALUE!	0.00092	0.0012	26.41509	ND	ND	#VALUE!	0.117	0.037	103.8961

	FD-11	TXY-123A	RPD (%)	FD-12	TUG-70A	RPD (%)	FD-13	TUG-61	RPD (%)	FD-14	TUG-69A	RPD (%)	FD-15	TXY-119B	RPD (%)	FD-16	TXY-103A	RPD (%)	FD-17	TXY-104A	RPD (%)	FD-18	TXY-115A	RPD (%)	FD-19	TXY-112A	RPD (%)	FD-20	TXY-106A	RPD (%)
PFOA	ND	ND	#VALUE!	ND	ND	#VALUE!	0.0046	0.0032	35.89744	ND	ND	#VALUE!	ND	0.00053	#VALUE!	0.0064	0.0164	87.7193	ND	ND	#VALUE!	0.00051	0.0011	73.29193	0.0015	0.001	40	ND	ND	#VALUE!
PFOS	0.0458	0.003	175.4098	0.0018	0.002	10.52632	0.453	0.221	68.84273	0.00096	0.00085	12.1547	0.00083	0.0565	194.209	0.0025	0.0036	36.06557	0.003	0.0032	6.451613	ND	ND	#VALUE!	0.0156	0.0167	6.811146	ND	ND	#VALUE!

	FD-21	DEMO-5	RPD (%)	FD-22	TXY-92	RPD (%)	FD-23	DEMO-14	RPD (%)	FD-24	DEMO-21	RPD (%)	FD-25	DEMO-25	RPD (%)	FD-26	TUG-80	RPD (%)	FD-12**	TXY-127A	RPD (%)
PFOA	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	0.00035	#VALUE!	0.00079	0.00082	3.726708	0.00059	0.003	134.2618	ND	ND	#VALUE!	ND	0.0011	#VALUE!
PFOS	0.0025	0.0028	11.32075	ND	ND	#VALUE!	ND	ND	#VALUE!	ND	ND	#VALUE!	0.146	0.0015	195.9322	0.0023	0.009	118.5841	0.0192	0.0832	125

Appendix C – Photo Pages



Typical drilling setup along taxiway



Drilling along the proposed Tug Road – looking west



Drill rig setup along proposed Tug Road



Drill rig, survey equipment and support vehicles along proposed Tug Road
– looking west



Typical soil boring installation



Drilling along Side Slope



Sampling near former Kulis ANG Hanger



Typical drilling - looking east



Soil boring near proposed South Tug Road



Typical drilling setup



Typical drilling setup along Taxiway



Typical winter drilling conditions

Appendix D – SGS North America Inc. Laboratory Soil Sample Data Reports

SGS Work Order 1216187

SGS Work Order 1217416

SGS Work Order 1217461

SGS Work Order 1217506



Laboratory Report of Analysis

To: Restoration Science & Eng
911 W. 8th Ave., #100
Anchorage, AK 99501
(907)278-1023

Report Number: **1216187**

Client Project: **CRW ANC Taxiway Z East**

Dear Lucas Gamble,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Chuck Homestead
Project Manager
Charles.Homestead@sgs.com

Date

Case Narrative

SGS Client: **Restoration Science & Eng**
SGS Project: **1216187**
Project Name/Site: **CRW ANC Taxiway Z East**
Project Contact: **Lucus Gamble**

Refer to sample receipt form for information on sample condition.

TXY-87B (1216187001) PS

EPA 537 PFAS- Confirm List were analyzed by SGS of Orlando, FL.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/18/2021 9:03:18AM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TXY-87B	1216187001	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-87A	1216187002	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
Canceled TXY-87A1	1216187003	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-87C	1216187004	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-133A	1216187005	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
FD-1	1216187006	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-133B	1216187007	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-132A	1216187008	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-132B	1216187009	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-131A	1216187010	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-131B	1216187011	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-134A	1216187012	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-134B	1216187013	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-130A	1216187014	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-130B	1216187015	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-129A	1216187016	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-129B	1216187017	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-128A	1216187018	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-128B	1216187019	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-135A	1216187020	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-135B	1216187021	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
DEMO-20	1216187022	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-138A	1216187023	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-138B	1216187024	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-138C	1216187025	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-120A	1216187026	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-120B	1216187027	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-120C	1216187028	09/18/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-93A	1216187029	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
FD-2	1216187030	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-93B	1216187031	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-93C	1216187032	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-94A	1216187033	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-94B	1216187034	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-94C	1216187035	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-95A	1216187036	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-95B	1216187037	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-95C	1216187038	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-95D	1216187039	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)

Print Date: 10/18/2021 9:03:21AM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
FD-3	1216187040	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-96A	1216187041	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-96B	1216187042	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-96C	1216187043	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-96D	1216187044	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
FD-4	1216187045	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-97A	1216187046	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-97B	1216187047	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-97C	1216187048	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-97D	1216187049	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-100A	1216187050	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
FD-5	1216187051	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-100B	1216187052	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-100C	1216187053	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-100D	1216187054	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-100E	1216187055	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-99A	1216187056	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-99B	1216187057	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-99C	1216187058	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-99D	1216187059	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-98A	1216187060	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-98B	1216187061	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
FD-6	1216187062	09/20/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-98C	1216187063	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)
TXY-98D	1216187064	09/19/2021	09/20/2021	Solid/Soil (Wet Weight)

Method

Method Description

Print Date: 10/18/2021 9:03:21AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

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CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>1</u> of <u>7</u>																																																																																																																																																																																																																																							
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Relinquished By: (4) Date: 09/20/21 Time: 1507 Received For Laboratory By:					Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery []																																																																																																																																																																																																																																												

<http://www.sgs.com/terms-and-conditions>



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1216187



CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.							
CONTACT: Lucus Gamble PHONE #: (907) 278-1023					Section 3		Page <u>2</u> of <u>7</u>					
PROJECT NAME: CRW ANC Taxiway Z East PROJECT/ PWSID/ PERMIT#: 21-2369					# C O N T A I N E R S	Comp Grab MI (Multi-incremental)	0 - 6° C.			Analysis* NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS		
REPORTS TO: L. Gamble E-MAIL: Lgamble@restorsci.com							PFAS, EPA Method 535M Full 24				REMARKS/LOC ID	
INVOICE TO: RSE, LLC QUOTE #: 21-2369												
PROFILE #: P.O. #: 21-2369												
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE								
(11A)	TXY-131B	9/18/2021	1342	Soil	1	Grab	X					
(12A)	TXY-134A	9/18/2021	1402	Soil	1	Grab	X					
(13A)	TXY-134B	9/18/2021	1408	Soil	1	Grab	X					
(14A)	TXY-130A	9/18/2021	1418	Soil	1	Grab	X					
(15A)	TXY-130B	9/18/2021	1422	Soil	1	Grab	X					
(16A)	TXY-129A	9/18/2021	1432	Soil	1	Grab	X					
(17A)	TXY-129B	9/18/2021	1438	Soil	1	Grab	X					
(18A)	TXY-128A	9/18/2021	1503	Soil	1	Grab	X					
(19A)	TXY-128B	9/18/2021	1509	Soil	1	Grab	X					
(20A)	TXY-135A	9/18/2021	1523	Soil	1	Grab	X					
Relinquished By: (1) Date: 9/20 Time: 1430 Received By:					Section 4		DOD Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Data Deliverable Requirements: ADEC			
Relinquished By: (2) Date: Time: Received By:							Cooler ID: 9/20/21		Requested Turnaround Time and/or Special Instructions: Regular			
Relinquished By: (3) Date: Time: Received By:							Temp Blank °C: 3.8 160 or Ambient []				Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT	
Relinquished By: (4) Date: 09/20/21 Time: 1507 Received For Laboratory By:							Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery []					



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W

CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.								Page <u>3</u> of <u>7</u>			
CONTACT: Lucus Gamble					PHONE #: (907) 278-1023		Section 3									
PROJECT NAME: CRW ANC Taxiway Z East					PROJECT/ PWSID/ PERMIT#: 21-2369		# C O N T A I N E R S	Comp Grab MI (Multi-incremental)	0 - 6° C.						NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
REPORTS TO: L. Gamble					E-MAIL: Lgamble@restorsci.com				Analysis*							
INVOICE TO: RSE, LLC					QUOTE #: 21-2369											
					P.O. #: 21-2369											
RESERVED for lab use												REMARKS/LOC ID				
SAMPLE IDENTIFICATION		DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE												
21A TXY-135B		9/18/2021	1530	Soil	1	Grab	X									
22A DEMO-20		9/18/2021	1600	Soil	1	Grab	X									
23A TXY-138A		9/18/2021	1610	Soil	1	Grab	X									
24A TXY-138B		9/18/2021	1615	Soil	1	Grab	X									
25A TXY-138C		9/18/2021	1620	Soil	1	Grab	X									
26A TXY-120A		9/18/2021	1635	Soil	1	Grab	X									
27A TXY-120B		9/18/2021	1640	Soil	1	Grab	X									
28A TXY-120C		9/18/2021	1650	Soil	1	Grab	X									
29A TXY-93A		9/19/2021	910	Soil	1	Grab	X									
30A FD-2		9/19/2021	911	Soil	1	Grab	X									
Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes <input checked="" type="radio"/> No <input type="radio"/>		Data Deliverable Requirements:						
		9/20	1430					Cooler ID: 9/20/21		ADEC						
Relinquished By: (2)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:										
						Regular										
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)								
						7.8 00		INTACT <input checked="" type="radio"/> BROKEN <input type="radio"/> ABSENT <input type="radio"/>								
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery <input type="checkbox"/>										
		09/20/21	1507													

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CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>4</u> of <u>7</u>										
CONTACT: Lucus Gamble			PHONE #: (907) 278-1023		Section 3															
Section 1	PROJECT NAME: CRW ANC Taxiway Z East		PROJECT/PWSID/PERMIT#: 21-2369			# C O N T A I N E R S	0-6°C					NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS								
	REPORTS TO: L. Gamble		E-MAIL: lgamble@restorsci.com				Analysis*													
	INVOICE TO: RSE, LLC		QUOTE #: 21-2369				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 10%; font-size: 8px;">PFAS, EPA Method 535M Full 24</td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> </tr> </table>						PFAS, EPA Method 535M Full 24							
PFAS, EPA Method 535M Full 24																				
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE		Comp Grab MI (Multi-incremental)						REMARKS/LOC ID							
	(31A)	TXY-93B	9/19/2021	915	Soil	1	Grab	X												
	(32A)	TXY-93C	9/19/2021	917	Soil	1	Grab	X												
	(33A)	TXY-94A	9/19/2021	944	Soil	1	Grab	X												
	(34A)	TXY-94B	9/19/2021	948	Soil	1	Grab	X												
	(35A)	TXY-94C	9/19/2021	952	Soil	1	Grab	X												
	(36A)	TXY-95A	9/19/2021	1001	Soil	1	Grab	X												
	(37A)	TXY-95B	9/19/2021	1005	Soil	1	Grab	X												
	(38A)	TXY-95C	9/19/2021	1012	Soil	1	Grab	X												
	(39A)	TXY-95D	9/19/2021	1017	Soil	1	Grab	X												
(40A)	FD-3	9/19/2021	1018	Soil	1	Grab	X													
Section 5	Relinquished By: (1)		Date: 9/20	Time: 1430	Received By:		Section 4		DOD Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Data Deliverable Requirements: ADEC									
	Relinquished By: (2)		Date:	Time:	Received By:		Requested Turnaround Time and/or Special Instructions: Regular													
	Relinquished By: (3)		Date:	Time:	Received By:		Temp Blank °C: 7.8 060 or Ambient []					Chain of Custody Seal: (Circle) INTACT BROKEN <input checked="" type="checkbox"/> ABSENT								
	Relinquished By: (4)		Date: 09/20/21	Time: 1507	Received For Laboratory By:		Delivery Method: Hand Delivery [] Commercial Delivery []													

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CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>5</u> of <u>7</u>				
CONTACT: Lucus Gamble					PHONE #: (907) 278-1023		Section 3							
PROJECT NAME: CRW ANC Taxiway Z East					PROJECT/ PWSID/ PERMIT#: 21-2369		# CONTAINERS	0-8°C				NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS		
REPORTS TO: L. Gamble					E-MAIL: Lgamble@restorsci.com			Analysis*						
INVOICE TO: RSE, LLC					QUOTE #: 21-2369			Comp Grab MI (Multi-incremental)	PFAS, EPA Method 555M Full 24					
RESERVED for lab use					SAMPLE IDENTIFICATION					DATE mm/dd/yy			TIME HH:MM	
											REMARKS/LOC ID			
(41A)					TXY-96A		9/19/2021		1024		Soil			
(42A)					TXY-96B		9/19/2021		1032		Soil			
(43A)					TXY-96C		9/19/2021		1036		Soil			
(44A)					TXY-96D		9/19/2021		1047		Soil			
(45A)					FD-4		9/19/2021		1048		Soil			
(46A)					TXY-97A		9/19/2021		1055		Soil			
(47A)					TXY-97B		9/19/2021		1103		Soil			
(48A)					TXY-97C		9/19/2021		1110		Soil			
(49A)					TXY-97D		9/19/2021		1121		Soil			
(50A)					TXY-100A		9/19/2021		1303		Soil			
Relinquished By: (1) <i>[Signature]</i>					Date 9/20		Time 1430		Received By: <i>[Signature]</i>			Section 4 DOD Project? Yes <input type="radio"/> No <input checked="" type="radio"/> Data Deliverable Requirements: ADEC		
Relinquished By: (2)					Date		Time		Requested Turnaround Time and/or Special Instructions: Regular					
Relinquished By: (3)					Date		Time		Temp Blank °C: 3.8 D60					
Relinquished By: (4) <i>[Signature]</i>					Date 09/20/21		Time 1507		Received For Laboratory By: <i>[Signature]</i>			Chain of Custody Seal: (Circle) INTACT BROKEN <input checked="" type="radio"/> ABSENT		
					Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery <input type="checkbox"/>									

MA 9-21-21

Section 1

Section 2

Section 5



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JM

Section 1	CLIENT: Restoration Science					Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.					Page <u>6</u> of <u>7</u>											
	CONTACT: Lucus Gamble			PHONE #: (907) 278-1023		Section 3																
	PROJECT NAME: CRW ANC Taxiway Z East		PROJECT/ PWSID/ PERMIT#: 21-2369			CONTAINERS	Comp Grab MI (Multi-incremental)	0-6°C					NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS									
	REPORTS TO: L. Gamble		E-MAIL: <u>Lgamble@restorsci.com</u>					Analysis*														
INVOICE TO: RSE, LLC		QUOTE #: P.O. #: 21-2369																				
Section 2	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE			PFAS, EPA Method 535M Full 24													REMARKS/LOC ID	
	(S1A)	FD-5	9/19/2021	1304	Soil	1	Grab	X														
	(S2A)	TXY-100B	9/19/2021	1308	Soil	1	Grab	X														
	(S3A)	TXY-100C	9/19/2021	1318	Soil	1	Grab	X														
	(S4A)	TXY-100D	9/19/2021	1328	Soil	1	Grab	X														
	(S5A)	TXY-100E	9/19/2021	1333	Soil	1	Grab	X														
	(S6A)	TXY-99A	9/19/2021	1338	Soil	1	Grab	X														
	(S7A)	TXY-99B	9/19/2021	1343	Soil	1	Grab	X														
	(S8A)	TXY-99C	9/19/2021	1347	Soil	1	Grab	X														
	(S9A)	TXY-99D	9/19/2021	1412	Soil	1	Grab	X														
(60A)	TXY-98A	9/19/2021	1420	Soil	1	Grab	X															
Section 5	Relinquished By: (1)		Date	Time	Received By:		Section 4		DOD Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Data Deliverable Requirements:											
			9/20	1430			Cooler ID: 9/20/21		ADEC													
	Relinquished By: (2)		Date	Time	Received By:		Requested Turnaround Time and/or Special Instructions:															
							Regular															
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)														
						3.8 060		INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input checked="" type="checkbox"/>														
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		Delivery Method: Hand Delivery <input checked="" type="checkbox"/> Commercial Delivery []														
		09/20/21	1607																			

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SGS North America Inc.
CHAIN OF CUSTODY RECORD

1216187



Form containing client information (Restoration Science), contact details (Lucus Gamble), project name (CRW ANC Taxiway Z East), and a table of sample identifications (TXY-98B, FD-6, TXY-98C, TXY-98D) with columns for date, time, matrix code, and analysis results.

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e-Sample Receipt Form

SGS Workorder #:

1216187



1 2 1 6 1 8 7

Review Criteria		Condition (Yes, No, N/A)	Exceptions Noted below	
Chain of Custody / Temperature Requirements			<input checked="" type="checkbox"/> Yes	Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	<input type="checkbox"/> N/A	Absent		
COC accompanied samples?	<input checked="" type="checkbox"/> Yes			
DOD: Were samples received in COC corresponding coolers?	<input type="checkbox"/> N/A			
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required				
Temperature blank compliant* (i.e., 0-6 °C after CF)?	<input checked="" type="checkbox"/> Yes	Cooler ID:	9/20/2021	@ <input checked="" type="checkbox"/> 3.8 °C Therm. ID: D60
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.	<input type="checkbox"/>	Cooler ID:		@ <input type="checkbox"/> °C Therm. ID:
	<input type="checkbox"/>	Cooler ID:		@ <input type="checkbox"/> °C Therm. ID:
	<input type="checkbox"/>	Cooler ID:		@ <input type="checkbox"/> °C Therm. ID:
	<input type="checkbox"/>	Cooler ID:		@ <input type="checkbox"/> °C Therm. ID:
*if >6°C, were samples collected <8 hours ago?	<input type="checkbox"/> N/A			
If <0°C, were sample containers ice free?	<input type="checkbox"/> N/A			
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.				
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.		
Were samples received within holding time?	<input checked="" type="checkbox"/> Yes			
Do samples match COC** (i.e., sample IDs, dates/times collected)?	<input checked="" type="checkbox"/> Yes			
**Note: If times differ <1hr, record details & login per COC.				
***Note: If sample information on containers differs from COC, SGS will default to COC information				
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	<input checked="" type="checkbox"/> Yes			
Were proper containers (type/mass/volume/preservative***) used?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A	***Exemption permitted for metals (e.g, 200.8/6020B).	
Volatile / LL-Hg Requirements				
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<input type="checkbox"/> N/A			
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	<input type="checkbox"/> N/A			
Were all soil VOAs field extracted with MeOH+BFB?	<input type="checkbox"/> N/A			
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.				
Additional notes (if applicable):				

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates that an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1216187

SGS Job Number: FA89200

Sampling Dates: 09/18/21 - 09/20/21



Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: 189



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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Test results relate only to samples analyzed.

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4.51: FA89200-51: TXY-100B	117
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4.53: FA89200-53: TXY-100D	121
4.54: FA89200-54: TXY-100E	123
4.55: FA89200-55: TXY-99A	125
4.56: FA89200-56: TXY-99B	127
4.57: FA89200-57: TXY-99C	129
4.58: FA89200-58: TXY-99D	131
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Sample Summary

SGS North America, Inc
1216187

Job No: FA89200

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
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This report contains results reported as ND = Not detected. The following applies:
Organics ND = Not detected above the RL

FA89200-1	09/18/21	09:38	09/23/21	SO	Soil	TXY-87B
FA89200-2	09/18/21	10:02	09/23/21	SO	Soil	TXY-87A
FA89200-3	09/18/21	11:54	09/23/21	SO	Soil	TXY-87C
FA89200-4	09/18/21	12:23	09/23/21	SO	Soil	TXY-133A
FA89200-5	09/18/21	12:25	09/23/21	SO	Soil	FD-1
FA89200-6	09/18/21	12:33	09/23/21	SO	Soil	TXY-133B
FA89200-7	09/18/21	13:00	09/23/21	SO	Soil	TXY-132A
FA89200-8	09/18/21	13:15	09/23/21	SO	Soil	TXY-132B
FA89200-9	09/18/21	13:37	09/23/21	SO	Soil	TXY-131A
FA89200-10	09/18/21	13:42	09/23/21	SO	Soil	TXY-131B
FA89200-11	09/18/21	14:02	09/23/21	SO	Soil	TXY-134A
FA89200-12	09/18/21	14:08	09/23/21	SO	Soil	TXY-134B

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA89200

1216187

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA89200-13	09/18/21	14:18	09/23/21	SO	Soil	TXY-130A
FA89200-14	09/18/21	14:22	09/23/21	SO	Soil	TXY-130B
FA89200-15	09/18/21	14:32	09/23/21	SO	Soil	TXY-129A
FA89200-16	09/18/21	14:38	09/23/21	SO	Soil	TXY-129B
FA89200-17	09/18/21	15:03	09/23/21	SO	Soil	TXY-128A
FA89200-18	09/18/21	15:09	09/23/21	SO	Soil	TXY-128B
FA89200-19	09/18/21	15:23	09/23/21	SO	Soil	TXY-135A
FA89200-20	09/18/21	15:30	09/23/21	SO	Soil	TXY-135B
FA89200-21	09/18/21	16:00	09/23/21	SO	Soil	DEMO-20
FA89200-22	09/18/21	16:10	09/23/21	SO	Soil	TXY-138A
FA89200-23	09/18/21	16:15	09/23/21	SO	Soil	TXY-138B
FA89200-24	09/18/21	16:20	09/23/21	SO	Soil	TXY-138C
FA89200-25	09/18/21	16:35	09/23/21	SO	Soil	TXY-120A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA89200

1216187

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA89200-26	09/18/21	16:40	09/23/21	SO	Soil	TXY-120B
FA89200-27	09/18/21	16:50	09/23/21	SO	Soil	TXY-120C
FA89200-28	09/19/21	09:01	09/23/21	SO	Soil	TXY-93A
FA89200-29	09/19/21	09:11	09/23/21	SO	Soil	FD-2
FA89200-30	09/19/21	09:15	09/23/21	SO	Soil	TXY-93B
FA89200-31	09/19/21	09:17	09/23/21	SO	Soil	TXY-93C
FA89200-32	09/19/21	09:44	09/23/21	SO	Soil	TXY-94A
FA89200-33	09/19/21	09:48	09/23/21	SO	Soil	TXY-94B
FA89200-34	09/19/21	09:52	09/23/21	SO	Soil	TXY-94C
FA89200-35	09/19/21	10:01	09/23/21	SO	Soil	TXY-95A
FA89200-36	09/19/21	10:05	09/23/21	SO	Soil	TXY-95B
FA89200-37	09/19/21	10:12	09/23/21	SO	Soil	TXY-95C
FA89200-38	09/19/21	10:17	09/23/21	SO	Soil	TXY-95D

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA89200

1216187

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA89200-39	09/19/21	10:18	09/23/21	SO	Soil	FD-3
FA89200-40	09/19/21	10:24	09/23/21	SO	Soil	TXY-96A
FA89200-41	09/19/21	10:32	09/23/21	SO	Soil	TXY-96B
FA89200-42	09/19/21	10:36	09/23/21	SO	Soil	TXY-96C
FA89200-43	09/19/21	10:47	09/23/21	SO	Soil	TXY-96D
FA89200-44	09/19/21	10:48	09/23/21	SO	Soil	FD-4
FA89200-45	09/19/21	10:55	09/23/21	SO	Soil	TXY-97A
FA89200-46	09/19/21	11:03	09/23/21	SO	Soil	TXY-97B
FA89200-47	09/19/21	11:10	09/23/21	SO	Soil	TXY-97C
FA89200-48	09/19/21	11:21	09/23/21	SO	Soil	TXY-97D
FA89200-49	09/19/21	13:03	09/23/21	SO	Soil	TXY-100A
FA89200-50	09/19/21	13:04	09/23/21	SO	Soil	FD-5
FA89200-51	09/19/21	13:08	09/23/21	SO	Soil	TXY-100B

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA89200

1216187

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA89200-52	09/19/21	13:18	09/23/21	SO	Soil	TXY-100C
FA89200-53	09/19/21	13:28	09/23/21	SO	Soil	TXY-100D
FA89200-54	09/19/21	13:33	09/23/21	SO	Soil	TXY-100E
FA89200-55	09/19/21	13:38	09/23/21	SO	Soil	TXY-99A
FA89200-56	09/19/21	13:43	09/23/21	SO	Soil	TXY-99B
FA89200-57	09/19/21	13:47	09/23/21	SO	Soil	TXY-99C
FA89200-58	09/19/21	14:12	09/23/21	SO	Soil	TXY-99D
FA89200-59	09/19/21	14:20	09/23/21	SO	Soil	TXY-98A
FA89200-60	09/19/21	14:26	09/23/21	SO	Soil	TXY-98B
FA89200-61	09/20/21	14:27	09/23/21	SO	Soil	FD-6
FA89200-62	09/19/21	14:30	09/23/21	SO	Soil	TXY-98C
FA89200-63	09/19/21	14:45	09/23/21	SO	Soil	TXY-98D

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc

Job No: FA89200

Site: 1216187

Report Date: 10/15/2021 2:29:00

On 09/23/2021, 63 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA89200 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: SO **Batch ID:** OP87498

Sample(s) FA89200-10MS, FA89200-10MSD were used as the QC samples indicated.
Sample(s) FA89200-16, FA89200-17 have surrogates outside control limits.
FA89200-16: Dilution required due to matrix interference (ID recovery standard failure).
FA89200-16 for 13C2-6:2FTS: Outside control limits.
FA89200-16 for 13C2-8:2FTS: Outside control limits.
FA89200-16 for 13C6-PFDA: Outside control limits.
FA89200-17 for 13C2-PFTeDA: Outside control limits.
FA89200-17: Dilution required due to matrix interference (ID recovery standard failure).

Matrix: SO **Batch ID:** OP87499

Sample(s) FA89200-24MS, FA89200-24MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP87500

Sample(s) FA89200-52MS, FA89200-52MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP87501

Sample(s) FA89196-7MS, FA89196-7MSD were used as the QC samples indicated.

General Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN89323

Sample(s) FA89200-1DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89324

Sample(s) FA89200-21DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89326

Sample(s) FA89200-41DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89340

Sample(s) FA89196-7DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (Signature on File)

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-1 **TXY-87B**

No hits reported in this sample.

FA89200-2 **TXY-87A**

No hits reported in this sample.

FA89200-3 **TXY-87C**

No hits reported in this sample.

FA89200-4 **TXY-133A**

No hits reported in this sample.

FA89200-5 **FD-1**

No hits reported in this sample.

FA89200-6 **TXY-133B**

No hits reported in this sample.

FA89200-7 **TXY-132A**

No hits reported in this sample.

FA89200-8 **TXY-132B**

No hits reported in this sample.

FA89200-9 **TXY-131A**

Perfluorooctanesulfonic acid 0.0180 0.0018 mg/kg EPA 537M BY ID

FA89200-10 **TXY-131B**

No hits reported in this sample.

FA89200-11 **TXY-134A**

No hits reported in this sample.

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-12 TXY-134B

Perfluorooctanesulfonic acid 0.0131 0.0019 mg/kg EPA 537M BY ID

FA89200-13 TXY-130A

Perfluorooctanesulfonic acid 0.0086 0.0017 mg/kg EPA 537M BY ID

FA89200-14 TXY-130B

Perfluorooctanesulfonic acid 0.0067 0.0024 mg/kg EPA 537M BY ID

FA89200-15 TXY-129A

Perfluorooctanesulfonic acid 0.0212 0.0016 mg/kg EPA 537M BY ID

FA89200-16 TXY-129B

No hits reported in this sample.

FA89200-17 TXY-128A

Perfluorooctanesulfonic acid 0.0075 0.0014 mg/kg EPA 537M BY ID

FA89200-18 TXY-128B

Perfluorooctanesulfonic acid 0.0344 0.0021 mg/kg EPA 537M BY ID
 6:2 Fluorotelomer sulfonate 0.0067 0.0021 mg/kg EPA 537M BY ID

FA89200-19 TXY-135A

No hits reported in this sample.

FA89200-20 TXY-135B

No hits reported in this sample.

FA89200-21 DEMO-20

Perfluorooctanesulfonic acid 0.0133 0.00099 mg/kg EPA 537M BY ID

FA89200-22 TXY-138A

No hits reported in this sample.

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-23 TXY-138B

Perfluorohexanesulfonic acid 0.0012 0.0012 mg/kg EPA 537M BY ID

FA89200-24 TXY-138C

Perfluorohexanesulfonic acid 0.0020 0.0012 mg/kg EPA 537M BY ID

FA89200-25 TXY-120A

No hits reported in this sample.

FA89200-26 TXY-120B

Perfluorohexanesulfonic acid 0.0023 0.0012 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0325 0.0012 mg/kg EPA 537M BY ID

FA89200-27 TXY-120C

Perfluorohexanesulfonic acid 0.0021 0.0013 mg/kg EPA 537M BY ID

FA89200-28 TXY-93A

No hits reported in this sample.

FA89200-29 FD-2

No hits reported in this sample.

FA89200-30 TXY-93B

No hits reported in this sample.

FA89200-31 TXY-93C

No hits reported in this sample.

FA89200-32 TXY-94A

No hits reported in this sample.

FA89200-33 TXY-94B

No hits reported in this sample.

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-34 **TXY-94C**

No hits reported in this sample.

FA89200-35 **TXY-95A**

No hits reported in this sample.

FA89200-36 **TXY-95B**

No hits reported in this sample.

FA89200-37 **TXY-95C**

No hits reported in this sample.

FA89200-38 **TXY-95D**

No hits reported in this sample.

FA89200-39 **FD-3**

No hits reported in this sample.

FA89200-40 **TXY-96A**

No hits reported in this sample.

FA89200-41 **TXY-96B**

No hits reported in this sample.

FA89200-42 **TXY-96C**

No hits reported in this sample.

FA89200-43 **TXY-96D**

No hits reported in this sample.

FA89200-44 **FD-4**

No hits reported in this sample.

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-45 TXY-97A

No hits reported in this sample.

FA89200-46 TXY-97B

No hits reported in this sample.

FA89200-47 TXY-97C

No hits reported in this sample.

FA89200-48 TXY-97D

No hits reported in this sample.

FA89200-49 TXY-100A

Perfluorohexanoic acid	0.0017	0.0012		mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0020	0.0012		mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0102	0.0012		mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0031	0.0012		mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0054	0.0012		mg/kg	EPA 537M BY ID

FA89200-50 FD-5

Perfluorohexanoic acid	0.0021	0.0012		mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0018	0.0012		mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0120	0.0012		mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0028	0.0012		mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0020	0.0012		mg/kg	EPA 537M BY ID

FA89200-51 TXY-100B

No hits reported in this sample.

FA89200-52 TXY-100C

No hits reported in this sample.

FA89200-53 TXY-100D

No hits reported in this sample.

Summary of Hits

Job Number: FA89200
Account: SGS North America, Inc
Project: 1216187
Collected: 09/18/21 thru 09/20/21



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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FA89200-54 **TXY-100E**

No hits reported in this sample.

FA89200-55 **TXY-99A**

No hits reported in this sample.

FA89200-56 **TXY-99B**

No hits reported in this sample.

FA89200-57 **TXY-99C**

No hits reported in this sample.

FA89200-58 **TXY-99D**

No hits reported in this sample.

FA89200-59 **TXY-98A**

No hits reported in this sample.

FA89200-60 **TXY-98B**

No hits reported in this sample.

FA89200-61 **FD-6**

No hits reported in this sample.

FA89200-62 **TXY-98C**

No hits reported in this sample.

FA89200-63 **TXY-98D**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TXY-87B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-1		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 89.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46411.D	1	10/08/21 00:38	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0028	mg/kg	
2991-50-6	EtFOSAA	ND	0.0028	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: TXY-87B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-1		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 89.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	107%		50-150%
	13C4-PFHpA	104%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	77%		40-140%
	13C2-PFDoDA	78%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	103%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	77%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-87A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-2		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 66.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46412.D	1	10/08/21 00:55	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0015	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0015	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0015	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0015	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0015	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0015	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0015	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0015	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0015	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0015	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0015	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0015	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0015	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0038	mg/kg	
2991-50-6	EtFOSAA	ND	0.0038	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
 4

Report of Analysis

Client Sample ID: TXY-87A	Date Sampled: 09/18/21
Lab Sample ID: FA89200-2	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 66.1
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	108%		50-150%
	13C4-PFHpA	103%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	78%		40-140%
	13C2-PFDoDA	79%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	105%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	74%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	100%		40-140%
	13C2-4:2FTS	104%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	80%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: TXY-87C		Date Sampled: 09/18/21
Lab Sample ID: FA89200-3		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 46.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46413.D	1	10/08/21 01:12	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0021	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0021	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0021	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0021	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0021	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0021	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0021	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0021	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0021	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0021	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0021	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0021	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0021	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0021	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0021	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0021	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0021	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0021	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0021	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0053	mg/kg	
2991-50-6	EtFOSAA	ND	0.0053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
 4

Report of Analysis

Client Sample ID: TXY-87C		Date Sampled: 09/18/21
Lab Sample ID: FA89200-3		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 46.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	102%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	75%		30-130%
	d3-MeFOSAA	81%		40-140%
	d5-EtFOSAA	82%		40-140%
	13C2-4:2FTS	98%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	72%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: TXY-133A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-4		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 64.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46414.D	1	10/08/21 01:28	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0015	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0015	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0015	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0015	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0015	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0015	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0015	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0015	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0015	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0015	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0015	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0015	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0015	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0038	mg/kg	
2991-50-6	EtFOSAA	ND	0.0038	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
 4

Report of Analysis

Client Sample ID: TXY-133A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-4		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 64.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	106%		50-150%
	13C4-PFHpA	103%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	77%		40-140%
	13C2-PFDoDA	77%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	93%		40-140%
	13C2-4:2FTS	101%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	80%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: FD-1		Date Sampled: 09/18/21
Lab Sample ID: FA89200-5		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 67.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46417.D	1	10/08/21 02:18	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0015	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0015	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0015	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0015	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0015	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0015	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0015	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0015	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0015	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0015	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0015	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0015	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0015	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0037	mg/kg	
2991-50-6	EtFOSAA	ND	0.0037	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID: FD-1		Date Sampled: 09/18/21
Lab Sample ID: FA89200-5		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 67.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		40-140%
	13C5-PFPeA	99%		50-150%
	13C5-PFHxA	109%		50-150%
	13C4-PFHpA	106%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	78%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	88%		40-140%
	d5-EtFOSAA	90%		40-140%
	13C2-4:2FTS	104%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	77%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-133B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-6		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 49.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46418.D	1	10/08/21 02:34	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0020	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0020	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0020	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0020	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0020	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0020	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0020	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0020	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0051	mg/kg	
2991-50-6	EtFOSAA	ND	0.0051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0020	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0020	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: TXY-133B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-6		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 49.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0020	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	62%		50-150%
	13C6-PFDA	59%		50-150%
	13C7-PFUnDA	61%		40-140%
	13C2-PFDoDA	63%		40-140%
	13C2-PFTeDA	62%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	62%		30-130%
	d3-MeFOSAA	70%		40-140%
	d5-EtFOSAA	69%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	72%		50-150%
	13C2-8:2FTS	65%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: TXY-132A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-7		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 63.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46419.D	1	10/08/21 02:51	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0015	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0015	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0015	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0015	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0015	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0015	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0015	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0015	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0015	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0015	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0015	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0015	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0015	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0039	mg/kg	
2991-50-6	EtFOSAA	ND	0.0039	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.7
 4

Report of Analysis

Client Sample ID: TXY-132A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-7		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 63.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		40-140%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	76%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	59%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	79%		40-140%
	13C2-4:2FTS	103%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	76%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-132B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-8		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 45.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46420.D	1	10/08/21 03:07	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.12 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0021	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0021	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0021	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0021	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0021	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0021	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0021	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0021	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0021	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0021	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0021	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0021	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0021	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0021	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0021	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0021	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0021	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0021	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0021	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0051	mg/kg	
2991-50-6	EtFOSAA	ND	0.0051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.8
 4

Report of Analysis

Client Sample ID: TXY-132B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-8		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 45.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		40-140%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	70%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	69%		30-130%
	d3-MeFOSAA	80%		40-140%
	d5-EtFOSAA	80%		40-140%
	13C2-4:2FTS	94%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	68%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID: TXY-131A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-9		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 54.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46421.D	1	10/08/21 03:24	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0018	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0018	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0018	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0018	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0018	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0018	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0018	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0018	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0018	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0018	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0018	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0018	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0018	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0018	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0018	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0180	0.0018	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0018	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0018	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0018	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0044	mg/kg	
2991-50-6	EtFOSAA	ND	0.0044	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: TXY-131A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-9		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 54.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	97%		50-150%
	13C5-PFHxA	108%		50-150%
	13C4-PFHpA	103%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	81%		50-150%
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	65%		40-140%
	13C2-PFTeDA	54%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	80%		30-130%
	d3-MeFOSAA	111%		40-140%
	d5-EtFOSAA	115%		40-140%
	13C2-4:2FTS	103%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	88%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: TXY-131B	Date Sampled: 09/18/21
Lab Sample ID: FA89200-10	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 55.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46422.D	1	10/08/21 03:40	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0018	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0018	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0018	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0018	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0018	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0018	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0018	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0018	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0018	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0018	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0018	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0018	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0018	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0018	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0018	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0018	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0018	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0018	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0018	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0044	mg/kg	
2991-50-6	EtFOSAA	ND	0.0044	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TXY-131B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-10		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 55.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.10
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0018	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		40-140%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	95%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	68%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	77%		30-130%
	d3-MeFOSAA	64%		40-140%
	d5-EtFOSAA	67%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	68%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-134A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-11		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 66.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46425.D	1	10/08/21 04:30	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0015	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0015	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0015	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0015	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0015	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0015	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0015	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0015	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0015	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0015	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0015	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0015	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0015	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0038	mg/kg	
2991-50-6	EtFOSAA	ND	0.0038	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.11
 4

Report of Analysis

Client Sample ID: TXY-134A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-11		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 66.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.11
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	60%		30-130%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	86%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	61%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	96%		40-140%
	13C2-4:2FTS	97%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	80%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-134B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-12		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 51.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46426.D	1	10/08/21 04:47	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0019	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0019	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0019	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0019	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0019	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0019	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0019	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0019	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0019	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0019	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0019	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0019	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0019	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0019	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0019	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0131	0.0019	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0019	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0019	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0019	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0047	mg/kg	
2991-50-6	EtFOSAA	ND	0.0047	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.12
4

Report of Analysis

Client Sample ID: TXY-134B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-12		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 51.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.12
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	75%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	68%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	52%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	95%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	69%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-130A	Date Sampled: 09/18/21
Lab Sample ID: FA89200-13	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 56.5
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46429.D	1	10/08/21 05:36	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.13 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0017	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0017	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0017	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0017	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0017	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0017	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0017	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0017	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0017	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0017	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0017	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0017	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0017	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0017	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0017	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0086	0.0017	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0017	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0017	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0017	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0042	mg/kg	
2991-50-6	EtFOSAA	ND	0.0042	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0017	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0017	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: TXY-130A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-13		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 56.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0017	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	63%		30-130%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	65%		30-130%
	d3-MeFOSAA	81%		40-140%
	d5-EtFOSAA	84%		40-140%
	13C2-4:2FTS	97%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	78%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-130B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-14		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 41.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46430.D	1	10/08/21 05:53	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0024	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0024	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0024	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0024	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0024	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0024	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0024	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0024	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0024	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0024	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0024	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0024	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0024	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0024	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0024	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0067	0.0024	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0024	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0024	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0024	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0060	mg/kg	
2991-50-6	EtFOSAA	ND	0.0060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0024	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0024	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-130B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-14		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 41.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0024	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		40-140%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	66%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	67%		40-140%
	13C2-PFTeDA	64%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	65%		40-140%
	d5-EtFOSAA	66%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	67%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-129A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-15		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 62.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46431.D	1	10/08/21 06:09	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0016	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0016	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0016	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0016	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0016	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0016	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0016	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0016	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0016	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0016	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0016	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0016	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0016	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0016	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0016	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0212	0.0016	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0016	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0016	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0016	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0039	mg/kg	
2991-50-6	EtFOSAA	ND	0.0039	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-129A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-15		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 62.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	70%		40-140%
	13C2-PFDoDA	69%		40-140%
	13C2-PFTeDA	59%		30-130%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	57%		30-130%
	d3-MeFOSAA	61%		40-140%
	d5-EtFOSAA	63%		40-140%
	13C2-4:2FTS	95%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	73%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-129B	
Lab Sample ID: FA89200-16	Date Sampled: 09/18/21
Matrix: SO - Soil	Date Received: 09/23/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 55.9
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46432.D	1	10/08/21 06:26	MV	09/27/21 06:30	OP87498	S3Q665
Run #2 ^a	2Q77768.D	5	10/08/21 12:27	NG	09/27/21 06:30	OP87498	S2Q1101

Run #	Initial Weight	Final Volume
Run #1	2.12 g	1.0 ml
Run #2	2.12 g	1.0 ml

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0017	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0017	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0017	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0017	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0017	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0017	mg/kg	
335-76-2	Perfluorodecanoic acid	ND ^b	0.0084	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0017	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0017	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0017	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0017	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0017	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0017	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0017	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0017	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0017	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0017	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0017	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0017	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0042	mg/kg	
2991-50-6	EtFOSAA	ND	0.0042	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0017	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND ^b	0.0084	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: TXY-129B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-16		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 55.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND ^b	0.0084	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	48%	50%	40-140%
	13C5-PFPeA	54%	53%	50-150%
	13C5-PFHxA	62%	53%	50-150%
	13C4-PFHpA	61%	55%	50-150%
	13C8-PFOA	51%	57%	50-150%
	13C9-PFNA	50%	58%	50-150%
	13C6-PFDA	49% ^c	63%	50-150%
	13C7-PFUnDA	48%	60%	40-140%
	13C2-PFDoDA	50%	54%	40-140%
	13C2-PFTeDA	46%	58%	30-130%
	13C3-PFBS	75%	64%	50-150%
	13C3-PFHxS	63%	67%	50-150%
	13C8-PFOS	52%	73%	50-150%
	13C8-FOSA	73%	85%	30-130%
	d3-MeFOSAA	41%	49%	40-140%
	d5-EtFOSAA	44%	55%	40-140%
	13C2-4:2FTS	59%	50%	50-150%
	13C2-6:2FTS	49% ^c	53%	50-150%
	13C2-8:2FTS	46% ^c	54%	50-150%

- (a) Dilution required due to matrix interference (ID recovery standard failure).
- (b) Result is from Run# 2
- (c) Outside control limits.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-128A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-17		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 66.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46433.D	1	10/08/21 06:42	MV	09/27/21 06:30	OP87498	S3Q665
Run #2 ^a	2Q77769.D	5	10/08/21 12:44	NG	09/27/21 06:30	OP87498	S2Q1101

Run #	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0014	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0014	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0014	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0014	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0014	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0014	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0014	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0014	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0014	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0014	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND ^b	0.0072	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0014	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0014	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0014	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0014	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0075	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0014	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0014	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0014	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0036	mg/kg	
2991-50-6	EtFOSAA	ND	0.0036	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0014	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0014	mg/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-128A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-17		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 66.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0014	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%	96%	40-140%
	13C5-PFPeA	100%	98%	50-150%
	13C5-PFHxA	111%	98%	50-150%
	13C4-PFHpA	105%	99%	50-150%
	13C8-PFOA	86%	99%	50-150%
	13C9-PFNA	77%	100%	50-150%
	13C6-PFDA	70%	103%	50-150%
	13C7-PFUnDA	59%	93%	40-140%
	13C2-PFDoDA	44%	74%	40-140%
	13C2-PFTeDA	26% ^c	89%	30-130%
	13C3-PFBS	111%	100%	50-150%
	13C3-PFHxS	89%	98%	50-150%
	13C8-PFOS	69%	99%	50-150%
	13C8-FOSA	70%	87%	30-130%
	d3-MeFOSAA	103%	119%	40-140%
	d5-EtFOSAA	103%	126%	40-140%
	13C2-4:2FTS	108%	93%	50-150%
	13C2-6:2FTS	86%	98%	50-150%
	13C2-8:2FTS	81%	110%	50-150%

- (a) Dilution required due to matrix interference (ID recovery standard failure).
- (b) Result is from Run# 2
- (c) Outside control limits.

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-128B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-18		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 46.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46434.D	1	10/08/21 06:59	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0021	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0021	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0021	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0021	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0021	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0021	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0021	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0021	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0021	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0021	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0021	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0021	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0021	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0021	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0021	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0344	0.0021	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0021	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0021	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0021	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0052	mg/kg	
2991-50-6	EtFOSAA	ND	0.0052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0067	0.0021	mg/kg	

ND = Not detected

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-128B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-18		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 46.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.18
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0021	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		40-140%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	66%		50-150%
	13C6-PFDA	64%		50-150%
	13C7-PFUnDA	64%		40-140%
	13C2-PFDoDA	65%		40-140%
	13C2-PFTeDA	60%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	65%		50-150%
	13C8-FOSA	59%		30-130%
	d3-MeFOSAA	56%		40-140%
	d5-EtFOSAA	56%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	63%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-135A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-19		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 61.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46435.D	1	10/08/21 07:15	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0016	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0016	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0016	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0016	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0016	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0016	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0016	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0016	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0016	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0016	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0016	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0016	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0016	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0016	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0016	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0016	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0016	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0016	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0016	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0041	mg/kg	
2991-50-6	EtFOSAA	ND	0.0041	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-135A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-19		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 61.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0016	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	98%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	70%		40-140%
	13C2-PFDoDA	69%		40-140%
	13C2-PFTeDA	64%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	73%		30-130%
	d3-MeFOSAA	79%		40-140%
	d5-EtFOSAA	78%		40-140%
	13C2-4:2FTS	93%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	70%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.19
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Report of Analysis

Client Sample ID: TXY-135B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-20		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 51.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q46436.D	1	10/08/21 07:32	MV	09/27/21 06:30	OP87498	S3Q665
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0019	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0019	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0019	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0019	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0019	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0019	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0019	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0019	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0019	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0019	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0019	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0019	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0019	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0019	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0019	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0019	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0019	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0019	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0019	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0048	mg/kg	
2991-50-6	EtFOSAA	ND	0.0048	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.20
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Report of Analysis

Client Sample ID: TXY-135B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-20		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 51.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.20
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0019	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		40-140%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	68%		50-150%
	13C7-PFUnDA	67%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	61%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	63%		50-150%
	13C8-FOSA	60%		30-130%
	d3-MeFOSAA	66%		40-140%
	d5-EtFOSAA	69%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	65%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-20		Date Sampled: 09/18/21
Lab Sample ID: FA89200-21		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 97.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77947.D	1	10/10/21 15:47	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND		0.00099	mg/kg
2706-90-3	Perfluoropentanoic acid	ND		0.00099	mg/kg
307-24-4	Perfluorohexanoic acid	ND		0.00099	mg/kg
375-85-9	Perfluoroheptanoic acid	ND		0.00099	mg/kg
335-67-1	Perfluorooctanoic acid	ND		0.00099	mg/kg
375-95-1	Perfluorononanoic acid	ND		0.00099	mg/kg
335-76-2	Perfluorodecanoic acid	ND		0.00099	mg/kg
2058-94-8	Perfluoroundecanoic acid	ND		0.00099	mg/kg
307-55-1	Perfluorododecanoic acid	ND		0.00099	mg/kg
72629-94-8	Perfluorotridecanoic acid	ND		0.00099	mg/kg
376-06-7	Perfluorotetradecanoic acid	ND		0.00099	mg/kg

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND		0.00099	mg/kg
2706-91-4	Perfluoropentanesulfonic acid	ND		0.00099	mg/kg
355-46-4	Perfluorohexanesulfonic acid	ND		0.00099	mg/kg
375-92-8	Perfluoroheptanesulfonic acid	ND		0.00099	mg/kg
1763-23-1	Perfluorooctanesulfonic acid	0.0133		0.00099	mg/kg
68259-12-1	Perfluorononanesulfonic acid	ND		0.00099	mg/kg
335-77-3	Perfluorodecanesulfonic acid	ND		0.00099	mg/kg

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND		0.00099	mg/kg
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND		0.0025	mg/kg
2991-50-6	EtFOSAA	ND		0.0025	mg/kg

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND		0.00099	mg/kg
27619-97-2	6:2 Fluorotelomer sulfonate	ND		0.00099	mg/kg

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-20		Date Sampled: 09/18/21
Lab Sample ID: FA89200-21		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 97.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.00099	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	76%		30-130%
	d3-MeFOSAA	99%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	86%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-138A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-22		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 97.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77948.D	1	10/10/21 16:04	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0010	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0010	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0010	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0010	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0010	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0010	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0010	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0010	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0010	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0010	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0010	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0010	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0010	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0010	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0010	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0010	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0010	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0010	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0010	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0025	mg/kg	
2991-50-6	EtFOSAA	ND	0.0025	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.22
4

Report of Analysis

Client Sample ID: TXY-138A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-22		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 97.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.22
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	103%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	87%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-138B	Date Sampled: 09/18/21
Lab Sample ID: FA89200-23	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 79.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77949.D	1	10/10/21 16:21	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0012	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0031	mg/kg	
2991-50-6	EtFOSAA	ND	0.0031	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-138B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-23		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 79.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	93%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	99%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	70%		30-130%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	89%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: TXY-138C	Date Sampled: 09/18/21
Lab Sample ID: FA89200-24	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 80.2
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77950.D	1	10/10/21 16:39	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0020	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.24
4

Report of Analysis

Client Sample ID: TXY-138C		Date Sampled: 09/18/21
Lab Sample ID: FA89200-24		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 80.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.24
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		40-140%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	55%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	103%		40-140%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	83%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-120A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-25		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 98.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77953.D	1	10/10/21 17:30	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0010	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0010	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0010	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0010	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0010	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0010	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0010	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0010	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0010	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0010	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0010	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0010	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0010	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0010	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0010	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0010	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0010	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0010	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0010	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0025	mg/kg	
2991-50-6	EtFOSAA	ND	0.0025	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.25
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Report of Analysis

Client Sample ID: TXY-120A		Date Sampled: 09/18/21
Lab Sample ID: FA89200-25		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 98.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		40-140%
	13C5-PFPeA	99%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	102%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	101%		40-140%
	13C2-PFTeDA	107%		30-130%
	13C3-PFBS	103%		50-150%
	13C3-PFHxS	102%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	111%		40-140%
	d5-EtFOSAA	115%		40-140%
	13C2-4:2FTS	93%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	94%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-120B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-26		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77954.D	1	10/10/21 17:47	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0023	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0325	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-120B		Date Sampled: 09/18/21
Lab Sample ID: FA89200-26		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.26
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	83%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	64%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	96%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	80%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-120C	Date Sampled: 09/18/21
Lab Sample ID: FA89200-27	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 73.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77957.D	1	10/10/21 18:38	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0013	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0013	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0013	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0013	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0013	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0013	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0013	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0013	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0013	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0013	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0013	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0013	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0013	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0021	0.0013	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0013	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0013	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0013	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0013	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0013	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0033	mg/kg	
2991-50-6	EtFOSAA	ND	0.0033	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.27
4

Report of Analysis

Client Sample ID: TXY-120C		Date Sampled: 09/18/21
Lab Sample ID: FA89200-27		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 73.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.27
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	101%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	107%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	82%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-93A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-28		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q20280.D	1	10/13/21 14:09	NG	09/27/21 06:30	OP87499	S4Q281
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.10 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0028	mg/kg	
2991-50-6	EtFOSAA	ND	0.0028	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-93A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-28		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.28
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	88%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	94%		30-130%
	d3-MeFOSAA	79%		40-140%
	d5-EtFOSAA	83%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	91%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-2		Date Sampled: 09/19/21
Lab Sample ID: FA89200-29		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77959.D	1	10/10/21 19:12	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-2		Date Sampled: 09/19/21
Lab Sample ID: FA89200-29		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	102%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	94%		40-140%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	81%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID: TXY-93B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-30		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 91.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77960.D	1	10/10/21 19:29	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.30
4

Report of Analysis

Client Sample ID: TXY-93B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-30		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 91.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	97%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	75%		30-130%
	d3-MeFOSAA	103%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	84%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.30
4

Report of Analysis

Client Sample ID: TXY-93C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-31		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 90.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q20281.D	1	10/13/21 14:24	NG	09/27/21 06:30	OP87499	S4Q281
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-93C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-31		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 90.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	104%		40-140%
	13C5-PFPeA	106%		50-150%
	13C5-PFHxA	105%		50-150%
	13C4-PFHpA	106%		50-150%
	13C8-PFOA	107%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	112%		50-150%
	13C7-PFUnDA	109%		40-140%
	13C2-PFDoDA	106%		40-140%
	13C2-PFTeDA	101%		30-130%
	13C3-PFBS	104%		50-150%
	13C3-PFHxS	101%		50-150%
	13C8-PFOS	109%		50-150%
	13C8-FOSA	103%		30-130%
	d3-MeFOSAA	112%		40-140%
	d5-EtFOSAA	119%		40-140%
	13C2-4:2FTS	99%		50-150%
	13C2-6:2FTS	103%		50-150%
	13C2-8:2FTS	106%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.31
 4

Report of Analysis

Client Sample ID: TXY-94A	Date Sampled: 09/19/21
Lab Sample ID: FA89200-32	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 80.0
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77962.D	1	10/10/21 20:03	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.32
4

Report of Analysis

Client Sample ID: TXY-94A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-32		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 80.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	92%		40-140%
	13C2-PFTeDA	99%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	90%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	103%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	85%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.32
4

Report of Analysis

Client Sample ID: TXY-94B	Date Sampled: 09/19/21
Lab Sample ID: FA89200-33	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 88.7
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77963.D	1	10/10/21 20:20	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.33
4

Report of Analysis

Client Sample ID: TXY-94B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-33		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 88.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	94%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	104%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	104%		40-140%
	d5-EtFOSAA	107%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	89%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-94C	Date Sampled: 09/19/21
Lab Sample ID: FA89200-34	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 85.7
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77964.D	1	10/10/21 20:37	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.34
4

Report of Analysis

Client Sample ID: TXY-94C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-34		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 85.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	103%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	79%		30-130%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	107%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	90%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-95A	Date Sampled: 09/19/21
Lab Sample ID: FA89200-35	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 83.3
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77967.D	1	10/10/21 21:28	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: TXY-95A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-35		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	95%		30-130%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	96%		40-140%
	d5-EtFOSAA	99%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	83%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: TXY-95B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-36		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q20282.D	1	10/13/21 14:40	NG	09/27/21 06:30	OP87499	S4Q281
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.36
4

Report of Analysis

Client Sample ID: TXY-95B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-36		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.36
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	86%		40-140%
	13C2-PFTeDA	85%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	86%		40-140%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	85%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-95C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-37		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 90.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77969.D	1	10/10/21 22:02	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-95C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-37		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 90.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		40-140%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	96%		50-150%
	13C4-PFHpA	98%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	103%		40-140%
	13C2-PFDoDA	102%		40-140%
	13C2-PFTeDA	109%		30-130%
	13C3-PFBS	104%		50-150%
	13C3-PFHxS	102%		50-150%
	13C8-PFOS	103%		50-150%
	13C8-FOSA	91%		30-130%
	d3-MeFOSAA	106%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	96%		50-150%
	13C2-8:2FTS	95%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.37
4

Report of Analysis

Client Sample ID: TXY-95D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-38		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 75.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77970.D	1	10/10/21 22:19	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0013	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0013	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0013	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0013	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0013	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0013	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0013	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0013	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0013	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0013	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0013	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0013	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0013	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0013	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0013	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0013	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0013	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0013	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0013	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0033	mg/kg	
2991-50-6	EtFOSAA	ND	0.0033	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID: TXY-95D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-38		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 75.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	93%		50-150%
	13C7-PFUnDA	95%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	93%		30-130%
	d3-MeFOSAA	107%		40-140%
	d5-EtFOSAA	110%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	87%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID: FD-3	Date Sampled: 09/19/21
Lab Sample ID: FA89200-39	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 76.8
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77971.D	1	10/10/21 22:36	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.10 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0031	mg/kg	
2991-50-6	EtFOSAA	ND	0.0031	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.39
4

Report of Analysis

Client Sample ID: FD-3		Date Sampled: 09/19/21
Lab Sample ID: FA89200-39		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 76.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.39
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	87%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	98%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	79%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-96A	Date Sampled: 09/19/21
Lab Sample ID: FA89200-40	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77972.D	1	10/10/21 22:53	NG	09/27/21 06:30	OP87499	S2Q1103
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID: TXY-96A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-40		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	102%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	71%		30-130%
	d3-MeFOSAA	99%		40-140%
	d5-EtFOSAA	103%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	85%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID: TXY-96B	Date Sampled: 09/19/21
Lab Sample ID: FA89200-41	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 83.9
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77983.D	1	10/11/21 02:01	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID: TXY-96B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-41		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	99%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	73%		30-130%
	d3-MeFOSAA	106%		40-140%
	d5-EtFOSAA	111%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	89%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID: TXY-96C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-42		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77984.D	1	10/11/21 02:18	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.42
4

Report of Analysis

Client Sample ID: TXY-96C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-42		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.42
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	93%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	98%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	99%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	92%		30-130%
	d3-MeFOSAA	115%		40-140%
	d5-EtFOSAA	117%		40-140%
	13C2-4:2FTS	88%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	92%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-96D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-43		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77985.D	1	10/11/21 02:35	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-96D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-43		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	104%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	83%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.43
4

Report of Analysis

Client Sample ID: FD-4	Date Sampled: 09/19/21
Lab Sample ID: FA89200-44	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 84.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77986.D	1	10/11/21 02:52	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

Client Sample ID: FD-4		Date Sampled: 09/19/21
Lab Sample ID: FA89200-44		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 84.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	94%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	99%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	84%		30-130%
	d3-MeFOSAA	106%		40-140%
	d5-EtFOSAA	110%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	90%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

Client Sample ID: TXY-97A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-45		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 79.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77987.D	1	10/11/21 03:09	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0031	mg/kg	
2991-50-6	EtFOSAA	ND	0.0031	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.45
4

Report of Analysis

Client Sample ID: TXY-97A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-45		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 79.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.45
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	95%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	76%		30-130%
	d3-MeFOSAA	108%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	89%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-97B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-46		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 89.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77988.D	1	10/11/21 03:26	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID: TXY-97B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-46		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 89.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	82%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	88%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	99%		40-140%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	79%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID: TXY-97C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-47		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77989.D	1	10/11/21 03:43	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0028	mg/kg	
2991-50-6	EtFOSAA	ND	0.0028	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.47
 4

Report of Analysis

Client Sample ID: TXY-97C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-47		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	92%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	78%		30-130%
	d3-MeFOSAA	108%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	84%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.47
4

Report of Analysis

Client Sample ID: TXY-97D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-48		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77990.D	1	10/11/21 04:00	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-97D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-48		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	95%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	96%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	104%		40-140%
	d5-EtFOSAA	112%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	88%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.48
4

Report of Analysis

Client Sample ID: TXY-100A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-49		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 81.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77993.D	1	10/11/21 04:51	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0017	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0020	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0102	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0031	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0054	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-100A		
Lab Sample ID: FA89200-49		Date Sampled: 09/19/21
Matrix: SO - Soil		Date Received: 09/23/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 81.4
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	69%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	78%		30-130%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	76%		50-150%
	13C8-FOSA	58%		30-130%
	d3-MeFOSAA	70%		40-140%
	d5-EtFOSAA	80%		40-140%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	72%		50-150%
	13C2-8:2FTS	79%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-5		Date Sampled: 09/19/21
Lab Sample ID: FA89200-50		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77994.D	1	10/11/21 05:08	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0021	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0018	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0120	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0028	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0020	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.50
4

Report of Analysis

Client Sample ID: FD-5		Date Sampled: 09/19/21
Lab Sample ID: FA89200-50		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.50
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		40-140%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	74%		50-150%
	13C8-PFOA	76%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	69%		40-140%
	13C2-PFTeDA	84%		30-130%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	83%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-100B	Date Sampled: 09/19/21
Lab Sample ID: FA89200-51	Date Received: 09/23/21
Matrix: SO - Soil	Percent Solids: 95.2
Method: EPA 537M BY ID IN HOUSE	
Project: 1216187	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77995.D	1	10/11/21 05:25	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0010	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0010	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0010	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0010	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0010	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0010	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0010	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0010	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0010	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0010	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0010	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0010	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0010	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0010	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0010	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0010	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0010	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0010	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0010	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0025	mg/kg	
2991-50-6	EtFOSAA	ND	0.0025	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.51
4

Report of Analysis

Client Sample ID: TXY-100B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-51		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 95.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.51
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0010	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	81%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	82%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-100C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-52		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 77.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77996.D	1	10/11/21 05:42	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0013	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0013	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0013	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0013	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0013	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0013	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0013	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0013	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0013	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0013	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0013	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0013	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0013	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0013	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0013	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0013	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0013	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0013	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0013	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0032	mg/kg	
2991-50-6	EtFOSAA	ND	0.0032	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.52
4

Report of Analysis

Client Sample ID: TXY-100C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-52		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 77.5
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.52
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CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0013	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	88%		30-130%
	d3-MeFOSAA	105%		40-140%
	d5-EtFOSAA	111%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	86%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-100D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-53		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 88.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77999.D	1	10/11/21 06:33	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0028	mg/kg	
2991-50-6	EtFOSAA	ND	0.0028	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.53
 4

Report of Analysis

Client Sample ID: TXY-100D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-53		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 88.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	57%		30-130%
	d3-MeFOSAA	96%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	81%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.53
4

Report of Analysis

Client Sample ID: TXY-100E		Date Sampled: 09/19/21
Lab Sample ID: FA89200-54		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 80.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78000.D	1	10/11/21 06:50	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.14 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-100E		Date Sampled: 09/19/21
Lab Sample ID: FA89200-54		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 80.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	102%		40-140%
	13C2-PFDoDA	99%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	120%		40-140%
	d5-EtFOSAA	122%		40-140%
	13C2-4:2FTS	106%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	92%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-55		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78001.D	1	10/11/21 07:07	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-55		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	101%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	104%		30-130%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	94%		30-130%
	d3-MeFOSAA	108%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	88%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	91%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-56		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 79.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78002.D	1	10/11/21 07:24	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #1	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-56		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 79.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	107%		40-140%
	13C2-PFDoDA	101%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	115%		40-140%
	d5-EtFOSAA	126%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	95%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-57		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78005.D	1	10/11/21 08:16	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.10 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0027	mg/kg	
2991-50-6	EtFOSAA	ND	0.0027	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-57		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	102%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	102%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	103%		40-140%
	13C2-PFDoDA	101%		40-140%
	13C2-PFTeDA	107%		30-130%
	13C3-PFBS	104%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	101%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	122%		40-140%
	d5-EtFOSAA	124%		40-140%
	13C2-4:2FTS	92%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	97%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-99D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-58		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78006.D	1	10/11/21 08:33	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

Client Sample ID: TXY-99D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-58		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	94%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	98%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	101%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	115%		40-140%
	d5-EtFOSAA	118%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	92%		50-150%
	13C2-8:2FTS	91%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

Client Sample ID: TXY-98A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-59		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78007.D	1	10/11/21 08:50	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-98A		Date Sampled: 09/19/21
Lab Sample ID: FA89200-59		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 86.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	66%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	78%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-98B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-60		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q78008.D	1	10/11/21 09:07	NG	09/27/21 06:30	OP87500	S2Q1104
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0011	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0011	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0011	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0011	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0011	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0011	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0011	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0011	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0011	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0011	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0011	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0011	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0011	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0011	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0011	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0011	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0011	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0011	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0011	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0028	mg/kg	
2991-50-6	EtFOSAA	ND	0.0028	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-98B		Date Sampled: 09/19/21
Lab Sample ID: FA89200-60		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 87.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.60
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0011	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	95%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	106%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	85%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-6		Date Sampled: 09/20/21
Lab Sample ID: FA89200-61		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 84.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77761.D	1	10/08/21 10:30	NG	09/27/21 06:30	OP87501	S2Q1101
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result RL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0029	mg/kg	
2991-50-6	EtFOSAA	ND	0.0029	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-6		Date Sampled: 09/20/21
Lab Sample ID: FA89200-61		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 84.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	64%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	66%		50-150%
	13C6-PFDA	68%		50-150%
	13C7-PFUnDA	65%		40-140%
	13C2-PFDoDA	55%		40-140%
	13C2-PFTeDA	63%		30-130%
	13C3-PFBS	64%		50-150%
	13C3-PFHxS	64%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	53%		30-130%
	d3-MeFOSAA	64%		40-140%
	d5-EtFOSAA	64%		40-140%
	13C2-4:2FTS	62%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	63%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.61
 4

Report of Analysis

Client Sample ID: TXY-98C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-62		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77762.D	1	10/08/21 10:47	NG	09/27/21 06:30	OP87501	S2Q1101
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

4.62
4

Report of Analysis

Client Sample ID: TXY-98C		Date Sampled: 09/19/21
Lab Sample ID: FA89200-62		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 82.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	87%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	92%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	84%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-98D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-63		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q77763.D	1	10/08/21 11:03	NG	09/27/21 06:30	OP87501	S2Q1101
Run #2							

Run #	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	ND	0.0012	mg/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.0012	mg/kg	
307-24-4	Perfluorohexanoic acid	ND	0.0012	mg/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.0012	mg/kg	
335-67-1	Perfluorooctanoic acid	ND	0.0012	mg/kg	
375-95-1	Perfluorononanoic acid	ND	0.0012	mg/kg	
335-76-2	Perfluorodecanoic acid	ND	0.0012	mg/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.0012	mg/kg	
307-55-1	Perfluorododecanoic acid	ND	0.0012	mg/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.0012	mg/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.0012	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	ND	0.0012	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0012	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0012	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0012	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0012	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0012	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0012	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	ND	0.0012	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	ND	0.0030	mg/kg	
2991-50-6	EtFOSAA	ND	0.0030	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-98D		Date Sampled: 09/19/21
Lab Sample ID: FA89200-63		Date Received: 09/23/21
Matrix: SO - Soil		Percent Solids: 83.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1216187		

4.63
4

CAS No.	Compound	Result	RL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0012	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	77%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	97%		40-140%
	d5-EtFOSAA	97%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	86%		50-150%

ND = Not detected
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: FA89200
Account: SGS/KA SGS North America, Inc
Project: 1216187

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M BY ID	SO	Certified by SOP MS014
6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M BY ID	SO	Certified by SOP MS014
8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M BY ID	SO	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	SO	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	SO	Certified by SOP MS014
PFOSA	754-91-6	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanoic acid	375-22-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanesulfonic acid	335-77-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanesulfonic acid	375-92-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanesulfonic acid	68259-12-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanoic acid	375-95-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanesulfonic acid	2706-91-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanoic acid	2706-90-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	SO	Certified by SOP MS014

SGS North America Inc.
CHAIN OF CUSTODY RECORD

FA89200



Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS ORLANDO				Page 1 of 7				
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1216187		PWSID#:		CONTAINER	Preservative Used: NONE	TYPE	C = COMP G = GRAB M = Multi Incremental Soils	EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: 686280 SGS - Alaska		QUOTE #: 1216187										
E-MAIL: Env.Alaska.ReflabTeam@sgs.com		P.O. #: 1216187										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	TYPE	C = COMP G = GRAB M = Multi Incremental Soils	EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID
1	TXY-87B	09/18/2021	09:38:00	Solid	1			X			1216187001	
2	TXY-87A	09/18/2021	10:02:00	Solid	1			X			1216187002	
3	TXY-87C	09/18/2021	11:54:00	Solid	1			X			1216187004	
4	TXY-133A	09/18/2021	12:23:00	Solid	1			X			1216187005	
5	FD-1	09/18/2021	12:25:00	Solid	1			X			1216187006	
6	TXY-133B	09/18/2021	12:33:00	Solid	1			X			1216187007	
7	TXY-132A	09/18/2021	13:00:00	Solid	1			X			1216187008	
8	TXY-132B	09/18/2021	13:15:00	Solid	1			X			1216187009	
9	TXY-131A	09/18/2021	13:37:00	Solid	1			X			1216187010	
10	TXY-131B	09/18/2021	13:42:00	Solid	1			X			1216187011	
Relinquished By: (1) <i>UPS</i>		Date	Time	Received By:		DOD Project?		NO	Data Deliverable Requirements:			
		<i>9/20/21</i>	<i>1000</i>	<i>[Signature]</i>		Report to DL (J Flags)? If J- Report as DL/LOD/LOG.		NO	Level 2			
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:						
						Requested Turnaround Time and-or Special Instructions:						
Relinquished By: (3)		Date	Time	Received By:		24 Compound List; SAMPLES ARE HOT!!!						
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank <i>3.1 IRM</i>		Chain of Custody Seal: (Circle)				
						or Ambient []		INTACT BROKEN ABSENT				

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INITIAL ASSESSMENT *[Signature]*

LABEL VERIFICATION *B6*

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FA89200: Chain of Custody

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS ORLANDO				Page 2 of 7				
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1216187		PWSID#: NPDL#:		CONTAINER #	Preservative Used: NONE	TYPE	C = COMP G = GRAB H = Multi Incremental Soils	EPA 517 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: 686280 SGS - Alaska		QUOTE #: P.O. #: 1216187										
RESERVED for lab use		SAMPLE IDENTIFICATION										
11	TXY-134A	09/18/2021	14:02:00	Solid	1		X				1216187012	
12	TXY-134B	09/18/2021	14:08:00	Solid	1		X				1216187013	
13	TXY-130A	09/18/2021	14:18:00	Solid	1		X				1216187014	
14	TXY-130B	09/18/2021	14:22:00	Solid	1		X				1216187015	
15	TXY-129A	09/18/2021	14:32:00	Solid	1		X				1216187016	
16	TXY-129B	09/18/2021	14:38:00	Solid	1		X				1216187017	
17	TXY-128A	09/18/2021	15:03:00	Solid	1		X				1216187018	
18	TXY-128B	09/18/2021	15:09:00	Solid	1		X				1216187019	
19	TXY-135A	09/18/2021	15:23:00	Solid	1		X				1216187020	
20	TXY-135B	09/18/2021	15:30:00	Solid	1		X				1216187021	
Relinquished By: (1) <i>UJ</i>		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)? if J-Report as DL/LOD/LOQ.		Data Deliverable Requirements:		
		9/18/21	1200	<i>[Signature]</i>		NO		NO		Level 2		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:						
						Requested Turnaround Time and-or Special Instructions:						
						24 Compound List; SAMPLES ARE HOT!!!						
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)				
						or Ambient []		INTACT BROKEN ABSENT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:								

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FA89200: Chain of Custody

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS ORLANDO				Page 4 of 7																																																																																																												
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																																																																																																																
PROJECT NAME: 1216187		PWSID#:		<table border="1"> <tr> <td rowspan="4">CONTAINER</td> <td>Preservative Used:</td> <td>NONE</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>TYPE</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>C = COMP</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>G = GRAB</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>MI = Multi Incremental Soils</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>EPA 817 PFAS CONFIRM LIST</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>MS</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>MSD</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>SGS lab #</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Location ID</td> <td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>						CONTAINER	Preservative Used:	NONE									TYPE										C = COMP										G = GRAB										MI = Multi Incremental Soils											EPA 817 PFAS CONFIRM LIST											MS											MSD											SGS lab #											Location ID										
CONTAINER	Preservative Used:	NONE																																																																																																																		
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REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com																																																																																																																		
		Env.Alaska.RefLabTeam@sgs.com																																																																																																																		
INVOICE TO: 686230		QUOTE #:																																																																																																																		
SGS - Alaska		P.O. #: 1216187																																																																																																																		
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	Preservative Used:	TYPE	C = COMP	G = GRAB	MI = Multi Incremental Soils	EPA 817 PFAS CONFIRM LIST	MS	MSD	SGS lab #	Location ID																																																																																																					
31	TXY-93C	09/19/2021	09:17:00	Solid 1	1		X							1216187032																																																																																																						
32	TXY-94A	09/19/2021	09:44:00	Solid 1	1		X							1216187033																																																																																																						
33	TXY-94B	09/19/2021	09:48:00	Solid 1	1		X							1216187034																																																																																																						
34	TXY-94C	09/19/2021	09:52:00	Solid 1	1		X							1216187035																																																																																																						
35	TXY-95A	09/19/2021	10:01:00	Solid 1	1		X							1216187036																																																																																																						
36	TXY-95B	09/19/2021	10:05:00	Solid 1	1		X							1216187037																																																																																																						
37	TXY-95C	09/19/2021	10:12:00	Solid 1	1		X							1216187038																																																																																																						
38	TXY-95D	09/19/2021	10:17:00	Solid 1	1		X							1216187039																																																																																																						
39	FD-3	09/19/2021	10:18:00	Solid 1	1		X							1216187040																																																																																																						
40	TXY-96A	09/19/2021	10:24:00	Solid 1	1		X							1216187041																																																																																																						
Relinquished By: (1) <i>UPS</i>		Date	Time	Received By:		DOD Project?		NO		Data Deliverable Requirements:																																																																																																										
		9/21/21	1000	<i>Julie Shumway</i>		Report to DL (J Flags)?		NO		Level 2																																																																																																										
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:																																																																																																														
Relinquished By: (3)		Date	Time	Received By:		Requested Turnaround Time and-or Special Instructions:																																																																																																														
Relinquished By: (4)		Date	Time	Received For Laboratory By:		24 Compound List; SAMPLES ARE HOT!!!																																																																																																														
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						or Ambient []				INTACT BROKEN ABSENT																																																																																																										

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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless					
PROJECT NAME: 1216187		PWSID#: _____		#		Preservative Used: NONE			
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com		CONTAINER		TYPE			
		Env.Alaska.RefLabTeam@sgs.com		C = COMP		G = CRAB			
INVOICE TO: 686230		QUOTE #: _____		EPA 517 PFAS CONFIRM LIST		MS		MSD	
SGS - Alaska		P.O. #: 1216187		MT = Multi Incremental Soils				SGS lab #	
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE					Location ID
41	TXY-96B	09/19/2021	10:32:00	Solid 1		X			1216187042
42	TXY-96C	09/19/2021	10:36:00	Solid 1		X			1216187043
43	TXY-96D	09/19/2021	10:47:00	Solid 1		X			1216187044
44	FD-4	09/19/2021	10:48:00	Solid 1		X			1216187045
45	TXY-97A	09/19/2021	10:55:00	Solid 1		X			1216187046
46	TXY-97B	09/19/2021	11:03:00	Solid 1		X			1216187047
47	TXY-97C	09/19/2021	11:10:00	Solid 1		X			1216187048
48	TXY-97D	09/19/2021	11:21:00	Solid 1		X			1216187049
49	TXY-100A	09/19/2021	13:03:00	Solid 1		X			1216187050
50	FD-5	09/19/2021	13:04:00	Solid 1		X			1216187051
Relinquished By: (1) <i>UPS</i>		Date	Time	Received By: <i>Stephanie</i>		DOD Project?		NO	Data Deliverable Requirements:
Relinquished By: (2)		Date	Time	Received By:		Report to DL (J Flags)? If J- Report as DL/LOD/LOQ.		NO	Level 2
Relinquished By: (3)		Date	Time	Received By:		Cooler ID: Requested Turnaround Time and-or Special Instructions: 24 Compound List; SAMPLES ARE HOT!!!			
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank °C: or Ambient []		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT	

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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1216187		PWSID#:		CONTAINER	Preservative Used: NONE	TYPE	C = COMP G = GRAB MI = Multi Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: 686230		QUOTE #:										
SGS - Alaska		P.O. #: 1216187										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE	#	TYPE	C = COMP G = GRAB MI = Multi Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
51	TXY-100B	09/19/2021	13:08:00	Solid	1			X			1216187052	
52	TXY-100C	09/19/2021	13:18:00	Solid	1			X			1216187053	
53	TXY-100D	09/19/2021	13:28:00	Solid	1			X			1216187054	
54	TXY-100E	09/19/2021	13:33:00	Solid	1			X			1216187055	
55	TXY-99A	09/19/2021	13:38:00	Solid	1			X			1216187056	
56	TXY-99B	09/19/2021	13:43:00	Solid	1			X			1216187057	
57	TXY-99C	09/19/2021	13:47:00	Solid	1			X			1216187058	
58	TXY-99D	09/19/2021	14:12:00	Solid	1			X			1216187059	
59	TXY-98A	09/19/2021	14:20:00	Solid	1			X			1216187060	
60	TXY-98B	09/19/2021	14:26:00	Solid	1			X			1216187061	
Relinquished By: (1) <i>UPS</i>		Date	Time	Received By:	DOD Project?		Report to DL (J Flags)? If J-Report as DL/LOD/LOQ.		Data Deliverable Requirements:			
		<i>9/23/21</i>	<i>1000</i>	<i>[Signature]</i>	NO		NO		Level 2			
Relinquished By: (2)		Date	Time	Received By:	Cooler ID: Requested Turnaround Time and-or Special Instructions:							
					24 Compound List; SAMPLES ARE HOT!!!							
Relinquished By: (3)		Date	Time	Received By:	Temp Blank °C:		Chain of Custody Seal: (Circle)					
					or Ambient []		INTACT BROKEN ABSENT					
Relinquished By: (4)		Date	Time	Received For Laboratory By:								

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS ORLANDO				Page 7 of 7													
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																	
PROJECT NAME: 1216187		PWSID#:		#	Preservative Used:	NONE			MS	MSD	SGS lab #	Location ID									
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com				CONTRACT AIRS	TYPE	C = COMP					S = GRAB	MI = Multi Incremental	Sols	EPA 837 PFAS- CONFIRM LIST					
INVOICE TO: 686230		QUOTE #:															EPA 837 PFAS- CONFIRM LIST	MS	MSD	SGS lab #	Location ID
SGS - Alaska		P.O. #: 1216187																			
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE																	
61	FD-6	09/20/2021	14:27:00	Solid	1	X					1216187062										
62	TXY-98C	09/19/2021	14:30:00	Solid	1	X					1216187063										
63	TXY-98D	09/19/2021	14:45:00	Solid	1	X					1216187064										
Relinquished By: (1) <i>UPS</i>		Date	Time	Received By: <i>Stacy Hill</i>		DOD Project? NO		Data Deliverable Requirements: Level 2													
Relinquished By: (2)		Date	Time	Received By:		Cooler ID: Requested Turnaround Time and-or Special Instructions: 24 Compound List; SAMPLES ARE HOT!!!															
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: or Ambient [] Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT															
Relinquished By: (4)		Date	Time	Received For Laboratory By:																	

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SGS Sample Receipt Summary

Job Number: FA89200

Client: SGS ALASKA

Project: 1216187

Date / Time Received: 9/23/2021 10:00:00 AM

Delivery Method: UPS

Airbill #s: _____

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.4);

Cooler Temps (Corrected) °C: Cooler 1: (3.6);

Cooler Information

Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Temp criteria achieved | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. Cooler temp verification | <u>IR Gun</u> | |
| 5. Cooler media | <u>Ice (Bag)</u> | |

Sample Information

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Samples preserved properly | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Sufficient volume/containers recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Condition of sample | <u>Intact</u> | | |
| 5. Sample recvd within HT | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 6. Dates/Times/IDs on COC match Sample Label | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 7. VOCs have headspace | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 9. Compositing instructions clear | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10. Voa Soil Kits/Jars received past 48hrs? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11. % Solids Jar received? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 12. Residual Chlorine Present? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Trip Blank Information

Y or N N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

W or S N/A

- | | | | |
|------------------------|--------------------------|--------------------------|-------------------------------------|
| 3. Type Of TB Received | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
|------------------------|--------------------------|--------------------------|-------------------------------------|

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____
 Test Strip Lot #: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____
 Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: STEPHENP

Date: 9/23/2021 10:00:00 A

Reviewer: _____

Date: _____

FA89200: Chain of Custody

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-MB	3Q46410.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	ug/kg	
754-91-6	PFOSA	ND	0.50	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	94% 40-140%
	13C5-PFPeA	104% 50-150%
	13C5-PFHxA	115% 50-150%
	13C4-PFHpA	111% 50-150%
	13C8-PFOA	95% 50-150%
	13C9-PFNA	88% 50-150%
	13C6-PFDA	86% 50-150%
	13C7-PFUnDA	84% 40-140%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-MB	3Q46410.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	82% 40-140%
	13C2-PFTeDA	79% 30-130%
	13C3-PFBS	113% 50-150%
	13C3-PFHxS	95% 50-150%
	13C8-PFOS	80% 50-150%
	13C8-FOSA	77% 30-130%
	d3-MeFOSAA	103% 40-140%
	d5-EtFOSAA	101% 40-140%
	13C2-4:2FTS	111% 50-150%
	13C2-6:2FTS	88% 50-150%
	13C2-8:2FTS	82% 50-150%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-MB	2Q77738.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	ug/kg	
307-24-4	Perfluoroheptanoic acid	ND	0.50	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	ug/kg	
355-46-4	Perfluoroheptanesulfonic acid	ND	0.50	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	ug/kg	
754-91-6	PFOSA	ND	0.50	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	91% 40-140%
	13C5-PFPeA	93% 50-150%
	13C5-PFHxA	91% 50-150%
	13C4-PFHpA	94% 50-150%
	13C8-PFOA	93% 50-150%
	13C9-PFNA	95% 50-150%
	13C6-PFDA	99% 50-150%
	13C7-PFUnDA	95% 40-140%

Method Blank Summary

Job Number: FA89200
Account: SGS/KA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-MB	2Q77738.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	83% 40-140%
	13C2-PFTeDA	89% 30-130%
	13C3-PFBS	91% 50-150%
	13C3-PFHxS	93% 50-150%
	13C8-PFOS	92% 50-150%
	13C8-FOSA	83% 30-130%
	d3-MeFOSAA	104% 40-140%
	d5-EtFOSAA	100% 40-140%
	13C2-4:2FTS	90% 50-150%
	13C2-6:2FTS	92% 50-150%
	13C2-8:2FTS	93% 50-150%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-MB	2Q77946.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	ug/kg	
754-91-6	PFOSA	ND	0.50	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	95% 40-140%
	13C5-PFPeA	95% 50-150%
	13C5-PFHxA	96% 50-150%
	13C4-PFHpA	97% 50-150%
	13C8-PFOA	101% 50-150%
	13C9-PFNA	100% 50-150%
	13C6-PFDA	99% 50-150%
	13C7-PFUnDA	101% 40-140%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-MB	2Q77946.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	97% 40-140%
	13C2-PFTeDA	124% 30-130%
	13C3-PFBS	99% 50-150%
	13C3-PFHxS	97% 50-150%
	13C8-PFOS	98% 50-150%
	13C8-FOSA	83% 30-130%
	d3-MeFOSAA	121% 40-140%
	d5-EtFOSAA	122% 40-140%
	13C2-4:2FTS	91% 50-150%
	13C2-6:2FTS	95% 50-150%
	13C2-8:2FTS	94% 50-150%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-MB	2Q77982.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	ug/kg	
754-91-6	PFOSA	ND	0.50	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 40-140%
	13C5-PFPeA	97% 50-150%
	13C5-PFHxA	97% 50-150%
	13C4-PFHpA	100% 50-150%
	13C8-PFOA	102% 50-150%
	13C9-PFNA	102% 50-150%
	13C6-PFDA	103% 50-150%
	13C7-PFUnDA	104% 40-140%

Method Blank Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-MB	2Q77982.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	101% 40-140%
	13C2-PFTeDA	107% 30-130%
	13C3-PFBS	103% 50-150%
	13C3-PFHxS	101% 50-150%
	13C8-PFOS	101% 50-150%
	13C8-FOSA	95% 30-130%
	d3-MeFOSAA	129% 40-140%
	d5-EtFOSAA	132% 40-140%
	13C2-4:2FTS	94% 50-150%
	13C2-6:2FTS	99% 50-150%
	13C2-8:2FTS	97% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q665-IBLK	3Q46359.D	1	10/07/21	MV	n/a	n/a	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	95% 50-150%
	13C5-PFPeA	102% 50-150%
	13C5-PFHxA	110% 50-150%
	13C4-PFHpA	110% 50-150%
	13C8-PFOA	97% 50-150%
	13C9-PFNA	89% 50-150%
	13C6-PFDA	87% 50-150%
	13C7-PFUnDA	86% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q665-IBLK	3Q46359.D	1	10/07/21	MV	n/a	n/a	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	86% 50-150%
	13C2-PFTeDA	79% 50-150%
	13C3-PFBS	109% 50-150%
	13C3-PFHxS	98% 50-150%
	13C8-PFOS	81% 50-150%
	13C8-FOSA	95% 50-150%
	d3-MeFOSAA	100% 50-150%
	d5-EtFOSAA	100% 50-150%
	13C2-4:2FTS	105% 50-150%
	13C2-6:2FTS	93% 50-150%
	13C2-8:2FTS	84% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1101-IBLK	2Q77692.D	1	10/07/21	NG	n/a	n/a	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-16, FA89200-17, FA89200-61, FA89200-62, FA89200-63

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	93% 50-150%
	13C5-PFPeA	94% 50-150%
	13C5-PFHxA	93% 50-150%
	13C4-PFHpA	93% 50-150%
	13C8-PFOA	95% 50-150%
	13C9-PFNA	95% 50-150%
	13C6-PFDA	100% 50-150%
	13C7-PFUnDA	96% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1101-IBLK	2Q77692.D	1	10/07/21	NG	n/a	n/a	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-16, FA89200-17, FA89200-61, FA89200-62, FA89200-63

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	89% 50-150%
	13C2-PFTeDA	89% 50-150%
	13C3-PFBS	90% 50-150%
	13C3-PFHxS	92% 50-150%
	13C8-PFOS	96% 50-150%
	13C8-FOSA	99% 50-150%
	d3-MeFOSAA	108% 50-150%
	d5-EtFOSAA	106% 50-150%
	13C2-4:2FTS	89% 50-150%
	13C2-6:2FTS	92% 50-150%
	13C2-8:2FTS	92% 50-150%

6.1.6
6

Instrument Blank

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q665-IBLK	3Q46465.D	1	10/08/21	MV	n/a	n/a	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	99% 50-150%
	13C5-PFPeA	108% 50-150%
	13C5-PFHxA	116% 50-150%
	13C4-PFHpA	112% 50-150%
	13C8-PFOA	99% 50-150%
	13C9-PFNA	90% 50-150%
	13C6-PFDA	86% 50-150%
	13C7-PFUnDA	86% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q665-IBLK	3Q46465.D	1	10/08/21	MV	n/a	n/a	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	ID	Standard Recoveries	Limits
	13C2-PFDoDA	85%	50-150%
	13C2-PFTeDA	81%	50-150%
	13C3-PFBS	114%	50-150%
	13C3-PFHxS	99%	50-150%
	13C8-PFOS	87%	50-150%
	13C8-FOSA	94%	50-150%
	d3-MeFOSAA	107%	50-150%
	d5-EtFOSAA	105%	50-150%
	13C2-4:2FTS	112%	50-150%
	13C2-6:2FTS	91%	50-150%
	13C2-8:2FTS	84%	50-150%

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Instrument Blank

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1103-IBLK	2Q77881.D	1	10/09/21	NG	n/a	n/a	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-29, FA89200-30, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	106% 50-150%
	13C5-PFPeA	103% 50-150%
	13C5-PFHxA	104% 50-150%
	13C4-PFHpA	103% 50-150%
	13C8-PFOA	106% 50-150%
	13C9-PFNA	105% 50-150%
	13C6-PFDA	105% 50-150%
	13C7-PFUnDA	106% 50-150%

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Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1103-IBLK	2Q77881.D	1	10/09/21	NG	n/a	n/a	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-29, FA89200-30, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	107% 50-150%
	13C2-PFTeDA	108% 50-150%
	13C3-PFBS	104% 50-150%
	13C3-PFHxS	106% 50-150%
	13C8-PFOS	104% 50-150%
	13C8-FOSA	111% 50-150%
	d3-MeFOSAA	120% 50-150%
	d5-EtFOSAA	124% 50-150%
	13C2-4:2FTS	98% 50-150%
	13C2-6:2FTS	102% 50-150%
	13C2-8:2FTS	98% 50-150%

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Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1104-IBLK	2Q77978.D	1	10/11/21	NG	n/a	n/a	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	107% 50-150%
	13C5-PFPeA	103% 50-150%
	13C5-PFHxA	102% 50-150%
	13C4-PFHpA	104% 50-150%
	13C8-PFOA	106% 50-150%
	13C9-PFNA	107% 50-150%
	13C6-PFDA	108% 50-150%
	13C7-PFUnDA	106% 50-150%

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Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1104-IBLK	2Q77978.D	1	10/11/21	NG	n/a	n/a	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	109% 50-150%
	13C2-PFTeDA	109% 50-150%
	13C3-PFBS	107% 50-150%
	13C3-PFHxS	103% 50-150%
	13C8-PFOS	106% 50-150%
	13C8-FOSA	114% 50-150%
	d3-MeFOSAA	134% 50-150%
	d5-EtFOSAA	134% 50-150%
	13C2-4:2FTS	97% 50-150%
	13C2-6:2FTS	102% 50-150%
	13C2-8:2FTS	100% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q281-IBLK	4Q20271.D	1	10/13/21	NG	n/a	n/a	S4Q281

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-28, FA89200-31, FA89200-36

CAS No.	Compound	Result	RL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	ug/kg	
754-91-6	PFOSA	ND	1.0	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	108% 50-150%
	13C5-PFPeA	108% 50-150%
	13C5-PFHxA	107% 50-150%
	13C4-PFHpA	107% 50-150%
	13C8-PFOA	108% 50-150%
	13C9-PFNA	108% 50-150%
	13C6-PFDA	109% 50-150%
	13C7-PFUnDA	107% 50-150%

Instrument Blank

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q281-IBLK	4Q20271.D	1	10/13/21	NG	n/a	n/a	S4Q281

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA89200-28, FA89200-31, FA89200-36

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	104% 50-150%
	13C2-PFTeDA	104% 50-150%
	13C3-PFBS	104% 50-150%
	13C3-PFHxS	103% 50-150%
	13C8-PFOS	105% 50-150%
	13C8-FOSA	120% 50-150%
	d3-MeFOSAA	112% 50-150%
	d5-EtFOSAA	121% 50-150%
	13C2-4:2FTS	100% 50-150%
	13C2-6:2FTS	104% 50-150%
	13C2-8:2FTS	103% 50-150%

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Blank Spike Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-BS	3Q46409.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.8	88	70-130
2706-90-3	Perfluoropentanoic acid	10	8.5	85	70-130
307-24-4	Perfluorohexanoic acid	10	9.2	92	70-130
375-85-9	Perfluoroheptanoic acid	10	9.0	90	70-130
335-67-1	Perfluorooctanoic acid	10	9.3	93	70-130
375-95-1	Perfluorononanoic acid	10	8.2	82	70-130
335-76-2	Perfluorodecanoic acid	10	8.3	83	70-130
2058-94-8	Perfluoroundecanoic acid	10	8.5	85	70-130
307-55-1	Perfluorododecanoic acid	10	8.8	88	70-130
72629-94-8	Perfluorotridecanoic acid	10	8.1	81	70-130
376-06-7	Perfluorotetradecanoic acid	10	8.7	87	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.0	90	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.5	85	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.0	90	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.3	93	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	8.5	85	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.3	93	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.1	91	65-135
754-91-6	PFOSA	10	8.6	86	70-130
2355-31-9	MeFOSAA	10	7.9	79	70-130
2991-50-6	EtFOSAA	10	8.2	82	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.0	90	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.2	92	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	8.9	89	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	99%	40-140%
	13C5-PFPeA	108%	50-150%
	13C5-PFHxA	119%	50-150%
	13C4-PFHpA	113%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	89%	50-150%
	13C6-PFDA	86%	50-150%
	13C7-PFUnDA	86%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-BS	3Q46409.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	85%	40-140%
	13C2-PFTeDA	81%	30-130%
	13C3-PFBS	117%	50-150%
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	81%	50-150%
	13C8-FOSA	75%	30-130%
	d3-MeFOSAA	103%	40-140%
	d5-EtFOSAA	104%	40-140%
	13C2-4:2FTS	121%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	85%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAK/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-BS	2Q77737.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.5	85	70-130
2706-90-3	Perfluoropentanoic acid	10	9.2	92	70-130
307-24-4	Perfluorohexanoic acid	10	9.3	93	70-130
375-85-9	Perfluoroheptanoic acid	10	9.5	95	70-130
335-67-1	Perfluorooctanoic acid	10	9.8	98	70-130
375-95-1	Perfluorononanoic acid	10	9.1	91	70-130
335-76-2	Perfluorodecanoic acid	10	8.3	83	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.1	91	70-130
307-55-1	Perfluorododecanoic acid	10	9.1	91	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.6	96	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.1	91	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.2	92	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.8	88	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.5	95	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10	100	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.5	95	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.1	91	70-130
335-77-3	Perfluorodecanesulfonic acid	10	8.4	84	65-135
754-91-6	PFOSA	10	9.4	94	70-130
2355-31-9	MeFOSAA	10	8.9	89	70-130
2991-50-6	EtFOSAA	10	8.8	88	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.2	92	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.6	96	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	8.8	88	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	98%	40-140%
	13C5-PFPeA	98%	50-150%
	13C5-PFHxA	96%	50-150%
	13C4-PFHpA	97%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	97%	50-150%
	13C6-PFDA	105%	50-150%
	13C7-PFUnDA	100%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/KA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-BS	2Q77737.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	89%	40-140%
	13C2-PFTeDA	97%	30-130%
	13C3-PFBS	96%	50-150%
	13C3-PFHxS	98%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	77%	30-130%
	d3-MeFOSAA	108%	40-140%
	d5-EtFOSAA	106%	40-140%
	13C2-4:2FTS	99%	50-150%
	13C2-6:2FTS	100%	50-150%
	13C2-8:2FTS	101%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-BS	2Q77945.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.4	84	70-130
2706-90-3	Perfluoropentanoic acid	10	9.0	90	70-130
307-24-4	Perfluorohexanoic acid	10	9.2	92	70-130
375-85-9	Perfluoroheptanoic acid	10	9.2	92	70-130
335-67-1	Perfluorooctanoic acid	10	9.2	92	70-130
375-95-1	Perfluorononanoic acid	10	8.9	89	70-130
335-76-2	Perfluorodecanoic acid	10	8.6	86	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.0	90	70-130
307-55-1	Perfluorododecanoic acid	10	8.7	87	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.5	95	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.0	90	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.2	92	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.4	84	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.4	94	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.5	95	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.0	90	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.4	94	70-130
335-77-3	Perfluorodecanesulfonic acid	10	8.5	85	65-135
754-91-6	PFOSA	10	8.8	88	70-130
2355-31-9	MeFOSAA	10	8.7	87	70-130
2991-50-6	EtFOSAA	10	8.6	86	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.1	91	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.7	97	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	8.6	86	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	101%	40-140%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	100%	50-150%
	13C8-PFOA	102%	50-150%
	13C9-PFNA	101%	50-150%
	13C6-PFDA	102%	50-150%
	13C7-PFUnDA	103%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-BS	2Q77945.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	101%	40-140%
	13C2-PFTeDA	113%	30-130%
	13C3-PFBS	103%	50-150%
	13C3-PFHxS	101%	50-150%
	13C8-PFOS	101%	50-150%
	13C8-FOSA	84%	30-130%
	d3-MeFOSAA	123%	40-140%
	d5-EtFOSAA	125%	40-140%
	13C2-4:2FTS	99%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	102%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-BS	2Q77981.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.4	84	70-130
2706-90-3	Perfluoropentanoic acid	10	9.5	95	70-130
307-24-4	Perfluorohexanoic acid	10	9.5	95	70-130
375-85-9	Perfluoroheptanoic acid	10	9.6	96	70-130
335-67-1	Perfluorooctanoic acid	10	9.5	95	70-130
375-95-1	Perfluorononanoic acid	10	9.2	92	70-130
335-76-2	Perfluorodecanoic acid	10	8.9	89	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.3	93	70-130
307-55-1	Perfluorododecanoic acid	10	9.0	90	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.7	97	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.4	94	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.4	94	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.9	89	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.7	97	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.8	98	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.6	96	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.7	97	70-130
335-77-3	Perfluorodecanesulfonic acid	10	8.8	88	65-135
754-91-6	PFOSA	10	8.9	89	70-130
2355-31-9	MeFOSAA	10	8.7	87	70-130
2991-50-6	EtFOSAA	10	9.2	92	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.5	95	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.9	99	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	8.9	89	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	99%	40-140%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	96%	50-150%
	13C4-PFHpA	97%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	100%	50-150%
	13C7-PFUnDA	101%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-BS	2Q77981.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	100%	40-140%
	13C2-PFTeDA	107%	30-130%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	100%	50-150%
	13C8-PFOS	99%	50-150%
	13C8-FOSA	82%	30-130%
	d3-MeFOSAA	126%	40-140%
	d5-EtFOSAA	124%	40-140%
	13C2-4:2FTS	97%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	100%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-MS	3Q46423.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665
OP87498-MSD	3Q46424.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665
FA89200-10	3Q46422.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	Compound	FA89200-10 Spike ug/kg	MS Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
375-22-4	Perfluorobutanoic acid	ND		17.4	15.3	88	17.7	14.5	82	5	70-130/30
2706-90-3	Perfluoropentanoic acid	ND		17.4	15.0	86	17.7	14.3	81	5	70-130/30
307-24-4	Perfluorohexanoic acid	ND		17.4	16.0	92	17.7	15.3	86	4	70-130/30
375-85-9	Perfluoroheptanoic acid	ND		17.4	15.5	89	17.7	15.0	85	3	70-130/30
335-67-1	Perfluorooctanoic acid	ND		17.4	16.3	94	17.7	15.5	87	5	70-130/30
375-95-1	Perfluorononanoic acid	ND		17.4	13.9	80	17.7	13.5	76	3	70-130/30
335-76-2	Perfluorodecanoic acid	ND		17.4	14.4	83	17.7	14.0	79	3	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND		17.4	15.4	89	17.7	14.5	82	6	70-130/30
307-55-1	Perfluorododecanoic acid	ND		17.4	15.2	87	17.7	14.2	80	7	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND		17.4	13.9	80	17.7	13.3	75	4	70-130/30
376-06-7	Perfluorotetradecanoic acid	ND		17.4	15.1	87	17.7	14.6	82	3	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND		17.4	15.8	91	17.7	15.0	85	5	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	ND		17.4	14.7	85	17.7	14.0	79	5	70-130/30
355-46-4	Perfluorohexanesulfonic acid	ND		17.4	15.6	90	17.7	14.5	82	7	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND		17.4	16.4	94	17.7	15.3	86	7	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	ND		17.4	15.4	89	17.7	14.1	80	9	70-130/30
68259-12-1	Perfluorononanesulfonic acid	ND		17.4	16.2	93	17.7	14.7	83	10	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND		17.4	17.9	103	17.7	15.3	86	16	65-135/30
754-91-6	PFOSA	ND		17.4	14.5	83	17.7	14.6	82	1	70-130/30
2355-31-9	MeFOSAA	ND		17.4	14.0	81	17.7	14.3	81	2	70-130/30
2991-50-6	EtFOSAA	ND		17.4	14.7	85	17.7	13.9	78	6	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	ND		17.4	15.2	87	17.7	14.7	83	3	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND		17.4	16.4	94	17.7	15.8	89	4	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND		17.4	14.9	86	17.7	13.6	77	9	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-10	Limits
	13C4-PFBA	79%	77%	76%	40-140%
	13C5-PFPeA	89%	86%	85%	50-150%
	13C5-PFHxA	98%	95%	95%	50-150%
	13C4-PFHpA	96%	92%	91%	50-150%
	13C8-PFOA	80%	77%	78%	50-150%
	13C9-PFNA	75%	72%	73%	50-150%
	13C6-PFDA	72%	68%	71%	50-150%
	13C7-PFUnDA	70%	68%	69%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/KA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87498-MS	3Q46423.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665
OP87498-MSD	3Q46424.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665
FA89200-10	3Q46422.D	1	10/08/21	MV	09/27/21	OP87498	S3Q665

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-1, FA89200-2, FA89200-3, FA89200-4, FA89200-5, FA89200-6, FA89200-7, FA89200-8, FA89200-9, FA89200-10, FA89200-11, FA89200-12, FA89200-13, FA89200-14, FA89200-15, FA89200-16, FA89200-17, FA89200-18, FA89200-19, FA89200-20

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-10	Limits
	13C2-PFD _o DA	71%	68%	72%	40-140%
	13C2-PFTeDA	68%	65%	68%	30-130%
	13C3-PFBS	100%	99%	98%	50-150%
	13C3-PFH _x S	83%	83%	82%	50-150%
	13C8-PFOS	68%	69%	69%	50-150%
	13C8-FOSA	79%	75%	77%	30-130%
	d3-MeFOSAA	73%	69%	64%	40-140%
	d5-EtFOSAA	75%	72%	67%	40-140%
	13C2-4:2FTS	99%	97%	91%	50-150%
	13C2-6:2FTS	77%	75%	74%	50-150%
	13C2-8:2FTS	71%	71%	68%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAK North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-MS	2Q77743.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101
OP87501-MSD	2Q77744.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101
FA89196-7	2Q77742.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	Compound	FA89196-7 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	1.3 U	11.8	9.9	84	12.2	10.1	83	2	70-130/30
2706-90-3	Perfluoropentanoic acid	0.63 U	11.8	10.7	91	12.2	11.0	90	3	70-130/30
307-24-4	Perfluoroheptanoic acid	0.63 U	11.8	10.8	92	12.2	11.2	92	4	70-130/30
375-85-9	Perfluoroheptanoic acid	0.63 U	11.8	11.2	95	12.2	11.3	92	1	70-130/30
335-67-1	Perfluorooctanoic acid	0.63 U	11.8	11.5	98	12.2	11.5	94	0	70-130/30
375-95-1	Perfluorononanoic acid	0.63 U	11.8	10.4	88	12.2	10.7	88	3	70-130/30
335-76-2	Perfluorodecanoic acid	0.63 U	11.8	10	85	12.2	10	82	0	70-130/30
2058-94-8	Perfluoroundecanoic acid	0.63 U	11.8	10.6	90	12.2	10.8	88	2	70-130/30
307-55-1	Perfluorododecanoic acid	0.63 U	11.8	10.6	90	12.2	10.8	88	2	70-130/30
72629-94-8	Perfluorotridecanoic acid	0.63 U	11.8	11.3	96	12.2	12.0	98	6	70-130/30
376-06-7	Perfluorotetradecanoic acid	0.63 U	11.8	10.5	89	12.2	10.8	88	3	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.63 U	11.8	10.8	92	12.2	10.8	88	0	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.63 U	11.8	10.1	86	12.2	10.4	85	3	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.63 U	11.8	10.8	92	12.2	11.6	95	7	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	0.63 U	11.8	11.3	96	12.2	12.2	100	8	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.96	11.8	12.6	99	12.2	12.6	95	0	70-130/30
68259-12-1	Perfluorononanesulfonic acid	0.63 U	11.8	11.0	93	12.2	11.0	90	0	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.8	11.8	12.2	88	12.2	12.7	89	4	65-135/30
754-91-6	PFOSA	0.63 U	11.8	11.0	93	12.2	11.4	93	4	70-130/30
2355-31-9	MeFOSAA	1.3 U	11.8	10.4	88	12.2	10.5	86	1	70-130/30
2991-50-6	EtFOSAA	1.3 U	11.8	10.4	88	12.2	10.8	88	4	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.3 U	11.8	10.7	91	12.2	11.0	90	3	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.3 U	11.8	11.4	97	12.2	11.7	96	3	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.3 U	11.8	10.3	88	12.2	10.5	86	2	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA89196-7	Limits
	13C4-PFBA	91%	97%		40-140%
	13C5-PFPeA	91%	97%		50-150%
	13C5-PFHxA	89%	94%	93%	50-150%
	13C4-PFHpA	89%	95%	94%	50-150%
	13C8-PFOA	88%	95%	94%	50-150%
	13C9-PFNA	91%	97%	93%	50-150%
	13C6-PFDA	96%	103%	100%	50-150%
	13C7-PFUnDA	85%	88%	88%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87501-MS	2Q77743.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101
OP87501-MSD	2Q77744.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101
FA89196-7	2Q77742.D	1	10/08/21	NG	09/27/21	OP87501	S2Q1101

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-61, FA89200-62, FA89200-63

CAS No.	ID Standard Recoveries	MS	MSD	FA89196-7	Limits
	13C2-PFDoDA	75%	77%	75%	40-140%
	13C2-PFTeDA	84%	90%	87%	30-130%
	13C3-PFBS	89%	95%	94%	50-150%
	13C3-PFHxS	91%	93%	95%	50-150%
	13C8-PFOS	87%	94%	94%	50-150%
	13C8-FOSA	77%	89%		30-130%
	d3-MeFOSAA	107%	115%	119%	40-140%
	d5-EtFOSAA	112%	121%	127%	40-140%
	13C2-4:2FTS	92%	96%		50-150%
	13C2-6:2FTS	91%	97%		50-150%
	13C2-8:2FTS	96%	104%		50-150%
	13C3-HFPO-DA			97%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-MS	2Q77997.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104
OP87500-MSD	2Q77998.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104
FA89200-52	2Q77996.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	Compound	FA89200-52 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND	12.7	10.9	86	12.8	10.9	85	0	70-130/30
2706-90-3	Perfluoropentanoic acid	ND	12.7	12.3	97	12.8	12.2	95	1	70-130/30
307-24-4	Perfluorohexanoic acid	ND	12.7	12.1	95	12.8	11.9	93	2	70-130/30
375-85-9	Perfluoroheptanoic acid	ND	12.7	12.4	98	12.8	12.2	95	2	70-130/30
335-67-1	Perfluorooctanoic acid	ND	12.7	12.4	98	12.8	12.2	95	2	70-130/30
375-95-1	Perfluorononanoic acid	ND	12.7	11.8	93	12.8	11.9	93	1	70-130/30
335-76-2	Perfluorodecanoic acid	ND	12.7	11.4	90	12.8	11.2	88	2	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND	12.7	11.8	93	12.8	11.5	90	3	70-130/30
307-55-1	Perfluorododecanoic acid	ND	12.7	11.6	91	12.8	11.4	89	2	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND	12.7	12.5	98	12.8	12.4	97	1	70-130/30
376-06-7	Perfluorotetradecanoic acid	ND	12.7	12.2	96	12.8	11.9	93	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.64	12.7	13.1	98	12.8	12.5	93	5	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	ND	12.7	11.4	90	12.8	11.1	87	3	70-130/30
355-46-4	Perfluorohexanesulfonic acid	ND	12.7	12.7	100	12.8	12.4	97	2	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND	12.7	13.0	102	12.8	12.8	100	2	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	ND	12.7	11.9	94	12.8	11.6	91	3	70-130/30
68259-12-1	Perfluorononanesulfonic acid	ND	12.7	12.3	97	12.8	12.0	94	2	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND	12.7	11.4	90	12.8	11.2	88	2	65-135/30
754-91-6	PFOSA	ND	12.7	11.6	91	12.8	11.7	92	1	70-130/30
2355-31-9	MeFOSAA	ND	12.7	11.9	94	12.8	11.7	92	2	70-130/30
2991-50-6	EtFOSAA	ND	12.7	11.9	94	12.8	11.5	90	3	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	ND	12.7	12.2	96	12.8	11.9	93	2	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND	12.7	12.8	101	12.8	12.8	100	0	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND	12.7	11.7	92	12.8	11.5	90	2	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-52	Limits
13C4-PFBA		94%	90%	87%	40-140%
13C5-PFPeA		91%	88%	85%	50-150%
13C5-PFHxA		91%	88%	85%	50-150%
13C4-PFHpA		93%	90%	87%	50-150%
13C8-PFOA		92%	90%	89%	50-150%
13C9-PFNA		94%	90%	90%	50-150%
13C6-PFDA		94%	93%	90%	50-150%
13C7-PFUnDA		95%	94%	91%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87500-MS	2Q77997.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104
OP87500-MSD	2Q77998.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104
FA89200-52	2Q77996.D	1	10/11/21	NG	09/27/21	OP87500	S2Q1104

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-41, FA89200-42, FA89200-43, FA89200-44, FA89200-45, FA89200-46, FA89200-47, FA89200-48, FA89200-49, FA89200-50, FA89200-51, FA89200-52, FA89200-53, FA89200-54, FA89200-55, FA89200-56, FA89200-57, FA89200-58, FA89200-59, FA89200-60

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-52	Limits
	13C2-PFDoDA	93%	91%	89%	40-140%
	13C2-PFTeDA	99%	98%	94%	30-130%
	13C3-PFBS	94%	94%	90%	50-150%
	13C3-PFHxS	93%	90%	89%	50-150%
	13C8-PFOS	93%	92%	88%	50-150%
	13C8-FOSA	86%	78%	88%	30-130%
	d3-MeFOSAA	115%	116%	105%	40-140%
	d5-EtFOSAA	114%	116%	111%	40-140%
	13C2-4:2FTS	90%	88%	81%	50-150%
	13C2-6:2FTS	93%	90%	84%	50-150%
	13C2-8:2FTS	93%	91%	86%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-MS	2Q77951.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103
OP87499-MSD	4Q20283.D	1	10/13/21	NG	09/27/21	OP87499	S4Q281
FA89200-24	2Q77950.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	Compound	FA89200-24 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND	11.8	9.8	83	12.4	10.5	85	7	70-130/30
2706-90-3	Perfluoropentanoic acid	0.32	11.8	10.8	89	12.4	11.2	88	4	70-130/30
307-24-4	Perfluorohexanoic acid	0.48	11.8	11.1	90	12.4	11.8	91	6	70-130/30
375-85-9	Perfluoroheptanoic acid	ND	11.8	10.8	92	12.4	11.0	89	2	70-130/30
335-67-1	Perfluorooctanoic acid	1.1	11.8	12.0	93	12.4	12.7	93	6	70-130/30
375-95-1	Perfluorononanoic acid	ND	11.8	9.9	84	12.4	10.5	85	6	70-130/30
335-76-2	Perfluorodecanoic acid	ND	11.8	9.9	84	12.4	10.7	86	8	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND	11.8	10.4	88	12.4	11.0	89	6	70-130/30
307-55-1	Perfluorododecanoic acid	ND	11.8	10.1	86	12.4	10.9	88	8	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND	11.8	10.6	90	12.4	11.5	93	8	70-130/30
376-06-7	Perfluorotetradecanoic acid	ND	11.8	10.3	88	12.4	11.1	89	7	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND	11.8	10.6	90	12.4	11.9	96	12	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	ND	11.8	10.0	85	12.4	10.7	86	7	70-130/30
355-46-4	Perfluorohexanesulfonic acid	2.0	11.8	13.0	94	12.4	13.4	92	3	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND	11.8	11.1	94	12.4	11.7	94	5	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	ND	11.8	10.3	88	12.4	10.7	86	4	70-130/30
68259-12-1	Perfluorononanesulfonic acid	ND	11.8	10.8	92	12.4	11.3	91	5	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND	11.8	9.9	84	12.4	10.5	85	6	65-135/30
754-91-6	PFOSA	ND	11.8	10.6	90	12.4	10.9	88	3	70-130/30
2355-31-9	MeFOSAA	ND	11.8	10.6	90	12.4	11.3	91	6	70-130/30
2991-50-6	EtFOSAA	ND	11.8	10.4	88	12.4	10.9	88	5	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	ND	11.8	10.6	90	12.4	11.2	90	6	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND	11.8	11.0	94	12.4	11.4	92	4	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND	11.8	10.2	87	12.4	10.7	86	5	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-24	Limits
13C4-PFBA		87%	89%	78%	40-140%
13C5-PFPeA		85%	90%	77%	50-150%
13C5-PFHxA		86%	90%	81%	50-150%
13C4-PFHpA		87%	92%	84%	50-150%
13C8-PFOA		89%	91%	88%	50-150%
13C9-PFNA		89%	93%	87%	50-150%
13C6-PFDA		89%	93%	88%	50-150%
13C7-PFUnDA		88%	95%	89%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA89200
Account: SGS/SAKA SGS North America, Inc
Project: 1216187

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP87499-MS	2Q77951.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103
OP87499-MSD	4Q20283.D	1	10/13/21	NG	09/27/21	OP87499	S4Q281
FA89200-24	2Q77950.D	1	10/10/21	NG	09/27/21	OP87499	S2Q1103

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA89200-21, FA89200-22, FA89200-23, FA89200-24, FA89200-25, FA89200-26, FA89200-27, FA89200-28, FA89200-29, FA89200-30, FA89200-31, FA89200-32, FA89200-33, FA89200-34, FA89200-35, FA89200-36, FA89200-37, FA89200-38, FA89200-39, FA89200-40

CAS No.	ID Standard Recoveries	MS	MSD	FA89200-24	Limits
	13C2-PFDoDA	89%	93%	89%	40-140%
	13C2-PFTeDA	95%	89%	93%	30-130%
	13C3-PFBS	90%	91%	90%	50-150%
	13C3-PFHxS	88%	87%	89%	50-150%
	13C8-PFOS	89%	93%	83%	50-150%
	13C8-FOSA	65%	73%	55%	30-130%
	d3-MeFOSAA	99%	93%	101%	40-140%
	d5-EtFOSAA	102%	97%	103%	40-140%
	13C2-4:2FTS	85%	90%	80%	50-150%
	13C2-6:2FTS	88%	94%	84%	50-150%
	13C2-8:2FTS	89%	93%	83%	50-150%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1217416

SGS Job Number: FA90768

Sampling Dates: 11/08/21 - 11/09/21



Report to:

SGS North America, Inc
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Anchorage, AK 99518
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ATTN: Julie Shumway

Total number of pages in report: **215**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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Test results relate only to samples analyzed.

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Sample Summary

SGS North America, Inc
1217416

Job No: FA90768

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90768-1	11/08/21	08:30	11/12/21	SO	Soil	DEMO-2
FA90768-2	11/08/21	08:35	11/12/21	SO	Soil	DEMO-3
FA90768-3	11/08/21	08:40	11/12/21	SO	Soil	DEMO-4
FA90768-4	11/08/21	08:55	11/12/21	SO	Soil	TXY-89A
FA90768-5	11/08/21	09:00	11/12/21	SO	Soil	TXY-89B
FA90768-6	11/08/21	08:50	11/12/21	SO	Soil	FD-7
FA90768-7	11/08/21	09:50	11/12/21	SO	Soil	TUG-58A
FA90768-8	11/08/21	09:55	11/12/21	SO	Soil	TUG-58B
FA90768-9	11/08/21	10:00	11/12/21	SO	Soil	TUG-58C
FA90768-10	11/08/21	10:05	11/12/21	SO	Soil	TUG-58D
FA90768-11	11/08/21	10:15	11/12/21	SO	Soil	TUG-59A
FA90768-12	11/08/21	10:20	11/12/21	SO	Soil	TUG-59B
FA90768-13	11/08/21	10:25	11/12/21	SO	Soil	TUG-59C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90768

1217416

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90768-14	11/08/21	10:30	11/12/21	SO	Soil	TUG-59D
FA90768-15	11/08/21	11:35	11/12/21	SO	Soil	FD-8
FA90768-16	11/08/21	10:45	11/12/21	SO	Soil	TUG-60A
FA90768-17	11/08/21	10:50	11/12/21	SO	Soil	TUG-60B
FA90768-18	11/08/21	10:55	11/12/21	SO	Soil	TUG-60C
FA90768-19	11/08/21	11:00	11/12/21	SO	Soil	TXY-90A
FA90768-20	11/08/21	11:05	11/12/21	SO	Soil	TXY-90B
FA90768-21	11/08/21	11:15	11/12/21	SO	Soil	TXY-91A
FA90768-22	11/08/21	11:20	11/12/21	SO	Soil	TXY-91B
FA90768-23	11/08/21	11:25	11/12/21	SO	Soil	TXY-91C
FA90768-24	11/08/21	11:45	11/12/21	SO	Soil	TXY-101A
FA90768-25	11/08/21	11:50	11/12/21	SO	Soil	TXY-101B
FA90768-26	11/08/21	11:55	11/12/21	SO	Soil	TXY-101C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90768

1217416

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90768-27	11/08/21	13:45	11/12/21	SO	Soil	TXY-141A
FA90768-28	11/08/21	13:50	11/12/21	SO	Soil	TXY-141B
FA90768-29	11/08/21	13:05	11/12/21	SO	Soil	TXY-141C
FA90768-30	11/08/21	14:00	11/12/21	SO	Soil	TXY-141D
FA90768-31	11/08/21	14:05	11/12/21	SO	Soil	FD-9
FA90768-32	11/08/21	14:15	11/12/21	SO	Soil	TXY-140A
FA90768-33	11/08/21	14:20	11/12/21	SO	Soil	TXY-140B
FA90768-34	11/08/21	14:40	11/12/21	SO	Soil	TXY-139A
FA90768-35	11/08/21	14:45	11/12/21	SO	Soil	TXY-139B
FA90768-36	11/08/21	14:50	11/12/21	SO	Soil	TXY-139C
FA90768-37	11/08/21	16:00	11/12/21	SO	Soil	TXY-118
FA90768-38	11/09/21	08:15	11/12/21	SO	Soil	TUG-79
FA90768-39	11/09/21	08:30	11/12/21	SO	Soil	TUG-78A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc
1217416

Job No: FA90768

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90768-40	11/09/21	08:35	11/12/21	SO	Soil	TUG-78B
FA90768-41	11/09/21	08:40	11/12/21	SO	Soil	TUG-77A
FA90768-42	11/09/21	08:20	11/12/21	SO	Soil	FD-10
FA90768-43	11/09/21	08:45	11/12/21	SO	Soil	TUG-77B
FA90768-44	11/09/21	08:50	11/12/21	SO	Soil	TUG-77C
FA90768-45	11/09/21	08:55	11/12/21	SO	Soil	TUG-76A
FA90768-46	11/09/21	09:00	11/12/21	SO	Soil	TUG-76B
FA90768-47	11/09/21	09:05	11/12/21	SO	Soil	TUG-76C
FA90768-48	11/09/21	09:10	11/12/21	SO	Soil	TUG-76D
FA90768-49	11/09/21	09:30	11/12/21	SO	Soil	TUG-75A
FA90768-50	11/09/21	09:35	11/12/21	SO	Soil	TUG-75B
FA90768-51	11/09/21	09:40	11/12/21	SO	Soil	TUG-75C
FA90768-52	11/09/21	09:45	11/12/21	SO	Soil	TUG-75D

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90768

1217416

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90768-53	11/09/21	10:20	11/12/21	SO	Soil	TXY-125A
FA90768-54	11/09/21	10:25	11/12/21	SO	Soil	TXY-125B
FA90768-55	11/09/21	10:30	11/12/21	SO	Soil	TXY-125C
FA90768-56	11/09/21	10:35	11/12/21	SO	Soil	TXY-125D
FA90768-57	11/09/21	11:00	11/12/21	SO	Soil	TXY-124A
FA90768-58	11/09/21	11:05	11/12/21	SO	Soil	TXY-124B
FA90768-59	11/09/21	11:10	11/12/21	SO	Soil	TXY-124C
FA90768-60	11/09/21	11:15	11/12/21	SO	Soil	TXY-124D
FA90768-61	11/09/21	11:30	11/12/21	SO	Soil	TXY-123A
FA90768-62	11/09/21	11:35	11/12/21	SO	Soil	TXY-123B
FA90768-63	11/09/21	11:40	11/12/21	SO	Soil	TXY-123C
FA90768-64	11/09/21	11:45	11/12/21	SO	Soil	TXY-123D
FA90768-65	11/09/21	11:50	11/12/21	SO	Soil	FD-11

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc

Job No: FA90768

Site: 1217416

Report Date: 12/14/2021 12:08:20

On 11/12/2021, 65 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90768 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: SO

Batch ID: OP88386

Sample(s) FA90768-1MS, FA90768-1MSD were used as the QC samples indicated.

Sample(s) FA90768-3, FA90768-4 have surrogates outside control limits.

FA90768-3: Confirmation run.

FA90768-4 for 13C5-PFPeA: Outside control limits.

FA90768-4 for 13C6-PFDA: Outside control limits.

FA90768-4 for Perfluorodecanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for Perfluoroheptanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for Perfluorohexanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for Perfluorononanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for Perfluorooctanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for Perfluoropentanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-4 for 13C4-PFBA: Outside control limits.

FA90768-4 for 13C5-PFHxA: Outside control limits.

FA90768-4 for 13C4-PFHpA: Outside control limits.

FA90768-4 for 13C8-PFOA: Outside control limits.

FA90768-4 for 13C9-PFNA: Outside control limits.

FA90768-4 for Perfluorobutanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

Matrix: SO

Batch ID: OP88450

Sample(s) FA90768-29MS, FA90768-29MSD were used as the QC samples indicated.

Sample(s) FA90768-23 have surrogates outside control limits.

FA90768-23 for 13C9-PFNA: Outside control limits.

FA90768-23 for Perfluoropentanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for 13C5-PFPeA: Outside control limits.

FA90768-23 for d3-MeFOSAA: Outside control limits.

FA90768-23 for d5-EtFOSAA: Outside control limits.

FA90768-23 for 13C2-4:2FTS: Outside control limits.

FA90768-23 for EtFOSAA: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for 13C5-PFHxA: Outside control limits.

FA90768-23 for MeFOSAA: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for Perfluorononanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: SO **Batch ID:** OP88450

FA90768-23 for Perfluoroheptanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for Perfluorohexanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-23 for 13C4-PFHpA: Outside control limits.

Matrix: SO **Batch ID:** OP88526

Sample(s) FA90768-3MS, FA90768-3MSD were used as the QC samples indicated.

Sample(s) FA90768-23, FA90768-3, FA90768-4 have surrogates outside control limits.

FA90768-3: Dilution required due to matrix interference (ID recovery standard failure).

FA90768-3 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90768-3 for 13C8-FOSA: Outside control limits.

FA90768-3 for 13C4-PFHpA: Outside control limits.

FA90768-3 for 13C2-4:2FTS: Outside control limits.

FA90768-3 for 13C2-6:2FTS: Outside control limits.

FA90768-3 for 13C9-PFNA: Outside control limits.

FA90768-3 for 13C4-PFBA: Outside control limits.

FA90768-3 for 13C8-PFOA: Outside control limits.

FA90768-3 for 13C5-PFHxA: Outside control limits.

FA90768-3 for 13C5-PFPeA: Outside control limits.

FA90768-3 for 13C2-8:2FTS: Outside control limits.

FA90768-4: Confirmation run.

FA90768-23: Confirmation run.

Matrix: SO **Batch ID:** OP88527

Sample(s) FA90768-56MS, FA90768-56MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP88582

Sample(s) FA90768-57MS, FA90768-57MSD were used as the QC samples indicated.

Matrix Spike Duplicate Recovery(s) for Perfluorooctanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA90768-58 have surrogates outside control limits.

FA90768-58 for d3-MeFOSAA: Outside control limits.

FA90768-58 for MeFOSAA: Associated ID Standard outside control limits.

FA90768-58 for d3-MeFOSAA: Outside control limits.

Matrix: SO **Batch ID:** OP88648

Sample(s) JD35115-1MS, JD35115-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for EtFOSAA are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for EtFOSAA, MeFOSAA are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA90768-37 have surrogates outside control limits.

FA90768-37: Dilution required due to matrix interference (ID recovery standard failure).

FA90768-37 for 13C2-4:2FTS: Outside control limits.

General Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN89800

Sample(s) FA90768-1DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89801

Sample(s) FA90768-21DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89802

Sample(s) FA90768-41DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89816

Sample(s) FA90795-5DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90768-1 DEMO-2

Perfluorooctanoic acid	0.00047 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00066 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.00065 J	0.0012	0.00061	mg/kg	EPA 537M BY ID

FA90768-2 DEMO-3

No hits reported in this sample.

FA90768-3 DEMO-4

Perfluorononanoic acid ^a	0.0025 J	0.0057	0.0029	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00039 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90768-4 TXY-89A

No hits reported in this sample.

FA90768-5 TXY-89B

No hits reported in this sample.

FA90768-6 FD-7

No hits reported in this sample.

FA90768-7 TUG-58A

No hits reported in this sample.

FA90768-8 TUG-58B

Perfluorooctanoic acid	0.00064 J	0.0013	0.00064	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00033 J	0.0013	0.00064	mg/kg	EPA 537M BY ID

FA90768-9 TUG-58C

No hits reported in this sample.

FA90768-10 TUG-58D

No hits reported in this sample.

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90768-11 TUG-59A						
	Perfluorohexanesulfonic acid	0.00072 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.0012	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90768-12 TUG-59B						
	Perfluorooctanesulfonic acid	0.0014	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90768-13 TUG-59C						
	Perfluorooctanesulfonic acid	0.0017	0.0012	0.00058	mg/kg	EPA 537M BY ID
FA90768-14 TUG-59D						
	Perfluorooctanoic acid	0.00036 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.00059 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
FA90768-15 FD-8						
	Perfluorohexanesulfonic acid	0.00053 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.00092 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90768-16 TUG-60A						
	Perfluoropentanoic acid	0.00030 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
	Perfluorohexanoic acid	0.00068 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
	Perfluoroheptanoic acid	0.0013	0.0011	0.00057	mg/kg	EPA 537M BY ID
	Perfluorooctanoic acid	0.00087 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.0026	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90768-17 TUG-60B						
No hits reported in this sample.						
FA90768-18 TUG-60C						
	Perfluorohexanoic acid	0.00039 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
FA90768-19 TXY-90A						
	Perfluorohexanesulfonic acid	0.00047 J	0.0013	0.00064	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90768-20 **TXY-90B**

No hits reported in this sample.

FA90768-21 **TXY-91A**

No hits reported in this sample.

FA90768-22 **TXY-91B**

No hits reported in this sample.

FA90768-23 **TXY-91C**

No hits reported in this sample.

FA90768-24 **TXY-101A**

No hits reported in this sample.

FA90768-25 **TXY-101B**

No hits reported in this sample.

FA90768-26 **TXY-101C**

No hits reported in this sample.

FA90768-27 **TXY-141A**

No hits reported in this sample.

FA90768-28 **TXY-141B**

No hits reported in this sample.

FA90768-29 **TXY-141C**

No hits reported in this sample.

FA90768-30 **TXY-141D**

No hits reported in this sample.

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90768-31 FD-9

Perfluorohexanesulfonic acid 0.00042 J 0.0012 0.00060 mg/kg EPA 537M BY ID

FA90768-32 TXY-140A

Perfluorohexanesulfonic acid 0.00063 J 0.0012 0.00059 mg/kg EPA 537M BY ID

FA90768-33 TXY-140B

No hits reported in this sample.

FA90768-34 TXY-139A

Perfluoropentanoic acid 0.00034 J 0.0012 0.00062 mg/kg EPA 537M BY ID
 Perfluorohexanoic acid 0.00039 J 0.0012 0.00062 mg/kg EPA 537M BY ID
 Perfluoroheptanoic acid 0.00044 J 0.0012 0.00062 mg/kg EPA 537M BY ID
 Perfluorooctanoic acid 0.00040 J 0.0012 0.00062 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.00099 J 0.0012 0.00062 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0092 0.0012 0.00062 mg/kg EPA 537M BY ID

FA90768-35 TXY-139B

Perfluorooctanoic acid 0.00045 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.00056 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0080 0.0013 0.00063 mg/kg EPA 537M BY ID
 6:2 Fluorotelomer sulfonate 0.00091 J 0.0013 0.00063 mg/kg EPA 537M BY ID

FA90768-36 TXY-139C

Perfluorohexanesulfonic acid 0.00043 J 0.0013 0.00065 mg/kg EPA 537M BY ID
 6:2 Fluorotelomer sulfonate 0.0011 J 0.0013 0.00065 mg/kg EPA 537M BY ID

FA90768-37 TXY-118

Perfluoropentanoic acid 0.00047 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorohexanoic acid 0.00058 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluoroheptanoic acid 0.00067 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorooctanoic acid 0.0085 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorononanoic acid 0.0046 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.0059 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluoroheptanesulfonic acid 0.00074 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0494 0.0013 0.00063 mg/kg EPA 537M BY ID
 6:2 Fluorotelomer sulfonate 0.00093 J 0.0013 0.00063 mg/kg EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90768-38	TUG-79					
Perfluorooctanesulfonic acid		0.0109	0.0010	0.00051	mg/kg	EPA 537M BY ID
FA90768-39	TUG-78A					
Perfluoropentanoic acid		0.00030 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00048 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0045	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0370	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorononanesulfonic acid		0.0036	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorodecanesulfonic acid		0.00029 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
PFOSA		0.00058 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90768-40	TUG-78B					
Perfluoropentanoic acid		0.00041 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.0022	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid		0.0014	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.0571	0.0022	0.0011	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid		0.00053 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0325	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00037 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.00071 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate		0.0026	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90768-41	TUG-77A					
Perfluorohexanoic acid		0.00050 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.0037	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorononanoic acid		0.00085 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid		0.00035 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0198	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.0022	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0175	0.0012	0.00061	mg/kg	EPA 537M BY ID
FA90768-42	FD-10					
Perfluoropentanoic acid		0.00042 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00053 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00046 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid		0.00039 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0058	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.117	0.0057	0.0029	mg/kg	EPA 537M BY ID
Perfluorononanesulfonic acid		0.00074 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90768-43 TUG-77B

Perfluorohexanoic acid	0.00050 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0333	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00036 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0337	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0013	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90768-44 TUG-77C

Perfluorohexanoic acid	0.00038 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0263	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0482	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90768-45 TUG-76A

Perfluoropentanoic acid	0.00081 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0011 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.00069 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0014	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00080 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0220	0.0012	0.00060	mg/kg	EPA 537M BY ID

FA90768-46 TUG-76B

Perfluoropentanoic acid	0.00094 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0019	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00035 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0164	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00036 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00036 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0065	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0117	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0887	0.0024	0.0012	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.0051	0.0012	0.00061	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate	0.00066 J	0.0012	0.00061	mg/kg	EPA 537M BY ID

FA90768-47 TUG-76C

Perfluoropentanoic acid	0.00037 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0027	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0054	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0526	0.0021	0.0010	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.0045	0.0010	0.00052	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorohexanesulfonic acid		0.0347	0.0010	0.00052	mg/kg	EPA 537M BY ID
FA90768-48 TUG-76D						
Perfluoropentanoic acid		0.0014	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.0024	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid		0.0094	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.221	0.012	0.0059	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid		0.0017	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0663	0.012	0.0059	mg/kg	EPA 537M BY ID
FA90768-49 TUG-75A						
Perfluorohexanesulfonic acid		0.00028 J	0.0010	0.00050	mg/kg	EPA 537M BY ID
FA90768-50 TUG-75B						
Perfluoropentanoic acid		0.00058 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00048 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
FA90768-51 TUG-75C						
Perfluoropentanoic acid		0.00059 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00061 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
FA90768-52 TUG-75D						
Perfluoropentanoic acid		0.00087 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00039 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90768-53 TXY-125A						
Perfluorooctanesulfonic acid		0.0019	0.0010	0.00051	mg/kg	EPA 537M BY ID
FA90768-54 TXY-125B						
Perfluorooctanoic acid		0.00045 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.00053 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90768-55 TXY-125C						
Perfluoroheptanoic acid		0.00035 J	0.0011	0.00055	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90768-56 TXY-125D

Perfluorohexanesulfonic acid 0.00040 J 0.0012 0.00060 mg/kg EPA 537M BY ID

FA90768-57 TXY-124A

Perfluorohexanesulfonic acid 0.0030 0.0010 0.00052 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0181 0.0010 0.00052 mg/kg EPA 537M BY ID
 Perfluorononanesulfonic acid 0.00032 J 0.0010 0.00052 mg/kg EPA 537M BY ID
 PFOSA 0.00061 J 0.0010 0.00052 mg/kg EPA 537M BY ID

FA90768-58 TXY-124B

Perfluorohexanoic acid 0.00040 J 0.0011 0.00053 mg/kg EPA 537M BY ID
 Perfluoroheptanoic acid 0.00040 J 0.0011 0.00053 mg/kg EPA 537M BY ID
 Perfluorooctanoic acid 0.0088 0.0011 0.00053 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.0259 0.0011 0.00053 mg/kg EPA 537M BY ID
 Perfluoroheptanesulfonic acid 0.0017 0.0011 0.00053 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.00089 J 0.0011 0.00053 mg/kg EPA 537M BY ID

FA90768-59 TXY-124C

Perfluorooctanoic acid 0.00043 J 0.0012 0.00059 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.0023 0.0012 0.00059 mg/kg EPA 537M BY ID

FA90768-60 TXY-124D

No hits reported in this sample.

FA90768-61 TXY-123A

Perfluorohexanoic acid 0.00033 J 0.0013 0.00063 mg/kg EPA 537M BY ID
 Perfluorooctanesulfonic acid 0.0030 0.0013 0.00063 mg/kg EPA 537M BY ID

FA90768-62 TXY-123B

Perfluorohexanoic acid 0.0016 0.0013 0.00066 mg/kg EPA 537M BY ID
 Perfluorooctanoic acid 0.00067 J 0.0013 0.00066 mg/kg EPA 537M BY ID
 Perfluorohexanesulfonic acid 0.0073 0.0013 0.00066 mg/kg EPA 537M BY ID
 Perfluoroheptanesulfonic acid 0.0021 0.0013 0.00066 mg/kg EPA 537M BY ID

FA90768-63 TXY-123C

Perfluorohexanoic acid 0.0016 0.0013 0.00066 mg/kg EPA 537M BY ID
 Perfluorooctanoic acid 0.00061 J 0.0013 0.00066 mg/kg EPA 537M BY ID

Summary of Hits

Job Number: FA90768
Account: SGS North America, Inc
Project: 1217416
Collected: 11/08/21 thru 11/09/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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		0.0060	0.0013	0.00066	mg/kg	EPA 537M BY ID
		0.0022	0.0013	0.00066	mg/kg	EPA 537M BY ID
		0.0223	0.0013	0.00066	mg/kg	EPA 537M BY ID

FA90768-64 TXY-123D

		0.0010 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
		0.00033 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
		0.00034 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
		0.00053 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
		0.0034	0.0012	0.00060	mg/kg	EPA 537M BY ID

FA90768-65 FD-11

		0.00069 J	0.0013	0.00067	mg/kg	EPA 537M BY ID
		0.0458	0.0013	0.00067	mg/kg	EPA 537M BY ID

(a) Dilution required due to matrix interference (ID recovery standard failure). Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: DEMO-2		Date Sampled: 11/08/21
Lab Sample ID: FA90768-1		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 81.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86495.D	1	11/25/21 03:59	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00047	0.0012	0.00061	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00066	0.0012	0.00061	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00065	0.0012	0.00061	0.00030	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID:	DEMO-2	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-1	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	81.2
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		40-140%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	75%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	77%		30-130%
	13C3-PFBS	75%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	63%		30-130%
	d3-MeFOSAA	65%		40-140%
	d5-EtFOSAA	69%		40-140%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
4

Report of Analysis

Client Sample ID: DEMO-3		
Lab Sample ID: FA90768-2		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86498.D	1	11/25/21 04:54	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID:	DEMO-3	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-2	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	83.6
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		40-140%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	65%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	68%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	65%		40-140%
	13C2-PFDoDA	67%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	62%		40-140%
	d5-EtFOSAA	64%		40-140%
	13C2-4:2FTS	62%		50-150%
	13C2-6:2FTS	63%		50-150%
	13C2-8:2FTS	65%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-4	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-3	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	82.3
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q22945.D	1	11/30/21 01:36	NG	11/29/21 08:00	OP88526	S4Q313
Run #2 ^a	Q86499.D	1	11/25/21 05:12	MRE	11/17/21 08:00	OP88386	SQ1877
Run #3 ^b	4Q22946.D	5	11/30/21 01:51	NG	11/29/21 08:00	OP88526	S4Q313

	Initial Weight	Final Volume
Run #1	2.13 g	1.0 ml
Run #2	2.02 g	1.0 ml
Run #3	2.13 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid ^c	0.0029 U ^d	0.0057	0.0029	0.0022	mg/kg	
2706-90-3	Perfluoropentanoic acid ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
307-24-4	Perfluoroheptanoic acid ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
375-85-9	Perfluoroheptanoic acid ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
335-67-1	Perfluorooctanoic acid ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
375-95-1	Perfluorononanoic acid ^c	0.0025 ^d	0.0057	0.0029	0.0014	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00039	0.0011	0.00057	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
4

Report of Analysis

Client Sample ID: DEMO-4		Date Sampled: 11/08/21
Lab Sample ID: FA90768-3		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 82.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate ^c	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0029 U ^d	0.0057	0.0029	0.0014	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	31% ^e	36% ^e	33% ^e	40-140%
	13C5-PFPeA	33% ^e	36% ^e	35% ^e	50-150%
	13C5-PFHxA	35% ^e	38% ^e	37% ^e	50-150%
	13C4-PFHpA	38% ^e	40% ^e	40% ^e	50-150%
	13C8-PFOA	42% ^e	42% ^e	43% ^e	50-150%
	13C9-PFNA	46% ^e	41% ^e	48% ^e	50-150%
	13C6-PFDA	50%	44% ^e	53%	50-150%
	13C7-PFUnDA	50%	42%	54%	40-140%
	13C2-PFDoDA	55%	43%	57%	40-140%
	13C2-PFTeDA	66%	43%	71%	30-130%
	13C3-PFBS	52%	43% ^e	51%	50-150%
	13C3-PFHxS	53%	43% ^e	62%	50-150%
	13C8-PFOS	54%	43% ^e	55%	50-150%
	13C8-FOSA	28% ^e	33%	29% ^e	30-130%
	d3-MeFOSAA	43%	36% ^e	46%	40-140%
	d5-EtFOSAA	43%	38% ^e	44%	40-140%
	13C2-4:2FTS	47% ^e	39% ^e	48% ^e	50-150%
	13C2-6:2FTS	47% ^e	40% ^e	49% ^e	50-150%
	13C2-8:2FTS	49% ^e	41% ^e	52%	50-150%

- (a) Confirmation run.
- (b) Dilution required due to matrix interference (ID recovery standard failure).
- (c) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
- (d) Result is from Run# 3
- (e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
 4

Report of Analysis

Client Sample ID: TXY-89A	
Lab Sample ID: FA90768-4	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.4
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86500.D	1	11/25/21 05:31	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2 ^a	4Q22949.D	1	11/30/21 02:34	NG	11/29/21 08:00	OP88526	S4Q313

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2	2.12 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid ^b	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
 4

Report of Analysis

Client Sample ID: TXY-89A	
Lab Sample ID: FA90768-4	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	38% ^c	35% ^c	40-140%
	13C5-PFPeA	38% ^c	38% ^c	50-150%
	13C5-PFHxA	38% ^c	38% ^c	50-150%
	13C4-PFHpA	38% ^c	39% ^c	50-150%
	13C8-PFOA	39% ^c	40% ^c	50-150%
	13C9-PFNA	39% ^c	41% ^c	50-150%
	13C6-PFDA	41% ^c	41% ^c	50-150%
	13C7-PFUnDA	41%	46%	40-140%
	13C2-PFDoDA	47%	53%	40-140%
	13C2-PFTeDA	59%	71%	30-130%
	13C3-PFBS	64%	66%	50-150%
	13C3-PFHxS	64%	68%	50-150%
	13C8-PFOS	65%	69%	50-150%
	13C8-FOSA	42%	35%	30-130%
	d3-MeFOSAA	43%	39% ^c	40-140%
	d5-EtFOSAA	44%	43%	40-140%
	13C2-4:2FTS	60%	59%	50-150%
	13C2-6:2FTS	63%	61%	50-150%
	13C2-8:2FTS	70%	64%	50-150%

- (a) Confirmation run.
- (b) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
- (c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: TXY-89B		
Lab Sample ID: FA90768-5		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 79.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86501.D	1	11/25/21 05:49	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID: TXY-89B	
Lab Sample ID: FA90768-5	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%		40-140%
	13C5-PFPeA	54%		50-150%
	13C5-PFHxA	55%		50-150%
	13C4-PFHpA	54%		50-150%
	13C8-PFOA	54%		50-150%
	13C9-PFNA	51%		50-150%
	13C6-PFDA	53%		50-150%
	13C7-PFUnDA	50%		40-140%
	13C2-PFDoDA	59%		40-140%
	13C2-PFTeDA	70%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	52%		30-130%
	d3-MeFOSAA	56%		40-140%
	d5-EtFOSAA	59%		40-140%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-7		
Lab Sample ID: FA90768-6		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.0
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86502.D	1	11/25/21 06:07	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: FD-7	
Lab Sample ID: FA90768-6	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.0
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%		40-140%
	13C5-PFPeA	55%		50-150%
	13C5-PFHxA	54%		50-150%
	13C4-PFHpA	55%		50-150%
	13C8-PFOA	54%		50-150%
	13C9-PFNA	52%		50-150%
	13C6-PFDA	54%		50-150%
	13C7-PFUnDA	51%		40-140%
	13C2-PFDoDA	59%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	55%		30-130%
	d3-MeFOSAA	59%		40-140%
	d5-EtFOSAA	65%		40-140%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-58A		
Lab Sample ID: FA90768-7		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.4
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86505.D	1	11/25/21 07:02	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID: TUG-58A	
Lab Sample ID: FA90768-7	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	58%		40-140%
	13C5-PFPeA	60%		50-150%
	13C5-PFHxA	62%		50-150%
	13C4-PFHpA	64%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	67%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	63%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	66%		50-150%
	13C3-PFHxS	67%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	44%		30-130%
	d3-MeFOSAA	63%		40-140%
	d5-EtFOSAA	63%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-58B		
Lab Sample ID: FA90768-8		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 74.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86506.D	1	11/25/21 07:20	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.10 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00064 U	0.0013	0.00064	0.00049	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00064 U	0.0013	0.00064	0.00034	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00033	0.0013	0.00064	0.00032	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID:	TUG-58B	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-8	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	74.2
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	62%		50-150%
	13C4-PFHpA	63%		50-150%
	13C8-PFOA	63%		50-150%
	13C9-PFNA	63%		50-150%
	13C6-PFDA	63%		50-150%
	13C7-PFUnDA	55%		40-140%
	13C2-PFDoDA	63%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	61%		30-130%
	d3-MeFOSAA	70%		40-140%
	d5-EtFOSAA	68%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-58C		
Lab Sample ID: FA90768-9		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 76.3
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86507.D	1	11/25/21 07:39	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.12 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: TUG-58C	
Lab Sample ID: FA90768-9	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 76.3
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	63%		50-150%
	13C6-PFDA	61%		50-150%
	13C7-PFUnDA	57%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	45%		30-130%
	d3-MeFOSAA	68%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
 4

Report of Analysis

Client Sample ID: TUG-58D		
Lab Sample ID: FA90768-10		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 88.0
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86508.D	1	11/25/21 07:57	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.18 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TUG-58D	
Lab Sample ID: FA90768-10	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.0
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	69%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	49%		30-130%
	d3-MeFOSAA	50%		40-140%
	d5-EtFOSAA	52%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	66%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TUG-59A		
Lab Sample ID: FA90768-11		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86509.D	1	11/25/21 08:15	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.16 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00072	0.0011	0.00056	0.00028	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0012	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.11
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Report of Analysis

Client Sample ID:	TUG-59A	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-11	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	82.2
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		40-140%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	64%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	67%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	62%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	50%		30-130%
	d3-MeFOSAA	71%		40-140%
	d5-EtFOSAA	71%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-59B		Date Sampled: 11/08/21
Lab Sample ID: FA90768-12		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86510.D	1	11/25/21 08:33	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0014	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.12
4

Report of Analysis

Client Sample ID: TUG-59B	
Lab Sample ID: FA90768-12	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	63%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	51%		30-130%
	d3-MeFOSAA	76%		40-140%
	d5-EtFOSAA	80%		40-140%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.12
4

Report of Analysis

Client Sample ID: TUG-59C		Date Sampled: 11/08/21
Lab Sample ID: FA90768-13		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 81.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86511.D	1	11/25/21 08:52	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.12 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0017	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.13
4

Report of Analysis

Client Sample ID: TUG-59C	
Lab Sample ID: FA90768-13	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.9
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	63%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	59%		30-130%
	d3-MeFOSAA	78%		40-140%
	d5-EtFOSAA	77%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.14
4

Client Sample ID: TUG-59D		
Lab Sample ID: FA90768-14		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.7
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86512.D	1	11/25/21 09:10	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00036	0.0012	0.00061	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059	0.0012	0.00061	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TUG-59D	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-14	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	80.7
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	65%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	66%		50-150%
	13C6-PFDA	66%		50-150%
	13C7-PFUnDA	61%		40-140%
	13C2-PFDoDA	71%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	56%		30-130%
	d3-MeFOSAA	68%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-8		
Lab Sample ID: FA90768-15		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.7
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86513.D	1	11/25/21 09:28	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.23 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053	0.0011	0.00054	0.00027	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00092	0.0011	0.00054	0.00027	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: FD-8	
Lab Sample ID: FA90768-15	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	54%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	59%		50-150%
	13C4-PFHpA	62%		50-150%
	13C8-PFOA	65%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	67%		50-150%
	13C7-PFUnDA	61%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	69%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	65%		50-150%
	13C8-FOSA	48%		30-130%
	d3-MeFOSAA	69%		40-140%
	d5-EtFOSAA	71%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	73%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-60A		
Lab Sample ID: FA90768-16		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.8
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86514.D	1	11/25/21 09:47	MRE	11/17/21 08:00	OP88386	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.11 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00030	0.0011	0.00057	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00068	0.0011	0.00057	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.0013	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00087	0.0011	0.00057	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0026	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.16
4

Report of Analysis

Client Sample ID: TUG-60A	
Lab Sample ID: FA90768-16	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.8
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	49%		40-140%
	13C5-PFPeA	51%		50-150%
	13C5-PFHxA	54%		50-150%
	13C4-PFHpA	57%		50-150%
	13C8-PFOA	59%		50-150%
	13C9-PFNA	60%		50-150%
	13C6-PFDA	62%		50-150%
	13C7-PFUnDA	54%		40-140%
	13C2-PFDoDA	60%		40-140%
	13C2-PFTeDA	64%		30-130%
	13C3-PFBS	62%		50-150%
	13C3-PFHxS	61%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	42%		30-130%
	d3-MeFOSAA	45%		40-140%
	d5-EtFOSAA	47%		40-140%
	13C2-4:2FTS	56%		50-150%
	13C2-6:2FTS	59%		50-150%
	13C2-8:2FTS	65%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.16
4

Report of Analysis

Client Sample ID: TUG-60B		Date Sampled: 11/08/21
Lab Sample ID: FA90768-17		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 82.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86520.D	1	11/25/21 11:36	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Client Sample ID: TUG-60B	
Lab Sample ID: FA90768-17	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.9
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	65%		30-130%
	d3-MeFOSAA	45%		40-140%
	d5-EtFOSAA	50%		40-140%
	13C2-4:2FTS	63%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Client Sample ID: TUG-60C		Date Sampled: 11/08/21
Lab Sample ID: FA90768-18		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 81.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86521.D	1	11/25/21 11:55	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00039	0.0012	0.00062	0.00031	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-60C	
Lab Sample ID: FA90768-18	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	50%		40-140%
	13C5-PFPeA	52%		50-150%
	13C5-PFHxA	52%		50-150%
	13C4-PFHpA	54%		50-150%
	13C8-PFOA	54%		50-150%
	13C9-PFNA	54%		50-150%
	13C6-PFDA	54%		50-150%
	13C7-PFUnDA	50%		40-140%
	13C2-PFDoDA	55%		40-140%
	13C2-PFTeDA	56%		30-130%
	13C3-PFBS	57%		50-150%
	13C3-PFHxS	56%		50-150%
	13C8-PFOS	55%		50-150%
	13C8-FOSA	50%		30-130%
	d3-MeFOSAA	46%		40-140%
	d5-EtFOSAA	48%		40-140%
	13C2-4:2FTS	51%		50-150%
	13C2-6:2FTS	56%		50-150%
	13C2-8:2FTS	62%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID: TXY-90A		
Lab Sample ID: FA90768-19		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 78.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86522.D	1	11/25/21 12:13	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00064 U	0.0013	0.00064	0.00049	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-95-1	Perfluorononanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00064 U	0.0013	0.00064	0.00034	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00047	0.0013	0.00064	0.00032	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: TXY-90A	
Lab Sample ID: FA90768-19	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		40-140%
	13C5-PFPeA	67%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	63%		50-150%
	13C9-PFNA	58%		50-150%
	13C6-PFDA	55%		50-150%
	13C7-PFUnDA	51%		40-140%
	13C2-PFDoDA	60%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	50%		30-130%
	d3-MeFOSAA	44%		40-140%
	d5-EtFOSAA	51%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: TXY-90B		
Lab Sample ID: FA90768-20		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.8
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86523.D	1	11/25/21 12:31	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID: TXY-90B	
Lab Sample ID: FA90768-20	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.8
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	74%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	76%		40-140%
	13C2-PFTeDA	75%		30-130%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	76%		50-150%
	13C8-FOSA	60%		30-130%
	d3-MeFOSAA	62%		40-140%
	d5-EtFOSAA	64%		40-140%
	13C2-4:2FTS	69%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID: TXY-91A		
Lab Sample ID: FA90768-21		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86524.D	1	11/25/21 12:49	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.21
4

Report of Analysis

Client Sample ID: TXY-91A	
Lab Sample ID: FA90768-21	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	54%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	57%		50-150%
	13C4-PFHpA	59%		50-150%
	13C8-PFOA	59%		50-150%
	13C9-PFNA	57%		50-150%
	13C6-PFDA	55%		50-150%
	13C7-PFUnDA	52%		40-140%
	13C2-PFDoDA	58%		40-140%
	13C2-PFTeDA	59%		30-130%
	13C3-PFBS	61%		50-150%
	13C3-PFHxS	61%		50-150%
	13C8-PFOS	57%		50-150%
	13C8-FOSA	40%		30-130%
	d3-MeFOSAA	60%		40-140%
	d5-EtFOSAA	62%		40-140%
	13C2-4:2FTS	57%		50-150%
	13C2-6:2FTS	60%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-91B		
Lab Sample ID: FA90768-22		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 81.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86525.D	1	11/25/21 13:08	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.22
4

Report of Analysis

Client Sample ID: TXY-91B	
Lab Sample ID: FA90768-22	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	48%		40-140%
	13C5-PFPeA	52%		50-150%
	13C5-PFHxA	52%		50-150%
	13C4-PFHpA	55%		50-150%
	13C8-PFOA	55%		50-150%
	13C9-PFNA	52%		50-150%
	13C6-PFDA	54%		50-150%
	13C7-PFUnDA	50%		40-140%
	13C2-PFDoDA	56%		40-140%
	13C2-PFTeDA	57%		30-130%
	13C3-PFBS	69%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	60%		50-150%
	13C8-FOSA	37%		30-130%
	d3-MeFOSAA	40%		40-140%
	d5-EtFOSAA	45%		40-140%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.22
4

Report of Analysis

Client Sample ID: TXY-91C		
Lab Sample ID: FA90768-23		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.9
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86526.D	1	11/25/21 13:26	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2 ^a	4Q22953.D	1	11/30/21 03:32	NG	11/29/21 08:00	OP88526	S4Q313

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2	2.08 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA ^b	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA ^b	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: TXY-91C	
Lab Sample ID: FA90768-23	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.9
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	41%	32% ^c	40-140%
	13C5-PFPeA	44% ^c	35% ^c	50-150%
	13C5-PFHxA	46% ^c	37% ^c	50-150%
	13C4-PFHpA	49% ^c	38% ^c	50-150%
	13C8-PFOA	51%	40% ^c	50-150%
	13C9-PFNA	49% ^c	43% ^c	50-150%
	13C6-PFDA	54%	44% ^c	50-150%
	13C7-PFUnDA	53%	44%	40-140%
	13C2-PFDoDA	51%	47%	40-140%
	13C2-PFTeDA	53%	54%	30-130%
	13C3-PFBS	59%	44% ^c	50-150%
	13C3-PFHxS	60%	46% ^c	50-150%
	13C8-PFOS	58%	46% ^c	50-150%
	13C8-FOSA	60%	32%	30-130%
	d3-MeFOSAA	6% ^c	15% ^c	40-140%
	d5-EtFOSAA	7% ^c	17% ^c	40-140%
	13C2-4:2FTS	46% ^c	37% ^c	50-150%
	13C2-6:2FTS	51%	38% ^c	50-150%
	13C2-8:2FTS	51%	40% ^c	50-150%

- (a) Confirmation run.
- (b) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
- (c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: TXY-101A	
Lab Sample ID: FA90768-24	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.3
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86529.D	1	11/25/21 14:21	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.24
4

Report of Analysis

Client Sample ID: TXY-101A	
Lab Sample ID: FA90768-24	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.3
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		40-140%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxS	78%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	76%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	81%		30-130%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	79%		40-140%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-101B		
Lab Sample ID: FA90768-25		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.9
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86530.D	1	11/25/21 14:39	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.25
4

Report of Analysis

Client Sample ID:	TXY-101B	Date Sampled:	11/08/21
Lab Sample ID:	FA90768-25	Date Received:	11/12/21
Matrix:	SO - Soil	Percent Solids:	86.9
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	76%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	86%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	78%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.25
4

Report of Analysis

Client Sample ID: TXY-101C		
Lab Sample ID: FA90768-26		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 94.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86531.D	1	11/25/21 14:57	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-101C	
Lab Sample ID: FA90768-26	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	64%		40-140%
	13C2-PFDoDA	71%		40-140%
	13C2-PFTeDA	68%		30-130%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	67%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	47%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	77%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-141A	
Lab Sample ID: FA90768-27	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.4
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86532.D	1	11/25/21 15:16	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.27
4

Report of Analysis

Client Sample ID: TXY-141A	
Lab Sample ID: FA90768-27	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		40-140%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	64%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	66%		50-150%
	13C6-PFDA	67%		50-150%
	13C7-PFUnDA	64%		40-140%
	13C2-PFDoDA	67%		40-140%
	13C2-PFTeDA	64%		30-130%
	13C3-PFBS	64%		50-150%
	13C3-PFHxS	63%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	45%		30-130%
	d3-MeFOSAA	73%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	59%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	65%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-141B	
Lab Sample ID: FA90768-28	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.3
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86533.D	1	11/25/21 15:34	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.28
4

Report of Analysis

Client Sample ID: TXY-141B	Date Sampled: 11/08/21
Lab Sample ID: FA90768-28	Date Received: 11/12/21
Matrix: SO - Soil	Percent Solids: 90.3
Method: EPA 537M BY ID IN HOUSE	
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	78%		30-130%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	53%		30-130%
	d3-MeFOSAA	85%		40-140%
	d5-EtFOSAA	87%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.28
4

Report of Analysis

Client Sample ID: TXY-141C	
Lab Sample ID: FA90768-29	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.6
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86534.D	1	11/25/21 15:52	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID: TXY-141C	
Lab Sample ID: FA90768-29	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	74%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	55%		30-130%
	d3-MeFOSAA	80%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID: TXY-141D	
Lab Sample ID: FA90768-30	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.2
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86539.D	1	11/25/21 17:24	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCETANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCETANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-141D	
Lab Sample ID: FA90768-30	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.2
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		40-140%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	77%		40-140%
	13C2-PFTeDA	76%		30-130%
	13C3-PFBS	75%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	85%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.30
4

Report of Analysis

Client Sample ID: FD-9		
Lab Sample ID: FA90768-31		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.9
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86540.D	1	11/25/21 17:42	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00042	0.0012	0.00060	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.31
4

Report of Analysis

Client Sample ID: FD-9		
Lab Sample ID: FA90768-31		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.9
Project: 1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		40-140%
	13C5-PFPeA	69%		50-150%
	13C5-PFHxA	71%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	61%		30-130%
	d3-MeFOSAA	70%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-140A	
Lab Sample ID: FA90768-32	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.0
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86541.D	1	11/25/21 18:00	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00063	0.0012	0.00059	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.32
4

Report of Analysis

Client Sample ID: TXY-140A	
Lab Sample ID: FA90768-32	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.0
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		40-140%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	67%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	67%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	46%		30-130%
	d3-MeFOSAA	66%		40-140%
	d5-EtFOSAA	70%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	65%		50-150%
	13C2-8:2FTS	67%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-140B	
Lab Sample ID: FA90768-33	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.3
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86542.D	1	11/25/21 18:18	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.33
4

Report of Analysis

Client Sample ID: TXY-140B	
Lab Sample ID: FA90768-33	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.3
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	53%		40-140%
	13C5-PFPeA	56%		50-150%
	13C5-PFHxA	56%		50-150%
	13C4-PFHpA	57%		50-150%
	13C8-PFOA	58%		50-150%
	13C9-PFNA	58%		50-150%
	13C6-PFDA	60%		50-150%
	13C7-PFUnDA	55%		40-140%
	13C2-PFDoDA	58%		40-140%
	13C2-PFTeDA	57%		30-130%
	13C3-PFBS	56%		50-150%
	13C3-PFHxS	56%		50-150%
	13C8-PFOS	55%		50-150%
	13C8-FOSA	41%		30-130%
	d3-MeFOSAA	50%		40-140%
	d5-EtFOSAA	57%		40-140%
	13C2-4:2FTS	50%		50-150%
	13C2-6:2FTS	54%		50-150%
	13C2-8:2FTS	54%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-139A	Date Sampled: 11/08/21
Lab Sample ID: FA90768-34	Date Received: 11/12/21
Matrix: SO - Soil	Percent Solids: 81.1
Method: EPA 537M BY ID IN HOUSE	
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q22955.D	1	11/30/21 04:01	NG	11/29/21 08:00	OP88526	S4Q313
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00034	0.0012	0.00062	0.00031	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00039	0.0012	0.00062	0.00031	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00044	0.0012	0.00062	0.00031	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00040	0.0012	0.00062	0.00031	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00099	0.0012	0.00062	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0092	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.34
4

Report of Analysis

Client Sample ID: TXY-139A	
Lab Sample ID: FA90768-34	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.1
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%		40-140%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	80%		30-130%
	13C3-PFBS	66%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	50%		30-130%
	d3-MeFOSAA	67%		40-140%
	d5-EtFOSAA	71%		40-140%
	13C2-4:2FTS	63%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.35
4

Client Sample ID: TXY-139B		
Lab Sample ID: FA90768-35		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 77.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86544.D	1	11/25/21 18:55	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00045	0.0013	0.00063	0.00031	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056	0.0013	0.00063	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0080	0.0013	0.00063	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00091	0.0013	0.00063	0.00031	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-139B	
Lab Sample ID: FA90768-35	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 77.2
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	51%		30-130%
	d3-MeFOSAA	69%		40-140%
	d5-EtFOSAA	74%		40-140%
	13C2-4:2FTS	62%		50-150%
	13C2-6:2FTS	65%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: TXY-139C		
Lab Sample ID: FA90768-36		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 78.8
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	Q86545.D	1	11/25/21 19:13	MRE	11/19/21 10:00	OP88450	SQ1877
Run #2							

	Initial Weight	Final Volume
Run #1	1.94 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00065 U	0.0013	0.00065	0.00050	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
375-95-1	Perfluorononanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00065 U	0.0013	0.00065	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00043	0.0013	0.00065	0.00033	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00065 U	0.0013	0.00065	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00065	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00065	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00065 U	0.0013	0.00065	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0011	0.0013	0.00065	0.00033	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.36
4

Report of Analysis

Client Sample ID: TXY-139C	
Lab Sample ID: FA90768-36	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.8
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00065 U	0.0013	0.00065	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		40-140%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	51%		30-130%
	d3-MeFOSAA	69%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	62%		50-150%
	13C2-6:2FTS	66%		50-150%
	13C2-8:2FTS	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-118		
Lab Sample ID: FA90768-37		Date Sampled: 11/08/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 78.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23519.D	1	12/10/21 08:06	MV	12/06/21 07:00	OP88648	S4Q321
Run #2 ^a	4Q23537.D	5	12/10/21 16:27	MV	12/06/21 07:00	OP88648	S4Q322

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2	2.02 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00047	0.0013	0.00063	0.00032	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00058	0.0013	0.00063	0.00032	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00067	0.0013	0.00063	0.00032	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0085	0.0013	0.00063	0.00032	mg/kg	
375-95-1	Perfluorononanoic acid	0.0046	0.0013	0.00063	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0059	0.0013	0.00063	0.00032	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00074	0.0013	0.00063	0.00032	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0494	0.0013	0.00063	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.0032 U ^b	0.0063	0.0032	0.0016	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00093	0.0013	0.00063	0.00032	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.37
4

Report of Analysis

Client Sample ID: TXY-118	
Lab Sample ID: FA90768-37	Date Sampled: 11/08/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	52%	61%	40-140%
	13C5-PFPeA	50%	57%	50-150%
	13C5-PFHxA	50%	57%	50-150%
	13C4-PFHpA	52%	59%	50-150%
	13C8-PFOA	53%	60%	50-150%
	13C9-PFNA	55%	60%	50-150%
	13C6-PFDA	55%	63%	50-150%
	13C7-PFUnDA	53%	61%	40-140%
	13C2-PFDoDA	53%	60%	40-140%
	13C2-PFTeDA	53%	60%	30-130%
	13C3-PFBS	51%	56%	50-150%
	13C3-PFHxS	52%	66%	50-150%
	13C8-PFOS	56%	64%	50-150%
	13C8-FOSA	51%	64%	30-130%
	d3-MeFOSAA	64%	75%	40-140%
	d5-EtFOSAA	61%	72%	40-140%
	13C2-4:2FTS	48% ^c	56%	50-150%
	13C2-6:2FTS	50%	59%	50-150%
	13C2-8:2FTS	52%	64%	50-150%

- (a) Dilution required due to matrix interference (ID recovery standard failure).
- (b) Result is from Run# 2
- (c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.37
4

Report of Analysis

Client Sample ID: TUG-79		
Lab Sample ID: FA90768-38		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 92.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49768.D	1	12/02/21 01:03	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.13 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0109	0.0010	0.00051	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCETANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCETANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID: TUG-79	
Lab Sample ID: FA90768-38	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 92.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	92%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	67%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	84%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID: TUG-78A		
Lab Sample ID: FA90768-39		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 90.4
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49769.D	1	12/02/21 01:20	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00030	0.0011	0.00054	0.00027	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00048	0.0011	0.00054	0.00027	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0045	0.0011	0.00054	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0370	0.0011	0.00054	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0036	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00029	0.0011	0.00054	0.00027	mg/kg	J

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058	0.0011	0.00054	0.00027	mg/kg	J
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.39
4

Report of Analysis

Client Sample ID: TUG-78A	
Lab Sample ID: FA90768-39	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	85%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	57%		30-130%
	d3-MeFOSAA	85%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.39
4

Report of Analysis

Client Sample ID: TUG-78B		
Lab Sample ID: FA90768-40		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49770.D	1	12/02/21 01:36	MV	11/29/21 08:00	OP88527	S3Q701
Run #2	3Q49881.D	2	12/03/21 11:01	MV	11/29/21 08:00	OP88527	S3Q703

	Initial Weight	Final Volume
Run #1	2.14 g	1.0 ml
Run #2	2.14 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00041	0.0011	0.00056	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0022	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0014	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0571 ^a	0.0022	0.0011	0.00056	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053	0.0011	0.00056	0.00028	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0325	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00037	0.0011	0.00056	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00071	0.0011	0.00056	0.00028	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0026	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-78B	
Lab Sample ID: FA90768-40	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%	59%	40-140%
	13C5-PFPeA	65%	59%	50-150%
	13C5-PFHxA	66%	61%	50-150%
	13C4-PFHpA	66%	61%	50-150%
	13C8-PFOA	65%	63%	50-150%
	13C9-PFNA	66%	63%	50-150%
	13C6-PFDA	66%	61%	50-150%
	13C7-PFUnDA	67%	62%	40-140%
	13C2-PFDoDA	68%	64%	40-140%
	13C2-PFTeDA	67%	63%	30-130%
	13C3-PFBS	67%	61%	50-150%
	13C3-PFHxS	67%	65%	50-150%
	13C8-PFOS	65%	63%	50-150%
	13C8-FOSA	68%	62%	30-130%
	d3-MeFOSAA	54%	47%	40-140%
	d5-EtFOSAA	56%	50%	40-140%
	13C2-4:2FTS	59%	55%	50-150%
	13C2-6:2FTS	61%	58%	50-150%
	13C2-8:2FTS	60%	58%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-77A		
Lab Sample ID: FA90768-41		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.9
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49773.D	1	12/02/21 02:26	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050	0.0012	0.00061	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0037	0.0012	0.00061	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00085	0.0012	0.00061	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00035	0.0012	0.00061	0.00030	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0198	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0022	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0175	0.0012	0.00061	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID: TUG-77A	
Lab Sample ID: FA90768-41	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.9
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	85%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	88%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID: FD-10		
Lab Sample ID: FA90768-42		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49774.D	1	12/02/21 02:43	MV	11/29/21 08:00	OP88527	S3Q701
Run #2	3Q49816.D	5	12/02/21 15:44	MV	11/29/21 08:00	OP88527	S3Q702

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2	2.05 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00042	0.0011	0.00057	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00053	0.0011	0.00057	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00046	0.0011	0.00057	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00039	0.0011	0.00057	0.00029	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0058	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.117 ^a	0.0057	0.0029	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00074	0.0011	0.00057	0.00029	mg/kg	J
335-77-3	Perfluorodecane sulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.42
4

Report of Analysis

Client Sample ID: FD-10		Date Sampled: 11/09/21
Lab Sample ID: FA90768-42		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 85.2
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%	51%	40-140%
	13C5-PFPeA	79%	53%	50-150%
	13C5-PFHxA	82%	55%	50-150%
	13C4-PFHpA	83%	57%	50-150%
	13C8-PFOA	86%	58%	50-150%
	13C9-PFNA	79%	58%	50-150%
	13C6-PFDA	84%	58%	50-150%
	13C7-PFUnDA	83%	60%	40-140%
	13C2-PFDoDA	82%	58%	40-140%
	13C2-PFTeDA	78%	56%	30-130%
	13C3-PFBS	85%	58%	50-150%
	13C3-PFHxS	87%	61%	50-150%
	13C8-PFOS	78%	58%	50-150%
	13C8-FOSA	54%	38%	30-130%
	d3-MeFOSAA	86%	61%	40-140%
	d5-EtFOSAA	93%	61%	40-140%
	13C2-4:2FTS	79%	53%	50-150%
	13C2-6:2FTS	82%	55%	50-150%
	13C2-8:2FTS	81%	56%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.42
 4

Report of Analysis

4.43
4

Client Sample ID: TUG-77B		
Lab Sample ID: FA90768-43		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.7
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49775.D	1	12/02/21 02:59	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0333	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00036	0.0012	0.00058	0.00029	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0337	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0013	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-77B	
Lab Sample ID: FA90768-43	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	62%		30-130%
	d3-MeFOSAA	72%		40-140%
	d5-EtFOSAA	74%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.43
4

Report of Analysis

Client Sample ID: TUG-77C		
Lab Sample ID: FA90768-44		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.0
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49776.D	1	12/02/21 03:16	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00038	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0263	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0482	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

Client Sample ID: TUG-77C	
Lab Sample ID: FA90768-44	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.0
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	74%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	78%		40-140%
	d5-EtFOSAA	78%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

4.45
4

Client Sample ID: TUG-76A		
Lab Sample ID: FA90768-45		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 81.7
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49777.D	1	12/02/21 03:32	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00081	0.0012	0.00060	0.00030	mg/kg	J
307-24-4	Perfluoroheptanoic acid	0.0011	0.0012	0.00060	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00069	0.0012	0.00060	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.0014	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00080	0.0012	0.00060	0.00030	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0220	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-76A	
Lab Sample ID: FA90768-45	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	82%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.45
4

Report of Analysis

Client Sample ID: TUG-76B		
Lab Sample ID: FA90768-46		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 81.6
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49778.D	1	12/02/21 03:49	MV	11/29/21 08:00	OP88527	S3Q701
Run #2	3Q49882.D	2	12/03/21 11:17	MV	11/29/21 08:00	OP88527	S3Q703

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2	2.02 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00094	0.0012	0.00061	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0019	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00035	0.0012	0.00061	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0164	0.0012	0.00061	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00036	0.0012	0.00061	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00036	0.0012	0.00061	0.00030	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0065	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0117	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0887 ^a	0.0024	0.0012	0.00061	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0051	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID: TUG-76B	
Lab Sample ID: FA90768-46	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.6
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00066	0.0012	0.00061	0.00030	mg/kg	J

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%	68%	40-140%
	13C5-PFPeA	75%	69%	50-150%
	13C5-PFHxA	77%	72%	50-150%
	13C4-PFHpA	76%	72%	50-150%
	13C8-PFOA	77%	73%	50-150%
	13C9-PFNA	76%	72%	50-150%
	13C6-PFDA	76%	71%	50-150%
	13C7-PFUnDA	80%	73%	40-140%
	13C2-PFDoDA	79%	75%	40-140%
	13C2-PFTeDA	77%	73%	30-130%
	13C3-PFBS	75%	70%	50-150%
	13C3-PFHxS	77%	72%	50-150%
	13C8-PFOS	75%	68%	50-150%
	13C8-FOSA	51%	47%	30-130%
	d3-MeFOSAA	77%	68%	40-140%
	d5-EtFOSAA	80%	69%	40-140%
	13C2-4:2FTS	69%	65%	50-150%
	13C2-6:2FTS	74%	69%	50-150%
	13C2-8:2FTS	71%	67%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID: TUG-76C		
Lab Sample ID: FA90768-47		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 93.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49779.D	1	12/02/21 04:05	MV	11/29/21 08:00	OP88527	S3Q701
Run #2	3Q49870.D	2	12/03/21 05:31	MV	11/29/21 08:00	OP88527	S3Q702

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00037	0.0010	0.00052	0.00026	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0027	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0054	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0526 ^a	0.0021	0.0010	0.00052	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.0045	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0347	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.47
4

Report of Analysis

Client Sample ID: TUG-76C	
Lab Sample ID: FA90768-47	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 93.2
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%	86%	40-140%
	13C5-PFPeA	80%	88%	50-150%
	13C5-PFHxA	81%	89%	50-150%
	13C4-PFHpA	80%	89%	50-150%
	13C8-PFOA	81%	91%	50-150%
	13C9-PFNA	82%	91%	50-150%
	13C6-PFDA	80%	89%	50-150%
	13C7-PFUnDA	81%	90%	40-140%
	13C2-PFDoDA	84%	92%	40-140%
	13C2-PFTeDA	83%	92%	30-130%
	13C3-PFBS	81%	88%	50-150%
	13C3-PFHxS	81%	90%	50-150%
	13C8-PFOS	81%	89%	50-150%
	13C8-FOSA	69%	76%	30-130%
	d3-MeFOSAA	77%	90%	40-140%
	d5-EtFOSAA	80%	95%	40-140%
	13C2-4:2FTS	73%	80%	50-150%
	13C2-6:2FTS	74%	81%	50-150%
	13C2-8:2FTS	73%	81%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.47
4

Report of Analysis

Client Sample ID: TUG-76D		
Lab Sample ID: FA90768-48		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49780.D	1	12/02/21 04:22	MV	11/29/21 08:00	OP88527	S3Q701
Run #2	3Q49808.D	10	12/02/21 13:03	MV	11/29/21 08:00	OP88527	S3Q702

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2	2.03 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0014	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0024	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0094	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.221 ^a	0.012	0.0059	0.0029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.0017	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0663 ^a	0.012	0.0059	0.0029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.48
4

Report of Analysis

Client Sample ID: TUG-76D	
Lab Sample ID: FA90768-48	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%	69%	40-140%
	13C5-PFPeA	65%	69%	50-150%
	13C5-PFHxA	67%	71%	50-150%
	13C4-PFHpA	65%	71%	50-150%
	13C8-PFOA	62%	74%	50-150%
	13C9-PFNA	66%	71%	50-150%
	13C6-PFDA	66%	71%	50-150%
	13C7-PFUnDA	67%	71%	40-140%
	13C2-PFDoDA	67%	73%	40-140%
	13C2-PFTeDA	67%	71%	30-130%
	13C3-PFBS	65%	67%	50-150%
	13C3-PFHxS	65%	72%	50-150%
	13C8-PFOS	65%	71%	50-150%
	13C8-FOSA	70%	73%	30-130%
	d3-MeFOSAA	72%	84%	40-140%
	d5-EtFOSAA	72%	79%	40-140%
	13C2-4:2FTS	60%	63%	50-150%
	13C2-6:2FTS	56%	68%	50-150%
	13C2-8:2FTS	62%	65%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.48
 4

Report of Analysis

Client Sample ID: TUG-75A		
Lab Sample ID: FA90768-49		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.5
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49883.D	1	12/03/21 11:34	MV	11/29/21 08:00	OP88527	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00050 U	0.0010	0.00050	0.00038	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00050 U	0.0010	0.00050	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00028	0.0010	0.00050	0.00025	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-75A	
Lab Sample ID: FA90768-49	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.5
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		40-140%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	84%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	88%		30-130%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	86%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	58%		30-130%
	d3-MeFOSAA	58%		40-140%
	d5-EtFOSAA	65%		40-140%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.49
4

Report of Analysis

Client Sample ID: TUG-75B		Date Sampled: 11/09/21
Lab Sample ID: FA90768-50		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 83.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49782.D	1	12/02/21 04:55	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058	0.0012	0.00060	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00048	0.0012	0.00060	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.50
4

Report of Analysis

Client Sample ID: TUG-75B	
Lab Sample ID: FA90768-50	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	86%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	95%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	93%		30-130%
	d3-MeFOSAA	91%		40-140%
	d5-EtFOSAA	93%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-75C		Date Sampled: 11/09/21
Lab Sample ID: FA90768-51		Date Received: 11/12/21
Matrix: SO - Soil		Percent Solids: 85.1
Method: EPA 537M BY ID IN HOUSE		
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49785.D	1	12/02/21 05:44	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059	0.0012	0.00058	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00061	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.51
4

Report of Analysis

Client Sample ID: TUG-75C	
Lab Sample ID: FA90768-51	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.1
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	51%		40-140%
	13C5-PFPeA	52%		50-150%
	13C5-PFHxA	54%		50-150%
	13C4-PFHpA	56%		50-150%
	13C8-PFOA	58%		50-150%
	13C9-PFNA	56%		50-150%
	13C6-PFDA	57%		50-150%
	13C7-PFUnDA	60%		40-140%
	13C2-PFDoDA	60%		40-140%
	13C2-PFTeDA	60%		30-130%
	13C3-PFBS	57%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	59%		50-150%
	13C8-FOSA	54%		30-130%
	d3-MeFOSAA	58%		40-140%
	d5-EtFOSAA	58%		40-140%
	13C2-4:2FTS	54%		50-150%
	13C2-6:2FTS	57%		50-150%
	13C2-8:2FTS	54%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.52
4

Client Sample ID: TUG-75D		
Lab Sample ID: FA90768-52		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49786.D	1	12/02/21 06:01	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.21 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00087	0.0011	0.00054	0.00027	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00039	0.0011	0.00054	0.00027	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-75D	
Lab Sample ID: FA90768-52	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.2
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	91%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	84%		30-130%
	d3-MeFOSAA	89%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-125A	
Lab Sample ID: FA90768-53	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.8
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49787.D	1	12/02/21 06:17	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0019	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.53
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Report of Analysis

Client Sample ID: TXY-125A	
Lab Sample ID: FA90768-53	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.8
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	96%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	98%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	74%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	95%		30-130%
	d3-MeFOSAA	99%		40-140%
	d5-EtFOSAA	118%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	93%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-125B	
Lab Sample ID: FA90768-54	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.3
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49788.D	1	12/02/21 06:34	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.11 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00045	0.0011	0.00056	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053	0.0011	0.00056	0.00028	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.54
4

Report of Analysis

Client Sample ID: TXY-125B	
Lab Sample ID: FA90768-54	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.3
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	56%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	58%		50-150%
	13C4-PFHpA	58%		50-150%
	13C8-PFOA	60%		50-150%
	13C9-PFNA	58%		50-150%
	13C6-PFDA	58%		50-150%
	13C7-PFUnDA	60%		40-140%
	13C2-PFDoDA	61%		40-140%
	13C2-PFTeDA	61%		30-130%
	13C3-PFBS	58%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	57%		50-150%
	13C8-FOSA	36%		30-130%
	d3-MeFOSAA	55%		40-140%
	d5-EtFOSAA	57%		40-140%
	13C2-4:2FTS	52%		50-150%
	13C2-6:2FTS	56%		50-150%
	13C2-8:2FTS	54%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-125C		
Lab Sample ID: FA90768-55		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.1
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49789.D	1	12/02/21 06:51	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.14 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00035	0.0011	0.00055	0.00027	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.55
4

Report of Analysis

Client Sample ID: TXY-125C	
Lab Sample ID: FA90768-55	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.1
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	69%		50-150%
	13C5-PFHxA	70%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	60%		30-130%
	d3-MeFOSAA	74%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	64%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-125D	
Lab Sample ID: FA90768-56	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49790.D	1	12/02/21 07:07	MV	11/29/21 08:00	OP88527	S3Q701
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00040	0.0012	0.00060	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.56
4

Report of Analysis

Client Sample ID: TXY-125D	
Lab Sample ID: FA90768-56	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	67%		30-130%
	d3-MeFOSAA	87%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.56
4

Report of Analysis

Client Sample ID: TXY-124A	
Lab Sample ID: FA90768-57	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.4
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49922.D	1	12/03/21 22:10	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0030	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0181	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00032	0.0010	0.00052	0.00026	mg/kg	J
335-77-3	Perfluorodecane sulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCETANESULFONAMIDES

754-91-6	PFOSA	0.00061	0.0010	0.00052	0.00026	mg/kg	J
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PERFLUOROOCETANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.57
4

Report of Analysis

Client Sample ID: TXY-124A	
Lab Sample ID: FA90768-57	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	65%		40-140%
	13C2-PFTeDA	64%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	97%		40-140%
	d5-EtFOSAA	105%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	85%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-124B	
Lab Sample ID: FA90768-58	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 92.8
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50096.D	1	12/08/21 10:54	MV	12/01/21 08:30	OP88582	S3Q705
Run #2	3Q50177.D	5	12/09/21 09:27	MV	12/01/21 08:30	OP88582	S3Q705

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2	2.02 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00040	0.0011	0.00053	0.00027	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00040	0.0011	0.00053	0.00027	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0088	0.0011	0.00053	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0259	0.0011	0.00053	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0017	0.0011	0.00053	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00089	0.0011	0.00053	0.00027	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA ^a	0.0053 U ^b	0.013	0.0053	0.0027	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

Client Sample ID: TXY-124B	Date Sampled: 11/09/21
Lab Sample ID: FA90768-58	Date Received: 11/12/21
Matrix: SO - Soil	Percent Solids: 92.8
Method: EPA 537M BY ID IN HOUSE	
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%	78%	40-140%
	13C5-PFPeA	76%	79%	50-150%
	13C5-PFHxA	80%	81%	50-150%
	13C4-PFHpA	80%	81%	50-150%
	13C8-PFOA	84%	88%	50-150%
	13C9-PFNA	86%	88%	50-150%
	13C6-PFDA	87%	88%	50-150%
	13C7-PFUnDA	85%	84%	40-140%
	13C2-PFDoDA	86%	86%	40-140%
	13C2-PFTeDA	86%	85%	30-130%
	13C3-PFBS	88%	88%	50-150%
	13C3-PFHxS	88%	94%	50-150%
	13C8-PFOS	91%	96%	50-150%
	13C8-FOSA	94%	98%	30-130%
	d3-MeFOSAA	36% ^c	39% ^c	40-140%
	d5-EtFOSAA	41%	43%	40-140%
	13C2-4:2FTS	69%	70%	50-150%
	13C2-6:2FTS	74%	74%	50-150%
	13C2-8:2FTS	77%	78%	50-150%

- (a) Associated ID Standard outside control limits.
- (b) Result is from Run# 2
- (c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

Client Sample ID: TXY-124C		
Lab Sample ID: FA90768-59		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.1
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49928.D	1	12/03/21 23:49	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00043	0.0012	0.00059	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0023	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.59
4

Report of Analysis

Client Sample ID: TXY-124C	Date Sampled: 11/09/21
Lab Sample ID: FA90768-59	Date Received: 11/12/21
Matrix: SO - Soil	Percent Solids: 82.1
Method: EPA 537M BY ID IN HOUSE	
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	93%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	93%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	96%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	97%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	96%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	88%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.59
4

Report of Analysis

Client Sample ID: TXY-124D		
Lab Sample ID: FA90768-60		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 79.2
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49929.D	1	12/04/21 00:06	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.60
4

Report of Analysis

Client Sample ID: TXY-124D	
Lab Sample ID: FA90768-60	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.2
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	86%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-123A		
Lab Sample ID: FA90768-61		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 79.0
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49930.D	1	12/04/21 00:22	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00033	0.0013	0.00063	0.00031	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0030	0.0013	0.00063	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.61
4

Report of Analysis

Client Sample ID: TXY-123A	
Lab Sample ID: FA90768-61	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.0
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	71%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	76%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	70%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	66%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.61
4

Report of Analysis

Client Sample ID: TXY-123B		
Lab Sample ID: FA90768-62		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 73.7
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49931.D	1	12/04/21 00:39	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00066 U	0.0013	0.00066	0.00050	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0016	0.0013	0.00066	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00067	0.0013	0.00066	0.00033	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00066 U	0.0013	0.00066	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0073	0.0013	0.00066	0.00033	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0021	0.0013	0.00066	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.62
4

Report of Analysis

Client Sample ID: TXY-123B	
Lab Sample ID: FA90768-62	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 73.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	82%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	84%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	79%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	78%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.62
4

Report of Analysis

Client Sample ID: TXY-123C		
Lab Sample ID: FA90768-63		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 74.4
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49932.D	1	12/04/21 00:55	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00066 U	0.0013	0.00066	0.00050	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0016	0.0013	0.00066	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061	0.0013	0.00066	0.00033	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00066 U	0.0013	0.00066	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0060	0.0013	0.00066	0.00033	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0022	0.0013	0.00066	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0223	0.0013	0.00066	0.00033	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.63
4

Report of Analysis

Client Sample ID: TXY-123C	
Lab Sample ID: FA90768-63	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 74.4
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	74%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	48%		30-130%
	d3-MeFOSAA	71%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.63
 4

Report of Analysis

Client Sample ID: TXY-123D	
Lab Sample ID: FA90768-64	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217416	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49933.D	1	12/04/21 01:12	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0010	0.0012	0.00060	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00033	0.0012	0.00060	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00034	0.0012	0.00060	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053	0.0012	0.00060	0.00030	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0034	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.64
4

Report of Analysis

Client Sample ID: TXY-123D	
Lab Sample ID: FA90768-64	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217416	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	57%		40-140%
	13C5-PFPeA	61%		50-150%
	13C5-PFHxA	62%		50-150%
	13C4-PFHpA	63%		50-150%
	13C8-PFOA	65%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	64%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	62%		50-150%
	13C3-PFHxS	64%		50-150%
	13C8-PFOS	63%		50-150%
	13C8-FOSA	52%		30-130%
	d3-MeFOSAA	64%		40-140%
	d5-EtFOSAA	65%		40-140%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.64
4

Report of Analysis

Client Sample ID: FD-11		
Lab Sample ID: FA90768-65		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 72.4
Project: 1217416		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49934.D	1	12/04/21 01:28	MV	12/01/21 08:30	OP88582	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00067 U	0.0013	0.00067	0.00051	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
375-95-1	Perfluorononanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00067 U	0.0013	0.00067	0.00036	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00069	0.0013	0.00067	0.00034	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0458	0.0013	0.00067	0.00034	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0034	0.0013	0.00067	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0034	0.0013	0.00067	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.65
4

Report of Analysis

Client Sample ID: FD-11		
Lab Sample ID: FA90768-65		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/12/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 72.4
Project: 1217416		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	57%		40-140%
	13C5-PFPeA	59%		50-150%
	13C5-PFHxA	59%		50-150%
	13C4-PFHpA	60%		50-150%
	13C8-PFOA	61%		50-150%
	13C9-PFNA	58%		50-150%
	13C6-PFDA	59%		50-150%
	13C7-PFUnDA	59%		40-140%
	13C2-PFDoDA	61%		40-140%
	13C2-PFTeDA	61%		30-130%
	13C3-PFBS	58%		50-150%
	13C3-PFHxS	58%		50-150%
	13C8-PFOS	56%		50-150%
	13C8-FOSA	63%		30-130%
	d3-MeFOSAA	63%		40-140%
	d5-EtFOSAA	62%		40-140%
	13C2-4:2FTS	56%		50-150%
	13C2-6:2FTS	56%		50-150%
	13C2-8:2FTS	56%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

The following parameters included in this report are exceptions to NELAC certification.
 The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M BY ID	SO	Certified by SOP MS014
6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M BY ID	SO	Certified by SOP MS014
8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M BY ID	SO	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	SO	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	SO	Certified by SOP MS014
PFOSA	754-91-6	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanoic acid	375-22-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanesulfonic acid	335-77-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanesulfonic acid	375-92-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoronanesulfonic acid	68259-12-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoronanoic acid	375-95-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanesulfonic acid	2706-91-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanoic acid	2706-90-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	SO	Certified by SOP MS014

5.1
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SGS North America Inc.
CHAIN OF CUSTODY RECORD

FA90768



Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 1 of 7		
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless						
PROJECT NAME: 1217416		PWSID#: NPDL#:		# Preservative Used: NONE TYPE: C = COMP, G = GRAB, MI = Multi-Incremental Soils EPA 537 PFAS - 24 COMPOUNDS						
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com								
INVOICE TO: SGS - Alaska		QUOTE #:								
env.alaska.accounting@sgs.com		P.O. #: 1217416								
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE			MS	MSD	SGS lab #	Location ID
1	DEMO-2	11/08/2021	08:30:00	Solid 1	X				1217416001	
2	DEMO-3	11/08/2021	08:35:00	Solid 1	X				1217416002	
3	DEMO-4	11/08/2021	08:40:00	Solid 1	X				1217416003	
4	TXY-89A	11/08/2021	08:55:00	Solid 1	X				1217416004	
5	TXY-89B	11/08/2021	09:00:00	Solid 1	X				1217416005	
6	FD-7	11/08/2021	08:50:00	Solid 1	X				1217416006	
7	TUG-58A	11/08/2021	09:50:00	Solid 1	X				1217416007	
8	TUG-58B	11/08/2021	09:55:00	Solid 1	X				1217416008	
9	TUG-58C	11/08/2021	10:00:00	Solid 1	X				1217416009	
10	TUG-58D	11/08/2021	10:05:00	Solid 1	X				1217416010	
Relinquished By: (1)		Date	Time	Received By:	DOD Project? YES <input checked="" type="checkbox"/>		Data Deliverable Requirements: Level 2			
Relinquished By: (2)		Date	Time	Received By:	Report to DL (J Flags)? YES		Requested Turnaround Time and-or Special Instructions: AIRPORT SAMPLES MAY BE HOT			
Relinquished By: (3)		Date	Time	Received By:	Cooler ID:		Chain of Custody Seal: (Circle)			
Relinquished By: (4)		Date	Time	Received For Laboratory By:	Temp Blank °C: 7.8-104		INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>			

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 [. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

INITIAL ASSESSMENT JP

LABEL VERIFICATION _____

F088_COC_REF_LAB_20190411

FA90768: Chain of Custody

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SGS North America Inc.
CHAIN OF CUSTODY RECORD

FA90768



Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 2 of 7			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217416		PWSID#:		# C O N T A I N E R S Preserv- ative Used: NONE TYPE C = COMP G = GRAB HI = Multi- Incremental Soils EPA 837 PFAS - 24 COMPOUNDS							
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com									
		Env.Alaska.ReflabTeam@sgs.com									
INVOICE TO: SGS - Alaska		QUOTE #:									
env.alaska.accounting@sgs.com		P.O. #: 1217416									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE				MS	MSD	SGS lab #	Location ID
11	TUG-59A	11/08/2021	10:15:00	Solid 1		X				1217416011	
12	TUG-59B	11/08/2021	10:20:00	Solid 1		X				1217416012	
13	TUG-59C	11/08/2021	10:25:00	Solid 1		X				1217416013	
14	TUG-59D	11/08/2021	10:30:00	Solid 1		X				1217416014	
15	FD-8	11/08/2021	11:35:00	Solid 1		X				1217416015	
16	TUG-60A	11/08/2021	10:45:00	Solid 1		X				1217416016	
17	TUG-60B	11/08/2021	10:50:00	Solid 1		X				1217416017	
18	TUG-60C	11/08/2021	10:55:00	Solid 1		X				1217416018	
19	TXY-90A	11/08/2021	11:00:00	Solid 1		X				1217416019	
20	TXY-90B	11/08/2021	11:05:00	Solid 1		X				1217416020	
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES		Data Deliverable Requirements:			
<i>[Signature]</i>		11/11/21	1050	<i>[Signature]</i>		Report to DL (J Flags)? YES		Level 2			
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and-or Special Instructions:			
<i>[Signature]</i>		11/12/21	1000	<i>[Signature]</i>				FOLLOW COC - NOT JAR ID'S AIRPORT SAMPLES MAY BE HOT			
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)			
						or Ambient []		INTACT BROKEN ABSENT			
Relinquished By: (4)		Date	Time	Received For Laboratory By:							

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 3 of 7		
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless						
PROJECT NAME: 1217416		PWSID#: NPDL#:		C O N T A I N E R S	Preservative Used: NONE	EPA 537 PFAS - 24 COMPOUNDS	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com								
INVOICE TO: SGS - Alaska <i>1036230</i>		QUOTE #: P.O. #: 1217416								
env.alaska.accounting@sgs.com		Env.Alaska.ReflabTeam@sgs.com								
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE						
<i>21</i>	TXY-91A	11/08/2021	11:15:00	Solid 1	X					1217416021
<i>22</i>	TXY-91B	11/08/2021	11:20:00	Solid 1	X					1217416022
<i>23</i>	TXY-91C	11/08/2021	11:25:00	Solid 1	X					1217416023
<i>24</i>	TXY-101A	11/08/2021	11:45:00	Solid 1	X					1217416024
<i>25</i>	TXY-101B	11/08/2021	11:50:00	Solid 1	X					1217416025
<i>26</i>	TXY-101C	11/08/2021	11:55:00	Solid 1	X					1217416026
<i>27</i>	TXY-141A	11/08/2021	13:45:00	Solid 1	X					1217416027
<i>28</i>	TXY-141B	11/08/2021	13:50:00	Solid 1	X					1217416028
<i>29</i>	TXY-141C	11/08/2021	13:05:00	Solid 1	X					1217416029
<i>30</i>	TXY-141D	11/08/2021	14:00:00	Solid 1	X					1217416030
Relinquished By: (1) <i>[Signature]</i>		Date: <i>11/12/21</i>	Time: <i>10:50</i>	Received By:		DOD Project? <i>YES</i>		Data Deliverable Requirements: Level 2		
Relinquished By: (2) <i>[Signature]</i>		Date: <i>11/12/21</i>	Time: <i>10:00</i>	Received By: <i>[Signature]</i>		Cooler ID:		Requested Turnaround Time and-or Special Instructions: AIRPORT SAMPLES MAY BE HOT		
Relinquished By: (3)		Date:	Time:	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)		
Relinquished By: (4)		Date:	Time:	Received For Laboratory By:		or Ambient []		INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>		

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 4 of 7			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217416		PWSID#: _____		# C O N T A I N E R S Preserv- ative Used: NONE TYPE C = COMP G = GRAB MI = Multi Incremental Soils EPA 937 PFAS - 24 COMPOUNDS							
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com									
		Env.Alaska.RefLabTeam@sgs.com									
INVOICE TO: SGS - Alaska		QUOTE #: _____									
env.alaska.accounting@sgs.com		P.O. #: 1217416									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE				MS	MSD	SGS lab #	Location ID
31	FD-9	11/08/2021	14:05:00	Solid	1		X			1217416031	
32	TXY-140A	11/08/2021	14:15:00	Solid	1		X			1217416032	
33	TXY-140B	11/08/2021	14:20:00	Solid	1		X			1217416033	
34	TXY-139A	11/08/2021	14:40:00	Solid	1		X			1217416034	
35	TXY-139B	11/08/2021	14:45:00	Solid	1		X			1217416035	
36	TXY-139C	11/08/2021	14:50:00	Solid	1		X			1217416036	
37	TXY-118	11/08/2021	16:00:00	Solid	1		X			1217416037	
38	TUG-79	11/09/2021	08:15:00	Solid	1		X			1217416038	
39	TUG-78A	11/09/2021	08:30:00	Solid	1		X			1217416039	
40	TUG-78B	11/09/2021	08:35:00	Solid	1		X			1217416040	
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES		Data Deliverable Requirements:			
<i>J. Shumway</i>		11/16/21	1050	<i>[Signature]</i>		Report to DL (J Flags)? YES		Level 2			
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and-or Special Instructions:			
<i>[Signature]</i>		11/16/21	1000	<i>[Signature]</i>				AIRPORT SAMPLES MAY BE HOT			
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)			
						or Ambient []		INTACT BROKEN ABSENT			
Relinquished By: (4)		Date	Time	Received For Laboratory By:							

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 5 of 7		
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless						
PROJECT NAME: 1217416		PWSID#:		CONTAINER #	Preservative Used: NONE	EPA 537 PFAS-24 COMPOUNDS	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com								
INVOICE TO: SGS - Alaska 6480230		QUOTE #:								
env.alaska.accounting@sgs.com		P.O. #: 1217416								
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE	#					
41	TUG-77A	11/09/2021	08:40:00	Solid	1	X				1217416041
42	FD-10	11/09/2021	08:20:00	Solid	1	X				1217416042
43	TUG-77B	11/09/2021	08:45:00	Solid	1	X				1217416043
44	TUG-77C	11/09/2021	08:50:00	Solid	1	X				1217416044
45	TUG-76A	11/09/2021	08:55:00	Solid	1	X				1217416045
46	TUG-76B	11/09/2021	09:00:00	Solid	1	X				1217416046
47	TUG-76C	11/09/2021	09:05:00	Solid	1	X				1217416047
48	TUG-76D	11/09/2021	09:10:00	Solid	1	X				1217416048
49	TUG-75A	11/09/2021	09:30:00	Solid	1	X				1217416049
50	TUG-75B	11/09/2021	09:35:00	Solid	1	X				1217416050
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES / 10		Data Deliverable Requirements:		
<i>J. Shumway</i>		11/11/21	1050	<i>[Signature]</i>		Report to DL (J Flags)? YES		Level 2		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:				
<i>[Signature]</i>		11/12/21	1000	<i>[Signature]</i>		Requested Turnaround Time and-or Special Instructions:				
Relinquished By: (3)		Date	Time	Received By:		AIRPORT SAMPLES MAY BE HOT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank °C:		Chain of Custody Seal: (Circle)		
						or Ambient []		INTACT BROKEN ABSENT		

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 6 of 7			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217416		PWSID#:		CONTAINER #	Preservative Used: NONE	EPA 537 PFAS- 24 COMPOUNDS	MS	MSD	SGS lab #	Location ID	
REPORTS TO: Julie Shumway		NPDL#:									
E-MAIL: Julie.Shumway@sgs.com		Env.Alaska.Reft.abTeam@sgs.com									
INVOICE TO: SGS - Alaska 1086120		QUOTE #:									
env.alaska.accounting@sgs.com		P.O. #: 1217416									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	Preservative Used:	EPA 537 PFAS- 24 COMPOUNDS	MS	MSD	SGS lab #	Location ID
51	TUG-75C	11/09/2021	09:40:00	Solid 1	1		X			1217416051	
52	TUG-75D	11/09/2021	09:45:00	Solid 1	1		X			1217416052	
53	TXY-125A	11/09/2021	10:20:00	Solid 1	1		X			1217416053	
54	TXY-125B	11/09/2021	10:25:00	Solid 1	1		X			1217416054	
55	TXY-125C	11/09/2021	10:30:00	Solid 1	1		X			1217416055	
56	TXY-125D	11/09/2021	10:35:00	Solid 1	1		X			1217416056	
57	TXY-124A	11/09/2021	11:00:00	Solid 1	1		X			1217416057	
58	TXY-124B	11/09/2021	11:05:00	Solid 1	1		X			1217416058	
59	TXY-124C	11/09/2021	11:10:00	Solid 1	1		X			1217416059	
60	TXY-124D	11/09/2021	11:15:00	Solid 1	1		X			1217416060	
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES <i>JS</i>		Data Deliverable Requirements:			
<i>Julie Shumway</i>		11/11/21	1050	<i>[Signature]</i>		Report to DL (J Flags)? YES		Level 2			
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:					
<i>[Signature]</i>		11/11/21	1200	<i>[Signature]</i>		Requested Turnaround Time and-or Special Instructions:					
Relinquished By: (3)		Date	Time	Received By:		AIRPORT SAMPLES MAY BE HOT					
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank °C:		Chain of Custody Seal: (Circle)			
						or Ambient []		INTACT BROKEN ABSENT			

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 7 of 7				
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1217416		PWSID#:		CONTAINER #	Preservative Used: NONE	TYPE	C - COMP G = GRAB MI = Multi Incremental Soils	EPA 537 PFAS-24 COMPOUNDS	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: SGS - Alaska env.alaska.accounting@sgs.com		QUOTE #: 686720										
		P.O. #: 1217416										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE								
	101 TXY-123A	11/09/2021	11:30:00	Solid 1			X				1217416061	
	102 TXY-123B	11/09/2021	11:35:00	Solid 1			X				1217416062	
	103 TXY-123C	11/09/2021	11:40:00	Solid 1			X				1217416063	
	104 TXY-123D	11/09/2021	11:45:00	Solid 1			X				1217416064	
	105 FD-11	11/09/2021	11:50:00	Solid 1			X				1217416065	
Relinquished By: (1)		Date	Time	Received By:		DOD Project? YES <i>MS</i>		Data Deliverable Requirements: Level 2				
Relinquished By: (2)		Date	Time	Received By:		Report to DL (J Flags)? YES		Cooler ID: Requested Turnaround Time and-or Special Instructions: AIRPORT SAMPLES MAY BE HOT				
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C: or Ambient []		Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:								

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SGS Sample Receipt Summary

Job Number: FA90768

Client: SGS ALASKA

Project: 1217416

Date / Time Received: 11/12/2021 10:00:00 AM

Delivery Method: UPS

Airbill #'s: 1Z 74A 435 01 4117 4792

Therm ID: IR 1;	Therm CF: 0.2;	# of Coolers: 1
Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);		
Cooler Temps (Corrected) °C: Cooler 1: (2.8);		

<u>Cooler Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>
1. Custody Seals Present	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Temp criteria achieved	<input checked="" type="checkbox"/>		<input type="checkbox"/>
4. Cooler temp verification	<u>IR Gun</u>		
5. Cooler media	<u>Ice (Bag)</u>		

<u>Trip Blank Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Trip Blank present / cooler	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Trip Blank listed on COC	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

	<u>W</u>	<u>or</u>	<u>S</u>	<u>N/A</u>
3. Type Of TB Received	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Sample Information</u>	<u>Y</u>	<u>or</u>	<u>N</u>	<u>N/A</u>
1. Sample labels present on bottles	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Samples preserved properly	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
3. Sufficient volume/containers recvd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Condition of sample	<u>Intact</u>			
5. Sample recvd within HT	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
6. Dates/Times/IDs on COC match Sample Label	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
7. VOCs have headspace	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
9. Compositing instructions clear	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Voa Soil Kits/Jars received past 48hrs?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. % Solids Jar received?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Residual Chlorine Present?	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

<u>Misc. Information</u>			
Number of Encores: 25-Gram _____	5-Gram _____	Number of 5035 Field Kits: _____	Number of Lab Filtered Metals: _____
Test Strip Lot #s: pH 0-3 <u>230315</u>	pH 10-12 <u>219813A</u>	Other: (Specify) _____	
Residual Chlorine Test Strip Lot #: _____			

Comments SAMPLES 16 (COC ID: TUG-60A), 17 (COC ID: TUG-60B), AND 18 (COC ID: TUG-60C), ALL HAVE INCORRECT LABELS ON BOTTLES. ID ON BOTTLE IS TUG-57A, TUG 57B, AND TUG-57C RESPECTIVELY. TIME ON EACH BOTTLE STILL MATCHES COC TIME.

SAMPLE 29 (COC ID: TXY-141C) HAS INCORRECT TIME ON BOTTLE. COC STATES 13:05 WHEREAS BOTTLE STATES 13:50.

Technician: STEPHENP

Date: 11/12/2021 10:00:00 A

Reviewer: _____

Date: _____

SM001
Rev. Date 05/24/17

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Response: Use the sample IDs on the COC per Julie Shumway

SM001
Rev. Date 05/24/17

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
SQ1877-IBLK	Q86455.D	1	11/24/21	MRE	n/a	n/a	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16, FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	91% 40-140%
	13C5-PFPeA	91% 50-150%
	13C5-PFHxA	88% 50-150%
	13C4-PFHpA	86% 50-150%
	13C8-PFOA	84% 50-150%
	13C9-PFNA	78% 50-150%
	13C6-PFDA	77% 50-150%
	13C7-PFUnDA	63% 40-140%

Instrument Blank

Job Number: FA90768
Account: SGS/SAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
SQ1877-IBLK	Q86455.D	1	11/24/21	MRE	n/a	n/a	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16, FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	61% 40-140%
	13C2-PFTeDA	62% 30-130%
	13C3-PFBS	91% 50-150%
	13C3-PFHxS	94% 50-150%
	13C8-PFOS	95% 50-150%
	13C8-FOSA	88% 30-130%
	d3-MeFOSAA	50% 40-140%
	d5-EtFOSAA	47% 40-140%
	13C2-4:2FTS	81% 50-150%
	13C2-6:2FTS	82% 50-150%
	13C2-8:2FTS	74% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-MB	Q86494.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	50% 40-140%
	13C5-PFPeA	52% 50-150%
	13C5-PFHxA	54% 50-150%
	13C4-PFHpA	60% 50-150%
	13C8-PFOA	65% 50-150%
	13C9-PFNA	69% 50-150%
	13C6-PFDA	78% 50-150%
	13C7-PFUnDA	74% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-MB	Q86494.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	74% 40-140%
	13C2-PFTeDA	78% 30-130%
	13C3-PFBS	77% 50-150%
	13C3-PFHxS	77% 50-150%
	13C8-PFOS	77% 50-150%
	13C8-FOSA	56% 30-130%
	d3-MeFOSAA	82% 40-140%
	d5-EtFOSAA	81% 40-140%
	13C2-4:2FTS	71% 50-150%
	13C2-6:2FTS	73% 50-150%
	13C2-8:2FTS	75% 50-150%
	13C3-HFPO-DA	50% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-MB	Q86519.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	75% 40-140%
	13C5-PFPeA	78% 50-150%
	13C5-PFHxA	79% 50-150%
	13C4-PFHpA	78% 50-150%
	13C8-PFOA	80% 50-150%
	13C9-PFNA	79% 50-150%
	13C6-PFDA	79% 50-150%
	13C7-PFUnDA	78% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-MB	Q86519.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	78% 40-140%
	13C2-PFTeDA	77% 30-130%
	13C3-PFBS	76% 50-150%
	13C3-PFHxS	76% 50-150%
	13C8-PFOS	77% 50-150%
	13C8-FOSA	63% 30-130%
	d3-MeFOSAA	84% 40-140%
	d5-EtFOSAA	85% 40-140%
	13C2-4:2FTS	70% 50-150%
	13C2-6:2FTS	73% 50-150%
	13C2-8:2FTS	75% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-MB	4Q22944.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	63% 40-140%
	13C5-PFPeA	68% 50-150%
	13C5-PFHxA	71% 50-150%
	13C4-PFHpA	73% 50-150%
	13C8-PFOA	78% 50-150%
	13C9-PFNA	77% 50-150%
	13C6-PFDA	79% 50-150%
	13C7-PFUnDA	80% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-MB	4Q22944.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	83% 40-140%
	13C2-PFTeDA	97% 30-130%
	13C3-PFBS	74% 50-150%
	13C3-PFHxS	77% 50-150%
	13C8-PFOS	82% 50-150%
	13C8-FOSA	51% 30-130%
	d3-MeFOSAA	74% 40-140%
	d5-EtFOSAA	77% 40-140%
	13C2-4:2FTS	68% 50-150%
	13C2-6:2FTS	70% 50-150%
	13C2-8:2FTS	69% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-MB	3Q49766.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	71% 40-140%
	13C5-PFPeA	72% 50-150%
	13C5-PFHxA	74% 50-150%
	13C4-PFHpA	74% 50-150%
	13C8-PFOA	74% 50-150%
	13C9-PFNA	73% 50-150%
	13C6-PFDA	72% 50-150%
	13C7-PFUnDA	75% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/SAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-MB	3Q49766.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	73% 40-140%
	13C2-PFTeDA	73% 30-130%
	13C3-PFBS	71% 50-150%
	13C3-PFHxS	74% 50-150%
	13C8-PFOS	73% 50-150%
	13C8-FOSA	55% 30-130%
	d3-MeFOSAA	80% 40-140%
	d5-EtFOSAA	79% 40-140%
	13C2-4:2FTS	67% 50-150%
	13C2-6:2FTS	70% 50-150%
	13C2-8:2FTS	67% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-MB	3Q49921.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	78% 40-140%
	13C5-PFPeA	81% 50-150%
	13C5-PFHxA	82% 50-150%
	13C4-PFHpA	82% 50-150%
	13C8-PFOA	82% 50-150%
	13C9-PFNA	81% 50-150%
	13C6-PFDA	81% 50-150%
	13C7-PFUnDA	81% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-MB	3Q49921.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	83% 40-140%
	13C2-PFTeDA	81% 30-130%
	13C3-PFBS	78% 50-150%
	13C3-PFHxS	80% 50-150%
	13C8-PFOS	77% 50-150%
	13C8-FOSA	64% 30-130%
	d3-MeFOSAA	84% 40-140%
	d5-EtFOSAA	84% 40-140%
	13C2-4:2FTS	76% 50-150%
	13C2-6:2FTS	77% 50-150%
	13C2-8:2FTS	77% 50-150%
	13C3-HFPO-DA	69% 50-150%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MB	4Q23493.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 40-140%
	13C5-PFPeA	97% 50-150%
	13C5-PFHxA	98% 50-150%
	13C4-PFHpA	101% 50-150%
	13C8-PFOA	102% 50-150%
	13C9-PFNA	103% 50-150%
	13C6-PFDA	104% 50-150%
	13C7-PFUnDA	102% 40-140%

Method Blank Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MB	4Q23493.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	103% 40-140%
	13C2-PFTeDA	108% 30-130%
	13C3-PFBS	97% 50-150%
	13C3-PFHxS	99% 50-150%
	13C8-PFOS	99% 50-150%
	13C8-FOSA	118% 30-130%
	d3-MeFOSAA	126% 40-140%
	d5-EtFOSAA	121% 40-140%
	13C2-4:2FTS	92% 50-150%
	13C2-6:2FTS	97% 50-150%
	13C2-8:2FTS	99% 50-150%
	13C3-HFPO-DA	95% 50-150%

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Instrument Blank

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q313-IBLK	4Q22888.D	1	11/29/21	NG	n/a	n/a	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-3, FA90768-34

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	89% 50-150%
	13C5-PFPeA	92% 50-150%
	13C5-PFHxA	92% 50-150%
	13C4-PFHpA	94% 50-150%
	13C8-PFOA	95% 50-150%
	13C9-PFNA	98% 50-150%
	13C6-PFDA	98% 50-150%
	13C7-PFUnDA	94% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/SAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q313-IBLK	4Q22888.D	1	11/29/21	NG	n/a	n/a	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-3, FA90768-34

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	101% 50-150%
	13C2-PFTeDA	115% 50-150%
	13C3-PFBS	92% 50-150%
	13C3-PFHxS	93% 50-150%
	13C8-PFOS	97% 50-150%
	13C8-FOSA	80% 50-150%
	d3-MeFOSAA	87% 50-150%
	d5-EtFOSAA	88% 50-150%
	13C2-4:2FTS	85% 50-150%
	13C2-6:2FTS	84% 50-150%
	13C2-8:2FTS	88% 50-150%

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Instrument Blank

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q701-IBLK	3Q49720.D	1	12/01/21	MV	n/a	n/a	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	100% 50-150%
	13C4-PFHpA	101% 50-150%
	13C8-PFOA	101% 50-150%
	13C9-PFNA	99% 50-150%
	13C6-PFDA	99% 50-150%
	13C7-PFUnDA	101% 50-150%
	13C2-PFDoDA	101% 50-150%
	13C2-PFTeDA	99% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q701-IBLK	3Q49720.D	1	12/01/21	MV	n/a	n/a	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	98% 50-150%
	13C3-PFHxS	101% 50-150%
	13C8-PFOS	99% 50-150%
	d3-MeFOSAA	106% 50-150%
	d5-EtFOSAA	104% 50-150%
	13C3-HFPO-DA	94% 50-150%

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Job Number: FA90768
Account: SGS/SAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q702-IBLK	3Q49801.D	1	12/02/21	MV	n/a	n/a	S3Q702

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-42, FA90768-47, FA90768-48

CAS No.	Compound	Result	RL	MDL	Units	Q
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	91% 50-150%
	13C4-PFHpA	91% 50-150%
	13C8-PFOA	92% 50-150%
	13C9-PFNA	92% 50-150%
	13C6-PFDA	89% 50-150%
	13C7-PFUnDA	91% 50-150%
	13C2-PFDoDA	89% 50-150%
	13C2-PFTeDA	90% 50-150%
	13C3-PFBS	88% 50-150%
	13C3-PFHxS	90% 50-150%
	13C8-PFOS	89% 50-150%
	d3-MeFOSAA	101% 50-150%
	d5-EtFOSAA	101% 50-150%
	13C3-HFPO-DA	85% 50-150%

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Instrument Blank

Job Number: FA90768
Account: SGS/SAKKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49878.D	1	12/03/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-40, FA90768-46, FA90768-49, FA90768-57, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	94% 50-150%
	13C4-PFHpA	94% 50-150%
	13C8-PFOA	95% 50-150%
	13C9-PFNA	93% 50-150%
	13C6-PFDA	92% 50-150%
	13C7-PFUnDA	94% 50-150%
	13C2-PFDoDA	96% 50-150%
	13C2-PFTeDA	94% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49878.D	1	12/03/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-40, FA90768-46, FA90768-49, FA90768-57, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	91% 50-150%
	13C3-PFHxS	92% 50-150%
	13C8-PFOS	90% 50-150%
	d3-MeFOSAA	95% 50-150%
	d5-EtFOSAA	93% 50-150%
	13C3-HFPO-DA	88% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49979.D	1	12/04/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-40, FA90768-46, FA90768-49, FA90768-57, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	77% 50-150%
	13C4-PFHpA	77% 50-150%
	13C8-PFOA	78% 50-150%
	13C9-PFNA	77% 50-150%
	13C6-PFDA	77% 50-150%
	13C7-PFUnDA	77% 50-150%
	13C2-PFDoDA	78% 50-150%
	13C2-PFTeDA	78% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49979.D	1	12/04/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-40, FA90768-46, FA90768-49, FA90768-57, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	75% 50-150%
	13C3-PFHxS	74% 50-150%
	13C8-PFOS	73% 50-150%
	d3-MeFOSAA	84% 50-150%
	d5-EtFOSAA	80% 50-150%
	13C3-HFPO-DA	65% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q705-IBLK	3Q50092.D	1	12/08/21	MV	n/a	n/a	S3Q705

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-58

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	108% 50-150%
	13C5-PFPeA	109% 50-150%
	13C5-PFHxA	109% 50-150%
	13C4-PFHpA	109% 50-150%
	13C8-PFOA	112% 50-150%
	13C9-PFNA	112% 50-150%
	13C6-PFDA	111% 50-150%
	13C7-PFUnDA	110% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q705-IBLK	3Q50092.D	1	12/08/21	MV	n/a	n/a	S3Q705

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-58

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	115% 50-150%
	13C2-PFTeDA	110% 50-150%
	13C3-PFBS	108% 50-150%
	13C3-PFHxS	108% 50-150%
	13C8-PFOS	109% 50-150%
	13C8-FOSA	123% 50-150%
	d3-MeFOSAA	131% 50-150%
	d5-EtFOSAA	125% 50-150%
	13C2-4:2FTS	102% 50-150%
	13C2-6:2FTS	106% 50-150%
	13C2-8:2FTS	105% 50-150%
	13C3-HFPO-DA	103% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q321-IBLK	4Q23451.D	1	12/09/21	MV	n/a	n/a	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-37

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 50-150%
	13C5-PFPeA	99% 50-150%
	13C5-PFHxA	99% 50-150%
	13C4-PFHpA	101% 50-150%
	13C8-PFOA	103% 50-150%
	13C9-PFNA	103% 50-150%
	13C6-PFDA	105% 50-150%
	13C7-PFUnDA	105% 50-150%
	13C2-PFDoDA	104% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGS/SAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q321-IBLK	4Q23451.D	1	12/09/21	MV	n/a	n/a	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-37

CAS No.	ID Standard Recoveries	Limits
	13C2-PFTeDA	108% 50-150%
	13C3-PFBS	98% 50-150%
	13C3-PFHxS	99% 50-150%
	13C8-PFOS	104% 50-150%
	13C8-FOSA	119% 50-150%
	d3-MeFOSAA	132% 50-150%
	d5-EtFOSAA	126% 50-150%
	13C2-4:2FTS	92% 50-150%
	13C2-6:2FTS	100% 50-150%
	13C2-8:2FTS	101% 50-150%
	13C3-HFPO-DA	104% 50-150%

Instrument Blank

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q322-IBLK	4Q23526.D	1	12/10/21	MV	n/a	n/a	S4Q322

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90768-37

CAS No.	Compound	Result	RL	MDL	Units	Q
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	88% 50-150%
	13C4-PFHpA	89% 50-150%
	13C8-PFOA	91% 50-150%
	13C9-PFNA	93% 50-150%
	13C6-PFDA	93% 50-150%
	13C7-PFUnDA	91% 50-150%
	13C2-PFDoDA	92% 50-150%
	13C2-PFTeDA	93% 50-150%
	13C3-PFBS	86% 50-150%
	13C3-PFHxS	85% 50-150%
	13C8-PFOS	88% 50-150%
	d3-MeFOSAA	118% 50-150%
	d5-EtFOSAA	111% 50-150%
	13C3-HFPO-DA	86% 50-150%

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Blank Spike Summary

Job Number: FA90768
Account: SGS/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-BS	Q86493.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.5	85	70-130
2706-90-3	Perfluoropentanoic acid	10	7.7	77	70-130
307-24-4	Perfluorohexanoic acid	10	7.9	79	70-130
375-85-9	Perfluoroheptanoic acid	10	8.0	80	70-130
335-67-1	Perfluorooctanoic acid	10	7.9	79	70-130
375-95-1	Perfluorononanoic acid	10	8.1	81	70-130
335-76-2	Perfluorodecanoic acid	10	8.4	84	70-130
2058-94-8	Perfluoroundecanoic acid	10	8.0	80	70-130
307-55-1	Perfluorododecanoic acid	10	8.3	83	70-130
72629-94-8	Perfluorotridecanoic acid	10	8.2	82	70-130
376-06-7	Perfluorotetradecanoic acid	10	8.2	82	70-130
375-73-5	Perfluorobutanesulfonic acid	10	7.9	79	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.3	83	70-130
355-46-4	Perfluorohexanesulfonic acid	10	7.9	79	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	8.4	84	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	8.1	81	70-130
68259-12-1	Perfluorononanesulfonic acid	10	8.5	85	70-130
335-77-3	Perfluorodecanesulfonic acid	10	8.0	80	65-135
754-91-6	PFOSA	10	8.1	81	70-130
2355-31-9	MeFOSAA	10	8.7	87	70-130
2991-50-6	EtFOSAA	10	8.4	84	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.0	90	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	8.7	87	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.1	91	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	80%	40-140%
	13C5-PFPeA	82%	50-150%
	13C5-PFHxA	82%	50-150%
	13C4-PFHpA	81%	50-150%
	13C8-PFOA	82%	50-150%
	13C9-PFNA	81%	50-150%
	13C6-PFDA	80%	50-150%
	13C7-PFUnDA	79%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-BS	Q86493.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	79%	40-140%
	13C2-PFTeDA	81%	30-130%
	13C3-PFBS	80%	50-150%
	13C3-PFHxS	80%	50-150%
	13C8-PFOS	80%	50-150%
	13C8-FOSA	93%	30-130%
	d3-MeFOSAA	86%	40-140%
	d5-EtFOSAA	90%	40-140%
	13C2-4:2FTS	78%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	78%	50-150%
	13C3-HFPO-DA	80%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-BS	Q86518.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.8	98	70-130
2706-90-3	Perfluoropentanoic acid	10	9.0	90	70-130
307-24-4	Perfluorohexanoic acid	10	9.3	93	70-130
375-85-9	Perfluoroheptanoic acid	10	9.4	94	70-130
335-67-1	Perfluorooctanoic acid	10	9.2	92	70-130
375-95-1	Perfluorononanoic acid	10	9.5	95	70-130
335-76-2	Perfluorodecanoic acid	10	9.5	95	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.3	93	70-130
307-55-1	Perfluorododecanoic acid	10	9.6	96	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.1	91	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.6	96	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.1	91	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.6	96	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.4	94	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.2	102	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.5	95	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.1	101	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.6	96	65-135
754-91-6	PFOSA	10	9.0	90	70-130
2355-31-9	MeFOSAA	10	10.0	100	70-130
2991-50-6	EtFOSAA	10	9.7	97	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10.5	105	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	10.2	102	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.3	103	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	75%	40-140%
	13C5-PFPeA	77%	50-150%
	13C5-PFHxA	76%	50-150%
	13C4-PFHpA	77%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	78%	50-150%
	13C6-PFDA	79%	50-150%
	13C7-PFUnDA	71%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-BS	Q86518.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	76%	40-140%
	13C2-PFTeDA	75%	30-130%
	13C3-PFBS	76%	50-150%
	13C3-PFHxS	75%	50-150%
	13C8-PFOS	73%	50-150%
	13C8-FOSA	64%	30-130%
	d3-MeFOSAA	84%	40-140%
	d5-EtFOSAA	85%	40-140%
	13C2-4:2FTS	73%	50-150%
	13C2-6:2FTS	76%	50-150%
	13C2-8:2FTS	79%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-BS	4Q22943.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.7	97	70-130
2706-90-3	Perfluoropentanoic acid	10	9.0	90	70-130
307-24-4	Perfluorohexanoic acid	10	8.9	89	70-130
375-85-9	Perfluoroheptanoic acid	10	9.5	95	70-130
335-67-1	Perfluorooctanoic acid	10	9.4	94	70-130
375-95-1	Perfluorononanoic acid	10	9.2	92	70-130
335-76-2	Perfluorodecanoic acid	10	9.7	97	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.3	93	70-130
307-55-1	Perfluorododecanoic acid	10	9.7	97	70-130
72629-94-8	Perfluorotridecanoic acid	10	8.5	85	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.0	90	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.5	95	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.4	94	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.1	91	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.4	94	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.5	95	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.1	101	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.5	95	65-135
754-91-6	PFOSA	10	9.7	97	70-130
2355-31-9	MeFOSAA	10	9.1	91	70-130
2991-50-6	EtFOSAA	10	9.8	98	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10.1	101	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.8	98	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.8	98	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	67%	40-140%
	13C5-PFPeA	72%	50-150%
	13C5-PFHxA	74%	50-150%
	13C4-PFHpA	75%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	78%	50-150%
	13C6-PFDA	75%	50-150%
	13C7-PFUnDA	77%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-BS	4Q22943.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	81%	40-140%
	13C2-PFTeDA	94%	30-130%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	77%	50-150%
	13C8-PFOS	76%	50-150%
	13C8-FOSA	48%	30-130%
	d3-MeFOSAA	74%	40-140%
	d5-EtFOSAA	74%	40-140%
	13C2-4:2FTS	70%	50-150%
	13C2-6:2FTS	70%	50-150%
	13C2-8:2FTS	74%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-BS	3Q49765.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.5	95	70-130
2706-90-3	Perfluoropentanoic acid	10	9.4	94	70-130
307-24-4	Perfluorohexanoic acid	10	9.6	96	70-130
375-85-9	Perfluoroheptanoic acid	10	9.7	97	70-130
335-67-1	Perfluorooctanoic acid	10	9.4	94	70-130
375-95-1	Perfluorononanoic acid	10	9.5	95	70-130
335-76-2	Perfluorodecanoic acid	10	9.9	99	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.3	93	70-130
307-55-1	Perfluorododecanoic acid	10	9.6	96	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.2	92	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.4	94	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.7	97	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.8	98	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.5	95	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.0	100	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.6	96	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.1	101	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.1	91	65-135
754-91-6	PFOSA	10	9.5	95	70-130
2355-31-9	MeFOSAA	10	9.7	97	70-130
2991-50-6	EtFOSAA	10	9.4	94	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10.0	100	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.6	96	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.1	101	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	89%	40-140%
	13C5-PFPeA	89%	50-150%
	13C5-PFHxA	90%	50-150%
	13C4-PFHpA	89%	50-150%
	13C8-PFOA	91%	50-150%
	13C9-PFNA	90%	50-150%
	13C6-PFDA	86%	50-150%
	13C7-PFUnDA	91%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-BS	3Q49765.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	91%	40-140%
	13C2-PFTeDA	90%	30-130%
	13C3-PFBS	87%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	87%	50-150%
	13C8-FOSA	64%	30-130%
	d3-MeFOSAA	93%	40-140%
	d5-EtFOSAA	98%	40-140%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	87%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-BS	3Q49920.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.7	97	70-130
2706-90-3	Perfluoropentanoic acid	10	9.3	93	70-130
307-24-4	Perfluorohexanoic acid	10	9.6	96	70-130
375-85-9	Perfluoroheptanoic acid	10	9.6	96	70-130
335-67-1	Perfluorooctanoic acid	10	9.5	95	70-130
375-95-1	Perfluorononanoic acid	10	9.4	94	70-130
335-76-2	Perfluorodecanoic acid	10	9.8	98	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.6	96	70-130
307-55-1	Perfluorododecanoic acid	10	9.8	98	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.3	93	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.5	95	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.7	97	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.9	99	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.7	97	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.3	103	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.8	98	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.6	106	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.5	95	65-135
754-91-6	PFOSA	10	9.7	97	70-130
2355-31-9	MeFOSAA	10	9.8	98	70-130
2991-50-6	EtFOSAA	10	9.8	98	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10	100	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.6	96	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.0	100	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	74%	40-140%
	13C5-PFPeA	77%	50-150%
	13C5-PFHxA	77%	50-150%
	13C4-PFHpA	76%	50-150%
	13C8-PFOA	78%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	75%	50-150%
	13C7-PFUnDA	76%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGSAKA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-BS	3Q49920.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	77%	40-140%
	13C2-PFTeDA	77%	30-130%
	13C3-PFBS	74%	50-150%
	13C3-PFHxS	76%	50-150%
	13C8-PFOS	72%	50-150%
	13C8-FOSA	55%	30-130%
	d3-MeFOSAA	77%	40-140%
	d5-EtFOSAA	79%	40-140%
	13C2-4:2FTS	75%	50-150%
	13C2-6:2FTS	78%	50-150%
	13C2-8:2FTS	75%	50-150%
	13C3-HFPO-DA	64%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-BS	4Q23492.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	10.2	102	70-130
2706-90-3	Perfluoropentanoic acid	10	10.3	103	70-130
307-24-4	Perfluorohexanoic acid	10	9.7	97	70-130
375-85-9	Perfluoroheptanoic acid	10	9.8	98	70-130
335-67-1	Perfluorooctanoic acid	10	9.9	99	70-130
375-95-1	Perfluorononanoic acid	10	10.2	102	70-130
335-76-2	Perfluorodecanoic acid	10	9.8	98	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.5	95	70-130
307-55-1	Perfluorododecanoic acid	10	10	100	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.4	94	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.7	97	70-130
375-73-5	Perfluorobutanesulfonic acid	10	10.1	101	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	10.1	101	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.8	98	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.8	98	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	10.6	106	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.4	104	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.5	95	65-135
754-91-6	PFOSA	10	9.9	99	70-130
2355-31-9	MeFOSAA	10	9.8	98	70-130
2991-50-6	EtFOSAA	10	10.3	103	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.7	97	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.6	96	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10	100	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	90%	40-140%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	89%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	89%	50-150%
	13C6-PFDA	91%	50-150%
	13C7-PFUnDA	89%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-BS	4Q23492.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	89%	40-140%
	13C2-PFTeDA	91%	30-130%
	13C3-PFBS	87%	50-150%
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	100%	30-130%
	d3-MeFOSAA	111%	40-140%
	d5-EtFOSAA	104%	40-140%
	13C2-4:2FTS	86%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	90%	50-150%
	13C3-HFPO-DA	83%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-MS	Q86496.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877
OP88386-MSD	Q86497.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877
FA90768-1	Q86495.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	Compound	FA90768-1 ug/kg	Spike Q	ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	1.2 U		12.3	11.1	90	12	11.9	99	7	70-130/30
2706-90-3	Perfluoropentanoic acid	1.2 U		12.3	10.5	85	12	11.2	93	6	70-130/30
307-24-4	Perfluorohexanoic acid	1.2 U		12.3	10.4	84	12	11.2	93	7	70-130/30
375-85-9	Perfluoroheptanoic acid	1.2 U		12.3	10.5	85	12	11.2	93	6	70-130/30
335-67-1	Perfluorooctanoic acid	0.47	J	12.3	11.1	86	12	11.6	93	4	70-130/30
375-95-1	Perfluorononanoic acid	0.66	J	12.3	11.5	88	12	12.2	96	6	70-130/30
335-76-2	Perfluorodecanoic acid	1.2 U		12.3	10.6	86	12	11.4	95	7	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.2 U		12.3	10.7	87	12	11.4	95	6	70-130/30
307-55-1	Perfluorododecanoic acid	1.2 U		12.3	10.7	87	12	11.6	97	8	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.2 U		12.3	10.7	87	12	11.4	95	6	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.2 U		12.3	10.8	88	12	11.4	95	5	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.2 U		12.3	10.3	84	12	11.0	92	7	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.2 U		12.3	10.9	89	12	11.7	97	7	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.2 U		12.3	10.4	84	12	11.1	92	7	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.2 U		12.3	11.1	90	12	11.8	98	6	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.65	J	12.3	11.4	87	12	11.8	93	3	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.2 U		12.3	11.2	91	12	11.7	97	4	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.2 U		12.3	10.6	86	12	11.2	93	6	65-135/30
754-91-6	PFOSA	1.2 U		12.3	10.6	86	12	11.2	93	6	70-130/30
2355-31-9	MeFOSAA	3.0 U		12.3	11.7	95	12	12.7	106	8	70-130/30
2991-50-6	EtFOSAA	3.0 U		12.3	11.2	91	12	12.0	100	7	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.2 U		12.3	11.7	95	12	12.4	103	6	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.2 U		12.3	11.5	93	12	12.2	102	6	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.2 U		12.3	11.9	97	12	12.5	104	5	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-1	Limits
	13C4-PFBA	76%	71%	71%	40-140%
	13C5-PFPeA	76%	71%	72%	50-150%
	13C5-PFHxA	77%	72%	73%	50-150%
	13C4-PFHpA	77%	73%	75%	50-150%
	13C8-PFOA	77%	72%	77%	50-150%
	13C9-PFNA	76%	72%	75%	50-150%
	13C6-PFDA	79%	75%	79%	50-150%
	13C7-PFUnDA	72%	67%	75%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88386-MS	Q86496.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877
OP88386-MSD	Q86497.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877
FA90768-1	Q86495.D	1	11/25/21	MRE	11/17/21	OP88386	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-1, FA90768-2, FA90768-4, FA90768-5, FA90768-6, FA90768-7, FA90768-8, FA90768-9, FA90768-10, FA90768-11, FA90768-12, FA90768-13, FA90768-14, FA90768-15, FA90768-16

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-1	Limits
	13C2-PFDoDA	75%	71%	75%	40-140%
	13C2-PFTeDA	77%	73%	77%	30-130%
	13C3-PFBS	76%	71%	75%	50-150%
	13C3-PFHxS	76%	72%	74%	50-150%
	13C8-PFOS	76%	72%	77%	50-150%
	13C8-FOSA	83%	79%	63%	30-130%
	d3-MeFOSAA	71%	74%	65%	40-140%
	d5-EtFOSAA	72%	75%	69%	40-140%
	13C2-4:2FTS	75%	71%	70%	50-150%
	13C2-6:2FTS	74%	71%	71%	50-150%
	13C2-8:2FTS	76%	71%	75%	50-150%
	13C3-HFPO-DA	76%	70%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-MS	Q86535.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877
OP88450-MSD	Q86536.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877
FA90768-29	Q86534.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	Compound	FA90768-29 Spike		MS	MS	Spike	MSD	MSD	RPD	Limits	
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	ug/kg		%	Rec/RPD
375-22-4	Perfluorobutanoic acid	1.1	U	11.1	11.0	99	11.3	10.9	96	1	70-130/30
2706-90-3	Perfluoropentanoic acid	1.1	U	11.1	10.3	92	11.3	10.1	89	2	70-130/30
307-24-4	Perfluorohexanoic acid	1.1	U	11.1	10.5	94	11.3	10.2	90	3	70-130/30
375-85-9	Perfluoroheptanoic acid	1.1	U	11.1	10.7	96	11.3	10.5	93	2	70-130/30
335-67-1	Perfluorooctanoic acid	1.1	U	11.1	10.2	92	11.3	10.2	90	0	70-130/30
375-95-1	Perfluorononanoic acid	1.1	U	11.1	10.9	98	11.3	10.9	96	0	70-130/30
335-76-2	Perfluorodecanoic acid	1.1	U	11.1	11.1	100	11.3	10.7	95	4	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.1	U	11.1	10.5	94	11.3	10.3	91	2	70-130/30
307-55-1	Perfluorododecanoic acid	1.1	U	11.1	10.7	96	11.3	10.6	94	1	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.1	U	11.1	10.4	93	11.3	10	88	4	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.1	U	11.1	10.8	97	11.3	10.6	94	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.1	U	11.1	10.2	92	11.3	10.0	88	2	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.1	U	11.1	10.7	96	11.3	10.7	95	0	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.1	U	11.1	10.4	93	11.3	10.2	90	2	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.1	U	11.1	11.0	99	11.3	10.9	96	1	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	1.1	U	11.1	10.7	96	11.3	10.4	92	3	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.1	U	11.1	11.1	100	11.3	10.9	96	2	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.1	U	11.1	10.2	92	11.3	10.1	89	1	65-135/30
754-91-6	PFOA	1.1	U	11.1	10.6	95	11.3	10.2	90	4	70-130/30
2355-31-9	MeFOSAA	2.8	U	11.1	11.8	106	11.3	11.3	100	4	70-130/30
2991-50-6	EtFOSAA	2.8	U	11.1	11.1	100	11.3	10.9	96	2	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.1	U	11.1	11.7	105	11.3	11.6	103	1	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.1	U	11.1	11.6	104	11.3	11.4	101	2	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.1	U	11.1	11.5	103	11.3	11.6	103	1	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-29	Limits
	13C4-PFBA	72%	72%	70%	40-140%
	13C5-PFPeA	74%	75%	73%	50-150%
	13C5-PFHxA	74%	75%	74%	50-150%
	13C4-PFHpA	74%	74%	75%	50-150%
	13C8-PFOA	74%	74%	74%	50-150%
	13C9-PFNA	75%	75%	76%	50-150%
	13C6-PFDA	76%	77%	78%	50-150%
	13C7-PFUnDA	71%	69%	69%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88450-MS	Q86535.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877
OP88450-MSD	Q86536.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877
FA90768-29	Q86534.D	1	11/25/21	MRE	11/19/21	OP88450	SQ1877

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-17, FA90768-18, FA90768-19, FA90768-20, FA90768-21, FA90768-22, FA90768-23, FA90768-24, FA90768-25, FA90768-26, FA90768-27, FA90768-28, FA90768-29, FA90768-30, FA90768-31, FA90768-32, FA90768-33, FA90768-35, FA90768-36

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-29	Limits
	13C2-PFDoDA	74%	74%	75%	40-140%
	13C2-PFTeDA	70%	71%	74%	30-130%
	13C3-PFBS	74%	73%	72%	50-150%
	13C3-PFHxS	73%	73%	73%	50-150%
	13C8-PFOS	73%	73%	73%	50-150%
	13C8-FOSA	57%	59%	55%	30-130%
	d3-MeFOSAA	69%	71%	80%	40-140%
	d5-EtFOSAA	76%	78%	85%	40-140%
	13C2-4:2FTS	71%	70%	65%	50-150%
	13C2-6:2FTS	71%	72%	69%	50-150%
	13C2-8:2FTS	78%	77%	75%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-MS	4Q22947.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
OP88526-MSD	4Q22948.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
FA90768-3	4Q22945.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
FA90768-3 ^a	4Q22946.D	5	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	Compound	FA90768-3 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	5.7 U ^b	12	10	84	11.7	10.9	93	9	70-130/30
2706-90-3	Perfluoropentanoic acid	5.7 U ^b	12	9.5	79	11.7	10.4	89	9	70-130/30
307-24-4	Perfluorohexanoic acid	5.7 U ^b	12	9.2	77	11.7	10.2	87	10	70-130/30
375-85-9	Perfluoroheptanoic acid	5.7 U ^b	12	10.3	86	11.7	11.2	96	8	70-130/30
335-67-1	Perfluorooctanoic acid	5.7 U ^b	12	10.1	84	11.7	11.1	95	9	70-130/30
375-95-1	Perfluorononanoic acid	2.5 ^b J	12	12.5	84	11.7	12.7	87	2	70-130/30
335-76-2	Perfluorodecanoic acid	1.1 U	12	10.0	84	11.7	11.0	94	10	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.1 U	12	9.8	82	11.7	10.5	90	7	70-130/30
307-55-1	Perfluorododecanoic acid	1.1 U	12	10.5	88	11.7	11.2	96	6	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.1 U	12	9.2	77	11.7	10.1	86	9	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.1 U	12	9.4	79	11.7	10.4	89	10	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.1 U	12	9.9	83	11.7	10.8	92	9	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.1 U	12	9.5	79	11.7	10.6	91	11	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.39 J	12	10.2	82	11.7	11.4	94	11	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.1 U	12	9.7	81	11.7	11.2	96	14	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	1.1 U	12	9.8	82	11.7	11.4	98	15	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.1 U	12	10.3	86	11.7	11.8	101	14	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.1 U	12	10.3	86	11.7	11.0	94	7	65-135/30
754-91-6	PFOA	5.7 U ^b	12	10.1	84	11.7	10.5	90	4	70-130/30
2355-31-9	MeFOSAA	2.9 U	12	10.5	88	11.7	11.3	97	7	70-130/30
2991-50-6	EtFOSAA	2.9 U	12	10.7	89	11.7	10.7	92	0	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	5.7 U ^b	12	10.8	90	11.7	11.3	97	5	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	5.7 U ^b	12	10.2	85	11.7	11.1	95	8	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	5.7 U ^b	12	10.2	85	11.7	10.8	92	6	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-3	FA90768-3	Limits
13C4-PFBA		56%	58%	31% * c	33% * c	40-140%
13C5-PFPeA		59%	63%	33% * c	35% * c	50-150%
13C5-PFHxA		63%	65%	35% * c	37% * c	50-150%
13C4-PFHpA		63%	67%	38% * c	40% * c	50-150%
13C8-PFOA		66%	69%	42% * c	43% * c	50-150%
13C9-PFNA		66%	70%	46% * c	48% * c	50-150%
13C6-PFDA		68%	70%	50%	53%	50-150%
13C7-PFUnDA		68%	71%	50%	54%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK A SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88526-MS	4Q22947.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
OP88526-MSD	4Q22948.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
FA90768-3	4Q22945.D	1	11/30/21	NG	11/29/21	OP88526	S4Q313
FA90768-3 ^a	4Q22946.D	5	11/30/21	NG	11/29/21	OP88526	S4Q313

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-3, FA90768-34

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-3	FA90768-3	Limits
13C2-PFDoDA		72%	74%	55%	57%	40-140%
13C2-PFTeDA		83%	84%	66%	71%	30-130%
13C3-PFBS		65%	68%	52%	51%	50-150%
13C3-PFHxS		68%	67%	53%	62%	50-150%
13C8-PFOS		70%	70%	54%	55%	50-150%
13C8-FOSA		37%	42%	28% * c	29% * c	30-130%
d3-MeFOSAA		58%	61%	43%	46%	40-140%
d5-EtFOSAA		61%	66%	43%	44%	40-140%
13C2-4:2FTS		61%	66%	47% * c	48% * c	50-150%
13C2-6:2FTS		64%	66%	47% * c	49% * c	50-150%
13C2-8:2FTS		65%	70%	49% * c	52%	50-150%

- (a) Dilution required due to matrix interference (ID recovery standard failure).
- (b) Result is from Run #2.
- (c) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-MS	3Q49791.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701
OP88527-MSD	3Q49792.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701
FA90768-56	3Q49790.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	Compound	FA90768-56 Spike		MS	MS	Spike	MSD	MSD	RPD	Limits	
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	ug/kg		%	Rec/RPD
375-22-4	Perfluorobutanoic acid	1.2 U		11.7	11.8	101	11.6	10	86	17	70-130/30
2706-90-3	Perfluoropentanoic acid	1.2 U		11.7	11.7	100	11.6	9.9	86	17	70-130/30
307-24-4	Perfluorohexanoic acid	1.2 U		11.7	12.0	102	11.6	10.1	87	17	70-130/30
375-85-9	Perfluoroheptanoic acid	1.2 U		11.7	11.8	101	11.6	10.2	88	15	70-130/30
335-67-1	Perfluorooctanoic acid	1.2 U		11.7	11.9	101	11.6	10.3	89	14	70-130/30
375-95-1	Perfluorononanoic acid	1.2 U		11.7	11.8	101	11.6	10.1	87	16	70-130/30
335-76-2	Perfluorodecanoic acid	1.2 U		11.7	12.1	103	11.6	10.4	90	15	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.2 U		11.7	11.7	100	11.6	9.9	86	17	70-130/30
307-55-1	Perfluorododecanoic acid	1.2 U		11.7	11.7	100	11.6	9.9	86	17	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.2 U		11.7	10.8	92	11.6	9.1	79	17	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.2 U		11.7	11.6	99	11.6	9.9	86	16	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.2 U		11.7	12.0	102	11.6	10.1	87	17	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.2 U		11.7	12.2	104	11.6	10.3	89	17	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.40	J	11.7	12.5	103	11.6	10.4	86	18	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.2 U		11.7	12.2	104	11.6	10.4	90	16	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	1.2 U		11.7	12.4	106	11.6	10.3	89	19	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.2 U		11.7	12.4	106	11.6	10.6	92	16	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.2 U		11.7	12.3	105	11.6	10.1	87	20	65-135/30
754-91-6	PFOSA	1.2 U		11.7	12.0	102	11.6	10.2	88	16	70-130/30
2355-31-9	MeFOSAA	3.0 U		11.7	12.1	103	11.6	10.2	88	17	70-130/30
2991-50-6	EtFOSAA	3.0 U		11.7	12.2	104	11.6	10.6	92	14	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.2 U		11.7	12.4	106	11.6	10.8	93	14	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.2 U		11.7	12.0	102	11.6	10.2	88	16	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.2 U		11.7	12.7	108	11.6	10.7	92	17	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-56	Limits
13C4-PFBA		80%	80%	77%	40-140%
13C5-PFPeA		81%	81%	79%	50-150%
13C5-PFHxA		83%	83%	83%	50-150%
13C4-PFHpA		83%	81%	83%	50-150%
13C8-PFOA		83%	82%	87%	50-150%
13C9-PFNA		81%	80%	87%	50-150%
13C6-PFDA		80%	79%	85%	50-150%
13C7-PFUnDA		79%	80%	85%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88527-MS	3Q49791.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701
OP88527-MSD	3Q49792.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701
FA90768-56	3Q49790.D	1	12/02/21	MV	11/29/21	OP88527	S3Q701

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-38, FA90768-39, FA90768-40, FA90768-41, FA90768-42, FA90768-43, FA90768-44, FA90768-45, FA90768-46, FA90768-47, FA90768-48, FA90768-49, FA90768-50, FA90768-51, FA90768-52, FA90768-53, FA90768-54, FA90768-55, FA90768-56

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-56	Limits
	13C2-PFDoDA	84%	85%	90%	40-140%
	13C2-PFTeDA	80%	81%	86%	30-130%
	13C3-PFBS	80%	81%	84%	50-150%
	13C3-PFHxS	83%	83%	87%	50-150%
	13C8-PFOS	81%	82%	85%	50-150%
	13C8-FOSA	55%	55%	67%	30-130%
	d3-MeFOSAA	74%	80%	87%	40-140%
	d5-EtFOSAA	80%	84%	91%	40-140%
	13C2-4:2FTS	78%	77%	78%	50-150%
	13C2-6:2FTS	81%	80%	82%	50-150%
	13C2-8:2FTS	78%	78%	78%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/KA SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-MS	3Q49923.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703
OP88582-MSD	3Q49924.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703
FA90768-57	3Q49922.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	Compound	FA90768-57 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
375-22-4	Perfluorobutanoic acid	1.0 U		10.3	9.9	96	10.2	9.3	91	6	70-130/30
2706-90-3	Perfluoropentanoic acid	1.0 U		10.3	9.5	92	10.2	8.9	87	7	70-130/30
307-24-4	Perfluorohexanoic acid	1.0 U		10.3	9.9	96	10.2	9.4	92	5	70-130/30
375-85-9	Perfluoroheptanoic acid	1.0 U		10.3	9.8	95	10.2	9.2	90	6	70-130/30
335-67-1	Perfluorooctanoic acid	1.0 U		10.3	9.8	95	10.2	9.2	90	6	70-130/30
375-95-1	Perfluorononanoic acid	1.0 U		10.3	9.8	95	10.2	9.2	90	6	70-130/30
335-76-2	Perfluorodecanoic acid	1.0 U		10.3	9.9	96	10.2	9.4	92	5	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.0 U		10.3	9.7	94	10.2	9.1	89	6	70-130/30
307-55-1	Perfluorododecanoic acid	1.0 U		10.3	9.9	96	10.2	9.3	91	6	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.0 U		10.3	9.0	88	10.2	8.6	84	5	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.0 U		10.3	9.7	94	10.2	9.1	89	6	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.0 U		10.3	9.9	96	10.2	9.1	89	8	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.0 U		10.3	9.9	96	10.2	9.4	92	5	70-130/30
355-46-4	Perfluorohexanesulfonic acid	3.0		10.3	12.9	96	10.2	11.7	85	10	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.0 U		10.3	10.9	106	10.2	10.2	100	7	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	18.1		10.3	26.0	77	10.2	24.4	62*	6	70-130/30
68259-12-1	Perfluorononanesulfonic acid	0.32	J	10.3	10.3	97	10.2	10	95	3	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.0 U		10.3	10.1	98	10.2	9.2	90	9	65-135/30
754-91-6	PFOSA	0.61	J	10.3	10.3	94	10.2	9.6	88	7	70-130/30
2355-31-9	MeFOSAA	2.6 U		10.3	9.6	93	10.2	9.6	94	0	70-130/30
2991-50-6	EtFOSAA	2.6 U		10.3	9.7	94	10.2	9.5	93	2	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.0 U		10.3	10.2	99	10.2	9.7	95	5	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.0 U		10.3	10.0	97	10.2	9.5	93	5	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.0 U		10.3	10.3	100	10.2	9.8	96	5	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-57	Limits
	13C4-PFBA	84%	84%	84%	40-140%
	13C5-PFPeA	87%	86%	87%	50-150%
	13C5-PFHxA	87%	87%	87%	50-150%
	13C4-PFHpA	86%	86%	85%	50-150%
	13C8-PFOA	85%	86%	87%	50-150%
	13C9-PFNA	82%	83%	84%	50-150%
	13C6-PFDA	78%	78%	81%	50-150%
	13C7-PFUnDA	72%	74%	74%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88582-MS	3Q49923.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703
OP88582-MSD	3Q49924.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703
FA90768-57	3Q49922.D	1	12/03/21	MV	12/01/21	OP88582	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-57, FA90768-58, FA90768-59, FA90768-60, FA90768-61, FA90768-62, FA90768-63, FA90768-64, FA90768-65

CAS No.	ID Standard Recoveries	MS	MSD	FA90768-57	Limits
	13C2-PFDoDA	60%	63%	65%	40-140%
	13C2-PFTeDA	59%	62%	64%	30-130%
	13C3-PFBS	84%	86%	84%	50-150%
	13C3-PFHxS	84%	85%	84%	50-150%
	13C8-PFOS	77%	78%	80%	50-150%
	13C8-FOSA	79%	78%	81%	30-130%
	d3-MeFOSAA	88%	88%	97%	40-140%
	d5-EtFOSAA	97%	99%	105%	40-140%
	13C2-4:2FTS	83%	83%	79%	50-150%
	13C2-6:2FTS	85%	86%	84%	50-150%
	13C2-8:2FTS	87%	88%	85%	50-150%
	13C3-HFPO-DA	70%	72%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SAK North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MS	4Q23495.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
OP88648-MSD	4Q23496.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
JD35115-1	4Q23494.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	Compound	JD35115-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND	11.1	12.5	112	11.1	14.0	127	11	70-130/30
2706-90-3	Perfluoropentanoic acid	ND	11.1	12.4	112	11.1	13.9	126	11	70-130/30
307-24-4	Perfluorohexanoic acid	ND	11.1	11.9	107	11.1	13.4	121	12	70-130/30
375-85-9	Perfluoroheptanoic acid	ND	11.1	12.1	109	11.1	13.5	122	11	70-130/30
335-67-1	Perfluorooctanoic acid	ND	11.1	11.7	105	11.1	13.0	118	11	70-130/30
375-95-1	Perfluorononanoic acid	ND	11.1	12.2	110	11.1	13.3	120	9	70-130/30
335-76-2	Perfluorodecanoic acid	ND	11.1	12.0	108	11.1	13.0	118	8	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND	11.1	11.5	103	11.1	12.6	114	9	70-130/30
307-55-1	Perfluorododecanoic acid	ND	11.1	12.2	110	11.1	13.2	119	8	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND	11.1	11.1	100	11.1	12.4	112	11	70-130/30
376-06-7	Perfluorotetradecanoic acid	ND	11.1	11.7	105	11.1	12.8	116	9	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND	11.1	11.7	105	11.1	13.2	119	12	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	ND	11.1	12.0	108	11.1	13.0	118	8	70-130/30
355-46-4	Perfluorohexanesulfonic acid	ND	11.1	12.0	108	11.1	13.2	119	10	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND	11.1	11.8	106	11.1	12.8	116	8	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	ND	11.1	12.4	112	11.1	13.4	121	8	70-130/30
68259-12-1	Perfluorononanesulfonic acid	ND	11.1	12.3	111	11.1	13.5	122	9	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND	11.1	12.1	109	11.1	13.3	120	9	65-135/30
754-91-6	PFOSA	ND	11.1	11.5	103	11.1	11.7	106	2	70-130/30
2355-31-9	MeFOSAA	ND	11.1	13.8	124	11.1	16.6	150*	18	70-130/30
2991-50-6	EtFOSAA	ND	11.1	14.6	131*	11.1	16.7	151*	13	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	ND	11.1	11.9	107	11.1	13.2	119	10	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND	11.1	11.7	105	11.1	12.7	115	8	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND	11.1	12.1	109	11.1	13.3	120	9	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	JD35115-1	Limits
13C4-PFBA		60%	68%		40-140%
13C5-PFPeA		58%	65%		50-150%
13C5-PFHxA		57%	65%		50-150%
13C4-PFHpA		60%	67%		50-150%
13C8-PFOA		63%	70%	70%	50-150%
13C9-PFNA		63%	70%	70%	50-150%
13C6-PFDA		63%	72%		50-150%
13C7-PFUnDA		63%	72%		40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90768
Account: SGS/SGS North America, Inc
Project: 1217416

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MS	4Q23495.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
OP88648-MSD	4Q23496.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
JD35115-1	4Q23494.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90768-37

CAS No.	ID Standard Recoveries	MS	MSD	JD35115-1	Limits
	13C2-PFDoDA	64%	72%		40-140%
	13C2-PFTeDA	67%	76%		30-130%
	13C3-PFBS	64%	72%		50-150%
	13C3-PFHxS	64%	71%		50-150%
	13C8-PFOS	65%	74%	76%	50-150%
	13C8-FOSA	85%	104%		30-130%
	d3-MeFOSAA	53%	60%		40-140%
	d5-EtFOSAA	53%	61%		40-140%
	13C2-4:2FTS	55%	63%		50-150%
	13C2-6:2FTS	59%	69%		50-150%
	13C2-8:2FTS	61%	70%		50-150%
	13C3-HFPO-DA	63%	74%		50-150%

* = Outside of Control Limits.



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1217416

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Instructions: Sections 1 Omissions may delay t

CLIENT: RSE

CONTACT: Lisa Koemenen PHONE #: 907-884-4532

PROJECT NAME: CRW Taxonomy East PFAS PROJECT/ PWSID/ PERMIT#: 20-2369

REPORTS TO: RSE E-MAIL: lkoemenen@rse.com

INVOICE TO: RSE Profile #: 20-2369 QUOTE #: P.O. #:

Section 3

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	CONTAINERS		Comp	Analysis*	REMARKS/LOC ID
					#	C			
(1A)	DEMO-2	11/8/21	8:30	801L	1		G		
(2A)	DEMO-3	11/8/21	8:35	801L	1		G		
(3A)	DEMO-4	11/8/21	8:40	801L	1		G		
(4A)	TX1-89A	11/8/21	8:55	801L	1		G		
(5A)	TX1-89B	11/8/21	9:00	801L	1		G		
(6A)	PD-7	11/8/21	8:50	802	1		G		
(7A)	TUG-58A	11/8/21	9:50	801L	1		G		
(8A)	TUG-58B	11/8/21	9:55	801L	1		G		
(9A)	TUG-58C	11/8/21	10:00	801L	1		G		
(10A)	TUG-58D	11/8/21	10:05	801L	1		G		

Section 2

Relinquished By: (1) [Signature] Received By: [Signature]

Relinquished By: (2) [Signature] Received By: [Signature]

Relinquished By: (3) [Signature] Received By: [Signature]

Relinquished By: (4) [Signature] Received For Laboratory By: MA

Section 5

Temp Blank °C: 6.0 or Ambient [] D60

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery Commercial Delivery

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS



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Instructions: See
Omissions may delay the process.

it.

Page 2 of 7

CLIENT: <u>RSE</u>		PHONE #: <u>907-884-4532</u>		Section 3		Preservative		NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
CONTACT: <u>Ugo Koenenen</u>		PROJECT/ PWSID/ PERMIT#: <u>21-2309</u>		Section 3		Analysis*		REMARKS/LOC ID	
PROJECT NAME: <u>East RFXS</u>		E-MAIL: <u>koenenen@restorsci.com</u>		#		Comp		*The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
REPORTS TO: <u>RSE</u>		Profile #: <u>restorsci.com</u>		CONTAINERS		Grab		REMARKS/LOC ID	
INVOICE TO: <u>RSE</u>		QUOTE #: <u></u>		P.O. #: <u></u>		MI (Multi-Incremental)		REMARKS/LOC ID	
RESERVED for lab use		SAMPLE IDENTIFICATION		DATE mm/dd/yy		TIME HH:MM		MATRIX CODE	
①1A		TUG-59A		11/9/21		10:15		S01L	
①2A		TUG-59B		11/9/21		10:20		S01L	
①3A		TUG-59C		11/9/21		10:25		S01L	
①4A		TUG-59D		11/9/21		10:30		S01L	
①5A		FD-8		11/9/21		10:35		S01L	
①6A		TUG-57A		11/9/21		10:45		S01L	
①7A		TUG-57B		11/9/21		10:50		S01L	
①8A		TUG-57C		11/9/21		10:55		S01L	
①9A		TX4-90A		11/9/21		11:00		S01L	
②0A		TX4-90B		11/9/21		11:05		S01L	
Relinquished By: (1)		Date		Time		Received By:		Section 4	
<u>[Signature]</u>		11/9/21		12:30		<u>[Signature]</u>		DOD Project? Yes No	
Relinquished By: (2)		Date		Time		Received By:		Cooler ID:	
<u>[Signature]</u>						<u>[Signature]</u>		Requested Turnaround Time and/or Special Instructions:	
Relinquished By: (3)		Date		Time		Received By:		Data Deliverable Requirements:	
<u>[Signature]</u>						<u>[Signature]</u>			
Relinquished By: (4)		Date		Time		Received For Laboratory By:		Temp Blank °C: <u>0.0</u> <u>D60</u>	
<u>[Signature]</u>		11/9/21		12:50		<u>[Signature]</u>		or Ambient []	
								Delivery Method: <u>Hand Delivery</u> <input checked="" type="checkbox"/> Commercial Delivery []	
								Chain of Custody Seal: (Circle)	
								INTACT <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> ABSENT	

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1217416

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ut. b. Page 3 of 2

CLIENT: PSC
 CONTACT: Lisa Koonenen 907-884-4532
 PROJECT NAME: ARW Taxi way East PFAS
 PROJECT PWSID/PERMIT#: 21-2369
 E-MAIL: lkoonenen@roster.com
 Profile #: SW.COM
 QUOTE #: PSC
 P.O. #: PSC

Instructions: S Omissions m
 Section 3



RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	CONTAINERS				REMARKS/LOC ID
					#	Comp	Grab	MI (Multi-incremental)	
(21A)	TX4-91A	11/8/21	11:15	801L	1	G			
(22A)	TX4-91B	11/8/21	11:20	801L	1	G			
(23A)	TX4-91C	11/8/21	11:25	801L	1	G			
(24A)	TX4-101A	11/8/21	11:45	101L	1	G			
(25A)	TX4-101B	11/8/21	11:50	101L	1	G			
(26A)	TX4-101C	11/8/21	11:55	801L	1	G			
(27A)	TX4-141A	11/8/21	13:45	801L	1	G			
(28A)	TX4-141B	11/8/21	13:50	801L	1	G			
(29A)	TX4-141C	11/8/21	13:55	801L	1	G			
(30A)	TX4-141D	11/8/21	14:00	801L	1	G			

Relinquished By: (1) [Signature]
 Relinquished By: (2) [Signature]
 Relinquished By: (3) [Signature]
 Relinquished By: (4) [Signature]

Section 4 DOD Project? Yes No
 Cooler ID:
 Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 0.0 D60
 or Ambient []
 Delivery Method: Hand Delivery [] Commercial Delivery []
 Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

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1217416



Page 1 of 1

Instructions: See Omissions manual

CLIENT: RSC
CONTACT: USA Koenigsmann
PHONE #: 907-884-4532

PROJECT: CW Taxiway
NAME: East PFAS
PWSID/PERMIT#: 21-2369

REPORTS TO: RSC
E-MAIL: koenigsmann@restoration.com

INVOICE TO: RSC
Profile #: QUOTE #: P.O. #:

Section 3

#	CONTAINERS				Matrix/ Matrix Code	TIME HH:MM	DATE mm/dd/yy	SAMPLE IDENTIFICATION	RESERVED for lab use	Analysis*	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	REMARKS/LOC ID
	Comp	Grab	MI	(Multi-incremental)								
1	G				SOIL	14:05	11/8/21	ED-9				
1	G				SOIL	14:15	11/9/21	TX1-140A				
1	G				SOIL	14:20	11/8/21	TX1-140B				
1	G				SOIL	14:40	11/8/21	TX1-140A				
1	G				SOIL	14:45	11/8/21	TX1-130B				
1	G				SOIL	14:50	11/8/21	TX1-130C				
1	G				SOIL	16:00	11/8/21	TX1-118				
1	G				SOIL	8:15	11/9/21	TUG-7A				
1	G				SOIL	8:30	11/9/21	TUG-72A				
1	G				SOIL	8:35	11/9/21	TUG-78B				

Section 4 DOD Project? Yes No
Cooler ID:
Requested Turnaround Time and/or Special Instructions:

Data Deliverable Requirements:
Temp Blank °C: 0.0 D60
or Ambient []
Delivery Method: Hand Delivery [] Commercial Delivery []

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
Delivery Method: Hand Delivery [] Commercial Delivery []

Section 1

Section 2

Section 5

Relinquished By: (1)
Date: 11/9/21 Time: 12:30
Received By:

Relinquished By: (2)
Date: Time:
Received By:

Relinquished By: (3)
Date: Time:
Received By:

Relinquished By: (4)
Date: 11/9/21 Time: 1250
Received For Laboratory By: *MA*

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CLIENT: RSE

CONTACT: Lisa Koemenen
PHONE #: 907-884-4532

PROJECT NAME: CRW Taxiway
PWSID/PERMIT#: 21-2369

REPORTS TO: RSE
E-MAIL: lkoemenen@restorsci.com

INVOICE TO: RSE
QUOTE #: P.O. #:

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 3 Preservative

1217416

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Section 4	DOD Project?	Yes	No	REMARKS/LOC ID
(41A)	TUG-77A	11/9/21	8:40	SOIL					
(42A)	FD-16	11/9/21	8:20	SOIL					
(43A)	TUG-77B	11/9/21	8:45	SOIL					
(44A)	TUG-77C	11/9/21	8:50	SOIL					
(45A)	TUG-76A	11/9/21	8:55	SOIL					
(46A)	TUG-76B	11/9/21	9:00	SOIL					
(47A)	TUG-76C	11/9/21	9:05	SOIL					
(48A)	TUG-76D	11/9/21	9:10	SOIL					
(49A)	TUG-75A	11/9/21	9:30	SOIL					
(50A)	TUG-75B	11/9/21	9:35	SOIL					

Section 5

Relinquished By: (1) [Signature]

Relinquished By: (2) [Signature]

Relinquished By: (3) [Signature]

Relinquished By: (4) [Signature]

Received By: [Signature]

Received By: [Signature]

Received By: [Signature]

Received For Laboratory By: [Signature]

Temp Blank °C: 0.0 D60 or Ambient []

Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Delivery Method: Hand Delivery [] Commercial Delivery []

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SGS North America Inc. CHAIN OF CUSTODY RECORD

CLIENT: RSE
CONTACT: Lisa Koenenan 907-884-4532
PROJECT/ PWSID/ PERMIT#: ORW Taxiway 21-2369
REPORTS TO: RSE
INVOICE TO: RSE
E-MAIL: lkoenenan@restor.sj.com
Profile #:
QUOTE #:
P.O. #:

Section 1

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	Comp Grab MI (Multi-Incremental)	CONTAINERS	REMARKS/LOC ID
(51A)	TUG-75C	11/9/21	9:50	801C	G	1	RSE
(52A)	TUG-75D	11/9/21	9:45	801C	G	1	RSE
(53A)	TX4-128A	11/9/21	10:20	801C	G	1	RSE
(54A)	TX4-128B	11/9/21	10:25	801C	G	1	RSE
(55A)	TX4-125C	11/9/21	10:30	801C	G	1	RSE
(56A)	TX4-125D	11/9/21	10:35	801C	G	1	RSE
(57A)	TX4-124A	11/9/21	11:00	801C	G	1	RSE
(58A)	TX4-124B	11/9/21	11:05	801C	G	1	RSE
(59A)	TX4-124C	11/9/21	11:10	801C	G	1	RSE
(60A)	TX4-124D	11/9/21	11:15	801C	G	1	RSE

Section 3

Section 4

Section 5

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Preservative

Analysis*

1217416

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Temp Blank °C: 0.0 **DGC**
or Ambient []

Chain of Custody Seal: (Circle) **INTACT** **BROKEN** **ABSENT**

Delivery Method: Hand Delivery [] Commerical Delivery []

Relinquished By: (1) [Signature]
Relinquished By: (2) [Signature]
Relinquished By: (3)
Relinquished By: (4) [Signature]

Received By:
Received By:
Received By:
Received For Laboratory By: [Signature]

Temp Blank °C: 0.0 **DGC**
or Ambient []

Delivery Method: Hand Delivery [] Commerical Delivery []

Temp Blank °C: 0.0 **DGC**
or Ambient []

Delivery Method: Hand Delivery [] Commerical Delivery []



SGS North America Inc.
CHAIN OF CUSTODY RECORD

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CLIENT: RSE

CONTACT: Lisa Koenenen 607-984-4832

PROJECT/ PWSID/ PERMIT#: 21-2369

E-MAIL: lkoenenen@restorsci.com

Profile #: RSE

QUOTE #:

P.O. #:

INVOICE TO: RSE

REPORTS TO:

RESERVED for lab use

SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE
(6A) TX4-123A	11/9/21	11:30	801C
(6A) TX4-123B	11/9/21	11:35	801C
(6A) TX4-123C	11/9/21	11:40	801C
(6A) TX4-123D	11/9/21	11:45	801C
(6A) PD-11	11/5/21	11:50	801C

Section 2

Section 3

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 4

Section 5

Temp Blank °C: 0.0 **DOD Project?** Yes No **Chain of Custody Seal:** (Circle) INTACT BROKEN **ABSENT**

Delivery Method: Hand Delivery [] Commerical Delivery []

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

1217416

11/9/21

12:30

1250

Received By:

Relinquished By:

Requested Turnaround Time and/or Special Instructions:

Chain of Custody Seal: (Circle) INTACT BROKEN **ABSENT**

Delivery Method: Hand Delivery [] Commerical Delivery []

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F083-Blank_COC_20181228



e-Sample Receipt Form

SGS Workorder #:

1217416

1217416

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 0.0 °C Therm. ID: D60
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	Yes	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	Yes	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1217416001-A	No Preservative Required	OK	1217416048-A	No Preservative Required	OK
1217416002-A	No Preservative Required	OK	1217416049-A	No Preservative Required	OK
1217416003-A	No Preservative Required	OK	1217416050-A	No Preservative Required	OK
1217416004-A	No Preservative Required	OK	1217416051-A	No Preservative Required	OK
1217416005-A	No Preservative Required	OK	1217416052-A	No Preservative Required	OK
1217416006-A	No Preservative Required	OK	1217416053-A	No Preservative Required	OK
1217416007-A	No Preservative Required	OK	1217416054-A	No Preservative Required	OK
1217416008-A	No Preservative Required	OK	1217416055-A	No Preservative Required	OK
1217416009-A	No Preservative Required	OK	1217416056-A	No Preservative Required	OK
1217416010-A	No Preservative Required	OK	1217416057-A	No Preservative Required	OK
1217416011-A	No Preservative Required	OK	1217416058-A	No Preservative Required	OK
1217416012-A	No Preservative Required	OK	1217416059-A	No Preservative Required	OK
1217416013-A	No Preservative Required	OK	1217416060-A	No Preservative Required	OK
1217416014-A	No Preservative Required	OK	1217416061-A	No Preservative Required	OK
1217416015-A	No Preservative Required	OK	1217416062-A	No Preservative Required	OK
1217416016-A	No Preservative Required	OK	1217416063-A	No Preservative Required	OK
1217416017-A	No Preservative Required	OK	1217416064-A	No Preservative Required	OK
1217416018-A	No Preservative Required	OK	1217416065-A	No Preservative Required	OK
1217416019-A	No Preservative Required	OK	1217416066-A	Methanol field pres. 4 C	OK
1217416020-A	No Preservative Required	OK			
1217416020-B	No Preservative Required	OK			
1217416020-C	Methanol field pres. 4 C	OK			
1217416021-A	No Preservative Required	OK			
1217416022-A	No Preservative Required	OK			
1217416023-A	No Preservative Required	OK			
1217416024-A	No Preservative Required	OK			
1217416025-A	No Preservative Required	OK			
1217416026-A	No Preservative Required	OK			
1217416027-A	No Preservative Required	OK			
1217416028-A	No Preservative Required	OK			
1217416029-A	No Preservative Required	OK			
1217416030-A	No Preservative Required	OK			
1217416031-A	No Preservative Required	OK			
1217416032-A	No Preservative Required	OK			
1217416033-A	No Preservative Required	OK			
1217416034-A	No Preservative Required	OK			
1217416035-A	No Preservative Required	OK			
1217416036-A	No Preservative Required	OK			
1217416037-A	No Preservative Required	OK			
1217416038-A	No Preservative Required	OK			
1217416039-A	No Preservative Required	OK			
1217416040-A	No Preservative Required	OK			
1217416041-A	No Preservative Required	OK			
1217416042-A	No Preservative Required	OK			
1217416043-A	No Preservative Required	OK			
1217416044-A	No Preservative Required	OK			
1217416045-A	No Preservative Required	OK			
1217416046-A	No Preservative Required	OK			
1217416047-A	No Preservative Required	OK			

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.



Laboratory Report of Analysis

To: Restoration Science & Eng
911 West 8th Ave Suite 100
Anchorage, AK 99501
(907)278-1023

Report Number: **1217461**

Client Project: **21-2369CRW Taxiway Z PFAS East**

Dear Lisa Koeneman,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Chuck Homestead
Project Manager
Charles.Homestead@sgs.com

Date

Case Narrative

SGS Client: **Restoration Science & Eng**
SGS Project: **1217461**
Project Name/Site: **21-2369CRW Taxiway Z PFAS East**
Project Contact: **Lisa Koeneman**

Refer to sample receipt form for information on sample condition.

TXY-122A (1217461001) PS

EPA 537 PFAS- Confirm List were analyzed by SGS of Orlando, FL.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 12/27/2021 2:04:00PM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TXY-122A	1217461001	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-122B	1217461002	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-122C	1217461003	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-122D	1217461004	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-121A	1217461005	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-121B	1217461006	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-121C	1217461007	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-121D	1217461008	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-72A	1217461009	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-72B	1217461010	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-72C	1217461011	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-72D	1217461012	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-71A	1217461013	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-71B	1217461014	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-71C	1217461015	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-70A	1217461016	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-70B	1217461017	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-70C	1217461018	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-12	1217461019	11/09/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-84	1217461020	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-137A	1217461021	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-137B	1217461022	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-137C	1217461023	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-136A	1217461024	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-136B	1217461025	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-136C	1217461026	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-127A	1217461027	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-127B	1217461028	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-127C	1217461029	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-127D	1217461030	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-12	1217461031	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-126A	1217461032	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-126B	1217461033	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-126C	1217461034	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-126D	1217461035	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-74A	1217461036	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-74B	1217461037	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-74C	1217461038	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-74D	1217461039	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)

Print Date: 12/27/2021 2:04:03PM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TUG-73A	1217461040	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-73B	1217461041	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-73C	1217461042	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-73D	1217461043	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-61	1217461044	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-13	1217461045	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-62	1217461046	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-63	1217461047	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-64	1217461048	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-65	1217461049	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-66	1217461050	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-102A	1217461051	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-102B	1217461052	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-102C	1217461053	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-110A	1217461054	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-110B	1217461055	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-109A	1217461056	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-109B	1217461057	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-108A	1217461058	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-108B	1217461059	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-111A	1217461060	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-111B	1217461061	11/10/2021	11/11/2021	Solid/Soil (Wet Weight)
DEMO-19	1217461062	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-119A	1217461063	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-119B	1217461064	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-119C	1217461065	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-69A	1217461066	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-69B	1217461067	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-14	1217461068	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-68A	1217461069	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-68B	1217461070	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TUG-68C	1217461071	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-116A	1217461072	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-116B	1217461073	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-116C	1217461074	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-15	1217461075	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-103A	1217461076	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-103B	1217461077	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-103C	1217461078	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)

Print Date: 12/27/2021 2:04:03PM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
FD-16	1217461079	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-104A	1217461080	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-104B	1217461081	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
TXY-104C	1217461082	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)
FD-17	1217461083	11/11/2021	11/11/2021	Solid/Soil (Wet Weight)

Method

Method Description

Print Date: 12/27/2021 2:04:03PM



SGS North America Inc. CHAIN OF CUSTODY RECORD

CLIENT: PSC

CONTACT: Lisa Koerneman
PHONE #: 907-884-4832

PROJECT NAME: OW Taxiway
PWSID/PERMIT#: 21-2369

REPORTS TO: PSC
E-MAIL: lkoerneman@redhotdr.com

INVOICE TO: PSC
QUOTE #: PSC
P.O. #:

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 3

Preservative

Analysis*
1217461

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

Section 4

DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID:
Requested Turnaround Time and/or Special Instructions:
Profile # 36278892

Temp Blank °C: **0.1D65**
or Ambient []

Chain of Custody Seal: (Circle)
INTACT **BROKEN** **ABSENT**

Delivery Method: Hand Delivery Commercial Delivery []

Page 1 of 9

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE
(1A)	TX4-122A	11/9/21	13:20	801C
(2A)	TX4-122B	11/9/21	13:25	801C
(3A)	TX4-122C	11/9/21	13:30	801C
(4A)	TX4-122D	11/9/21	13:35	801C
(5A)	TX4-121A	11/9/21	14:00	801C
(6A)	TX4-121B	11/9/21	14:05	801C
(7A)	TX4-121C	11/9/21	14:10	801C
(8A)	TX4-121D	11/9/21	14:15	801C
(9A)	TUG-72A	11/9/21	14:45	801C
(10A)	TUG-72B	11/9/21	14:50	801C

Section 5

Relinquished By: (1) *[Signature]*

Relinquished By: (2) *[Signature]*

Relinquished By: (3) *[Signature]*

Relinquished By: (4) *[Signature]*

Received By: *[Signature]*

Received By: *[Signature]*

Received By: *[Signature]*

Received For Laboratory By: *[Signature]*



SGS North America Inc.
CHAIN OF CUSTODY RECORD

www.us.sgs.com

CLIENT: RSE CONTACT: USA Koenen PROJECT NAME: Crew Taxiway East PFAS PROJECT PWSID/PERMIT#: 907-884-4532 / 21-2369 REPORTS TO: RSE INVOICE TO: RSE E-MAIL: kkoenen@restor.sgi.com Profile #: QUOTE #: P.O. #:		Section 1 Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis. Section 3 Preservative		Page <u>29</u> of <u>29</u>																																																																														
Section 2 <table border="1"> <thead> <tr> <th>RESERVED for lab use</th> <th>SAMPLE IDENTIFICATION</th> <th>DATE mm/dd/yy</th> <th>TIME HH:MM</th> <th>MATRIX/MATRIX CODE</th> <th>Comp Grab MI (Multi-incremental)</th> <th>REMARKS/LOC ID</th> </tr> </thead> <tbody> <tr><td>(11A)</td><td>TUG-72C</td><td>11/9/21</td><td>14:55</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(12A)</td><td>TUG-72D</td><td>11/9/21</td><td>15:00</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(13A)</td><td>TUG-71A</td><td>11/9/21</td><td>15:40</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(14A)</td><td>TUG-71B</td><td>11/9/21</td><td>15:45</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(15A)</td><td>TUG-71C</td><td>11/9/21</td><td>15:50</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(16A)</td><td>TUG-70A</td><td>11/9/21</td><td>16:00</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(17A)</td><td>TUG-70B</td><td>11/9/21</td><td>16:05</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(18A)</td><td>TUG-70C</td><td>11/9/21</td><td>16:10</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(19A)</td><td>FD-12</td><td>11/9/21</td><td>16:30</td><td>801C</td><td>G</td><td></td></tr> <tr><td>(20A)</td><td>TUG-84</td><td>11/10/21</td><td>8:30</td><td>801C</td><td>G</td><td></td></tr> </tbody> </table>		RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	Comp Grab MI (Multi-incremental)	REMARKS/LOC ID	(11A)	TUG-72C	11/9/21	14:55	801C	G		(12A)	TUG-72D	11/9/21	15:00	801C	G		(13A)	TUG-71A	11/9/21	15:40	801C	G		(14A)	TUG-71B	11/9/21	15:45	801C	G		(15A)	TUG-71C	11/9/21	15:50	801C	G		(16A)	TUG-70A	11/9/21	16:00	801C	G		(17A)	TUG-70B	11/9/21	16:05	801C	G		(18A)	TUG-70C	11/9/21	16:10	801C	G		(19A)	FD-12	11/9/21	16:30	801C	G		(20A)	TUG-84	11/10/21	8:30	801C	G		Analysis* 1217461 PFAS			NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS REMARKS/LOC ID
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	Comp Grab MI (Multi-incremental)	REMARKS/LOC ID																																																																												
(11A)	TUG-72C	11/9/21	14:55	801C	G																																																																													
(12A)	TUG-72D	11/9/21	15:00	801C	G																																																																													
(13A)	TUG-71A	11/9/21	15:40	801C	G																																																																													
(14A)	TUG-71B	11/9/21	15:45	801C	G																																																																													
(15A)	TUG-71C	11/9/21	15:50	801C	G																																																																													
(16A)	TUG-70A	11/9/21	16:00	801C	G																																																																													
(17A)	TUG-70B	11/9/21	16:05	801C	G																																																																													
(18A)	TUG-70C	11/9/21	16:10	801C	G																																																																													
(19A)	FD-12	11/9/21	16:30	801C	G																																																																													
(20A)	TUG-84	11/10/21	8:30	801C	G																																																																													
Section 5 Relinquished By: (1) [Signature] Relinquished By: (2) [Signature] Relinquished By: (3) [Signature] Relinquished By: (4) [Signature]		Section 4 DOD Project? Yes No Cooler ID: Requested Turnaround Time and/or Special Instructions:	Data Deliverable Requirements: Chain of Custody Seal: (Circle) Temp Blank °C: _____ or Ambient [] Delivery Method: Hand Delivery [] Commercial Delivery []																																																																															

http://www.sgs.com/terms-and-conditions

CLIENT: RSE	Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.		
CONTACT: Lisa Koenenen	PHONE #: 907-889-4532	Preservative	
PROJECT NAME: CFW Taxway East PPFAS	PROJECT/ PWSID/ PERMIT#: 21-2369	Analysis*	
REPORTS TO: RSE	E-MAIL: lkoenenen@restor.sgs.com	1217461	
INVOICE TO: RSE	Profile #: restor.sgs.com		
QUOTE #:	QUOTE #:	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS	
P.O. #:	P.O. #:	REMARKS/LOC ID	

Section 2		Section 3		Section 4		Section 5	
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	Comp Grab MI (Multi-incremental)	DOD Project? Yes No	Data Deliverable Requirements:
(21A)	TX4-137A	11/10/21	8:45	SOIL	G	X	
(22A)	TX4-137B	11/10/21	8:50	SOIL	G	X	
(23A)	TX4-137C	11/10/21	8:55	SOIL	G	X	
(24A)	TX4-130A	11/10/21	9:10	SOIL	G	X	
(25A)	TX4-130B	11/10/21	9:15	SOIL	G	X	
(26A)	TX4-136C	11/10/21	9:20	SOIL	G	X	
(27A)	TX4-127A	11/10/21	9:30	SOIL	G	X	
(28A)	TX4-127B	11/10/21	9:35	SOIL	G	X	
(29A)	TX4-127C	11/10/21	9:40	SOIL	G	X	
(30A)	TX4-127D	11/10/21	9:45	SOIL	G	X	
Relinquished By: (1)		Date	Time	Received By:			
		11/10/21	12:15				
Relinquished By: (2)		Date	Time	Received By:			
Relinquished By: (3)		Date	Time	Received By:			
Relinquished By: (4)		Date	Time	Received For Laboratory By:			
		11/10/21	12:30				

Temp Blank °C: _____	or Ambient []	Chain of Custody Seal: (Circle)
		INTACT BROKEN ABSENT
Delivery Method: <input checked="" type="checkbox"/> Hand Delivery <input type="checkbox"/> Commercial Delivery []		



SGS North America Inc. CHAIN OF CUSTODY RECORD

CLIENT: RSE
 CONTACT: Lisa Koeneman 907-884-4532
 PROJECT/PWSID/PERMIT#: CW Taxway 21-2367
 NAME: PFAS Erst
 REPORTS TO: RSE E-MAIL: lkoeneman@restor.sgi.com
 INVOICE TO: Profile #: QUOTE #: P.O. #:

Section 1 Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 2		Section 3		Section 4		Section 5	
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	Comp Grab MI (Multi-incremental)	# CONTAINERS	Analysis*
(31A)	FD-12	11/10/21	9:25	SOIL	G	1	NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS REMARKS/LOC ID 1217461
(32A)	TX4-120A	11/10/21	10:00	SOIL	G	1	
(33A)	TX4-120B	11/10/21	10:05	SOIL	G	1	
(34A)	TX4-120C	11/10/21	10:10	SOIL	G	1	
(35A)	TX4-120D	11/10/21	10:15	SOIL	G	1	
(36A)	TUG-74A	11/10/21	10:45	SOIL	G	1	
(37A)	TUG-74B	11/10/21	10:50	SOIL	G	1	
(38A)	TUG-74C	11/10/21	10:55	SOIL	G	1	
(39A)	TUG-74D	11/10/21	11:00	SOIL	G	1	
(40A)	TUG-73A	11/10/21	11:15	SOIL	G	1	
Relinquished By: (1)		Date	Time	Received By:	Section 4 DOD Project? Yes No		
Relinquished By: (2)		Date	Time	Received By:	Cooler ID: Requested Turnaround Time and/or Special Instructions:		
Relinquished By: (3)		Date	Time	Received By:	Data Deliverable Requirements:		
Relinquished By: (4)		Date	Time	Received For Laboratory By:	Temp Blank °C: or Ambient [] Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT		



SGS North America Inc. CHAIN OF CUSTODY RECORD

CLIENT: PSE

CONTACT: Lisa Koenenan 907-884-4532

PROJECT/ PWSID/ PERMIT#: CPW Taxiway East PFAS 21-2369

REPORTS TO: PSE

INVOICE TO: PSE

E-MAIL: lkoenenan@rsgsci.com

Profile #: RSG

QUOTE #:

P.O. #:

PHONE #:

Section 1

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 3

Preservative

Analysis*

1217461

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

Section 4

DOD Project? Yes No

Data Deliverable Requirements:

Temp Blank °C: or Ambient []

Chain of Custody Seal: (Circle) INTACT **BROKEN** **ABSENT**

Delivery Method: Hand Delivery [] Commerical Delivery []

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE
(51A)	TXY-102A	11/10/21	14:10	801L
(52A)	TXY-102B	11/10/21	14:15	801L
(53A)	TXY-102C	11/10/21	14:20	801L
(54A)	TXY-110A	11/10/21	14:45	801L
(55A)	TXY-110B	11/10/21	14:50	801L
(56A)	TXY-109A	11/10/21	14:55	801L
(57A)	TXY-109B	11/10/21	15:00	801L
(58A)	TXY-108A	11/10/21	15:20	801L
(59A)	TXY-108B	11/10/21	15:25	801L
(60A)	TXY-111A	11/10/21	15:40	801L

Section 5

Relinquished By: (1)

Relinquished By: (2)

Relinquished By: (3)

Relinquished By: (4)

Received By:

Received By:

Received By:

Received For Laboratory By:

Section 4

Temp Blank °C: or Ambient []

Chain of Custody Seal: (Circle) INTACT **BROKEN** **ABSENT**

Delivery Method: Hand Delivery [] Commerical Delivery []



SGS North America Inc.
CHAIN OF CUSTODY RECORD

CLIENT: RSE

CONTACT: Lisa Koenenen 907-884-4532

PROJECT/ PWSID/ PERMIT#: CRW Taxiway 21-2369

NAME: East PFAS

REPORTS TO: RSE

INVOICE TO: RSE

E-MAIL: lkoenenen@central.sgj.com

Profile #:

QUOTE #:

P.O. #:

PHONE #:

Section 1

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 3

Preservative

Analysis*

1217461

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	Comp Grab MI (Multi-incremental)	CONTAINER S
(61A)	TXY-111B	11/10/21	15:45	SOIL	G	1
	TXY-107A	11/11/21	8:15	SOIL	G	1
	TXY-107B	11/11/21	8:30	SOIL	G	1
(62A)	PGW-19	11/11/21	9:00	SOIL	G	1
(63A)	TXY-119A	11/11/21	9:30	SOIL	G	1
(64A)	TXY-119B	11/11/21	9:35	SOIL	G	1
(65A)	TXY-119C	11/11/21	9:40	SOIL	G	1
(66A)	TUG-69A	11/11/21	10:00	SOIL	G	1
(67A)	TUG-69B	11/11/21	10:05	SOIL	G	1
(68A)	FD-14	11/11/21	9:55	SOIL	G	1

Section 4

Section 5

Relinquished By: (1)

Relinquished By: (2)

Relinquished By: (3)

Relinquished By: (4)

Received By:

Received By:

Received By:

Received For Laboratory By:

Temp Blank °C: or Ambient []

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [] Commercial Delivery []

Section 4

DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID:

Requested Turnaround Time and/or Special Instructions:

Page 7 of 9



SGS North America Inc. CHAIN OF CUSTODY RECORD

Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

CLIENT: RSE
 CONTACT: Lisa Koenenen 907-884-4532
 PROJECT/PWSID/PERMIT#: 21-2369
 NAME: 2 East PPA3
 REPORTS TO: RSE
 INVOICE TO: RSE
 E-MAIL: lkoenenen@restor.sgi.com
 Profile #:
 QUOTE #:
 P.O. #:

Section 3 Preservative

CONTAINERS

Comp Grab MI (Multi-incremental)	Matrix Code	Time HH:MM	Date mm/dd/yy	Sample Identification	Reserved for lab use
G	SOIL	16:15	11/11/21	TUG-68A	(69A)
G	SOIL	16:20	11/11/21	TUG-68B	(70A)
G	SOIL	16:25	11/11/21	TUG-68C	(71A)
G	SOIL	10:45	11/11/21	TXY-116A	(72A)
G	SOIL	10:50	11/11/21	TXY-116B	(73A)
G	SOIL	10:55	11/11/21	TXY-116C	(74A)
G	SOIL	11:00	11/11/21	PD-15	(75A)
G	SOIL	11:15	11/11/21	TXY103A	(76A)
G	SOIL	11:20	11/11/21	TXY-103B	(77A)
G	SOIL	11:25	11/11/21	TXY-103C	(78A)

Section 4	DOD Project?	Yes	No	Section 5
				Relinquished By: (1)
				Relinquished By: (2)
				Relinquished By: (3)
				Relinquished By: (4)

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

Section 4 DOD Project? Yes No

Cooler ID:

Requested Turnaround Time and/or Special Instructions:

Section 5 Data Deliverable Requirements:

Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Temp Blank °C: or Ambient []

Delivery Method: Hand Delivery [] Commercial Delivery []



e-Sample Receipt Form

SGS Workorder #:

1217461

1217461

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 0.1 °C Therm. ID: D65
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g. 200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1217461

SGS Job Number: FA90827

Sampling Dates: 11/09/21 - 11/11/21

Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: **254**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads "Norm Farmer".

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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1

2

3

4

5

6



Sample Summary

SGS North America, Inc
1217461

Job No: FA90827

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-1	11/09/21	13:20	11/16/21	SO	Soil	TXY-122A
FA90827-2	11/09/21	13:25	11/16/21	SO	Soil	TXY-122B
FA90827-3	11/09/21	13:30	11/16/21	SO	Soil	TXY-122C
FA90827-4	11/09/21	13:35	11/16/21	SO	Soil	TXY-122D
FA90827-5	11/09/21	14:00	11/16/21	SO	Soil	TXY-121A
FA90827-6	11/09/21	14:05	11/16/21	SO	Soil	TXY-121B
FA90827-7	11/09/21	14:10	11/16/21	SO	Soil	TXY-121C
FA90827-8	11/09/21	14:15	11/16/21	SO	Soil	TXY-121D
FA90827-9	11/09/21	14:45	11/16/21	SO	Soil	TUG-72A
FA90827-10	11/09/21	14:50	11/16/21	SO	Soil	TUG-72B
FA90827-11	11/09/21	14:55	11/16/21	SO	Soil	TUG-72C
FA90827-12	11/09/21	15:00	11/16/21	SO	Soil	TUG-72D
FA90827-13	11/09/21	15:40	11/16/21	SO	Soil	TUG-71A

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90827

1217461

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-14	11/09/21	15:45	11/16/21	SO	Soil	TUG-71B
FA90827-15	11/09/21	15:50	11/16/21	SO	Soil	TUG-71C
FA90827-16	11/09/21	16:00	11/16/21	SO	Soil	TUG-70A
FA90827-17	11/09/21	16:05	11/16/21	SO	Soil	TUG-70B
FA90827-18	11/09/21	16:10	11/16/21	SO	Soil	TUG-70C
FA90827-19	11/09/21	16:30	11/16/21	SO	Soil	FD-12
FA90827-20	11/10/21	08:30	11/16/21	SO	Soil	TUG-84
FA90827-21	11/10/21	08:45	11/16/21	SO	Soil	TXY-137A
FA90827-22	11/10/21	08:50	11/16/21	SO	Soil	TXY-137B
FA90827-23	11/10/21	08:55	11/16/21	SO	Soil	TXY-137C
FA90827-24	11/10/21	09:10	11/16/21	SO	Soil	TXY-136A
FA90827-25	11/10/21	09:15	11/16/21	SO	Soil	TXY-136B
FA90827-26	11/10/21	09:20	11/16/21	SO	Soil	TXY-136C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90827

1217461

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-27	11/10/21	09:30	11/16/21	SO	Soil	TXY-127A
FA90827-28	11/10/21	09:35	11/16/21	SO	Soil	TXY-127B
FA90827-29	11/10/21	09:40	11/16/21	SO	Soil	TXY-127C
FA90827-30	11/10/21	09:45	11/16/21	SO	Soil	TXY-127D
FA90827-31	11/10/21	09:25	11/16/21	SO	Soil	FD-12
FA90827-32	11/10/21	10:00	11/16/21	SO	Soil	TXY-126A
FA90827-33	11/10/21	10:05	11/16/21	SO	Soil	TXY-126B
FA90827-34	11/10/21	10:10	11/16/21	SO	Soil	TXY-126C
FA90827-35	11/10/21	10:15	11/16/21	SO	Soil	TXY-126D
FA90827-36	11/10/21	10:45	11/16/21	SO	Soil	TXY-74A
FA90827-37	11/10/21	10:50	11/16/21	SO	Soil	TXY-74B
FA90827-38	11/10/21	10:55	11/16/21	SO	Soil	TXY-74C
FA90827-39	11/10/21	11:00	11/16/21	SO	Soil	TXY-74D

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90827

1217461

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-40	11/10/21	11:15	11/16/21	SO	Soil	TUG-73A
FA90827-41	11/10/21	11:20	11/16/21	SO	Soil	TUG-73B
FA90827-42	11/10/21	11:25	11/16/21	SO	Soil	TUG-73C
FA90827-43	11/10/21	11:30	11/16/21	SO	Soil	TUG-73D
FA90827-44	11/10/21	13:20	11/16/21	SO	Soil	TUG-61
FA90827-45	11/10/21	13:15	11/16/21	SO	Soil	FD-13
FA90827-46	11/10/21	13:30	11/16/21	SO	Soil	TUG-62
FA90827-47	11/10/21	13:40	11/16/21	SO	Soil	TUG-63
FA90827-48	11/10/21	13:45	11/16/21	SO	Soil	TUG-64
FA90827-49	11/10/21	13:55	11/16/21	SO	Soil	TUG-65
FA90827-50	11/10/21	14:00	11/16/21	SO	Soil	TUG-66
FA90827-51	11/10/21	14:10	11/16/21	SO	Soil	TXY-102A
FA90827-52	11/10/21	14:15	11/16/21	SO	Soil	TXY-102B

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90827

1217461

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-53	11/10/21	14:20	11/16/21	SO	Soil	TXY-102C
FA90827-54	11/10/21	14:45	11/16/21	SO	Soil	TXY-110A
FA90827-55	11/10/21	14:50	11/16/21	SO	Soil	TXY-110B
FA90827-56	11/10/21	14:55	11/16/21	SO	Soil	TXY-109A
FA90827-57	11/10/21	15:00	11/16/21	SO	Soil	TXY-109B
FA90827-58	11/10/21	15:20	11/16/21	SO	Soil	TXY-108A
FA90827-59	11/10/21	15:25	11/16/21	SO	Soil	TXY-108B
FA90827-60	11/10/21	15:40	11/16/21	SO	Soil	TXY-111A
FA90827-61	11/10/21	15:45	11/16/21	SO	Soil	TXY-111B
FA90827-62	11/11/21	09:00	11/16/21	SO	Soil	DEMO-19
FA90827-63	11/11/21	09:30	11/16/21	SO	Soil	TXY-119A
FA90827-64	11/11/21	09:35	11/16/21	SO	Soil	TXY-119B
FA90827-65	11/11/21	09:40	11/16/21	SO	Soil	TXY-119C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90827

1217461

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90827-66	11/11/21	10:00	11/16/21	SO	Soil	TUG-69A
FA90827-67	11/11/21	10:05	11/16/21	SO	Soil	TUG-69B
FA90827-68	11/11/21	09:55	11/16/21	SO	Soil	FD-14
FA90827-69	11/11/21	10:15	11/16/21	SO	Soil	TUG-68A
FA90827-70	11/11/21	10:20	11/16/21	SO	Soil	TUG-68B
FA90827-71	11/11/21	10:25	11/16/21	SO	Soil	TUG-68C
FA90827-72	11/11/21	10:45	11/16/21	SO	Soil	TXY-116A
FA90827-73	11/11/21	10:50	11/16/21	SO	Soil	TXY-116B
FA90827-74	11/11/21	10:55	11/16/21	SO	Soil	TXY-116C
FA90827-75	11/11/21	11:00	11/16/21	SO	Soil	FD-15
FA90827-76	11/11/21	11:15	11/16/21	SO	Soil	TXY-103A
FA90827-77	11/11/21	11:20	11/16/21	SO	Soil	TXY-103B
FA90827-78	11/11/21	11:25	11/16/21	SO	Soil	TXY-103C

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary (continued)

SGS North America, Inc
1217461

Job No: FA90827

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA90827-79	11/11/21	11:30	11/16/21	SO	Soil	FD-16
FA90827-80	11/11/21	11:40	11/16/21	SO	Soil	TXY-104A
FA90827-81	11/11/21	11:45	11/16/21	SO	Soil	TXY-104B
FA90827-82	11/11/21	11:50	11/16/21	SO	Soil	TXY-104C
FA90827-83	11/11/21	12:00	11/16/21	SO	Soil	FD-17

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc

Job No: FA90827

Site: 1217461

Report Date 12/27/2021 2:53:42

On 11/16/2021, 83 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90827 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: SO **Batch ID:** OP88583

Sample(s) FA90827-1MS, FA90827-1MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP88594

Sample(s) FA90827-40MS, FA90827-40MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorooctanesulfonic acid are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Matrix Spike Duplicate Recovery(s) for Perfluorooctanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Matrix: SO **Batch ID:** OP88595

Sample(s) FA90827-42MS, FA90827-42MSD were used as the QC samples indicated.

Sample(s) FA90827-49 have surrogates outside control limits.

FA90827-49: No Isotopes added.

Matrix: SO **Batch ID:** OP88620

Sample(s) FA90827-62MS, FA90827-62MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA90827-64, FA90827-69, FA90827-71, FA90827-76 have surrogates outside control limits.

FA90827-64: Dilution required due to matrix interference (ID recovery standard failure).

FA90827-64 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-64 for 13C5-PFPeA: Outside control limits.

FA90827-64 for 13C5-PFHxA: Outside control limits.

FA90827-64 for 13C3-PFHxS: Outside control limits.

FA90827-64 for 13C2-4:2FTS: Outside control limits.

FA90827-64 for 13C2-8:2FTS: Outside control limits.

FA90827-64 for 13C2-6:2FTS: Outside control limits.

FA90827-64 for 13C8-PFOS: Outside control limits.

FA90827-69 for 13C9-PFNA: Outside control limits.

FA90827-69 for Perfluorooctanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-69 for 8:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-69 for Perfluorohexanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-69 for Perfluoroheptanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-69 for Perfluorohexanesulfonic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA90827-69 for Perfluorononanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-69 for 13C3-PFBS: Outside control limits.

FA90827-69 for Perfluoropentanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-69 for 13C2-4:2FTS: Outside control limits.
FA90827-69 for 13C2-6:2FTS: Outside control limits.
FA90827-69 for 13C2-8:2FTS: Outside control limits.
FA90827-69 for Perfluorononanoic acid: Associated ID Standard outside control limits due to matrix interference.
FA90827-69 for Perfluoroheptanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-69 for 13C3-PFHxS: Outside control limits.
FA90827-69 for Perfluoropentanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-69 for 13C4-PFHpA: Outside control limits.
FA90827-69 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-69 for 13C8-PFOS: Outside control limits.
FA90827-69 for 13C8-PFOA: Outside control limits.
FA90827-69 for Perfluorobutanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-69 for Perfluorodecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-69 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
FA90827-69 for 13C5-PFHxA: Outside control limits.
FA90827-69 for 13C5-PFPeA: Outside control limits.
FA90827-69 for 13C6-PFDA: Outside control limits.
FA90827-69 for 13C9-PFNA: Outside control limits.
FA90827-69 for 13C5-PFHxA: Outside control limits.
FA90827-69 for 13C5-PFPeA: Outside control limits.
FA90827-69 for 13C6-PFDA: Outside control limits.
FA90827-69 for 13C8-PFOA: Outside control limits.
FA90827-76 for 13C6-PFDA: Outside control limits.
FA90827-69 for 13C2-8:2FTS: Outside control limits.
FA90827-69 for 13C4-PFHpA: Outside control limits.
FA90827-69 for 13C8-PFOS: Outside control limits.
FA90827-69 for 13C3-PFHxS: Outside control limits.
FA90827-69 for 13C2-6:2FTS: Outside control limits.
FA90827-69 for 13C3-PFBS: Outside control limits.
FA90827-69 for Perfluorooctanesulfonic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
FA90827-69 for 13C2-4:2FTS: Outside control limits.
FA90827-71 for 13C2-8:2FTS: Outside control limits.
FA90827-71 for 13C5-PFHxA: Outside control limits.
FA90827-71 for 13C8-PFOS: Outside control limits.
FA90827-71 for Perfluorohexanesulfonic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
FA90827-71 for Perfluorohexanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-71 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
FA90827-71 for Perfluorobutanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-71 for Perfluorobutanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-71 for 8:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-71 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
FA90827-71 for Perfluorooctanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-71 for Perfluoroheptanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-71 for Perfluorononanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for Perfluorononanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for Perfluorooctanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for Perfluoropentanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for 13C2-6:2FTS: Outside control limits.

FA90827-71 for 13C3-PFBS: Outside control limits.

FA90827-71 for 13C4-PFBA: Outside control limits.

FA90827-71 for Perfluoropentanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for 13C8-PFOA: Outside control limits.

FA90827-71 for Perfluoroheptanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for 13C4-PFHpA: Outside control limits.

FA90827-71 for 13C6-PFDA: Outside control limits.

FA90827-71 for 13C3-PFHxS: Outside control limits.

FA90827-71 for Perfluorodecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-71 for 13C9-PFNA: Outside control limits.

FA90827-71 for 13C5-PFPeA: Outside control limits.

FA90827-71 for 13C2-4:2FTS: Outside control limits.

FA90827-76 for 13C2-6:2FTS: Outside control limits.

FA90827-76 for 13C5-PFPeA: Outside control limits.

FA90827-76 for 13C5-PFHxA: Outside control limits.

FA90827-76 for 13C4-PFBA: Outside control limits.

FA90827-76 for 13C3-PFBS: Outside control limits.

FA90827-76 for Perfluorononanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for 13C2-8:2FTS: Outside control limits.

FA90827-76 for 13C3-PFHxS: Outside control limits.

FA90827-76 for Perfluorodecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorodecanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorononanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for 13C4-PFHpA: Outside control limits.

FA90827-76 for 13C8-FOSA: Outside control limits.

FA90827-76 for 4:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorohexanoic acid: Associated ID Standard outside control limits due to matrix interference.

FA90827-76 for Perfluoropentanoic acid: Associated ID Standard outside control limits due to matrix interference.

FA90827-76 for Perfluoroheptanesulfonic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-76 for Perfluorooctanesulfonic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-76 for Perfluorohexanesulfonic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-76 for Perfluorooctanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-76 for 6:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for 8:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorobutanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorobutanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluoroheptanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA90827-76 for 13C2-PFDoDA: Outside control limits.

FA90827-76 for Perfluoropentanesulfonic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluorotridecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for Perfluoroundecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for PFOSA: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for 13C2-4:2FTS: Outside control limits.

FA90827-76 for 13C8-PFOS: Outside control limits.

FA90827-76 for Perfluorododecanoic acid: Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.

FA90827-76 for 13C7-PFUnDA: Outside control limits.

FA90827-76 for 13C8-PFOA: Outside control limits.

FA90827-76 for 13C9-PFNA: Outside control limits.

Matrix: SO **Batch ID:** OP88648

Sample(s) JD35115-1MS, JD35115-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for EtFOSAA are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for EtFOSAA, MeFOSAA are outside control limits. Probable cause is due to matrix interference.

Matrix: SO **Batch ID:** OP88800

The following samples were extracted outside of holding time for method EPA 537M BY ID: FA90827-49, FA90827-64, FA90827-69, FA90827-71, FA90827-76

FA90827-49: Sample re-extracted beyond hold time; re-extract results reported due to QC failure in original extract.

FA90827-64: Confirmation run.

FA90827-69: Confirmation run.

FA90827-71: Confirmation run beyond holdtime.

FA90827-76: Confirmation run.

General Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN89820

Sample(s) FA90827-9DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89822

Sample(s) FA90827-49DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89837

Sample(s) FA90845-11DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89838

Sample(s) FA90875-1DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Analyte	LOQ	LOD	Units	Method
FA90827-1		TXY-122A				
		Perfluorohexanoic acid	0.00071 J	0.0010	0.00051	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.00032 J	0.0010	0.00051	mg/kg EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0085	0.0010	0.00051	mg/kg EPA 537M BY ID
FA90827-2		TXY-122B				
		Perfluorohexanoic acid	0.0039	0.0012	0.00059	mg/kg EPA 537M BY ID
		Perfluoroheptanoic acid	0.00035 J	0.0012	0.00059	mg/kg EPA 537M BY ID
		Perfluorooctanoic acid	0.0133	0.0012	0.00059	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.0800	0.0059	0.0030	mg/kg EPA 537M BY ID
FA90827-3		TXY-122C				
		Perfluorohexanoic acid	0.0010 J	0.0012	0.00058	mg/kg EPA 537M BY ID
		Perfluoroheptanoic acid	0.00095 J	0.0012	0.00058	mg/kg EPA 537M BY ID
		Perfluoropentanesulfonic acid	0.0027	0.0012	0.00058	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.00029 J	0.0012	0.00058	mg/kg EPA 537M BY ID
FA90827-4		TXY-122D				
		Perfluorohexanoic acid	0.00093 J	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluoroheptanoic acid	0.0014	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluorooctanoic acid	0.00048 J	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluoropentanesulfonic acid	0.00081 J	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.0236	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0035	0.0011	0.00056	mg/kg EPA 537M BY ID
FA90827-5		TXY-121A				
		Perfluorooctanoic acid	0.00070 J	0.0011	0.00056	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.0018	0.0011	0.00056	mg/kg EPA 537M BY ID
FA90827-6		TXY-121B				
		Perfluorohexanoic acid	0.0029	0.0011	0.00055	mg/kg EPA 537M BY ID
		Perfluoroheptanoic acid	0.0013	0.0011	0.00055	mg/kg EPA 537M BY ID
		Perfluorooctanoic acid	0.00035 J	0.0011	0.00055	mg/kg EPA 537M BY ID
		Perfluoropentanesulfonic acid	0.0018	0.0011	0.00055	mg/kg EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.0037	0.0011	0.00055	mg/kg EPA 537M BY ID
FA90827-7		TXY-121C				
		Perfluorohexanoic acid	0.0024	0.0011	0.00056	mg/kg EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
		0.00033 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.00076 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90827-8		TXY-121D				
		0.0018	0.0012	0.00059	mg/kg	EPA 537M BY ID
		0.00052 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
FA90827-9		TUG-72A				
		0.00035 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
		0.0419	0.0011	0.00054	mg/kg	EPA 537M BY ID
		0.0021	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90827-10		TUG-72B				
		0.00045 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
		0.00052 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
		0.00060 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
		0.0016	0.0012	0.00061	mg/kg	EPA 537M BY ID
		0.0017	0.0012	0.00061	mg/kg	EPA 537M BY ID
FA90827-11		TUG-72C				
		0.00050 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
		0.00054 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
		0.0195	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90827-12		TUG-72D				
		0.00086 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
		0.00073 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
FA90827-13		TUG-71A				
No hits reported in this sample.						
FA90827-14		TUG-71B				
		0.0043	0.0011	0.00057	mg/kg	EPA 537M BY ID
		0.0046	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90827-15		TUG-71C				
		0.0016	0.0012	0.00060	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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Perfluorohexanesulfonic acid	0.0017	0.0012	0.00060	mg/kg	EPA 537M BY ID
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FA90827-16 TUG-70A

Perfluorooctanesulfonic acid	0.0020	0.0012	0.00060	mg/kg	EPA 537M BY ID
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FA90827-17 TUG-70B

Perfluorooctanoic acid	0.00069 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0011 J	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90827-18 TUG-70C

No hits reported in this sample.

FA90827-19 FD-12

Perfluorooctanesulfonic acid	0.0018	0.0012	0.00061	mg/kg	EPA 537M BY ID
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FA90827-20 TUG-84

Perfluoropentanoic acid	0.00097 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0014	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00084 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0041	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00085 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorobutanesulfonic acid	0.00041 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00076 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0177	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00059 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.253	0.011	0.0057	mg/kg	EPA 537M BY ID
Perfluoronanesulfonic acid	0.00098 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90827-21 TXY-137A

Perfluorohexanoic acid	0.00048 J	0.0011	0.00055	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0038	0.0011	0.00055	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0920	0.0055	0.0028	mg/kg	EPA 537M BY ID
Perfluoronanesulfonic acid	0.00046 J	0.0011	0.00055	mg/kg	EPA 537M BY ID
PFOSA	0.0020	0.0011	0.00055	mg/kg	EPA 537M BY ID

FA90827-22 TXY-137B

Perfluorohexanoic acid	0.00051 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0062	0.0012	0.00059	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanesulfonic acid		0.0650	0.0059	0.0030	mg/kg	EPA 537M BY ID
FA90827-23 TXY-137C						
Perfluorohexanoic acid		0.00053 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00057 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0074	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.0072	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0012	0.0012	0.00062	mg/kg	EPA 537M BY ID
FA90827-24 TXY-136A						
Perfluorooctanoic acid		0.00062 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorononanoic acid		0.00033 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0085	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00041 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0625	0.0057	0.0028	mg/kg	EPA 537M BY ID
FA90827-25 TXY-136B						
Perfluorohexanesulfonic acid		0.0039	0.0011	0.00054	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0770	0.0054	0.0027	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate		0.00032 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90827-26 TXY-136C						
Perfluorohexanesulfonic acid		0.0021	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0064	0.0012	0.00059	mg/kg	EPA 537M BY ID
FA90827-27 TXY-127A						
Perfluorobutanoic acid		0.00058 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluoropentanoic acid		0.00050 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00064 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid		0.00050 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.0011 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorononanoic acid		0.0010 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorodecanoic acid		0.00059 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluoroundecanoic acid		0.00053 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorododecanoic acid		0.00054 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorotridecanoic acid		0.00044 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0073	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00052 J	0.0014	0.00069	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0832	0.0069	0.0035	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90827-28		TXY-127B				
	Perfluorononanoic acid	0.00037 J	0.0013	0.00067	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.0045	0.0013	0.00067	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.0318	0.0013	0.00067	mg/kg	EPA 537M BY ID
FA90827-29		TXY-127C				
	Perfluorooctanoic acid	0.00035 J	0.0013	0.00066	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.0012 J	0.0013	0.00066	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.00074 J	0.0013	0.00066	mg/kg	EPA 537M BY ID
FA90827-30		TXY-127D				
	Perfluorooctanoic acid	0.0055	0.0012	0.00059	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.0095	0.0012	0.00059	mg/kg	EPA 537M BY ID
FA90827-31		FD-12				
	Perfluorohexanesulfonic acid	0.0012	0.0012	0.00061	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.0192	0.0012	0.00061	mg/kg	EPA 537M BY ID
FA90827-32		TXY-126A				
	Perfluorohexanesulfonic acid	0.00031 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.00052 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
	PFOSA	0.0074	0.0011	0.00053	mg/kg	EPA 537M BY ID
FA90827-33		TXY-126B				
	Perfluorodecanoic acid	0.00085 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.00032 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.0047	0.0012	0.00059	mg/kg	EPA 537M BY ID
	Perfluorononanesulfonic acid	0.00051 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
	PFOSA	0.0064	0.0012	0.00059	mg/kg	EPA 537M BY ID
	8:2 Fluorotelomer sulfonate	0.00070 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
FA90827-34		TXY-126C				
	Perfluorooctanoic acid	0.0014	0.0012	0.00058	mg/kg	EPA 537M BY ID
	Perfluorononanoic acid	0.00050 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
	Perfluorohexanesulfonic acid	0.0028	0.0012	0.00058	mg/kg	EPA 537M BY ID
	Perfluoroheptanesulfonic acid	0.0021	0.0012	0.00058	mg/kg	EPA 537M BY ID
	Perfluorooctanesulfonic acid	0.0301	0.0012	0.00058	mg/kg	EPA 537M BY ID
	6:2 Fluorotelomer sulfonate	0.0013	0.0012	0.00058	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-35 TXY-126D

Perfluorooctanoic acid	0.0012 J	0.0013	0.00063	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0033	0.0013	0.00063	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.0030	0.0013	0.00063	mg/kg	EPA 537M BY ID

FA90827-36 TXY-74A

Perfluorohexanesulfonic acid	0.0017	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00046 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0846	0.0058	0.0029	mg/kg	EPA 537M BY ID
Perfluorononanesulfonic acid	0.0109	0.0012	0.00058	mg/kg	EPA 537M BY ID
PFOSA	0.0084	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90827-37 TXY-74B

Perfluorohexanoic acid	0.00045 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.00092 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0102	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0040	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.647	0.023	0.012	mg/kg	EPA 537M BY ID

FA90827-38 TXY-74C

Perfluorohexanoic acid	0.00044 J	0.0013	0.00063	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0019	0.0013	0.00063	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0024	0.0013	0.00063	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00093 J	0.0013	0.00063	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.00087 J	0.0013	0.00063	mg/kg	EPA 537M BY ID

FA90827-39 TXY-74D

Perfluorohexanoic acid	0.00052 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00040 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00046 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0039	0.0011	0.00056	mg/kg	EPA 537M BY ID

FA90827-40 TUG-73A

Perfluorohexanesulfonic acid	0.0045	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.101	0.0052	0.0026	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-41 TUG-73B

Perfluorohexanesulfonic acid	0.0024	0.0013	0.00064	mg/kg	EPA 537M BY ID
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FA90827-42 TUG-73C

Perfluorobutanesulfonic acid	0.00043 J	0.0013	0.00064	mg/kg	EPA 537M BY ID
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FA90827-43 TUG-73D

No hits reported in this sample.

FA90827-44 TUG-61

Perfluoropentanoic acid	0.00066 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0017	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0015	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0032	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00076 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00032 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0102	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.221	0.012	0.0059	mg/kg	EPA 537M BY ID
Perfluoronanesulfonic acid	0.00099 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.0075	0.0012	0.00059	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate	0.0089	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90827-45 FD-13

Perfluoropentanoic acid	0.00050 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0015	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0020	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0046	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.0016	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoropentanesulfonic acid	0.00079 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0134	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00047 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.453	0.011	0.0056	mg/kg	EPA 537M BY ID
Perfluoronanesulfonic acid	0.0019	0.0011	0.00056	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.0108	0.0011	0.00056	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate	0.0141	0.0011	0.00056	mg/kg	EPA 537M BY ID

FA90827-46 TUG-62

Perfluoropentanoic acid	0.00049 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00078 J	0.0010	0.00052	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
		0.00047 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00088 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00068 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0019	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00040 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00066 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00061 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0034	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.00067 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0367	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0018	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0020	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0014	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0092	0.0010	0.00052	mg/kg	EPA 537M BY ID
		0.0350	0.0010	0.00052	mg/kg	EPA 537M BY ID
FA90827-47 TUG-63						
		0.00046 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.00041 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.00063 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.0011	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.201	0.0056	0.0028	mg/kg	EPA 537M BY ID
		0.00046 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.0234	0.0011	0.00056	mg/kg	EPA 537M BY ID
		0.0145	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90827-48 TUG-64						
		0.00037 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
		0.0013	0.0011	0.00053	mg/kg	EPA 537M BY ID
		0.00065 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
		0.0025	0.0011	0.00053	mg/kg	EPA 537M BY ID
		0.0017	0.0011	0.00053	mg/kg	EPA 537M BY ID
		0.0027	0.0011	0.00053	mg/kg	EPA 537M BY ID
FA90827-49 TUG-65						
		0.00034 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
		0.0045	0.0010	0.00051	mg/kg	EPA 537M BY ID
		0.0418	0.0010	0.00051	mg/kg	EPA 537M BY ID
		0.0014	0.0010	0.00051	mg/kg	EPA 537M BY ID
		0.00084 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
		0.0220	0.0010	0.00051	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-50 TUG-66

Perfluorohexanesulfonic acid	0.00030 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0021	0.0011	0.00057	mg/kg	EPA 537M BY ID
PFOSA	0.00030 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90827-51 TXY-102A

Perfluorodecanoic acid	0.0027	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0242	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorononanesulfonic acid	0.00055 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
PFOSA	0.00036 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate	0.0102	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90827-52 TXY-102B

Perfluorooctanoic acid	0.00053 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00068 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00048 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.00051 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.00049 J	0.0012	0.00061	mg/kg	EPA 537M BY ID

FA90827-53 TXY-102C

Perfluorooctanoic acid	0.0013	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00087 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.00078 J	0.0012	0.00061	mg/kg	EPA 537M BY ID

FA90827-54 TXY-110A

Perfluorooctanoic acid	0.00079 J	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0019	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0023	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.352	0.010	0.0050	mg/kg	EPA 537M BY ID

FA90827-55 TXY-110B

Perfluorohexanesulfonic acid	0.00072 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.115	0.0061	0.0030	mg/kg	EPA 537M BY ID

FA90827-56 TXY-109A

No hits reported in this sample.

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-57 TXY-109B

No hits reported in this sample.

FA90827-58 TXY-108A

Perfluorooctanesulfonic acid	0.0012	0.0011	0.00057	mg/kg	EPA 537M BY ID
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FA90827-59 TXY-108B

No hits reported in this sample.

FA90827-60 TXY-111A

Perfluoropentanoic acid	0.0027	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0048	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0070	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0016	0.0010	0.00051	mg/kg	EPA 537M BY ID

FA90827-61 TXY-111B

Perfluoropentanoic acid	0.0021	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00075 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00073 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0027	0.0011	0.00056	mg/kg	EPA 537M BY ID

FA90827-62 DEMO-19

Perfluorooctanoic acid	0.00042 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00094 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00059 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0022	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90827-63 TXY-119A

Perfluorooctanesulfonic acid	0.0095	0.0010	0.00050	mg/kg	EPA 537M BY ID
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FA90827-64 TXY-119B

Perfluorooctanoic acid	0.00053 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00074 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorodecanoic acid	0.00075 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid ^b	0.0565	0.0060	0.0030	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-65 TXY-119C

No hits reported in this sample.

FA90827-66 TUG-69A

Perfluorooctanesulfonic acid	0.00085 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
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FA90827-67 TUG-69B

Perfluorooctanoic acid	0.00048 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0016	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90827-68 FD-14

Perfluorooctanesulfonic acid	0.00096 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
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FA90827-69 TUG-68A

Perfluorooctanoic acid ^c	0.00041 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorononanoic acid ^d	0.00042 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid ^e	0.00059 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid ^c	0.129	0.0059	0.0029	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate ^e	0.00055 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate ^c	0.0053	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90827-70 TUG-68B

Perfluorooctanoic acid	0.00055 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.00041 J	0.0012	0.00061	mg/kg	EPA 537M BY ID

FA90827-71 TUG-68C

Perfluoroheptanoic acid ^c	0.00044 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid ^c	0.0071	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid ^c	0.0074	0.0011	0.00057	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate ^c	0.00055 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90827-72 TXY-116A

Perfluorodecanoic acid	0.00071 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluoroundecanoic acid	0.00050 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorododecanoic acid	0.0023	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.00075 J	0.0010	0.00051	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-73 TXY-116B

Perfluorooctanoic acid	0.0011 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00036 J	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90827-74 TXY-116C

No hits reported in this sample.

FA90827-75 FD-15

Perfluorodecanoic acid	0.00070 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluoroundecanoic acid	0.00060 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorododecanoic acid	0.0022	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.00083 J	0.0010	0.00052	mg/kg	EPA 537M BY ID

FA90827-76 TXY-103A

Perfluoropentanoic acid ^d	0.00035 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid ^d	0.00030 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid ^c	0.00092 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid ^c	0.0164	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid ^c	0.00077 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid ^c	0.00040 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid ^c	0.0036	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90827-77 TXY-103B

Perfluorohexanoic acid	0.00033 J	0.0013	0.00063	mg/kg	EPA 537M BY ID
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FA90827-78 TXY-103C

Perfluoropentanoic acid	0.00048 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0013	0.0011	0.00056	mg/kg	EPA 537M BY ID

FA90827-79 FD-16

Perfluoroheptanoic acid	0.00043 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0064	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0025	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90827-80 TXY-104A

Perfluorooctanesulfonic acid	0.0032	0.0012	0.00060	mg/kg	EPA 537M BY ID
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Summary of Hits

Job Number: FA90827
Account: SGS North America, Inc
Project: 1217461
Collected: 11/09/21 thru 11/11/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90827-81 **TXY-104B**

No hits reported in this sample.

FA90827-82 **TXY-104C**

No hits reported in this sample.

FA90827-83 **FD-17**

Perfluorooctanesulfonic acid	0.0030	0.0012	0.00060	mg/kg	EPA 537M BY ID
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- (a) Sample re-extracted beyond hold time; re-extract results reported due to QC failure in original extract.
- (b) Dilution required due to matrix interference (ID recovery standard failure).
- (c) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
- (d) Associated ID Standard outside control limits due to matrix interference.
- (e) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TXY-122A	
Lab Sample ID: FA90827-1	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 95.5
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49951.D	1	12/04/21 06:09	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00071	0.0010	0.00051	0.00025	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00032	0.0010	0.00051	0.00025	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0085	0.0010	0.00051	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
 4

Report of Analysis

Client Sample ID:	TXY-122A	Date Sampled:	11/09/21
Lab Sample ID:	FA90827-1	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	95.5
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	82%		40-140%
	13C2-PFDoDA	81%		40-140%
	13C2-PFTeDA	82%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	80%		30-130%
	d3-MeFOSAA	76%		40-140%
	d5-EtFOSAA	79%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-122B	
Lab Sample ID: FA90827-2	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49954.D	1	12/04/21 06:59	MV	12/01/21 08:30	OP88583	S3Q703
Run #2	3Q50049.D	5	12/06/21 23:35	MV	12/01/21 08:30	OP88583	S3Q704

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0039	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00035	0.0012	0.00059	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0133	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0800 ^a	0.0059	0.0030	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
4

Report of Analysis

Client Sample ID: TXY-122B	Date Sampled: 11/09/21
Lab Sample ID: FA90827-2	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 81.7
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%	90%	40-140%
	13C5-PFPeA	69%	90%	50-150%
	13C5-PFHxA	69%	90%	50-150%
	13C4-PFHpA	68%	92%	50-150%
	13C8-PFOA	70%	96%	50-150%
	13C9-PFNA	69%	97%	50-150%
	13C6-PFDA	70%	97%	50-150%
	13C7-PFUnDA	69%	93%	40-140%
	13C2-PFDoDA	71%	93%	40-140%
	13C2-PFTeDA	70%	93%	30-130%
	13C3-PFBS	68%	94%	50-150%
	13C3-PFHxS	67%	93%	50-150%
	13C8-PFOS	69%	96%	50-150%
	13C8-FOSA	66%	97%	30-130%
	d3-MeFOSAA	67%	92%	40-140%
	d5-EtFOSAA	68%	90%	40-140%
	13C2-4:2FTS	64%	83%	50-150%
	13C2-6:2FTS	65%	86%	50-150%
	13C2-8:2FTS	65%	90%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.2
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Report of Analysis

Client Sample ID: TXY-122C	
Lab Sample ID: FA90827-3	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50050.D	1	12/06/21 23:51	MV	12/01/21 08:30	OP88583	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0010	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00095	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.0027	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00029	0.0012	0.00058	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
 4

Report of Analysis

Client Sample ID: TXY-122C	
Lab Sample ID: FA90827-3	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	87%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-122D	
Lab Sample ID: FA90827-4	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.2
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50101.D	1	12/08/21 12:16	MV	12/01/21 08:30	OP88583	S3Q705
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00093	0.0011	0.00056	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.0014	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00048	0.0011	0.00056	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00081	0.0011	0.00056	0.00028	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0236	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0035	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
4

Report of Analysis

Client Sample ID: TXY-122D	Date Sampled: 11/09/21
Lab Sample ID: FA90827-4	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 88.2
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	61%		30-130%
	d3-MeFOSAA	81%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-121A	
Lab Sample ID: FA90827-5	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 89.3
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49957.D	1	12/04/21 07:49	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00070	0.0011	0.00056	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0018	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.5
4

Report of Analysis

Client Sample ID: TXY-121A	
Lab Sample ID: FA90827-5	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 89.3
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	90%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-121B	
Lab Sample ID: FA90827-6	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.2
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49958.D	1	12/04/21 08:05	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0029	0.0011	0.00055	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0013	0.0011	0.00055	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00035	0.0011	0.00055	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.0018	0.0011	0.00055	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0037	0.0011	0.00055	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.6
4

Report of Analysis

Client Sample ID: TXY-121B	Date Sampled: 11/09/21
Lab Sample ID: FA90827-6	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 88.2
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	54%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	57%		50-150%
	13C4-PFHpA	58%		50-150%
	13C8-PFOA	59%		50-150%
	13C9-PFNA	57%		50-150%
	13C6-PFDA	57%		50-150%
	13C7-PFUnDA	58%		40-140%
	13C2-PFDoDA	57%		40-140%
	13C2-PFTeDA	57%		30-130%
	13C3-PFBS	57%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	56%		50-150%
	13C8-FOSA	34%		30-130%
	d3-MeFOSAA	56%		40-140%
	d5-EtFOSAA	57%		40-140%
	13C2-4:2FTS	53%		50-150%
	13C2-6:2FTS	55%		50-150%
	13C2-8:2FTS	54%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-121C	
Lab Sample ID: FA90827-7	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.5
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49961.D	1	12/04/21 08:55	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0024	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00033	0.0011	0.00056	0.00028	mg/kg	J
2706-91-4	Perfluoropentanesulfonic acid	0.00076	0.0011	0.00056	0.00028	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID: TXY-121C	
Lab Sample ID: FA90827-7	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		40-140%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	65%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	65%		40-140%
	13C2-PFDoDA	65%		40-140%
	13C2-PFTeDA	65%		30-130%
	13C3-PFBS	63%		50-150%
	13C3-PFHxS	65%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	41%		30-130%
	d3-MeFOSAA	65%		40-140%
	d5-EtFOSAA	65%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.7
4

Report of Analysis

Client Sample ID: TXY-121D		
Lab Sample ID: FA90827-8		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49962.D	1	12/04/21 09:11	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0018	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052	0.0012	0.00059	0.00030	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID:	TXY-121D	Date Sampled:	11/09/21
Lab Sample ID:	FA90827-8	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	82.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	73%		30-130%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	45%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-72A		
Lab Sample ID: FA90827-9		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 88.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50102.D	1	12/08/21 12:33	MV	12/01/21 08:30	OP88583	S3Q705
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00035	0.0011	0.00054	0.00027	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0419	0.0011	0.00054	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0021	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: TUG-72A	
Lab Sample ID: FA90827-9	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.4
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	62%		30-130%
	d3-MeFOSAA	87%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	93%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-72B		
Lab Sample ID: FA90827-10		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49964.D	1	12/04/21 09:45	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00045	0.0012	0.00061	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00052	0.0012	0.00061	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060	0.0012	0.00061	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0016	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0017	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TUG-72B	
Lab Sample ID: FA90827-10	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		40-140%
	13C5-PFPeA	61%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	65%		50-150%
	13C9-PFNA	64%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	65%		40-140%
	13C2-PFTeDA	63%		30-130%
	13C3-PFBS	63%		50-150%
	13C3-PFHxS	65%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	43%		30-130%
	d3-MeFOSAA	64%		40-140%
	d5-EtFOSAA	65%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	62%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TUG-72C		
Lab Sample ID: FA90827-11		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49965.D	1	12/04/21 10:01	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050	0.0011	0.00057	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00054	0.0011	0.00057	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0195	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.11
4

Report of Analysis

Client Sample ID: TUG-72C	
Lab Sample ID: FA90827-11	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		40-140%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	74%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	74%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	43%		30-130%
	d3-MeFOSAA	73%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	69%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.12
4

Client Sample ID: TUG-72D		
Lab Sample ID: FA90827-12		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50103.D	1	12/08/21 12:49	MV	12/01/21 08:30	OP88583	S3Q705
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00086	0.0012	0.00060	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00073	0.0012	0.00060	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-72D	
Lab Sample ID: FA90827-12	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	99%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	94%		30-130%
	d3-MeFOSAA	110%		40-140%
	d5-EtFOSAA	107%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.12
4

Report of Analysis

Client Sample ID: TUG-71A		
Lab Sample ID: FA90827-13		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 89.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49967.D	1	12/04/21 10:35	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.13
4

Report of Analysis

Client Sample ID: TUG-71A	
Lab Sample ID: FA90827-13	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 89.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		40-140%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	37%		30-130%
	d3-MeFOSAA	64%		40-140%
	d5-EtFOSAA	66%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.13
4

Report of Analysis

Client Sample ID: TUG-71B		
Lab Sample ID: FA90827-14		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49968.D	1	12/04/21 10:51	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0043	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.0046	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.14
4

Report of Analysis

Client Sample ID: TUG-71B	
Lab Sample ID: FA90827-14	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	52%		40-140%
	13C5-PFPeA	56%		50-150%
	13C5-PFHxA	57%		50-150%
	13C4-PFHpA	59%		50-150%
	13C8-PFOA	59%		50-150%
	13C9-PFNA	59%		50-150%
	13C6-PFDA	59%		50-150%
	13C7-PFUnDA	62%		40-140%
	13C2-PFDoDA	59%		40-140%
	13C2-PFTeDA	55%		30-130%
	13C3-PFBS	55%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	59%		50-150%
	13C8-FOSA	37%		30-130%
	d3-MeFOSAA	59%		40-140%
	d5-EtFOSAA	59%		40-140%
	13C2-4:2FTS	53%		50-150%
	13C2-6:2FTS	55%		50-150%
	13C2-8:2FTS	56%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.14
4

Report of Analysis

Client Sample ID: TUG-71C		
Lab Sample ID: FA90827-15		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.3
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49969.D	1	12/04/21 11:08	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0016	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0017	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: TUG-71C	
Lab Sample ID: FA90827-15	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.3
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	80%		40-140%
	13C2-PFDoDA	79%		40-140%
	13C2-PFTeDA	78%		30-130%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	48%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: TUG-70A	
Lab Sample ID: FA90827-16	Date Sampled: 11/09/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		40-140%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	82%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	76%		30-130%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	57%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.16
4

Report of Analysis

Client Sample ID: TUG-70B		
Lab Sample ID: FA90827-17		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49973.D	1	12/04/21 12:14	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00069	0.0012	0.00058	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0011	0.0012	0.00058	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Client Sample ID:	TUG-70B	Date Sampled:	11/09/21
Lab Sample ID:	FA90827-17	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	85.5
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	57%		50-150%
	13C4-PFHpA	57%		50-150%
	13C8-PFOA	58%		50-150%
	13C9-PFNA	58%		50-150%
	13C6-PFDA	56%		50-150%
	13C7-PFUnDA	57%		40-140%
	13C2-PFDoDA	58%		40-140%
	13C2-PFTeDA	57%		30-130%
	13C3-PFBS	56%		50-150%
	13C3-PFHxS	56%		50-150%
	13C8-PFOS	55%		50-150%
	13C8-FOSA	42%		30-130%
	d3-MeFOSAA	55%		40-140%
	d5-EtFOSAA	58%		40-140%
	13C2-4:2FTS	52%		50-150%
	13C2-6:2FTS	54%		50-150%
	13C2-8:2FTS	53%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Client Sample ID: TUG-70C		
Lab Sample ID: FA90827-18		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49974.D	1	12/04/21 12:31	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID:	TUG-70C	Date Sampled:	11/09/21
Lab Sample ID:	FA90827-18	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	87.2
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	46%		30-130%
	d3-MeFOSAA	73%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID: FD-12		
Lab Sample ID: FA90827-19		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.3
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49975.D	1	12/04/21 12:47	MV	12/01/21 08:30	OP88583	S3Q703
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0018	0.0012	0.00061	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: FD-12		
Lab Sample ID: FA90827-19		Date Sampled: 11/09/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.3
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	71%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	71%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	59%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: TUG-84		Date Sampled: 11/10/21
Lab Sample ID: FA90827-20		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 88.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q49976.D	1	12/04/21 13:04	MV	12/01/21 08:30	OP88583	S3Q703
Run #2	3Q50058.D	10	12/07/21 02:04	MV	12/01/21 08:30	OP88583	S3Q704

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2	1.98 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00097	0.0011	0.00057	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0014	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00084	0.0011	0.00057	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0041	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00085	0.0011	0.00057	0.00029	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00041	0.0011	0.00057	0.00029	mg/kg	J
2706-91-4	Perfluoropentanesulfonic acid	0.00076	0.0011	0.00057	0.00029	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0177	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059	0.0011	0.00057	0.00029	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.253 ^a	0.011	0.0057	0.0029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00098	0.0011	0.00057	0.00029	mg/kg	J
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID: TUG-84	Date Sampled: 11/10/21
Lab Sample ID: FA90827-20	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 88.4
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%	59%	40-140%
	13C5-PFPeA	68%	62%	50-150%
	13C5-PFHxA	70%	62%	50-150%
	13C4-PFHpA	73%	63%	50-150%
	13C8-PFOA	75%	68%	50-150%
	13C9-PFNA	68%	68%	50-150%
	13C6-PFDA	77%	69%	50-150%
	13C7-PFUnDA	79%	66%	40-140%
	13C2-PFDoDA	68%	66%	40-140%
	13C2-PFTeDA	68%	66%	30-130%
	13C3-PFBS	74%	65%	50-150%
	13C3-PFHxS	77%	67%	50-150%
	13C8-PFOS	64%	64%	50-150%
	13C8-FOSA	30%	44%	30-130%
	d3-MeFOSAA	80%	67%	40-140%
	d5-EtFOSAA	81%	63%	40-140%
	13C2-4:2FTS	69%	64%	50-150%
	13C2-6:2FTS	73%	68%	50-150%
	13C2-8:2FTS	79%	65%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID: TXY-137A	
Lab Sample ID: FA90827-21	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.5
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23221.D	1	12/06/21 22:24	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23284.D	5	12/07/21 15:58	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2	2.05 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00048	0.0011	0.00055	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0038	0.0011	0.00055	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0920 ^a	0.0055	0.0028	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00046	0.0011	0.00055	0.00028	mg/kg	J
335-77-3	Perfluorodecanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.0020	0.0011	0.00055	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.21
4

Report of Analysis

Client Sample ID: TXY-137A	
Lab Sample ID: FA90827-21	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%	91%	40-140%
	13C5-PFPeA	90%	88%	50-150%
	13C5-PFHxA	91%	89%	50-150%
	13C4-PFHpA	92%	90%	50-150%
	13C8-PFOA	93%	91%	50-150%
	13C9-PFNA	91%	98%	50-150%
	13C6-PFDA	96%	97%	50-150%
	13C7-PFUnDA	93%	95%	40-140%
	13C2-PFDoDA	92%	94%	40-140%
	13C2-PFTeDA	94%	95%	30-130%
	13C3-PFBS	90%	91%	50-150%
	13C3-PFHxS	89%	90%	50-150%
	13C8-PFOS	84%	96%	50-150%
	13C8-FOSA	68%	73%	30-130%
	d3-MeFOSAA	95%	104%	40-140%
	d5-EtFOSAA	96%	104%	40-140%
	13C2-4:2FTS	84%	88%	50-150%
	13C2-6:2FTS	88%	90%	50-150%
	13C2-8:2FTS	90%	91%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.21
4

Report of Analysis

4.22
4

Client Sample ID: TXY-137B	
Lab Sample ID: FA90827-22	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.0
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23222.D	1	12/06/21 22:39	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23285.D	5	12/07/21 16:30	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2	2.04 g	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051	0.0012	0.00059	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0062	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0650 ^a	0.0059	0.0030	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-137B	Date Sampled: 11/10/21
Lab Sample ID: FA90827-22	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 83.0
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%	91%	40-140%
	13C5-PFPeA	97%	88%	50-150%
	13C5-PFHxA	97%	89%	50-150%
	13C4-PFHpA	98%	90%	50-150%
	13C8-PFOA	99%	95%	50-150%
	13C9-PFNA	98%	97%	50-150%
	13C6-PFDA	103%	94%	50-150%
	13C7-PFUnDA	100%	96%	40-140%
	13C2-PFDoDA	99%	94%	40-140%
	13C2-PFTeDA	99%	94%	30-130%
	13C3-PFBS	99%	88%	50-150%
	13C3-PFHxS	97%	93%	50-150%
	13C8-PFOS	93%	92%	50-150%
	13C8-FOSA	90%	90%	30-130%
	d3-MeFOSAA	104%	104%	40-140%
	d5-EtFOSAA	102%	103%	40-140%
	13C2-4:2FTS	89%	81%	50-150%
	13C2-6:2FTS	93%	88%	50-150%
	13C2-8:2FTS	96%	92%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.22
 4

Report of Analysis

Client Sample ID: TXY-137C	
Lab Sample ID: FA90827-23	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.6
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23286.D	1	12/07/21 16:52	MV	12/02/21 08:00	OP88594	S4Q319
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053	0.0012	0.00062	0.00031	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057	0.0012	0.00062	0.00031	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0074	0.0012	0.00062	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0072	0.0012	0.00062	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0012	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: TXY-137C	Date Sampled: 11/10/21
Lab Sample ID: FA90827-23	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 81.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	91%		30-130%
	d3-MeFOSAA	87%		40-140%
	d5-EtFOSAA	86%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: TXY-136A	
Lab Sample ID: FA90827-24	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.2
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23224.D	1	12/06/21 23:10	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23287.D	5	12/07/21 17:07	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2	2.00 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00062	0.0011	0.00057	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00033	0.0011	0.00057	0.00028	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0085	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00041	0.0011	0.00057	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0625 ^a	0.0057	0.0028	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.24
4

Report of Analysis

Client Sample ID: TXY-136A	
Lab Sample ID: FA90827-24	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%	75%	40-140%
	13C5-PFPeA	68%	72%	50-150%
	13C5-PFHxA	69%	72%	50-150%
	13C4-PFHpA	70%	76%	50-150%
	13C8-PFOA	73%	83%	50-150%
	13C9-PFNA	74%	83%	50-150%
	13C6-PFDA	76%	88%	50-150%
	13C7-PFUnDA	76%	87%	40-140%
	13C2-PFDoDA	74%	87%	40-140%
	13C2-PFTeDA	75%	85%	30-130%
	13C3-PFBS	74%	85%	50-150%
	13C3-PFHxS	76%	90%	50-150%
	13C8-PFOS	72%	84%	50-150%
	13C8-FOSA	74%	82%	30-130%
	d3-MeFOSAA	70%	89%	40-140%
	d5-EtFOSAA	69%	86%	40-140%
	13C2-4:2FTS	68%	77%	50-150%
	13C2-6:2FTS	73%	82%	50-150%
	13C2-8:2FTS	73%	86%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-136B		
Lab Sample ID: FA90827-25		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 89.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23225.D	1	12/06/21 23:25	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23288.D	5	12/07/21 17:22	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0039	0.0011	0.00054	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0770 ^a	0.0054	0.0027	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.25
4

Report of Analysis

Client Sample ID: TXY-136B	
Lab Sample ID: FA90827-25	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 89.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00032	0.0011	0.00054	0.00027	mg/kg	J

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%	80%	40-140%
	13C5-PFPeA	68%	78%	50-150%
	13C5-PFHxA	70%	81%	50-150%
	13C4-PFHpA	72%	83%	50-150%
	13C8-PFOA	75%	91%	50-150%
	13C9-PFNA	76%	94%	50-150%
	13C6-PFDA	79%	95%	50-150%
	13C7-PFUnDA	77%	98%	40-140%
	13C2-PFDoDA	78%	94%	40-140%
	13C2-PFTeDA	79%	96%	30-130%
	13C3-PFBS	79%	97%	50-150%
	13C3-PFHxS	79%	97%	50-150%
	13C8-PFOS	76%	102%	50-150%
	13C8-FOSA	49%	65%	30-130%
	d3-MeFOSAA	68%	85%	40-140%
	d5-EtFOSAA	67%	87%	40-140%
	13C2-4:2FTS	72%	86%	50-150%
	13C2-6:2FTS	75%	91%	50-150%
	13C2-8:2FTS	79%	93%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-136C	
Lab Sample ID: FA90827-26	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.8
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23289.D	1	12/07/21 17:37	MV	12/02/21 08:00	OP88594	S4Q319
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0021	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0064	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.26
4

Report of Analysis

Client Sample ID: TXY-136C	
Lab Sample ID: FA90827-26	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.8
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	85%		40-140%
	13C2-PFTeDA	87%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	90%		30-130%
	d3-MeFOSAA	90%		40-140%
	d5-EtFOSAA	88%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-127A	
Lab Sample ID: FA90827-27	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 72.9
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23227.D	1	12/06/21 23:55	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23290.D	5	12/07/21 17:52	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2	1.98 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058	0.0014	0.00069	0.00053	mg/kg	J
2706-90-3	Perfluoropentanoic acid	0.00050	0.0014	0.00069	0.00035	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00064	0.0014	0.00069	0.00035	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00050	0.0014	0.00069	0.00035	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0011	0.0014	0.00069	0.00035	mg/kg	J
375-95-1	Perfluorononanoic acid	0.0010	0.0014	0.00069	0.00035	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00059	0.0014	0.00069	0.00035	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00053	0.0014	0.00069	0.00035	mg/kg	J
307-55-1	Perfluorododecanoic acid	0.00054	0.0014	0.00069	0.00035	mg/kg	J
72629-94-8	Perfluorotridecanoic acid	0.00044	0.0014	0.00069	0.00037	mg/kg	J
376-06-7	Perfluorotetradecanoic acid	0.00069 U	0.0014	0.00069	0.00035	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00069 U	0.0014	0.00069	0.00035	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00069 U	0.0014	0.00069	0.00035	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0073	0.0014	0.00069	0.00035	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052	0.0014	0.00069	0.00035	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0832 ^a	0.0069	0.0035	0.0017	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00069 U	0.0014	0.00069	0.00035	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00069 U	0.0014	0.00069	0.00035	mg/kg	

PERFLUOROOCETANESULFONAMIDES

754-91-6	PFOSA	0.00069 U	0.0014	0.00069	0.00035	mg/kg	
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PERFLUOROOCETANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0014 U	0.0035	0.0014	0.00069	mg/kg	
2991-50-6	EtFOSAA	0.0014 U	0.0035	0.0014	0.00069	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00069 U	0.0014	0.00069	0.00035	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00069 U	0.0014	0.00069	0.00035	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.27
4

Report of Analysis

Client Sample ID: TXY-127A	
Lab Sample ID: FA90827-27	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 72.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00069 U	0.0014	0.00069	0.00035	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%	58%	40-140%
	13C5-PFPeA	59%	56%	50-150%
	13C5-PFHxA	59%	58%	50-150%
	13C4-PFHpA	59%	58%	50-150%
	13C8-PFOA	65%	63%	50-150%
	13C9-PFNA	65%	66%	50-150%
	13C6-PFDA	70%	69%	50-150%
	13C7-PFUnDA	70%	72%	40-140%
	13C2-PFDoDA	69%	71%	40-140%
	13C2-PFTeDA	75%	75%	30-130%
	13C3-PFBS	77%	76%	50-150%
	13C3-PFHxS	76%	76%	50-150%
	13C8-PFOS	73%	84%	50-150%
	13C8-FOSA	63%	65%	30-130%
	d3-MeFOSAA	72%	70%	40-140%
	d5-EtFOSAA	74%	71%	40-140%
	13C2-4:2FTS	71%	68%	50-150%
	13C2-6:2FTS	77%	69%	50-150%
	13C2-8:2FTS	81%	77%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-127B		
Lab Sample ID: FA90827-28		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 75.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23291.D	1	12/07/21 18:07	MV	12/02/21 08:00	OP88594	S4Q319
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00067 U	0.0013	0.00067	0.00051	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
375-95-1	Perfluorononanoic acid	0.00037	0.0013	0.00067	0.00034	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00067 U	0.0013	0.00067	0.00036	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.0045	0.0013	0.00067	0.00034	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0318	0.0013	0.00067	0.00034	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0034	0.0013	0.00067	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0034	0.0013	0.00067	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-127B	
Lab Sample ID: FA90827-28	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 75.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00034	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		40-140%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	64%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	68%		40-140%
	13C2-PFDoDA	66%		40-140%
	13C2-PFTeDA	68%		30-130%
	13C3-PFBS	63%		50-150%
	13C3-PFHxS	64%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	74%		30-130%
	d3-MeFOSAA	72%		40-140%
	d5-EtFOSAA	70%		40-140%
	13C2-4:2FTS	59%		50-150%
	13C2-6:2FTS	63%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.28
4

Report of Analysis

Client Sample ID: TXY-127C		
Lab Sample ID: FA90827-29		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 75.1
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23231.D	1	12/07/21 00:55	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00066 U	0.0013	0.00066	0.00050	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00035	0.0013	0.00066	0.00033	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00066 U	0.0013	0.00066	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0012	0.0013	0.00066	0.00033	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00074	0.0013	0.00066	0.00033	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID: TXY-127C	
Lab Sample ID: FA90827-29	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 75.1
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	83%		40-140%
	13C2-PFDoDA	81%		40-140%
	13C2-PFTeDA	82%		30-130%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	69%		30-130%
	d3-MeFOSAA	76%		40-140%
	d5-EtFOSAA	77%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

4.30
4

Client Sample ID: TXY-127D		
Lab Sample ID: FA90827-30		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 81.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23232.D	1	12/07/21 01:10	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0055	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0095	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	TXY-127D	Date Sampled:	11/10/21
Lab Sample ID:	FA90827-30	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	81.9
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	71%		40-140%
	13C2-PFDoDA	70%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	71%		30-130%
	d3-MeFOSAA	62%		40-140%
	d5-EtFOSAA	60%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.30
4

Report of Analysis

Client Sample ID: FD-12		
Lab Sample ID: FA90827-31		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23233.D	1	12/07/21 01:25	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0012	0.0012	0.00061	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0192	0.0012	0.00061	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.31
4

Report of Analysis

Client Sample ID: FD-12		
Lab Sample ID: FA90827-31		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.2
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	98%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-126A	
Lab Sample ID: FA90827-32	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 95.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23234.D	1	12/07/21 01:40	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00031	0.0011	0.00053	0.00026	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00052	0.0011	0.00053	0.00026	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.0074	0.0011	0.00053	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.32
4

Report of Analysis

Client Sample ID: TXY-126A	
Lab Sample ID: FA90827-32	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 95.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		40-140%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	81%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	79%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	79%		30-130%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	57%		30-130%
	d3-MeFOSAA	82%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-126B	
Lab Sample ID: FA90827-33	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.2
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23235.D	1	12/07/21 01:55	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00085	0.0012	0.00059	0.00029	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00032	0.0012	0.00059	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0047	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051	0.0012	0.00059	0.00029	mg/kg	J
335-77-3	Perfluorodecane sulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.0064	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.33
4

Report of Analysis

Client Sample ID: TXY-126B	
Lab Sample ID: FA90827-33	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00070	0.0012	0.00059	0.00029	mg/kg	J

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	77%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	87%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-126C		
Lab Sample ID: FA90827-34		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23236.D	1	12/07/21 02:10	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0014	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00050	0.0012	0.00058	0.00029	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0028	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0021	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0301	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0013	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.34
4

Report of Analysis

Client Sample ID: TXY-126C	
Lab Sample ID: FA90827-34	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.4
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	99%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	102%		50-150%
	13C8-FOSA	109%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	97%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	97%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-126D		
Lab Sample ID: FA90827-35		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.7
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23237.D	1	12/07/21 02:25	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	1.98 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0012	0.0013	0.00063	0.00031	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0033	0.0013	0.00063	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0030	0.0013	0.00063	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: TXY-126D	
Lab Sample ID: FA90827-35	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		40-140%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	70%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	84%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: TXY-74A		
Lab Sample ID: FA90827-36		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23238.D	1	12/07/21 02:40	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23292.D	5	12/07/21 18:22	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0017	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00046	0.0012	0.00058	0.00029	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0846 ^a	0.0058	0.0029	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0109	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.0084	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.36
4

Report of Analysis

Client Sample ID: TXY-74A	
Lab Sample ID: FA90827-36	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%	83%	40-140%
	13C5-PFPeA	79%	79%	50-150%
	13C5-PFHxA	80%	79%	50-150%
	13C4-PFHpA	80%	82%	50-150%
	13C8-PFOA	82%	84%	50-150%
	13C9-PFNA	81%	88%	50-150%
	13C6-PFDA	85%	84%	50-150%
	13C7-PFUnDA	82%	88%	40-140%
	13C2-PFDoDA	82%	83%	40-140%
	13C2-PFTeDA	83%	85%	30-130%
	13C3-PFBS	78%	82%	50-150%
	13C3-PFHxS	79%	80%	50-150%
	13C8-PFOS	79%	88%	50-150%
	13C8-FOSA	75%	82%	30-130%
	d3-MeFOSAA	84%	90%	40-140%
	d5-EtFOSAA	82%	86%	40-140%
	13C2-4:2FTS	74%	75%	50-150%
	13C2-6:2FTS	79%	79%	50-150%
	13C2-8:2FTS	80%	83%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.36
4

Report of Analysis

Client Sample ID: TXY-74B		
Lab Sample ID: FA90827-37		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23239.D	1	12/07/21 02:56	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23293.D	20	12/07/21 18:37	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2	2.04 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00045	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00092	0.0012	0.00058	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0102	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0040	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.647 ^a	0.023	0.012	0.0058	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.37
4

Report of Analysis

Client Sample ID: TXY-74B	
Lab Sample ID: FA90827-37	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%	76%	40-140%
	13C5-PFPeA	73%	72%	50-150%
	13C5-PFHxA	73%	69%	50-150%
	13C4-PFHpA	74%	69%	50-150%
	13C8-PFOA	77%	75%	50-150%
	13C9-PFNA	70%	71%	50-150%
	13C6-PFDA	79%	77%	50-150%
	13C7-PFUnDA	78%	76%	40-140%
	13C2-PFDoDA	76%	75%	40-140%
	13C2-PFTeDA	77%	74%	30-130%
	13C3-PFBS	74%	77%	50-150%
	13C3-PFHxS	76%	84%	50-150%
	13C8-PFOS	64%	87%	50-150%
	13C8-FOSA	89%	97%	30-130%
	d3-MeFOSAA	81%	82%	40-140%
	d5-EtFOSAA	77%	84%	40-140%
	13C2-4:2FTS	69%	69%	50-150%
	13C2-6:2FTS	72%	78%	50-150%
	13C2-8:2FTS	76%	72%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-74C		
Lab Sample ID: FA90827-38		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 78.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23296.D	1	12/07/21 19:22	MV	12/02/21 08:00	OP88594	S4Q319
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00044	0.0013	0.00063	0.00031	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0019	0.0013	0.00063	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0024	0.0013	0.00063	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00093	0.0013	0.00063	0.00031	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00087	0.0013	0.00063	0.00031	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0031	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID: TXY-74C	
Lab Sample ID: FA90827-38	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		40-140%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	98%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	105%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	99%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	98%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	109%		30-130%
	d3-MeFOSAA	110%		40-140%
	d5-EtFOSAA	105%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
 4

Report of Analysis

Client Sample ID: TXY-74D		
Lab Sample ID: FA90827-39		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23244.D	1	12/07/21 04:11	MV	12/02/21 08:00	OP88594	S4Q318
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052	0.0011	0.00056	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00040	0.0011	0.00056	0.00028	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00046	0.0011	0.00056	0.00028	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0039	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.39
4

Report of Analysis

Client Sample ID: TXY-74D	
Lab Sample ID: FA90827-39	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	69%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	70%		30-130%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	59%		30-130%
	d3-MeFOSAA	71%		40-140%
	d5-EtFOSAA	72%		40-140%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	64%		50-150%
	13C2-8:2FTS	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-73A		
Lab Sample ID: FA90827-40		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.1
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23245.D	1	12/07/21 04:26	MV	12/02/21 08:00	OP88594	S4Q318
Run #2	4Q23297.D	5	12/07/21 19:37	MV	12/02/21 08:00	OP88594	S4Q319

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2	1.99 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0045	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.101 ^a	0.0052	0.0026	0.0013	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID: TUG-73A	
Lab Sample ID: FA90827-40	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.1
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%	76%	40-140%
	13C5-PFPeA	75%	72%	50-150%
	13C5-PFHxA	76%	73%	50-150%
	13C4-PFHpA	76%	74%	50-150%
	13C8-PFOA	79%	78%	50-150%
	13C9-PFNA	79%	80%	50-150%
	13C6-PFDA	82%	80%	50-150%
	13C7-PFUnDA	79%	79%	40-140%
	13C2-PFDoDA	79%	78%	40-140%
	13C2-PFTeDA	80%	80%	30-130%
	13C3-PFBS	79%	77%	50-150%
	13C3-PFHxS	80%	79%	50-150%
	13C8-PFOS	78%	81%	50-150%
	13C8-FOSA	64%	67%	30-130%
	d3-MeFOSAA	70%	78%	40-140%
	d5-EtFOSAA	73%	74%	40-140%
	13C2-4:2FTS	71%	71%	50-150%
	13C2-6:2FTS	76%	72%	50-150%
	13C2-8:2FTS	77%	78%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID: TUG-73B		
Lab Sample ID: FA90827-41		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 77.7
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50061.D	1	12/07/21 02:53	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00064 U	0.0013	0.00064	0.00049	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-95-1	Perfluorononanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00064 U	0.0013	0.00064	0.00034	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0024	0.0013	0.00064	0.00032	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID: TUG-73B	
Lab Sample ID: FA90827-41	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 77.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	100%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	93%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	90%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-73C		
Lab Sample ID: FA90827-42		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 78.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50062.D	1	12/07/21 03:10	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00064 U	0.0013	0.00064	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-95-1	Perfluorononanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00064 U	0.0013	0.00064	0.00034	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00043	0.0013	0.00064	0.00032	mg/kg	J
2706-91-4	Perfluoropentanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00064	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.42
4

Report of Analysis

Client Sample ID: TUG-73C	
Lab Sample ID: FA90827-42	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00064 U	0.0013	0.00064	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	75%		40-140%
	13C2-PFDoDA	76%		40-140%
	13C2-PFTeDA	76%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	82%		30-130%
	d3-MeFOSAA	79%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.42
4

Report of Analysis

Client Sample ID: TUG-73D		
Lab Sample ID: FA90827-43		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 92.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50067.D	1	12/07/21 04:32	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.43
4

Report of Analysis

Client Sample ID: TUG-73D	
Lab Sample ID: FA90827-43	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 92.4
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	91%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	77%		30-130%
	d3-MeFOSAA	91%		40-140%
	d5-EtFOSAA	90%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	88%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-61		Date Sampled: 11/10/21
Lab Sample ID: FA90827-44		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 82.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50068.D	1	12/07/21 04:49	MV	12/02/21 08:00	OP88595	S3Q704
Run #2	3Q50104.D	10	12/08/21 13:06	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2	2.04 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00066	0.0012	0.00059	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0017	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0015	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0032	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00076	0.0012	0.00059	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00032	0.0012	0.00059	0.00030	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0102	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.221 ^a	0.012	0.0059	0.0030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00099	0.0012	0.00059	0.00030	mg/kg	J
335-77-3	Perfluorodecane sulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0075	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

Client Sample ID: TUG-61	Date Sampled: 11/10/21
Lab Sample ID: FA90827-44	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 82.4
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0089	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%	90%	40-140%
	13C5-PFPeA	86%	90%	50-150%
	13C5-PFHxA	86%	90%	50-150%
	13C4-PFHpA	86%	93%	50-150%
	13C8-PFOA	88%	94%	50-150%
	13C9-PFNA	79%	93%	50-150%
	13C6-PFDA	90%	101%	50-150%
	13C7-PFUnDA	88%	102%	40-140%
	13C2-PFDoDA	87%	90%	40-140%
	13C2-PFTeDA	87%	91%	30-130%
	13C3-PFBS	86%	90%	50-150%
	13C3-PFHxS	85%	98%	50-150%
	13C8-PFOS	77%	91%	50-150%
	13C8-FOSA	97%	108%	30-130%
	d3-MeFOSAA	94%	123%	40-140%
	d5-EtFOSAA	90%	113%	40-140%
	13C2-4:2FTS	80%	85%	50-150%
	13C2-6:2FTS	88%	98%	50-150%
	13C2-8:2FTS	89%	96%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.44
 4

Report of Analysis

Client Sample ID: FD-13		
Lab Sample ID: FA90827-45		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50069.D	1	12/07/21 05:05	MV	12/02/21 08:00	OP88595	S3Q704
Run #2	3Q50105.D	10	12/08/21 13:23	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2	2.08 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050	0.0011	0.00056	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0015	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0020	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0046	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.0016	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00079	0.0011	0.00056	0.00028	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0134	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00047	0.0011	0.00056	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.453 ^a	0.011	0.0056	0.0028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0019	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0108	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.45
4

Report of Analysis

Client Sample ID: FD-13	
Lab Sample ID: FA90827-45	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0141	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%	89%	40-140%
	13C5-PFPeA	81%	89%	50-150%
	13C5-PFHxA	82%	87%	50-150%
	13C4-PFHpA	83%	87%	50-150%
	13C8-PFOA	85%	91%	50-150%
	13C9-PFNA	70%	88%	50-150%
	13C6-PFDA	87%	91%	50-150%
	13C7-PFUnDA	86%	89%	40-140%
	13C2-PFDoDA	85%	90%	40-140%
	13C2-PFTeDA	84%	88%	30-130%
	13C3-PFBS	80%	86%	50-150%
	13C3-PFHxS	81%	89%	50-150%
	13C8-PFOS	64%	91%	50-150%
	13C8-FOSA	92%	104%	30-130%
	d3-MeFOSAA	91%	103%	40-140%
	d5-EtFOSAA	87%	99%	40-140%
	13C2-4:2FTS	77%	82%	50-150%
	13C2-6:2FTS	85%	91%	50-150%
	13C2-8:2FTS	85%	95%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.45
4

Report of Analysis

Client Sample ID: TUG-62		
Lab Sample ID: FA90827-46		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 95.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50108.D	1	12/08/21 14:12	MV	12/02/21 08:00	OP88595	S3Q705
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00049	0.0010	0.00052	0.00026	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00078	0.0010	0.00052	0.00026	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00047	0.0010	0.00052	0.00026	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00088	0.0010	0.00052	0.00026	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00068	0.0010	0.00052	0.00026	mg/kg	J
307-55-1	Perfluorododecanoic acid	0.0019	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00040	0.0010	0.00052	0.00026	mg/kg	J

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00066	0.0010	0.00052	0.00026	mg/kg	J
2706-91-4	Perfluoropentanesulfonic acid	0.00061	0.0010	0.00052	0.00026	mg/kg	J
355-46-4	Perfluorohexanesulfonic acid	0.0034	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00067	0.0010	0.00052	0.00026	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0367	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0018	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.0020	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.0014	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0092	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID:	TUG-62	Date Sampled:	11/10/21
Lab Sample ID:	FA90827-46	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	95.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0350	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	62%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	71%		30-130%
	d3-MeFOSAA	91%		40-140%
	d5-EtFOSAA	100%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	91%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-63		
Lab Sample ID: FA90827-47		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.7
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50071.D	1	12/07/21 05:38	MV	12/02/21 08:00	OP88595	S3Q704
Run #2	3Q50109.D	5	12/08/21 14:29	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2	2.03 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00046	0.0011	0.00056	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00041	0.0011	0.00056	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00063	0.0011	0.00056	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0011	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.201 ^a	0.0056	0.0028	0.0014	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00046	0.0011	0.00056	0.00028	mg/kg	J
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0234	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.47
4

Report of Analysis

Client Sample ID: TUG-63		Date Sampled: 11/10/21
Lab Sample ID: FA90827-47		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 87.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0145	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%	98%	40-140%
	13C5-PFPeA	89%	97%	50-150%
	13C5-PFHxA	92%	95%	50-150%
	13C4-PFHpA	92%	96%	50-150%
	13C8-PFOA	95%	103%	50-150%
	13C9-PFNA	85%	101%	50-150%
	13C6-PFDA	95%	101%	50-150%
	13C7-PFUnDA	94%	102%	40-140%
	13C2-PFDoDA	94%	100%	40-140%
	13C2-PFTeDA	92%	97%	30-130%
	13C3-PFBS	91%	99%	50-150%
	13C3-PFHxS	93%	98%	50-150%
	13C8-PFOS	83%	101%	50-150%
	13C8-FOSA	103%	112%	30-130%
	d3-MeFOSAA	84%	102%	40-140%
	d5-EtFOSAA	88%	96%	40-140%
	13C2-4:2FTS	83%	89%	50-150%
	13C2-6:2FTS	101%	105%	50-150%
	13C2-8:2FTS	94%	101%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.47
 4

Report of Analysis

Client Sample ID: TUG-64		
Lab Sample ID: FA90827-48		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 94.7
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50110.D	1	12/08/21 14:45	MV	12/02/21 08:00	OP88595	S3Q705
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00037	0.0011	0.00053	0.00027	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.0013	0.0011	0.00053	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00065	0.0011	0.00053	0.00027	mg/kg	J
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0025	0.0011	0.00053	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0017	0.0011	0.00053	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.48
4

Report of Analysis

Client Sample ID: TUG-64		Date Sampled: 11/10/21
Lab Sample ID: FA90827-48		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 94.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0027	0.0011	0.00053	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	105%		30-130%
	d3-MeFOSAA	115%		40-140%
	d5-EtFOSAA	113%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	96%		50-150%
	13C2-8:2FTS	98%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.48
 4

Report of Analysis

Client Sample ID: TUG-65		Date Sampled: 11/10/21
Lab Sample ID: FA90827-49		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 96.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	2Q82005.D	1	12/21/21 21:11	FS	12/13/21 09:00	OP88800	S2Q1159
Run #2 ^b	3Q50111.D	1	12/08/21 15:02	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2	2.00 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00034	0.0010	0.00051	0.00026	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.0045	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0418	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0014	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00084	0.0010	0.00051	0.00026	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.49
4

Report of Analysis

Client Sample ID: TUG-65	Date Sampled: 11/10/21
Lab Sample ID: FA90827-49	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 96.6
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0220	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%	0% ^c	40-140%
	13C5-PFPeA	89%	0% ^c	50-150%
	13C5-PFHxA	91%	0% ^c	50-150%
	13C4-PFHpA	92%	0% ^c	50-150%
	13C8-PFOA	93%	0% ^c	50-150%
	13C9-PFNA	94%	0% ^c	50-150%
	13C6-PFDA	93%	0% ^c	50-150%
	13C7-PFUnDA	94%	0% ^c	40-140%
	13C2-PFDoDA	95%	0% ^c	40-140%
	13C2-PFTeDA	97%	0% ^c	30-130%
	13C3-PFBS	89%	0% ^c	50-150%
	13C3-PFHxS	88%	0% ^c	50-150%
	13C8-PFOS	87%	0% ^c	50-150%
	13C8-FOSA	96%	0% ^c	30-130%
	d3-MeFOSAA	77%	0% ^c	40-140%
	d5-EtFOSAA	78%	0% ^c	40-140%
	13C2-4:2FTS	85%	0% ^c	50-150%
	13C2-6:2FTS	85%	0% ^c	50-150%
	13C2-8:2FTS	94%	0% ^c	50-150%

- (a) Sample re-extracted beyond hold time; re-extract results reported due to QC failure in original extract.
- (b) No Isotopes added.
- (c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.49
4

Report of Analysis

Client Sample ID: TUG-66		
Lab Sample ID: FA90827-50		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50074.D	1	12/07/21 06:28	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00030	0.0011	0.00057	0.00028	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0021	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	0.00030	0.0011	0.00057	0.00028	mg/kg	J
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.50
4

Report of Analysis

Client Sample ID:	TUG-66	Date Sampled:	11/10/21
Lab Sample ID:	FA90827-50	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	86.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	102%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	90%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-102A	
Lab Sample ID: FA90827-51	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.9
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50075.D	1	12/07/21 06:44	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.0027	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0242	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055	0.0012	0.00059	0.00029	mg/kg	J
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00036	0.0012	0.00059	0.00029	mg/kg	J
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.51
4

Report of Analysis

Client Sample ID: TXY-102A	
Lab Sample ID: FA90827-51	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0102	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.52
4

Client Sample ID: TXY-102B		
Lab Sample ID: FA90827-52		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.1
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50078.D	1	12/07/21 07:34	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053	0.0012	0.00061	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00068	0.0012	0.00061	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00048	0.0012	0.00061	0.00030	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00051	0.0012	0.00061	0.00030	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00049	0.0012	0.00061	0.00030	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-102B	
Lab Sample ID: FA90827-52	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.1
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	91%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	96%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.52
4

Report of Analysis

Client Sample ID: TXY-102C		Date Sampled: 11/10/21
Lab Sample ID: FA90827-53		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 78.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50079.D	1	12/07/21 07:51	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0013	0.0012	0.00061	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROALKYL SULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00087	0.0012	0.00061	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00078	0.0012	0.00061	0.00031	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-102C	
Lab Sample ID: FA90827-53	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 78.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	86%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	96%		30-130%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	93%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-110A	
Lab Sample ID: FA90827-54	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.3
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50080.D	1	12/07/21 08:07	MV	12/02/21 08:00	OP88595	S3Q704
Run #2	3Q50112.D	10	12/08/21 15:18	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2	2.08 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00050 U	0.0010	0.00050	0.00038	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00079	0.0010	0.00050	0.00025	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00050 U	0.0010	0.00050	0.00026	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0019	0.0010	0.00050	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0023	0.0010	0.00050	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.352 ^a	0.010	0.0050	0.0025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.54
4

Report of Analysis

Client Sample ID: TXY-110A	Date Sampled: 11/10/21
Lab Sample ID: FA90827-54	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 96.3
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%	72%	40-140%
	13C5-PFPeA	72%	71%	50-150%
	13C5-PFHxA	72%	71%	50-150%
	13C4-PFHpA	73%	71%	50-150%
	13C8-PFOA	75%	77%	50-150%
	13C9-PFNA	69%	76%	50-150%
	13C6-PFDA	76%	79%	50-150%
	13C7-PFUnDA	76%	73%	40-140%
	13C2-PFDoDA	74%	73%	40-140%
	13C2-PFTeDA	73%	73%	30-130%
	13C3-PFBS	73%	76%	50-150%
	13C3-PFHxS	74%	73%	50-150%
	13C8-PFOS	68%	76%	50-150%
	13C8-FOSA	75%	76%	30-130%
	d3-MeFOSAA	65%	74%	40-140%
	d5-EtFOSAA	67%	72%	40-140%
	13C2-4:2FTS	67%	68%	50-150%
	13C2-6:2FTS	71%	73%	50-150%
	13C2-8:2FTS	71%	71%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-110B		
Lab Sample ID: FA90827-55		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50081.D	1	12/07/21 08:24	MV	12/02/21 08:00	OP88595	S3Q704
Run #2	3Q50113.D	5	12/08/21 15:35	MV	12/02/21 08:00	OP88595	S3Q705

	Initial Weight	Final Volume
Run #1	2.05 g	1.0 ml
Run #2	2.05 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00072	0.0012	0.00061	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.115 ^a	0.0061	0.0030	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.55
4

Report of Analysis

Client Sample ID: TXY-110B	
Lab Sample ID: FA90827-55	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%	78%	40-140%
	13C5-PFPeA	91%	79%	50-150%
	13C5-PFHxA	91%	78%	50-150%
	13C4-PFHpA	91%	80%	50-150%
	13C8-PFOA	94%	83%	50-150%
	13C9-PFNA	89%	82%	50-150%
	13C6-PFDA	94%	85%	50-150%
	13C7-PFUnDA	91%	81%	40-140%
	13C2-PFDoDA	94%	80%	40-140%
	13C2-PFTeDA	93%	78%	30-130%
	13C3-PFBS	91%	82%	50-150%
	13C3-PFHxS	89%	80%	50-150%
	13C8-PFOS	88%	75%	50-150%
	13C8-FOSA	90%	82%	30-130%
	d3-MeFOSAA	96%	90%	40-140%
	d5-EtFOSAA	94%	91%	40-140%
	13C2-4:2FTS	85%	74%	50-150%
	13C2-6:2FTS	89%	79%	50-150%
	13C2-8:2FTS	90%	78%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-109A	
Lab Sample ID: FA90827-56	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 98.4
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50082.D	1	12/07/21 08:40	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00050 U	0.0010	0.00050	0.00038	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00050 U	0.0010	0.00050	0.00026	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.56
4

Report of Analysis

Client Sample ID: TXY-109A	
Lab Sample ID: FA90827-56	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 98.4
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	90%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	95%		50-150%
	13C7-PFUnDA	94%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	76%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	78%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	91%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-109B		
Lab Sample ID: FA90827-57		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50083.D	1	12/07/21 08:57	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.57
4

Report of Analysis

Client Sample ID: TXY-109B	
Lab Sample ID: FA90827-57	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	48%		40-140%
	13C5-PFPeA	51%		50-150%
	13C5-PFHxA	54%		50-150%
	13C4-PFHpA	57%		50-150%
	13C8-PFOA	62%		50-150%
	13C9-PFNA	63%		50-150%
	13C6-PFDA	67%		50-150%
	13C7-PFUnDA	66%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	69%		30-130%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	46%		30-130%
	d3-MeFOSAA	44%		40-140%
	d5-EtFOSAA	49%		40-140%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	67%		50-150%
	13C2-8:2FTS	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-108A	
Lab Sample ID: FA90827-58	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50084.D	1	12/07/21 09:14	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0012	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

Client Sample ID: TXY-108A	
Lab Sample ID: FA90827-58	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	84%		30-130%
	d3-MeFOSAA	89%		40-140%
	d5-EtFOSAA	88%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.58
4

Report of Analysis

4.59
4

Client Sample ID: TXY-108B		
Lab Sample ID: FA90827-59		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.9
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50085.D	1	12/07/21 09:30	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-108B	
Lab Sample ID: FA90827-59	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	86%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	88%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.59
4

Report of Analysis

Client Sample ID: TXY-111A	
Lab Sample ID: FA90827-60	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50086.D	1	12/07/21 09:47	MV	12/02/21 08:00	OP88595	S3Q704
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0027	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0048	0.0010	0.00051	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0070	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0016	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.60
4

Report of Analysis

Client Sample ID: TXY-111A	
Lab Sample ID: FA90827-60	Date Sampled: 11/10/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	98%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	97%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	67%		30-130%
	d3-MeFOSAA	81%		40-140%
	d5-EtFOSAA	83%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.60
4

Report of Analysis

Client Sample ID: TXY-111B		
Lab Sample ID: FA90827-61		Date Sampled: 11/10/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.8
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23420.D	1	12/09/21 02:53	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0021	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00075	0.0011	0.00056	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00073	0.0011	0.00056	0.00028	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0027	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.61
4

Report of Analysis

Client Sample ID: TXY-111B	Date Sampled: 11/10/21
Lab Sample ID: FA90827-61	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 85.8
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	59%		50-150%
	13C4-PFHpA	62%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	75%		40-140%
	13C2-PFDoDA	77%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	75%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	70%		30-130%
	d3-MeFOSAA	57%		40-140%
	d5-EtFOSAA	57%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	79%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.61
4

Report of Analysis

Client Sample ID: DEMO-19		Date Sampled: 11/11/21
Lab Sample ID: FA90827-62		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 84.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23421.D	1	12/09/21 03:08	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00042	0.0011	0.00057	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00094	0.0011	0.00057	0.00028	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00059	0.0011	0.00057	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0022	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.62
4

Report of Analysis

Client Sample ID:	DEMO-19	Date Sampled:	11/11/21
Lab Sample ID:	FA90827-62	Date Received:	11/16/21
Matrix:	SO - Soil	Percent Solids:	84.6
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	80%		40-140%
	13C2-PFDoDA	80%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	76%		30-130%
	d3-MeFOSAA	99%		40-140%
	d5-EtFOSAA	90%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-119A	
Lab Sample ID: FA90827-63	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23424.D	1	12/09/21 03:54	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00050 U	0.0010	0.00050	0.00038	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00050 U	0.0010	0.00050	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0095	0.0010	0.00050	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.63
4

Report of Analysis

Client Sample ID: TXY-119A	
Lab Sample ID: FA90827-63	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		40-140%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	75%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	75%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	77%		30-130%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	86%		40-140%
	d5-EtFOSAA	84%		40-140%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-119B		
Lab Sample ID: FA90827-64		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.7
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23425.D	1	12/09/21 04:09	MV	12/03/21 06:30	OP88620	S4Q320
Run #2 ^a	2Q82006.D	1	12/21/21 21:30	FS	12/13/21 09:00	OP88800	S2Q1159
Run #3 ^b	4Q23459.D	5	12/09/21 17:02	MV	12/03/21 06:30	OP88620	S4Q321

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2	2.05 g	1.0 ml
Run #3	1.99 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053	0.0012	0.00060	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00074	0.0012	0.00060	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00075	0.0012	0.00060	0.00030	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0565 ^c	0.0060	0.0030	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.64
4

Report of Analysis

Client Sample ID: TXY-119B	
Lab Sample ID: FA90827-64	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate ^d	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0030 U ^c	0.0060	0.0030	0.0015	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
13C4-PFBA		50%	82%	55%	40-140%
13C5-PFPeA		49% ^e	84%	51%	50-150%
13C5-PFHxA		49% ^e	86%	51%	50-150%
13C4-PFHpA		50%	87%	52%	50-150%
13C8-PFOA		52%	87%	57%	50-150%
13C9-PFNA		51%	86%	55%	50-150%
13C6-PFDA		53%	89%	58%	50-150%
13C7-PFUnDA		52%	88%	56%	40-140%
13C2-PFDoDA		51%	88%	56%	40-140%
13C2-PFTeDA		53%	90%	56%	30-130%
13C3-PFBS		51%	83%	50%	50-150%
13C3-PFHxS		49% ^e	83%	57%	50-150%
13C8-PFOS		47% ^e	79%	57%	50-150%
13C8-FOSA		54%	85%	66%	30-130%
d3-MeFOSAA		63%	77%	68%	40-140%
d5-EtFOSAA		61%	77%	67%	40-140%
13C2-4:2FTS		46% ^e	80%	49% ^e	50-150%
13C2-6:2FTS		48% ^e	79%	54%	50-150%
13C2-8:2FTS		49% ^e	77%	56%	50-150%

- (a) Confirmation run.
- (b) Dilution required due to matrix interference (ID recovery standard failure).
- (c) Result is from Run# 3
- (d) Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
- (e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.64
4

Report of Analysis

Client Sample ID: TXY-119C		
Lab Sample ID: FA90827-65		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 75.8
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23426.D	1	12/09/21 04:24	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	1.99 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00066 U	0.0013	0.00066	0.00050	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
375-95-1	Perfluorononanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00066 U	0.0013	0.00066	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00066	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.65
4

Report of Analysis

Client Sample ID: TXY-119C	Date Sampled: 11/11/21
Lab Sample ID: FA90827-65	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 75.8
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00066 U	0.0013	0.00066	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	90%		30-130%
	d3-MeFOSAA	109%		40-140%
	d5-EtFOSAA	100%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	87%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.65
4

Report of Analysis

Client Sample ID: TUG-69A		
Lab Sample ID: FA90827-66		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.8
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23427.D	1	12/09/21 04:39	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00085	0.0010	0.00052	0.00026	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.66
4

Report of Analysis

Client Sample ID: TUG-69A	
Lab Sample ID: FA90827-66	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.8
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	84%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	98%		40-140%
	d5-EtFOSAA	97%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.66
4

Report of Analysis

Client Sample ID: TUG-69B		Date Sampled: 11/11/21
Lab Sample ID: FA90827-67		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 82.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23430.D	1	12/09/21 05:24	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00048	0.0012	0.00058	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0016	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.67
4

Report of Analysis

Client Sample ID: TUG-69B	
Lab Sample ID: FA90827-67	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		40-140%
	13C5-PFPeA	57%		50-150%
	13C5-PFHxA	57%		50-150%
	13C4-PFHpA	57%		50-150%
	13C8-PFOA	60%		50-150%
	13C9-PFNA	62%		50-150%
	13C6-PFDA	62%		50-150%
	13C7-PFUnDA	62%		40-140%
	13C2-PFDoDA	61%		40-140%
	13C2-PFTeDA	63%		30-130%
	13C3-PFBS	56%		50-150%
	13C3-PFHxS	58%		50-150%
	13C8-PFOS	59%		50-150%
	13C8-FOSA	63%		30-130%
	d3-MeFOSAA	74%		40-140%
	d5-EtFOSAA	71%		40-140%
	13C2-4:2FTS	53%		50-150%
	13C2-6:2FTS	56%		50-150%
	13C2-8:2FTS	58%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.67
4

Report of Analysis

Client Sample ID: FD-14		
Lab Sample ID: FA90827-68		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 97.1
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23431.D	1	12/09/21 05:39	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00096	0.0010	0.00051	0.00026	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.68
4

Report of Analysis

Client Sample ID: FD-14		
Lab Sample ID: FA90827-68		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 97.1
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		40-140%
	13C5-PFPeA	78%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	84%		50-150%
	13C7-PFUnDA	82%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	84%		30-130%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	85%		40-140%
	d5-EtFOSAA	85%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.68
4

Report of Analysis

Client Sample ID: TUG-68A		
Lab Sample ID: FA90827-69		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23432.D	1	12/09/21 05:54	MV	12/03/21 06:30	OP88620	S4Q320
Run #2 ^a	2Q82008.D	1	12/21/21 22:07	FS	12/13/21 09:00	OP88800	S2Q1159
Run #3	4Q23460.D	5	12/09/21 17:17	MV	12/03/21 06:30	OP88620	S4Q321

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2	1.99 g	1.0 ml
Run #3	2.02 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYLCARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid ^c	0.00041	0.0012	0.00059	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid ^d	0.00042	0.0012	0.00059	0.00029	mg/kg	J
335-76-2	Perfluorodecanoic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic aci ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid ^e	0.00059	0.0012	0.00059	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic aci ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid ^c	0.129 ^f	0.0059	0.0029	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.69
4

Report of Analysis

Client Sample ID: TUG-68A		
Lab Sample ID: FA90827-69		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.4
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate ^b	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate ^e	0.00055	0.0012	0.00059	0.00029	mg/kg	J
39108-34-4	8:2 Fluorotelomer sulfonate ^c	0.0053	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
13C4-PFBA		43%	80%	43%	40-140%
13C5-PFPeA		41% ^g	82%	40% ^g	50-150%
13C5-PFHxA		41% ^g	84%	41% ^g	50-150%
13C4-PFHpA		43% ^g	85%	42% ^g	50-150%
13C8-PFOA		44% ^g	85%	43% ^g	50-150%
13C9-PFNA		43% ^g	83%	44% ^g	50-150%
13C6-PFDA		44% ^g	86%	43% ^g	50-150%
13C7-PFUnDA		44%	86%	44%	40-140%
13C2-PFDoDA		43%	87%	43%	40-140%
13C2-PFTeDA		46%	89%	43%	30-130%
13C3-PFBS		41% ^g	81%	45% ^g	50-150%
13C3-PFHxS		43% ^g	82%	45% ^g	50-150%
13C8-PFOS		40% ^g	76%	41% ^g	50-150%
13C8-FOSA		48%	86%	50%	30-130%
d3-MeFOSAA		54%	77%	51%	40-140%
d5-EtFOSAA		53%	77%	50%	40-140%
13C2-4:2FTS		39% ^g	78%	40% ^g	50-150%
13C2-6:2FTS		42% ^g	77%	41% ^g	50-150%
13C2-8:2FTS		43% ^g	77%	43% ^g	50-150%

- (a) Confirmation run.
- (b) Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
- (c) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
- (d) Associated ID Standard outside control limits due to matrix interference.
- (e) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
- (f) Result is from Run# 3
- (g) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.69
4

Report of Analysis

4.70
4

Client Sample ID: TUG-68B		Date Sampled: 11/11/21
Lab Sample ID: FA90827-70		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 79.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23433.D	1	12/09/21 06:09	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055	0.0012	0.00061	0.00031	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00041	0.0012	0.00061	0.00031	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-68B	
Lab Sample ID: FA90827-70	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 79.8
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		40-140%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	71%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	72%		40-140%
	13C2-PFDoDA	72%		40-140%
	13C2-PFTeDA	77%		30-130%
	13C3-PFBS	69%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	62%		30-130%
	d3-MeFOSAA	88%		40-140%
	d5-EtFOSAA	84%		40-140%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.70
4

Report of Analysis

Client Sample ID: TUG-68C		
Lab Sample ID: FA90827-71		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23434.D	1	12/09/21 06:24	MV	12/03/21 06:30	OP88620	S4Q320
Run #2 ^a	2Q82009.D	1	12/21/21 22:26	FS	12/13/21 09:00	OP88800	S2Q1159

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2	2.07 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid ^b	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid ^c	0.00044	0.0011	0.00057	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid ^c	0.0071	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic aci ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid ^c	0.0074	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic aci ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate ^c	0.00055	0.0011	0.00057	0.00029	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.71
4

Report of Analysis

Client Sample ID: TUG-68C	
Lab Sample ID: FA90827-71	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.2
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate ^b	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	39% ^d	69%	40-140%
	13C5-PFPeA	38% ^d	72%	50-150%
	13C5-PFHxA	39% ^d	74%	50-150%
	13C4-PFHpA	40% ^d	76%	50-150%
	13C8-PFOA	42% ^d	76%	50-150%
	13C9-PFNA	43% ^d	76%	50-150%
	13C6-PFDA	43% ^d	76%	50-150%
	13C7-PFUnDA	42%	76%	40-140%
	13C2-PFDoDA	43%	77%	40-140%
	13C2-PFTeDA	44%	80%	30-130%
	13C3-PFBS	40% ^d	73%	50-150%
	13C3-PFHxS	42% ^d	72%	50-150%
	13C8-PFOS	42% ^d	72%	50-150%
	13C8-FOSA	30%	44%	30-130%
	d3-MeFOSAA	45%	63%	40-140%
	d5-EtFOSAA	45%	64%	40-140%
	13C2-4:2FTS	38% ^d	71%	50-150%
	13C2-6:2FTS	40% ^d	71%	50-150%
	13C2-8:2FTS	41% ^d	70%	50-150%

- (a) Confirmation run beyond holdtime.
- (b) Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
- (c) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
- (d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.71
4

Report of Analysis

Client Sample ID: TXY-116A	
Lab Sample ID: FA90827-72	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.4
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23435.D	1	12/09/21 06:39	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00071	0.0010	0.00051	0.00025	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00050	0.0010	0.00051	0.00025	mg/kg	J
307-55-1	Perfluorododecanoic acid	0.0023	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00075	0.0010	0.00051	0.00025	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.72
4

Report of Analysis

Client Sample ID: TXY-116A	
Lab Sample ID: FA90827-72	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.4
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	104%		30-130%
	d3-MeFOSAA	135%		40-140%
	d5-EtFOSAA	130%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.72
4

Report of Analysis

Client Sample ID: TXY-116B	
Lab Sample ID: FA90827-73	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.9
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23436.D	1	12/09/21 06:54	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0011	0.0012	0.00059	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00036	0.0012	0.00059	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.73
4

Report of Analysis

Client Sample ID: TXY-116B	
Lab Sample ID: FA90827-73	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.9
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		40-140%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	80%		40-140%
	13C2-PFDoDA	81%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	78%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	79%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.73
4

Report of Analysis

Client Sample ID: TXY-116C		
Lab Sample ID: FA90827-74		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23437.D	1	12/09/21 07:09	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.74
4

Report of Analysis

Client Sample ID: TXY-116C	
Lab Sample ID: FA90827-74	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	101%		40-140%
	13C2-PFDoDA	100%		40-140%
	13C2-PFTeDA	106%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	79%		30-130%
	d3-MeFOSAA	130%		40-140%
	d5-EtFOSAA	125%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	100%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.74
4

Report of Analysis

Client Sample ID: FD-15		
Lab Sample ID: FA90827-75		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 95.3
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23438.D	1	12/09/21 07:24	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00070	0.0010	0.00052	0.00026	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00060	0.0010	0.00052	0.00026	mg/kg	J
307-55-1	Perfluorododecanoic acid	0.0022	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00083	0.0010	0.00052	0.00026	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.75
4

Report of Analysis

Client Sample ID: FD-15		Date Sampled: 11/11/21
Lab Sample ID: FA90827-75		Date Received: 11/16/21
Matrix: SO - Soil		Percent Solids: 95.3
Method: EPA 537M BY ID IN HOUSE		
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	78%		40-140%
	13C2-PFDoDA	77%		40-140%
	13C2-PFTeDA	77%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	88%		30-130%
	d3-MeFOSAA	112%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.75
4

Report of Analysis

Client Sample ID: TXY-103A		
Lab Sample ID: FA90827-76		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.1
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23439.D	1	12/09/21 07:40	MV	12/03/21 06:30	OP88620	S4Q320
Run #2 ^a	2Q82012.D	1	12/21/21 23:21	FS	12/13/21 09:00	OP88800	S2Q1159

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2	1.99 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid ^b	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid ^c	0.00035	0.0012	0.00058	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid ^c	0.00030	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid ^d	0.00092	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid ^d	0.0164	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid ^b	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid ^d	0.00077	0.0012	0.00058	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid ^d	0.00040	0.0012	0.00058	0.00029	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid ^d	0.0036	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.76
4

Report of Analysis

Client Sample ID: TXY-103A	
Lab Sample ID: FA90827-76	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.1
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate ^b	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	34% ^e	77%	40-140%
	13C5-PFPeA	34% ^e	80%	50-150%
	13C5-PFHxA	34% ^e	83%	50-150%
	13C4-PFHpA	36% ^e	86%	50-150%
	13C8-PFOA	37% ^e	85%	50-150%
	13C9-PFNA	39% ^e	87%	50-150%
	13C6-PFDA	39% ^e	90%	50-150%
	13C7-PFUnDA	39% ^e	88%	40-140%
	13C2-PFDoDA	38% ^e	88%	40-140%
	13C2-PFTeDA	41%	91%	30-130%
	13C3-PFBS	37% ^e	84%	50-150%
	13C3-PFHxS	37% ^e	83%	50-150%
	13C8-PFOS	39% ^e	81%	50-150%
	13C8-FOSA	29% ^e	58%	30-130%
	d3-MeFOSAA	44%	66%	40-140%
	d5-EtFOSAA	44%	67%	40-140%
	13C2-4:2FTS	33% ^e	79%	50-150%
	13C2-6:2FTS	37% ^e	79%	50-150%
	13C2-8:2FTS	37% ^e	79%	50-150%

- (a) Confirmation run.
- (b) Associated ID Standard outside control limits. Confirmed ND by re-extraction and reanalysis.
- (c) Associated ID Standard outside control limits due to matrix interference.
- (d) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
- (e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.76
4

Report of Analysis

Client Sample ID: TXY-103B		
Lab Sample ID: FA90827-77		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 77.8
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23442.D	1	12/09/21 08:25	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00063 U	0.0013	0.00063	0.00048	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00033	0.0013	0.00063	0.00032	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
375-95-1	Perfluorononanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00063 U	0.0013	0.00063	0.00034	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0032	0.0013	0.00063	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0032	0.0013	0.00063	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00032	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.77
4

Report of Analysis

Client Sample ID: TXY-103B	
Lab Sample ID: FA90827-77	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 77.8
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00063 U	0.0013	0.00063	0.00032	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	61%		50-150%
	13C5-PFHxA	61%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	67%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	67%		40-140%
	13C2-PFDoDA	67%		40-140%
	13C2-PFTeDA	71%		30-130%
	13C3-PFBS	62%		50-150%
	13C3-PFHxS	62%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	68%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	58%		50-150%
	13C2-6:2FTS	63%		50-150%
	13C2-8:2FTS	63%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.77
4

Report of Analysis

4.78
4

Client Sample ID: TXY-103C	Date Sampled: 11/11/21
Lab Sample ID: FA90827-78	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 88.5
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23443.D	1	12/09/21 08:40	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00048	0.0011	0.00056	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.0013	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-103C	Date Sampled: 11/11/21
Lab Sample ID: FA90827-78	Date Received: 11/16/21
Matrix: SO - Soil	Percent Solids: 88.5
Method: EPA 537M BY ID IN HOUSE	
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	96%		30-130%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	71%		30-130%
	d3-MeFOSAA	97%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	87%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.78
4

Report of Analysis

Client Sample ID: FD-16		
Lab Sample ID: FA90827-79		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.2
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23444.D	1	12/09/21 08:55	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00043	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0064	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0025	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.79
4

Report of Analysis

Client Sample ID: FD-16		
Lab Sample ID: FA90827-79		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.2
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%		40-140%
	13C5-PFPeA	54%		50-150%
	13C5-PFHxA	55%		50-150%
	13C4-PFHpA	56%		50-150%
	13C8-PFOA	58%		50-150%
	13C9-PFNA	61%		50-150%
	13C6-PFDA	61%		50-150%
	13C7-PFUnDA	59%		40-140%
	13C2-PFDoDA	59%		40-140%
	13C2-PFTeDA	63%		30-130%
	13C3-PFBS	56%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	59%		50-150%
	13C8-FOSA	38%		30-130%
	d3-MeFOSAA	73%		40-140%
	d5-EtFOSAA	70%		40-140%
	13C2-4:2FTS	53%		50-150%
	13C2-6:2FTS	56%		50-150%
	13C2-8:2FTS	59%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-104A	
Lab Sample ID: FA90827-80	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217461	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23445.D	1	12/09/21 09:10	MV	12/03/21 06:30	OP88620	S4Q320
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0032	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.80
4

Report of Analysis

Client Sample ID: TXY-104A	
Lab Sample ID: FA90827-80	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.7
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	86%		40-140%
	13C2-PFTeDA	92%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	101%		30-130%
	d3-MeFOSAA	114%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.80
4

Report of Analysis

Client Sample ID: TXY-104B		
Lab Sample ID: FA90827-81		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.0
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23505.D	1	12/10/21 04:35	MV	12/06/21 07:00	OP88648	S4Q321
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.81
4

Report of Analysis

Client Sample ID: TXY-104B	
Lab Sample ID: FA90827-81	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 82.0
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		40-140%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	68%		40-140%
	13C2-PFDoDA	68%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	63%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	65%		50-150%
	13C8-FOSA	80%		30-130%
	d3-MeFOSAA	80%		40-140%
	d5-EtFOSAA	78%		40-140%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	65%		50-150%
	13C2-8:2FTS	66%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-104C		
Lab Sample ID: FA90827-82		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.5
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23506.D	1	12/10/21 04:50	MV	12/06/21 07:00	OP88648	S4Q321
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.82
4

Report of Analysis

Client Sample ID: TXY-104C	
Lab Sample ID: FA90827-82	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.5
Project: 1217461	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		40-140%
	13C5-PFPeA	58%		50-150%
	13C5-PFHxA	58%		50-150%
	13C4-PFHpA	61%		50-150%
	13C8-PFOA	63%		50-150%
	13C9-PFNA	64%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	62%		40-140%
	13C2-PFDoDA	62%		40-140%
	13C2-PFTeDA	66%		30-130%
	13C3-PFBS	59%		50-150%
	13C3-PFHxS	61%		50-150%
	13C8-PFOS	59%		50-150%
	13C8-FOSA	70%		30-130%
	d3-MeFOSAA	73%		40-140%
	d5-EtFOSAA	71%		40-140%
	13C2-4:2FTS	55%		50-150%
	13C2-6:2FTS	59%		50-150%
	13C2-8:2FTS	60%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.82
4

Report of Analysis

Client Sample ID: FD-17		
Lab Sample ID: FA90827-83		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.4
Project: 1217461		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23507.D	1	12/10/21 05:05	MV	12/06/21 07:00	OP88648	S4Q321
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0030	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.83
4

Report of Analysis

Client Sample ID: FD-17		
Lab Sample ID: FA90827-83		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/16/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.4
Project: 1217461		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	91%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	100%		30-130%
	d3-MeFOSAA	107%		40-140%
	d5-EtFOSAA	100%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M BY ID	SO	Certified by SOP MS014
6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M BY ID	SO	Certified by SOP MS014
8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M BY ID	SO	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	SO	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	SO	Certified by SOP MS014
PFOSA	754-91-6	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanoic acid	375-22-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanesulfonic acid	335-77-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanesulfonic acid	375-92-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanesulfonic acid	68259-12-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanoic acid	375-95-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanesulfonic acid	2706-91-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanoic acid	2706-90-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	SO	Certified by SOP MS014

SGS North America Inc.
CHAIN OF CUSTODY RECORD



FA90827

Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 1 of 9		
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless						
PROJECT NAME: 1217461		PWSID#:		CONTAINER	Preservative Used: NONE	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com								
INVOICE TO: SGS - Alaska 680230		QUOTE #: 1217461								
env.alaska.accounting@sgs.com		P.O. #:								
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	TYPE				
1	TXY-122A	11/09/2021	13:20:00	Solid	1	X				1217461001
2	TXY-122B	11/09/2021	13:25:00	Solid	1	X				1217461002
3	TXY-122C	11/09/2021	13:30:00	Solid	1	X				1217461003
4	TXY-122D	11/09/2021	13:35:00	Solid	1	X				1217461004
5	TXY-121A	11/09/2021	14:00:00	Solid	1	X				1217461005
6	TXY-121B	11/09/2021	14:05:00	Solid	1	X				1217461006
7	TXY-121C	11/09/2021	14:10:00	Solid	1	X				1217461007
8	TXY-121D	11/09/2021	14:15:00	Solid	1	X				1217461008
9	TUG-72A	11/09/2021	14:45:00	Solid	1	X				1217461009
10	TUG-72B	11/09/2021	14:50:00	Solid	1	X				1217461010
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Data Deliverable Requirements:		
Julie Shumway		11/15/21	10:33	VPS		YES ⁷⁵ NO		Level 2		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:				
VPS						Requested Turnaround Time and/or Special Instructions: MAY BE HOT - AIRPORT SAMPLES Full List 24				
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)		
						3.8 IR24		INTACT <input checked="" type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>		
Relinquished By: (4)		Date	Time	Received For Laboratory By:						
				Pant 11/16/21 1015						

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

INITIAL ASSESSMENT SP

LABEL VERIFICATION MP

F088_COC_REF_LAB_20190411

FA90827: Chain of Custody

Page 1 of 10



5.2
5

SGS North America Inc.
CHAIN OF CUSTODY RECORD



FA90827

Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 2 of 9																						
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																										
PROJECT NAME: 1217461		PWSID#: _____		<table border="1"> <tr> <td rowspan="4">CONTRACT A I N E R S</td> <td rowspan="4">#</td> <td rowspan="4">Preservative Used:</td> <td rowspan="4">NONE</td> <td rowspan="4">EPA 537 PFAS - CONFIRM LIST</td> <td rowspan="4">MS</td> <td rowspan="4">MSD</td> <td rowspan="4">SGS lab #</td> <td rowspan="4">Location ID</td> </tr> <tr> <td rowspan="3">TYPE</td> <td rowspan="3">C = COMP</td> <td rowspan="3">G = GRAB</td> <td rowspan="3">M = Multi-Incremental Soils</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>						CONTRACT A I N E R S	#	Preservative Used:	NONE	EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID	TYPE	C = COMP	G = GRAB	M = Multi-Incremental Soils								
CONTRACT A I N E R S	#	Preservative Used:	NONE																				EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID			
																												TYPE	C = COMP	G = GRAB
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com																												
INVOICE TO: SGS - Alaska <i>486237</i>		QUOTE #: _____		P.O. #: 1217461																										
env.alaska.accounting@sgs.com		E-MAIL: Env.Alaska.ReflabTeam@sgs.com																												
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	TYPE	C = COMP	G = GRAB	M = Multi-Incremental Soils	EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID																
	TUG-72C	11/09/2021	14:55:00	Solid	1					X			1217461011																	
	TUG-72D	11/09/2021	15:00:00	Solid	1					X			1217461012																	
	TUG-71A	11/09/2021	15:40:00	Solid	1					X			1217461013																	
	TUG-71B	11/09/2021	15:45:00	Solid	1					X			1217461014																	
	TUG-71C	11/09/2021	15:50:00	Solid	1					X			1217461015																	
	TUG-70A	11/09/2021	16:00:00	Solid	1					X			1217461016																	
	TUG-70B	11/09/2021	16:05:00	Solid	1					X			1217461017																	
	TUG-70C	11/09/2021	16:10:00	Solid	1					X			1217461018																	
	FD-12	11/09/2021	16:30:00	Solid	1					X			1217461019																	
	TUG-84	11/10/2021	08:30:00	Solid	1					X			1217461020																	
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)?		Data Deliverable Requirements:																				
<i>[Signature]</i>		11/15/21	1023	VPS		YES <i>26</i> NO		YES		Level 2																				
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:																								
VPS						Requested Turnaround Time and/or Special Instructions: <i>MAY BE HOT - AIRPORT SAMPLES</i> Full List <i>24</i>																								
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)																						
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		INTACT BROKEN ABSENT																						
				<i>Reault</i>																										

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 3 of 9				
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1217461		PWSID#:		CONCENTRATIONS	Preservative Used: NONE	TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: SGS - Alaska		QUOTE #:										
env.alaska.accounting@sgs.com		P.O. #: 1217461										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE								
21	TXY-137A	11/10/2021	08:45:00	Solid 1			X				1217461021	
22	TXY-137B	11/10/2021	08:50:00	Solid 1			X				1217461022	
23	TXY-137C	11/10/2021	08:55:00	Solid 1			X				1217461023	
24	TXY-136A	11/10/2021	09:10:00	Solid 1			X				1217461024	
25	TXY-136B	11/10/2021	09:15:00	Solid 1			X				1217461025	
26	TXY-136C	11/10/2021	09:20:00	Solid 1			X				1217461026	
27	TXY-127A	11/10/2021	09:30:00	Solid 1			X				1217461027	
28	TXY-127B	11/10/2021	09:35:00	Solid 1			X				1217461028	
29	TXY-127C	11/10/2021	09:40:00	Solid 1			X				1217461029	
30	TXY-127D	11/10/2021	09:45:00	Solid 1			X				1217461030	
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)?		Data Deliverable Requirements:		
<i>J. Shumway</i>		11/15/21	10:00	<i>UPS</i>		YES <i>3/5</i>		YES		Level 2		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:						
<i>UPS</i>						Requested Turnaround Time and/or Special Instructions: <i>MAY BE HOT - AIRPORT SAMPLES</i> Full List <i>2/4</i>						
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)				
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		INTACT BROKEN ABSENT				
				<i>PHH</i>								

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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1217461		PWSID#:		CONTAINER	Preservative Used: NONE	TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: SGS - Alaska		QUOTE #: 1217461										
env.alaska.accounting@sgs.com		P.O. #:										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE								
31	FD-12	11/10/2021	09:25:00	Solid	1		X				1217461031	
32	TXY-126A	11/10/2021	10:00:00	Solid	1		X				1217461032	
33	TXY-126B	11/10/2021	10:05:00	Solid	1		X				1217461033	
34	TXY-126C	11/10/2021	10:10:00	Solid	1		X				1217461034	
35	TXY-126D	11/10/2021	10:15:00	Solid	1		X				1217461035	
36	TUG-74A	11/10/2021	10:45:00	Solid	1		X				1217461036	
37	TUG-74B	11/10/2021	10:50:00	Solid	1		X				1217461037	
38	TUG-74C	11/10/2021	10:55:00	Solid	1		X				1217461038	
39	TUG-74D	11/10/2021	11:00:00	Solid	1		X				1217461039	
40	TUG-73A	11/10/2021	11:15:00	Solid	1		X				1217461040	
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)?		Data Deliverable Requirements:		
Julie Shumway		11/15/21	10:33	VP5		YES		YES		Level 2		
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:						
VP5						Requested Turnaround Time and-or Special Instructions: MAY BE HOT - AIRPORT SAMPLES Full List 24						
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)				
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		INTACT BROKEN ABSENT				

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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																																														
PROJECT NAME: 1217461		PWSID#:		<table border="1"> <tr> <td rowspan="4">CONTAINER</td> <td rowspan="4">#</td> <td rowspan="4">Preservative Used:</td> <td rowspan="4">NONE</td> <td rowspan="4">TYPE</td> <td rowspan="4">C = COMP G = GRAB M = Multi-Incremental Soils</td> <td rowspan="4">EPA 537 PFAS-CONFIRM LIST</td> <td rowspan="4">MS</td> <td rowspan="4">MSD</td> <td rowspan="4">SGS lab #</td> <td rowspan="4">Location ID</td> </tr> <tr> <td rowspan="3">RESERVED for lab use</td> <td>SAMPLE IDENTIFICATION</td> <td>DATE mm/dd/yy</td> <td>TIME HHMM</td> <td>MATRIX/MATRIX CODE</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								CONTAINER	#	Preservative Used:	NONE	TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID	RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE																							
CONTAINER	#	Preservative Used:	NONE																					TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID																				
																															RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE															
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com																																																
INVOICE TO: SGS - Alaska		QUOTE #:																																																
env.alaska.accounting@sgs.com		P.O. #: 1217461																																																
RESERVED for lab use		SAMPLE IDENTIFICATION		DATE mm/dd/yy		TIME HHMM		MATRIX/MATRIX CODE																																										
U1		TUG-73B		11/10/2021		11:20:00		Solid 1		1217461041																																								
U2		TUG-73C		11/10/2021		11:25:00		Solid 1		1217461042																																								
U3		TUG-73D		11/10/2021		11:30:00		Solid 1		1217461043																																								
U4		TUG-61		11/10/2021		13:20:00		Solid 1		1217461044																																								
U5		FD-13		11/10/2021		13:15:00		Solid 1		1217461045																																								
U6		TUG-62		11/10/2021		13:30:00		Solid 1		1217461046																																								
U7		TUG-63		11/10/2021		13:40:00		Solid 1		1217461047																																								
U8		TUG-64		11/10/2021		13:45:00		Solid 1		1217461048																																								
U9		TUG-65		11/10/2021		13:55:00		Solid 1		1217461049																																								
S0		TUG-66		11/10/2021		14:00:00		Solid 1		1217461050																																								
Relinquished By: (1)		Date		Time		Received By:		DOD Project?		Data Deliverable Requirements:																																								
Julie Shumway		11/15/21		1033		VPS		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Level 2																																								
Relinquished By: (2)		Date		Time		Received By:		Report to DL (J Flags)?		Cooler ID:																																								
VPS								YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Requested Turnaround Time and-or Special Instructions:																																								
Relinquished By: (3)		Date		Time		Received By:		If J-Report as DLJLOD/LOQ		MAY BE HOT - AIRPORT SAMPLES																																								
								YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Full List <input checked="" type="checkbox"/>																																								
Relinquished By: (4)		Date		Time		Received For Laboratory By:		Temp Blank °C:		Chain of Custody Seal: (Circle)																																								
						Denny		or Ambient []		INTACT <input checked="" type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>																																								

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 6 of 9									
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless													
PROJECT NAME: 1217461		PWSID#:		CONTAINER	Preservative Used: NONE	TYPE	C = COMP	G = GRAB	M = Multi Incremental	S = Soils	EPA 537 PFAS - CONFIRM LIST	MS	MSD	SGS lab #	Location ID		
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com															
INVOICE TO: SGS - Alaska <i>026230</i>		QUOTE #:															
env.alaska.accounting@sgs.com		P.O. #: 1217461															
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE													
<i>51</i>	TXY-102A	11/10/2021	14:10:00	Solid	1												1217461051
<i>52</i>	TXY-102B	11/10/2021	14:15:00	Solid	1												1217461052
<i>53</i>	TXY-102C	11/10/2021	14:20:00	Solid	1												1217461053
<i>54</i>	TXY-110A	11/10/2021	14:45:00	Solid	1												1217461054
<i>55</i>	TXY-110B	11/10/2021	14:50:00	Solid	1												1217461055
<i>56</i>	TXY-109A	11/10/2021	14:55:00	Solid	1												1217461056
<i>57</i>	TXY-109B	11/10/2021	15:00:00	Solid	1												1217461057
<i>58</i>	TXY-108A	11/10/2021	15:20:00	Solid	1												1217461058
<i>59</i>	TXY-108B	11/10/2021	15:25:00	Solid	1												1217461059
<i>60</i>	TXY-111A	11/10/2021	15:40:00	Solid	1												1217461060
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)?		Data Deliverable Requirements:							
<i>J. Shumway</i>		<i>11/15/21</i>	<i>10:33</i>	<i>VP5</i>		<i>YES</i>		<i>NO</i>		Level 2							
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:											
<i>VP5</i>						Requested Turnaround Time and-or Special Instructions: <i>MAY BE HOT - AIRPORT SAMPLES</i> Full List <i>54</i>											
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)									
						or Ambient []		INTACT BROKEN ABSENT									
Relinquished By: (4)		Date	Time	Received For Laboratory By:													
				<i>VP5</i>													

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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																																												
PROJECT NAME: 1217461		PWSID#: NPDL#:		<table border="1"> <tr> <td rowspan="3">CONTAINER</td> <td>Preservative Used:</td> <td>NONE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>TYPE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>C = COMP G = GRAB MI = Multi Incremental Soils</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								CONTAINER	Preservative Used:	NONE											TYPE												C = COMP G = GRAB MI = Multi Incremental Soils											
CONTAINER	Preservative Used:	NONE																																														
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REPORTS TO: Julie Shumway		E-MAIL: Julie_Shumway@sgs.com																																														
		Env.Alaska.RefLabTeam@sgs.com																																														
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RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	MS	MSD	SGS lab #	Location ID																																							
b1	TXY-111B	11/10/2021	15:45:00	Solid	1			1217461061																																								
b2	DEMO-19	11/11/2021	09:00:00	Solid	1			1217461062																																								
b3	TXY-119A	11/11/2021	09:30:00	Solid	1			1217461063																																								
b4	TXY-119B	11/11/2021	09:35:00	Solid	1			1217461064																																								
b5	TXY-119C	11/11/2021	09:40:00	Solid	1			1217461065																																								
b6	TUG-69A	11/11/2021	10:00:00	Solid	1			1217461066																																								
b7	TUG-69B	11/11/2021	10:05:00	Solid	1			1217461067																																								
b8	FD-14	11/11/2021	09:55:00	Solid	1			1217461068																																								
b9	TUG-68A	11/11/2021	10:15:00	Solid	1			1217461069																																								
b10	TUG-68B	11/11/2021	10:20:00	Solid	1			1217461070																																								
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Data Deliverable Requirements:																																								
<i>J. Shumway</i>		11/15/21	10:33	<i>VPS</i>		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Level 2																																								
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and-or Special Instructions:																																								
<i>VPS</i>								MAY BE HOT - AIRPORT SAMPLES Full List <i>24</i>																																								
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)																																								
						or Ambient []		INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>																																								
Relinquished By: (4)		Date	Time	Received For Laboratory By:																																												
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CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																																	
PROJECT NAME: 1217461		PWSID#: _____		<table border="1"> <tr> <td rowspan="3">CONTAINER</td> <td rowspan="3">Preservative Used:</td> <td rowspan="3">NONE</td> <td rowspan="3">TYPE</td> <td rowspan="3">C = COMP G = GRAB M = Multi-Incremental Soils</td> <td rowspan="3">EPA 537 PFAS-CONFIRM LIST</td> <td rowspan="3">MS</td> <td rowspan="3">MSD</td> <td rowspan="3">SGS lab #</td> <td rowspan="3">Location ID</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>								CONTAINER	Preservative Used:	NONE	TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID																
CONTAINER	Preservative Used:	NONE	TYPE																			C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID										
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com																																			
		Env.Alaska.RefLabTeam@sgs.com																																			
INVOICE TO: SGS - Alaska		QUOTE #: 686280																																			
env.alaska.accounting@sgs.com		P.O. #: 1217461																																			
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE																																	
71	TUG-68C	11/11/2021	10:25:00	Solid	1	X				1217461071																											
72	TXY-116A	11/11/2021	10:45:00	Solid	1	X				1217461072																											
73	TXY-116B	11/11/2021	10:50:00	Solid	1	X				1217461073																											
74	TXY-116C	11/11/2021	10:55:00	Solid	1	X				1217461074																											
75	FD-15	11/11/2021	11:00:00	Solid	1	X				1217461075																											
76	TXY-103A	11/11/2021	11:15:00	Solid	1	X				1217461076																											
77	TXY-103B	11/11/2021	11:20:00	Solid	1	X				1217461077																											
78	TXY-103C	11/11/2021	11:25:00	Solid	1	X				1217461078																											
79	FD-16	11/11/2021	11:30:00	Solid	1	X				1217461079																											
80	TXY-104A	11/11/2021	11:40:00	Solid	1	X				1217461080																											
Relinquished By: (1) <i>Julie Shumway</i>		Date	Time	Received By:		DOD Project? YES		Data Deliverable Requirements:																													
		11/15/21	1033	<i>VPS</i>		Report to DL (J Flags)? YES		Level 2																													
Relinquished By: (2) <i>VPS</i>		Date	Time	Received By:		Cooler ID:																															
						Requested Turnaround Time and/or Special Instructions: <i>NIH BY HOT - AIRPORT SAMPLES</i> Full List																															
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)																													
						or Ambient []		INTACT BROKEN ABSENT																													
Relinquished By: (4)		Date	Time	Received For Laboratory By:																																	
				<i>VPS</i>																																	

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

F088_COC_REF_LAB_20190411

FA90827: Chain of Custody

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SGS North America Inc.
CHAIN OF CUSTODY RECORD



FA90827

Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 9 of 9			
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217461		PWSID#: NPD#:		CONCENTRATIONS PRESERVATIVE USED: NONE TYPE: C = COMP G = GRAB M = Multi Incremental Soils EPA 537 PFAS - CONFIRM LIST							
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com									
		Env.Alaska.RefLabTeam@sgs.com									
INVOICE TO: SGS - Alaska		QUOTE #: 1217461									
env.alaska.accounting@sgs.com		P.O. #: 686230									
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE				MS	MSD	SGS lab #	Location ID
81	TXY-104B	11/11/2021	11:45:00	Solid	1					1217461081	
82	TXY-104C	11/11/2021	11:50:00	Solid	1					1217461082	
83	FD-17	11/11/2021	12:00:00	Solid	1					1217461083	
Relinquished By: (1)		Date	Time	Received By:	DOD Project?		YES <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/>		Data Deliverable Requirements:		
<i>Julie Shumway</i>		11/15/21	10:35	<i>VPS</i>	Report to DL (J Flags)?		YES		Level 2		
Relinquished By: (2)		Date	Time	Received By:	Cooler ID:						
<i>VPS</i>					Requested Turnaround Time and-or Special Instructions:						
Relinquished By: (3)		Date	Time	Received By:	MAY BE HOT - AIR DRY SAMPLES Full List 24						
Relinquished By: (4)		Date	Time	Received For Laboratory By:	Temp Blank °C:		Chain of Custody Seal: (Circle)				
				<i>Patt</i>	or Ambient []		INTACT BROKEN ABSENT				

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 [. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

F088_COC_REF_LAB_20190411

FA90827: Chain of Custody
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SGS Sample Receipt Summary

Job Number: FA90827

Client: SGS ALASKA

Project: 1217461

Date / Time Received: 11/16/2021 10:15:00 AM

Delivery Method: UPS

Airbill #'s: 1Z 74A 435 01 4072 2405

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.6);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N

N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N

N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #: pH 0-3 230315

pH 10-12 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH

Date: 11/16/2021 10:15:00

Reviewer: _____

Date: _____

FA90827: Chain of Custody

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-MB	3Q49950.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	85% 40-140%
	13C5-PFPeA	84% 50-150%
	13C5-PFHxA	86% 50-150%
	13C4-PFHpA	85% 50-150%
	13C8-PFOA	87% 50-150%
	13C9-PFNA	86% 50-150%
	13C6-PFDA	85% 50-150%
	13C7-PFUnDA	86% 40-140%

Method Blank Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-MB	3Q49950.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	87% 40-140%
	13C2-PFTeDA	87% 30-130%
	13C3-PFBS	82% 50-150%
	13C3-PFHxS	84% 50-150%
	13C8-PFOS	81% 50-150%
	13C8-FOSA	70% 30-130%
	d3-MeFOSAA	91% 40-140%
	d5-EtFOSAA	91% 40-140%
	13C2-4:2FTS	80% 50-150%
	13C2-6:2FTS	83% 50-150%
	13C2-8:2FTS	80% 50-150%

Method Blank Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-MB	4Q23220.D	1	12/06/21	MV	12/02/21	OP88594	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 40-140%
	13C5-PFPeA	102% 50-150%
	13C5-PFHxA	103% 50-150%
	13C4-PFHpA	104% 50-150%
	13C8-PFOA	105% 50-150%
	13C9-PFNA	107% 50-150%
	13C6-PFDA	109% 50-150%
	13C7-PFUnDA	107% 40-140%

Method Blank Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-MB	4Q23220.D	1	12/06/21	MV	12/02/21	OP88594	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	106% 40-140%
	13C2-PFTeDA	107% 30-130%
	13C3-PFBS	104% 50-150%
	13C3-PFHxS	104% 50-150%
	13C8-PFOS	106% 50-150%
	13C8-FOSA	97% 30-130%
	d3-MeFOSAA	115% 40-140%
	d5-EtFOSAA	108% 40-140%
	13C2-4:2FTS	95% 50-150%
	13C2-6:2FTS	101% 50-150%
	13C2-8:2FTS	104% 50-150%

Method Blank Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-MB	3Q50060.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	88% 40-140%
	13C5-PFPeA	89% 50-150%
	13C5-PFHxA	90% 50-150%
	13C4-PFHpA	91% 50-150%
	13C8-PFOA	94% 50-150%
	13C9-PFNA	93% 50-150%
	13C6-PFDA	94% 50-150%
	13C7-PFUnDA	92% 40-140%

Method Blank Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-MB	3Q50060.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	91% 40-140%
	13C2-PFTeDA	92% 30-130%
	13C3-PFBS	90% 50-150%
	13C3-PFHxS	90% 50-150%
	13C8-PFOS	91% 50-150%
	13C8-FOSA	75% 30-130%
	d3-MeFOSAA	100% 40-140%
	d5-EtFOSAA	95% 40-140%
	13C2-4:2FTS	86% 50-150%
	13C2-6:2FTS	89% 50-150%
	13C2-8:2FTS	89% 50-150%

Method Blank Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-MB	4Q23419.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	94% 40-140%
	13C5-PFPeA	93% 50-150%
	13C5-PFHxA	92% 50-150%
	13C4-PFHpA	93% 50-150%
	13C8-PFOA	96% 50-150%
	13C9-PFNA	98% 50-150%
	13C6-PFDA	99% 50-150%
	13C7-PFUnDA	96% 40-140%

Method Blank Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-MB	4Q23419.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	97% 40-140%
	13C2-PFTeDA	102% 30-130%
	13C3-PFBS	92% 50-150%
	13C3-PFHxS	91% 50-150%
	13C8-PFOS	96% 50-150%
	13C8-FOSA	89% 30-130%
	d3-MeFOSAA	121% 40-140%
	d5-EtFOSAA	116% 40-140%
	13C2-4:2FTS	87% 50-150%
	13C2-6:2FTS	91% 50-150%
	13C2-8:2FTS	96% 50-150%

Method Blank Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MB	4Q23493.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 40-140%
	13C5-PFPeA	97% 50-150%
	13C5-PFHxA	98% 50-150%
	13C4-PFHpA	101% 50-150%
	13C8-PFOA	102% 50-150%
	13C9-PFNA	103% 50-150%
	13C6-PFDA	104% 50-150%
	13C7-PFUnDA	102% 40-140%

Method Blank Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MB	4Q23493.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	103% 40-140%
	13C2-PFTeDA	108% 30-130%
	13C3-PFBS	97% 50-150%
	13C3-PFHxS	99% 50-150%
	13C8-PFOS	99% 50-150%
	13C8-FOSA	118% 30-130%
	d3-MeFOSAA	126% 40-140%
	d5-EtFOSAA	121% 40-140%
	13C2-4:2FTS	92% 50-150%
	13C2-6:2FTS	97% 50-150%
	13C2-8:2FTS	99% 50-150%
	13C3-HFPO-DA	95% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49878.D	1	12/03/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-1, FA90827-2, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-10, FA90827-11, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	94% 50-150%
	13C4-PFHpA	94% 50-150%
	13C8-PFOA	95% 50-150%
	13C9-PFNA	93% 50-150%
	13C6-PFDA	92% 50-150%
	13C7-PFUnDA	94% 50-150%
	13C2-PFDoDA	96% 50-150%
	13C2-PFTeDA	94% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49878.D	1	12/03/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-1, FA90827-2, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-10, FA90827-11, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	91% 50-150%
	13C3-PFHxS	92% 50-150%
	13C8-PFOS	90% 50-150%
	d3-MeFOSAA	95% 50-150%
	d5-EtFOSAA	93% 50-150%
	13C3-HFPO-DA	88% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49979.D	1	12/04/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-1, FA90827-2, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-10, FA90827-11, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	77% 50-150%
	13C4-PFHpA	77% 50-150%
	13C8-PFOA	78% 50-150%
	13C9-PFNA	77% 50-150%
	13C6-PFDA	77% 50-150%
	13C7-PFUnDA	77% 50-150%
	13C2-PFDoDA	78% 50-150%
	13C2-PFTeDA	78% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q703-IBLK	3Q49979.D	1	12/04/21	MV	n/a	n/a	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-1, FA90827-2, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-10, FA90827-11, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	75% 50-150%
	13C3-PFHxS	74% 50-150%
	13C8-PFOS	73% 50-150%
	d3-MeFOSAA	84% 50-150%
	d5-EtFOSAA	80% 50-150%
	13C3-HFPO-DA	65% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q704-IBLK	3Q50025.D	1	12/06/21	MV	n/a	n/a	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-2, FA90827-3, FA90827-20, FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-47, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 50-150%
	13C5-PFPeA	101% 50-150%
	13C5-PFHxA	101% 50-150%
	13C4-PFHpA	102% 50-150%
	13C8-PFOA	104% 50-150%
	13C9-PFNA	102% 50-150%
	13C6-PFDA	104% 50-150%
	13C7-PFUnDA	102% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q704-IBLK	3Q50025.D	1	12/06/21	MV	n/a	n/a	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-2, FA90827-3, FA90827-20, FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-47, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	103% 50-150%
	13C2-PFTeDA	101% 50-150%
	13C3-PFBS	100% 50-150%
	13C3-PFHxS	101% 50-150%
	13C8-PFOS	103% 50-150%
	13C8-FOSA	109% 50-150%
	d3-MeFOSAA	108% 50-150%
	d5-EtFOSAA	100% 50-150%
	13C2-4:2FTS	93% 50-150%
	13C2-6:2FTS	97% 50-150%
	13C2-8:2FTS	96% 50-150%
	13C3-HFPO-DA	101% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q318-IBLK	4Q23205.D	1	12/06/21	MV	n/a	n/a	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-21, FA90827-22, FA90827-24, FA90827-25, FA90827-27, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-39, FA90827-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	107% 50-150%
	13C4-PFHpA	109% 50-150%
	13C8-PFOA	107% 50-150%
	13C9-PFNA	110% 50-150%
	13C6-PFDA	109% 50-150%
	13C7-PFUnDA	110% 50-150%
	13C2-PFDoDA	107% 50-150%
	13C2-PFTeDA	105% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q318-IBLK	4Q23205.D	1	12/06/21	MV	n/a	n/a	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-21, FA90827-22, FA90827-24, FA90827-25, FA90827-27, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-39, FA90827-40

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	106% 50-150%
	13C3-PFHxS	110% 50-150%
	13C8-PFOS	110% 50-150%
	d3-MeFOSAA	114% 50-150%
	d5-EtFOSAA	109% 50-150%
	13C3-HFPO-DA	107% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q319-IBLK	4Q23280.D	1	12/07/21	MV	n/a	n/a	S4Q319

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-36, FA90827-37, FA90827-38, FA90827-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	101% 50-150%
	13C4-PFHpA	102% 50-150%
	13C8-PFOA	102% 50-150%
	13C9-PFNA	106% 50-150%
	13C6-PFDA	106% 50-150%
	13C7-PFUnDA	107% 50-150%
	13C2-PFDoDA	103% 50-150%
	13C2-PFTeDA	103% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q319-IBLK	4Q23280.D	1	12/07/21	MV	n/a	n/a	S4Q319

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-36, FA90827-37, FA90827-38, FA90827-40

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	99% 50-150%
	13C3-PFHxS	102% 50-150%
	13C8-PFOS	105% 50-150%
	d3-MeFOSAA	117% 50-150%
	d5-EtFOSAA	112% 50-150%
	13C3-HFPO-DA	103% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q705-IBLK	3Q50092.D	1	12/08/21	MV	n/a	n/a	S3Q705

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-4, FA90827-9, FA90827-12, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-54, FA90827-55

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	108% 50-150%
	13C5-PFPeA	109% 50-150%
	13C5-PFHxA	109% 50-150%
	13C4-PFHpA	109% 50-150%
	13C8-PFOA	112% 50-150%
	13C9-PFNA	112% 50-150%
	13C6-PFDA	111% 50-150%
	13C7-PFUnDA	110% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q705-IBLK	3Q50092.D	1	12/08/21	MV	n/a	n/a	S3Q705

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-4, FA90827-9, FA90827-12, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-54, FA90827-55

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	115% 50-150%
	13C2-PFTeDA	110% 50-150%
	13C3-PFBS	108% 50-150%
	13C3-PFHxS	108% 50-150%
	13C8-PFOS	109% 50-150%
	13C8-FOSA	123% 50-150%
	d3-MeFOSAA	131% 50-150%
	d5-EtFOSAA	125% 50-150%
	13C2-4:2FTS	102% 50-150%
	13C2-6:2FTS	106% 50-150%
	13C2-8:2FTS	105% 50-150%
	13C3-HFPO-DA	103% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q320-IBLK	4Q23384.D	1	12/08/21	MV	n/a	n/a	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	108% 50-150%
	13C5-PFPeA	104% 50-150%
	13C5-PFHxA	104% 50-150%
	13C4-PFHpA	106% 50-150%
	13C8-PFOA	108% 50-150%
	13C9-PFNA	109% 50-150%
	13C6-PFDA	111% 50-150%
	13C7-PFUnDA	110% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q320-IBLK	4Q23384.D	1	12/08/21	MV	n/a	n/a	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	110% 50-150%
	13C2-PFTeDA	110% 50-150%
	13C3-PFBS	103% 50-150%
	13C3-PFHxS	107% 50-150%
	13C8-PFOS	107% 50-150%
	13C8-FOSA	131% 50-150%
	d3-MeFOSAA	136% 50-150%
	d5-EtFOSAA	127% 50-150%
	13C2-4:2FTS	98% 50-150%
	13C2-6:2FTS	106% 50-150%
	13C2-8:2FTS	105% 50-150%
	13C3-HFPO-DA	100% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q321-IBLK	4Q23451.D	1	12/09/21	MV	n/a	n/a	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-64, FA90827-69, FA90827-81, FA90827-82, FA90827-83

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	102% 50-150%
	13C5-PFPeA	99% 50-150%
	13C5-PFHxA	99% 50-150%
	13C4-PFHpA	101% 50-150%
	13C8-PFOA	103% 50-150%
	13C9-PFNA	103% 50-150%
	13C6-PFDA	105% 50-150%
	13C7-PFUnDA	105% 50-150%

Instrument Blank

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q321-IBLK	4Q23451.D	1	12/09/21	MV	n/a	n/a	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90827-64, FA90827-69, FA90827-81, FA90827-82, FA90827-83

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	104% 50-150%
	13C2-PFTeDA	108% 50-150%
	13C3-PFBS	98% 50-150%
	13C3-PFHxS	99% 50-150%
	13C8-PFOS	104% 50-150%
	13C8-FOSA	119% 50-150%
	d3-MeFOSAA	132% 50-150%
	d5-EtFOSAA	126% 50-150%
	13C2-4:2FTS	92% 50-150%
	13C2-6:2FTS	100% 50-150%
	13C2-8:2FTS	101% 50-150%
	13C3-HFPO-DA	104% 50-150%

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-BS	3Q49949.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.7	97	70-130
2706-90-3	Perfluoropentanoic acid	10	9.3	93	70-130
307-24-4	Perfluorohexanoic acid	10	9.6	96	70-130
375-85-9	Perfluoroheptanoic acid	10	9.6	96	70-130
335-67-1	Perfluorooctanoic acid	10	9.6	96	70-130
375-95-1	Perfluorononanoic acid	10	9.4	94	70-130
335-76-2	Perfluorodecanoic acid	10	9.8	98	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.5	95	70-130
307-55-1	Perfluorododecanoic acid	10	9.7	97	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.5	95	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.5	95	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.6	96	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.9	99	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.5	95	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.3	103	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.8	98	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.2	102	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.4	94	65-135
754-91-6	PFOSA	10	9.9	99	70-130
2355-31-9	MeFOSAA	10	9.8	98	70-130
2991-50-6	EtFOSAA	10	9.8	98	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10	100	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.9	99	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.1	101	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	85%	40-140%
	13C5-PFPeA	88%	50-150%
	13C5-PFHxA	89%	50-150%
	13C4-PFHpA	88%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	88%	50-150%
	13C6-PFDA	86%	50-150%
	13C7-PFUnDA	87%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-BS	3Q49949.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	87%	40-140%
	13C2-PFTeDA	88%	30-130%
	13C3-PFBS	86%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	84%	50-150%
	13C8-FOSA	64%	30-130%
	d3-MeFOSAA	89%	40-140%
	d5-EtFOSAA	93%	40-140%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	86%	50-150%
	13C2-8:2FTS	86%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-BS	4Q23219.D	1	12/06/21	MV	12/02/21	OP88594	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	10.2	102	70-130
2706-90-3	Perfluoropentanoic acid	10	10.2	102	70-130
307-24-4	Perfluorohexanoic acid	10	10.1	101	70-130
375-85-9	Perfluoroheptanoic acid	10	10.3	103	70-130
335-67-1	Perfluorooctanoic acid	10	9.8	98	70-130
375-95-1	Perfluorononanoic acid	10	10	100	70-130
335-76-2	Perfluorodecanoic acid	10	10	100	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.8	98	70-130
307-55-1	Perfluorododecanoic acid	10	10.2	102	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.9	99	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.9	99	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.9	99	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.9	99	70-130
355-46-4	Perfluorohexanesulfonic acid	10	10.2	102	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.7	107	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	10.6	106	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.8	108	70-130
335-77-3	Perfluorodecanesulfonic acid	10	10	100	65-135
754-91-6	PFOSA	10	9.9	99	70-130
2355-31-9	MeFOSAA	10	10.1	101	70-130
2991-50-6	EtFOSAA	10	10.3	103	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10.0	100	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	10	100	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.3	103	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	90%	40-140%
	13C5-PFPeA	89%	50-150%
	13C5-PFHxA	89%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	92%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	93%	50-150%
	13C7-PFUnDA	91%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-BS	4Q23219.D	1	12/06/21	MV	12/02/21	OP88594	S4Q318

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	90%	40-140%
	13C2-PFTeDA	93%	30-130%
	13C3-PFBS	91%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	80%	30-130%
	d3-MeFOSAA	95%	40-140%
	d5-EtFOSAA	95%	40-140%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	91%	50-150%
	13C2-8:2FTS	93%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-BS	3Q50059.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	8.7	87	70-130
2706-90-3	Perfluoropentanoic acid	10	8.7	87	70-130
307-24-4	Perfluorohexanoic acid	10	8.7	87	70-130
375-85-9	Perfluoroheptanoic acid	10	8.7	87	70-130
335-67-1	Perfluorooctanoic acid	10	8.6	86	70-130
375-95-1	Perfluorononanoic acid	10	8.5	85	70-130
335-76-2	Perfluorodecanoic acid	10	8.7	87	70-130
2058-94-8	Perfluoroundecanoic acid	10	8.6	86	70-130
307-55-1	Perfluorododecanoic acid	10	8.7	87	70-130
72629-94-8	Perfluorotridecanoic acid	10	8.2	82	70-130
376-06-7	Perfluorotetradecanoic acid	10	8.6	86	70-130
375-73-5	Perfluorobutanesulfonic acid	10	8.8	88	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	8.6	86	70-130
355-46-4	Perfluorohexanesulfonic acid	10	8.7	87	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	8.9	89	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	8.5	85	70-130
68259-12-1	Perfluorononanesulfonic acid	10	8.9	89	70-130
335-77-3	Perfluorodecanesulfonic acid	10	8.6	86	65-135
754-91-6	PFOSA	10	8.9	89	70-130
2355-31-9	MeFOSAA	10	9.0	90	70-130
2991-50-6	EtFOSAA	10	8.9	89	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.1	91	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.1	91	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.2	92	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	86%	40-140%
	13C5-PFPeA	83%	50-150%
	13C5-PFHxA	84%	50-150%
	13C4-PFHpA	85%	50-150%
	13C8-PFOA	87%	50-150%
	13C9-PFNA	88%	50-150%
	13C6-PFDA	87%	50-150%
	13C7-PFUnDA	87%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-BS	3Q50059.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	90%	40-140%
	13C2-PFTeDA	87%	30-130%
	13C3-PFBS	85%	50-150%
	13C3-PFHxS	85%	50-150%
	13C8-PFOS	85%	50-150%
	13C8-FOSA	67%	30-130%
	d3-MeFOSAA	90%	40-140%
	d5-EtFOSAA	89%	40-140%
	13C2-4:2FTS	84%	50-150%
	13C2-6:2FTS	86%	50-150%
	13C2-8:2FTS	87%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-BS	4Q23418.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	10.7	107	70-130
2706-90-3	Perfluoropentanoic acid	10	10.7	107	70-130
307-24-4	Perfluorohexanoic acid	10	10.5	105	70-130
375-85-9	Perfluoroheptanoic acid	10	10.5	105	70-130
335-67-1	Perfluorooctanoic acid	10	10.3	103	70-130
375-95-1	Perfluorononanoic acid	10	10.8	108	70-130
335-76-2	Perfluorodecanoic acid	10	10.7	107	70-130
2058-94-8	Perfluoroundecanoic acid	10	10.3	103	70-130
307-55-1	Perfluorododecanoic acid	10	10.6	106	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.7	97	70-130
376-06-7	Perfluorotetradecanoic acid	10	10.4	104	70-130
375-73-5	Perfluorobutanesulfonic acid	10	10.8	108	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	10.8	108	70-130
355-46-4	Perfluorohexanesulfonic acid	10	10.9	109	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	10.7	107	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	10.5	105	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.7	107	70-130
335-77-3	Perfluorodecanesulfonic acid	10	10.2	102	65-135
754-91-6	PFOSA	10	10.7	107	70-130
2355-31-9	MeFOSAA	10	10.3	103	70-130
2991-50-6	EtFOSAA	10	10.8	108	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	10.5	105	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	10.4	104	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.8	108	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	94%	40-140%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	94%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	96%	50-150%
	13C7-PFUnDA	96%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-BS	4Q23418.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	97%	40-140%
	13C2-PFTeDA	102%	30-130%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	96%	50-150%
	13C8-FOSA	83%	30-130%
	d3-MeFOSAA	121%	40-140%
	d5-EtFOSAA	117%	40-140%
	13C2-4:2FTS	92%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	98%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGS/SAK/SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-BS	4Q23492.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	10.2	102	70-130
2706-90-3	Perfluoropentanoic acid	10	10.3	103	70-130
307-24-4	Perfluorohexanoic acid	10	9.7	97	70-130
375-85-9	Perfluoroheptanoic acid	10	9.8	98	70-130
335-67-1	Perfluorooctanoic acid	10	9.9	99	70-130
375-95-1	Perfluorononanoic acid	10	10.2	102	70-130
335-76-2	Perfluorodecanoic acid	10	9.8	98	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.5	95	70-130
307-55-1	Perfluorododecanoic acid	10	10	100	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.4	94	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.7	97	70-130
375-73-5	Perfluorobutanesulfonic acid	10	10.1	101	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	10.1	101	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.8	98	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.8	98	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	10.6	106	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.4	104	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.5	95	65-135
754-91-6	PFOSA	10	9.9	99	70-130
2355-31-9	MeFOSAA	10	9.8	98	70-130
2991-50-6	EtFOSAA	10	10.3	103	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.7	97	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.6	96	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10	100	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	90%	40-140%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	89%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	89%	50-150%
	13C6-PFDA	91%	50-150%
	13C7-PFUnDA	89%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-BS	4Q23492.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	89%	40-140%
	13C2-PFTeDA	91%	30-130%
	13C3-PFBS	87%	50-150%
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	100%	30-130%
	d3-MeFOSAA	111%	40-140%
	d5-EtFOSAA	104%	40-140%
	13C2-4:2FTS	86%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	90%	50-150%
	13C3-HFPO-DA	83%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-MS	3Q49952.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703
OP88583-MSD	3Q49953.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703
FA90827-1	3Q49951.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	Compound	FA90827-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
375-22-4	Perfluorobutanoic acid	1.0 U		10.1	9.9	98	10.4	9.6	93	3	70-130/30
2706-90-3	Perfluoropentanoic acid	1.0 U		10.1	9.5	94	10.4	9.1	88	4	70-130/30
307-24-4	Perfluorohexanoic acid	0.71	J	10.1	10.7	99	10.4	10.3	93	4	70-130/30
375-85-9	Perfluoroheptanoic acid	1.0 U		10.1	9.8	97	10.4	9.5	92	3	70-130/30
335-67-1	Perfluorooctanoic acid	1.0 U		10.1	9.6	95	10.4	9.6	93	0	70-130/30
375-95-1	Perfluorononanoic acid	1.0 U		10.1	9.5	94	10.4	9.5	92	0	70-130/30
335-76-2	Perfluorodecanoic acid	1.0 U		10.1	10	99	10.4	9.7	94	3	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.0 U		10.1	9.7	96	10.4	9.2	89	5	70-130/30
307-55-1	Perfluorododecanoic acid	1.0 U		10.1	9.8	97	10.4	9.6	93	2	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.0 U		10.1	9.6	95	10.4	9.5	92	1	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.0 U		10.1	9.7	96	10.4	9.4	91	3	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.0 U		10.1	9.9	98	10.4	9.6	93	3	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.0 U		10.1	10.1	100	10.4	9.8	95	3	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.32	J	10.1	10.2	98	10.4	10	93	2	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.0 U		10.1	10.0	99	10.4	10.2	98	2	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	8.5		10.1	16.8	82	10.4	18.0	92	7	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.0 U		10.1	10.4	103	10.4	10.3	99	1	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.0 U		10.1	9.4	93	10.4	9.1	88	3	65-135/30
754-91-6	PFOSA	1.0 U		10.1	10	99	10.4	9.8	95	2	70-130/30
2355-31-9	MeFOSAA	2.5 U		10.1	10.2	101	10.4	9.5	92	7	70-130/30
2991-50-6	EtFOSAA	2.5 U		10.1	10.2	101	10.4	9.8	95	4	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.0 U		10.1	10.3	102	10.4	9.9	95	4	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.0 U		10.1	10.1	100	10.4	9.6	93	5	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.0 U		10.1	10.3	102	10.4	10	96	3	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-1	Limits
13C4-PFBA		76%	81%	77%	40-140%
13C5-PFPeA		81%	85%	81%	50-150%
13C5-PFHxA		79%	85%	80%	50-150%
13C4-PFHpA		79%	85%	81%	50-150%
13C8-PFOA		79%	84%	82%	50-150%
13C9-PFNA		78%	84%	80%	50-150%
13C6-PFDA		77%	82%	80%	50-150%
13C7-PFUnDA		81%	85%	82%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88583-MS	3Q49952.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703
OP88583-MSD	3Q49953.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703
FA90827-1	3Q49951.D	1	12/04/21	MV	12/01/21	OP88583	S3Q703

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-1, FA90827-2, FA90827-3, FA90827-4, FA90827-5, FA90827-6, FA90827-7, FA90827-8, FA90827-9, FA90827-10, FA90827-11, FA90827-12, FA90827-13, FA90827-14, FA90827-15, FA90827-16, FA90827-17, FA90827-18, FA90827-19, FA90827-20

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-1	Limits
	13C2-PFDoDA	80%	85%	81%	40-140%
	13C2-PFTeDA	80%	86%	82%	30-130%
	13C3-PFBS	76%	82%	80%	50-150%
	13C3-PFHxS	79%	84%	81%	50-150%
	13C8-PFOS	77%	81%	78%	50-150%
	13C8-FOSA	76%	81%	80%	30-130%
	d3-MeFOSAA	71%	74%	76%	40-140%
	d5-EtFOSAA	77%	80%	79%	40-140%
	13C2-4:2FTS	76%	83%	75%	50-150%
	13C2-6:2FTS	76%	83%	76%	50-150%
	13C2-8:2FTS	77%	82%	76%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-MS	3Q50063.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704
OP88595-MSD	3Q50066.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704
FA90827-42	3Q50062.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	Compound	FA90827-42		MS	MS	Spike	MSD	MSD	RPD	Limits	
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	ug/kg		%	Rec/RPD
375-22-4	Perfluorobutanoic acid	1.3	U	12.7	12.0	94	12.7	11.3	89	6	70-130/30
2706-90-3	Perfluoropentanoic acid	1.3	U	12.7	11.9	93	12.7	11.2	88	6	70-130/30
307-24-4	Perfluorohexanoic acid	1.3	U	12.7	11.9	93	12.7	11.4	89	4	70-130/30
375-85-9	Perfluoroheptanoic acid	1.3	U	12.7	11.5	90	12.7	10.9	86	5	70-130/30
335-67-1	Perfluorooctanoic acid	1.3	U	12.7	11.4	89	12.7	11.1	87	3	70-130/30
375-95-1	Perfluorononanoic acid	1.3	U	12.7	11.6	91	12.7	10.7	84	8	70-130/30
335-76-2	Perfluorodecanoic acid	1.3	U	12.7	11.4	89	12.7	11.0	86	4	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.3	U	12.7	11.1	87	12.7	10.9	86	2	70-130/30
307-55-1	Perfluorododecanoic acid	1.3	U	12.7	11.6	91	12.7	10.9	86	6	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.3	U	12.7	11.2	88	12.7	10.6	83	6	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.3	U	12.7	11.5	90	12.7	10.9	86	5	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.43	J	12.7	11.9	90	12.7	11.2	85	6	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.3	U	12.7	11.5	90	12.7	11.0	86	4	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.3	U	12.7	11.9	93	12.7	10.9	86	9	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.3	U	12.7	12.0	94	12.7	11.2	88	7	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	1.3	U	12.7	11.4	89	12.7	10.6	83	7	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.3	U	12.7	12.1	95	12.7	11.5	90	5	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.3	U	12.7	11.5	90	12.7	10.7	84	7	65-135/30
754-91-6	PFOSA	1.3	U	12.7	12.0	94	12.7	11.2	88	7	70-130/30
2355-31-9	MeFOSAA	3.2	U	12.7	11.5	90	12.7	11.1	87	4	70-130/30
2991-50-6	EtFOSAA	3.2	U	12.7	12.2	96	12.7	11.1	87	9	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.3	U	12.7	12.1	95	12.7	11.5	90	5	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.3	U	12.7	11.8	93	12.7	11.2	88	5	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.3	U	12.7	12.0	94	12.7	11.7	92	3	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-42	Limits
13C4-PFBA		88%	87%	74%	40-140%
13C5-PFPeA		88%	89%	74%	50-150%
13C5-PFHxA		88%	87%	75%	50-150%
13C4-PFHpA		88%	88%	75%	50-150%
13C8-PFOA		91%	89%	79%	50-150%
13C9-PFNA		89%	90%	77%	50-150%
13C6-PFDA		91%	90%	79%	50-150%
13C7-PFUnDA		90%	90%	75%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88595-MS	3Q50063.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704
OP88595-MSD	3Q50066.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704
FA90827-42	3Q50062.D	1	12/07/21	MV	12/02/21	OP88595	S3Q704

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-41, FA90827-42, FA90827-43, FA90827-44, FA90827-45, FA90827-46, FA90827-47, FA90827-48, FA90827-49, FA90827-50, FA90827-51, FA90827-52, FA90827-53, FA90827-54, FA90827-55, FA90827-56, FA90827-57, FA90827-58, FA90827-59, FA90827-60

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-42	Limits
	13C2-PFDoDA	88%	89%	76%	40-140%
	13C2-PFTeDA	87%	89%	76%	30-130%
	13C3-PFBS	89%	89%	74%	50-150%
	13C3-PFHxS	86%	89%	75%	50-150%
	13C8-PFOS	89%	90%	75%	50-150%
	13C8-FOSA	88%	91%	82%	30-130%
	d3-MeFOSAA	85%	88%	79%	40-140%
	d5-EtFOSAA	87%	90%	75%	40-140%
	13C2-4:2FTS	87%	87%	70%	50-150%
	13C2-6:2FTS	90%	91%	73%	50-150%
	13C2-8:2FTS	89%	89%	72%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-MS	4Q23298.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319
OP88594-MSD	4Q23299.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319
FA90827-40	4Q23245.D	1	12/07/21	MV	12/02/21	OP88594	S4Q318
FA90827-40	4Q23297.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	Compound	FA90827-40		MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
		ug/kg	Q							
375-22-4	Perfluorobutanoic acid	1.0 U	9.96	9.8	98	10	10.0	100	2	70-130/30
2706-90-3	Perfluoropentanoic acid	1.0 U	9.96	9.8	98	10	10.1	101	3	70-130/30
307-24-4	Perfluorohexanoic acid	1.0 U	9.96	9.7	97	10	10.0	100	3	70-130/30
375-85-9	Perfluoroheptanoic acid	1.0 U	9.96	10	100	10	9.8	98	2	70-130/30
335-67-1	Perfluorooctanoic acid	1.0 U	9.96	9.9	99	10	9.7	97	2	70-130/30
375-95-1	Perfluorononanoic acid	1.0 U	9.96	9.7	97	10	10	100	3	70-130/30
335-76-2	Perfluorodecanoic acid	1.0 U	9.96	9.5	95	10	10.0	100	5	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.0 U	9.96	9.7	97	10	10.1	101	4	70-130/30
307-55-1	Perfluorododecanoic acid	1.0 U	9.96	9.8	98	10	9.7	97	1	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.0 U	9.96	9.4	94	10	9.6	96	2	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.0 U	9.96	9.6	96	10	9.9	99	3	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.0 U	9.96	9.5	95	10	10	100	5	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.0 U	9.96	9.1	91	10	10.2	102	11	70-130/30
355-46-4	Perfluorohexanesulfonic acid	4.5	9.96	15.0	105	10	13.4	89	11	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.0 U	9.96	10.1	101	10	10.0	100	1	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	101 ^b	9.96	95.3	-57* ^a	10	100	-10* ^a	5	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.0 U	9.96	10.2	102	10	10.1	101	1	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.0 U	9.96	9.4	94	10	9.3	93	1	65-135/30
754-91-6	PFOSA	1.0 U	9.96	9.4	94	10	10.1	101	7	70-130/30
2355-31-9	MeFOSAA	2.6 U	9.96	9.6	96	10	9.9	99	3	70-130/30
2991-50-6	EtFOSAA	2.6 U	9.96	10.3	103	10	9.7	97	6	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.0 U	9.96	9.8	98	10	10.0	100	2	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.0 U	9.96	9.6	96	10	9.9	99	3	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.0 U	9.96	9.7	97	10	10.1	101	4	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-40	FA90827-40	Limits
13C4-PFBA		92%	95%	77%	76%	40-140%
13C5-PFPeA		88%	92%	75%	72%	50-150%
13C5-PFHxA		89%	93%	76%	73%	50-150%
13C4-PFHpA		88%	94%	76%	74%	50-150%
13C8-PFOA		93%	97%	79%	78%	50-150%
13C9-PFNA		97%	96%	79%	80%	50-150%
13C6-PFDA		98%	101%	82%	80%	50-150%
13C7-PFUnDA		96%	96%	79%	79%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88594-MS	4Q23298.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319
OP88594-MSD	4Q23299.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319
FA90827-40	4Q23245.D	1	12/07/21	MV	12/02/21	OP88594	S4Q318
FA90827-40	4Q23297.D	5	12/07/21	MV	12/02/21	OP88594	S4Q319

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-21, FA90827-22, FA90827-23, FA90827-24, FA90827-25, FA90827-26, FA90827-27, FA90827-28, FA90827-29, FA90827-30, FA90827-31, FA90827-32, FA90827-33, FA90827-34, FA90827-35, FA90827-36, FA90827-37, FA90827-38, FA90827-39, FA90827-40

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-40	FA90827-40	Limits
13C2-PFD _o DA		93%	96%	79%	78%	40-140%
13C2-PFT _e DA		95%	96%	80%	80%	30-130%
13C3-PFBS		94%	95%	79%	77%	50-150%
13C3-PFH _x S		86%	103%	80%	79%	50-150%
13C8-PFOS		97%	97%	78%	81%	50-150%
13C8-FOSA		76%	83%	64%	67%	30-130%
d3-MeFOSAA		98%	98%	70%	78%	40-140%
d5-EtFOSAA		92%	98%	73%	74%	40-140%
13C2-4:2FTS		87%	91%	71%	71%	50-150%
13C2-6:2FTS		91%	97%	76%	72%	50-150%
13C2-8:2FTS		96%	102%	77%	78%	50-150%

- (a) Outside control limits due to high level in sample relative to spike amount.
- (b) Result is from Run #2.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-MS ^a	4Q23422.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320
OP88620-MSD ^a	4Q23423.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320
FA90827-62	4Q23421.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	Compound	FA90827-62		MS	MS	Spike	MSD	MSD	RPD	Limits	
		ug/kg	Q	ug/kg	ug/kg	%	ug/kg	ug/kg		%	Rec/RPD
375-22-4	Perfluorobutanoic acid	1.1	U	23.8	18.1	76	23.4	17.2	73	5	70-130/30
2706-90-3	Perfluoropentanoic acid	1.1	U	23.8	18.0	76	23.4	17.3	74	4	70-130/30
307-24-4	Perfluorohexanoic acid	1.1	U	23.8	18.2	77	23.4	16.9	72	7	70-130/30
375-85-9	Perfluoroheptanoic acid	1.1	U	23.8	18.3	77	23.4	17.4	74	5	70-130/30
335-67-1	Perfluorooctanoic acid	0.42	J	23.8	18.2	75	23.4	17.0	71	7	70-130/30
375-95-1	Perfluorononanoic acid	1.1	U	23.8	17.7	74	23.4	16.9	72	5	70-130/30
335-76-2	Perfluorodecanoic acid	1.1	U	23.8	18.0	76	23.4	16.8	72	7	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.1	U	23.8	17.7	74	23.4	16.9	72	5	70-130/30
307-55-1	Perfluorododecanoic acid	1.1	U	23.8	17.9	75	23.4	16.8	72	6	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.1	U	23.8	16.3	69*	23.4	15.3	65*	6	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.1	U	23.8	17.6	74	23.4	16.5	70	6	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.1	U	23.8	18.0	76	23.4	16.6	71	8	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.1	U	23.8	17.8	75	23.4	16.9	72	5	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.94	J	23.8	19.0	76	23.4	17.9	72	6	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	0.59	J	23.8	18.1	74	23.4	18.3	76	1	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	2.2		23.8	21.5	81	23.4	20.2	77	6	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.1	U	23.8	18.0	76	23.4	17.5	75	3	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.1	U	23.8	16.9	71	23.4	16.7	71	1	65-135/30
754-91-6	PFOSA	1.1	U	23.8	18.1	76	23.4	16.5	70	9	70-130/30
2355-31-9	MeFOSAA	2.8	U	23.8	18.1	76	23.4	17.2	73	5	70-130/30
2991-50-6	EtFOSAA	2.8	U	23.8	19.0	80	23.4	18.0	77	5	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.1	U	23.8	17.4	73	23.4	16.4	70	6	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.1	U	23.8	17.4	73	23.4	16.6	71	5	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.1	U	23.8	17.3	73	23.4	16.5	70	5	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-62	Limits
13C4-PFBA		56%	63%	77%	40-140%
13C5-PFPeA		54%	61%	74%	50-150%
13C5-PFHxA		54%	62%	75%	50-150%
13C4-PFHpA		56%	62%	76%	50-150%
13C8-PFOA		56%	65%	78%	50-150%
13C9-PFNA		57%	66%	79%	50-150%
13C6-PFDA		57%	66%	83%	50-150%
13C7-PFUnDA		57%	64%	80%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/SAK North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88620-MS ^a	4Q23422.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320
OP88620-MSD ^a	4Q23423.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320
FA90827-62	4Q23421.D	1	12/09/21	MV	12/03/21	OP88620	S4Q320

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-61, FA90827-62, FA90827-63, FA90827-64, FA90827-65, FA90827-66, FA90827-67, FA90827-68, FA90827-69, FA90827-70, FA90827-71, FA90827-72, FA90827-73, FA90827-74, FA90827-75, FA90827-76, FA90827-77, FA90827-78, FA90827-79, FA90827-80

CAS No.	ID Standard Recoveries	MS	MSD	FA90827-62	Limits
	13C2-PFDoDA	57%	66%	80%	40-140%
	13C2-PFTeDA	59%	69%	83%	30-130%
	13C3-PFBS	54%	62%	74%	50-150%
	13C3-PFHxS	56%	62%	77%	50-150%
	13C8-PFOS	57%	63%	78%	50-150%
	13C8-FOSA	56%	65%	76%	30-130%
	d3-MeFOSAA	65%	77%	99%	40-140%
	d5-EtFOSAA	67%	75%	90%	40-140%
	13C2-4:2FTS	55%	63%	71%	50-150%
	13C2-6:2FTS	59%	67%	75%	50-150%
	13C2-8:2FTS	60%	68%	78%	50-150%

(a) Recoveries corrected for double spike.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGS/KA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MS	4Q23495.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
OP88648-MSD	4Q23496.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
JD35115-1	4Q23494.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	Compound	JD35115-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	ND	11.1	12.5	112	11.1	14.0	127	11	70-130/30
2706-90-3	Perfluoropentanoic acid	ND	11.1	12.4	112	11.1	13.9	126	11	70-130/30
307-24-4	Perfluorohexanoic acid	ND	11.1	11.9	107	11.1	13.4	121	12	70-130/30
375-85-9	Perfluoroheptanoic acid	ND	11.1	12.1	109	11.1	13.5	122	11	70-130/30
335-67-1	Perfluorooctanoic acid	ND	11.1	11.7	105	11.1	13.0	118	11	70-130/30
375-95-1	Perfluorononanoic acid	ND	11.1	12.2	110	11.1	13.3	120	9	70-130/30
335-76-2	Perfluorodecanoic acid	ND	11.1	12.0	108	11.1	13.0	118	8	70-130/30
2058-94-8	Perfluoroundecanoic acid	ND	11.1	11.5	103	11.1	12.6	114	9	70-130/30
307-55-1	Perfluorododecanoic acid	ND	11.1	12.2	110	11.1	13.2	119	8	70-130/30
72629-94-8	Perfluorotridecanoic acid	ND	11.1	11.1	100	11.1	12.4	112	11	70-130/30
376-06-7	Perfluorotetradecanoic acid	ND	11.1	11.7	105	11.1	12.8	116	9	70-130/30
375-73-5	Perfluorobutanesulfonic acid	ND	11.1	11.7	105	11.1	13.2	119	12	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	ND	11.1	12.0	108	11.1	13.0	118	8	70-130/30
355-46-4	Perfluorohexanesulfonic acid	ND	11.1	12.0	108	11.1	13.2	119	10	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	ND	11.1	11.8	106	11.1	12.8	116	8	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	ND	11.1	12.4	112	11.1	13.4	121	8	70-130/30
68259-12-1	Perfluorononanesulfonic acid	ND	11.1	12.3	111	11.1	13.5	122	9	70-130/30
335-77-3	Perfluorodecanesulfonic acid	ND	11.1	12.1	109	11.1	13.3	120	9	65-135/30
754-91-6	PFOSA	ND	11.1	11.5	103	11.1	11.7	106	2	70-130/30
2355-31-9	MeFOSAA	ND	11.1	13.8	124	11.1	16.6	150*	18	70-130/30
2991-50-6	EtFOSAA	ND	11.1	14.6	131*	11.1	16.7	151*	13	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	ND	11.1	11.9	107	11.1	13.2	119	10	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	ND	11.1	11.7	105	11.1	12.7	115	8	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	ND	11.1	12.1	109	11.1	13.3	120	9	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	JD35115-1	Limits
	13C4-PFBA	60%	68%		40-140%
	13C5-PFPeA	58%	65%		50-150%
	13C5-PFHxA	57%	65%		50-150%
	13C4-PFHpA	60%	67%		50-150%
	13C8-PFOA	63%	70%	70%	50-150%
	13C9-PFNA	63%	70%	70%	50-150%
	13C6-PFDA	63%	72%		50-150%
	13C7-PFUnDA	63%	72%		40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90827
Account: SGSAKA SGS North America, Inc
Project: 1217461

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88648-MS	4Q23495.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
OP88648-MSD	4Q23496.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321
JD35115-1	4Q23494.D	1	12/10/21	MV	12/06/21	OP88648	S4Q321

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90827-81, FA90827-82, FA90827-83

CAS No.	ID Standard Recoveries	MS	MSD	JD35115-1	Limits
	13C2-PFDoDA	64%	72%		40-140%
	13C2-PFTeDA	67%	76%		30-130%
	13C3-PFBS	64%	72%		50-150%
	13C3-PFHxS	64%	71%		50-150%
	13C8-PFOS	65%	74%	76%	50-150%
	13C8-FOSA	85%	104%		30-130%
	d3-MeFOSAA	53%	60%		40-140%
	d5-EtFOSAA	53%	61%		40-140%
	13C2-4:2FTS	55%	63%		50-150%
	13C2-6:2FTS	59%	69%		50-150%
	13C2-8:2FTS	61%	70%		50-150%
	13C3-HFPO-DA	63%	74%		50-150%

* = Outside of Control Limits.



Laboratory Report of Analysis

To: Restoration Science & Eng
911 West 8th Ave Suite 100
Anchorage, AK 99501
(907)278-1023

Report Number: **1217506**

Client Project: **21-2369CRWTaxiway Z East PFAS**

Dear Lisa Koeneman,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Chuck at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Chuck Homestead
Project Manager
Charles.Homestead@sgs.com

Date

Case Narrative

SGS Client: **Restoration Science & Eng**
SGS Project: **1217506**
Project Name/Site: **21-2369CRWTaxiway Z East PFAS**
Project Contact: **Lisa Koeneman**

Refer to sample receipt form for information on sample condition.

TXY-115A (1217506001) PS

EPA 537 PFAS- Confirm List were analyzed by SGS of Orlando, FL.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 12/16/2021 4:48:13PM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
TXY-115A	1217506001	11/11/2021	11/15/2021	Soil/Solid (dry weight)
TXY-115B	1217506002	11/11/2021	11/15/2021	Soil/Solid (dry weight)
TXY-115C	1217506003	11/11/2021	11/15/2021	Soil/Solid (dry weight)
FD-18	1217506004	11/11/2021	11/15/2021	Soil/Solid (dry weight)
TXY-105A	1217506005	11/11/2021	11/15/2021	Soil/Solid (dry weight)
TXY-105B	1217506006	11/11/2021	11/15/2021	Soil/Solid (dry weight)
TXY-112A	1217506007	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-112B	1217506008	11/12/2021	11/15/2021	Soil/Solid (dry weight)
FD-19	1217506009	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-107A	1217506010	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-107B	1217506011	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-106A	1217506012	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-106B	1217506013	11/12/2021	11/15/2021	Soil/Solid (dry weight)
FD-20	1217506014	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-113A	1217506015	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-113B	1217506016	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-114A	1217506017	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-114B	1217506018	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-114C	1217506019	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-5	1217506020	11/12/2021	11/15/2021	Soil/Solid (dry weight)
FD-21	1217506021	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-6	1217506022	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-8	1217506023	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-9	1217506024	11/12/2021	11/15/2021	Soil/Solid (dry weight)
TXY-92	1217506025	11/12/2021	11/15/2021	Soil/Solid (dry weight)
FD-22	1217506026	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-10	1217506027	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-11	1217506028	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-12	1217506029	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-13	1217506030	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-14	1217506031	11/12/2021	11/15/2021	Soil/Solid (dry weight)
FD-23	1217506032	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-15	1217506033	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-16	1217506034	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-17	1217506035	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-18	1217506036	11/12/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-21	1217506037	11/13/2021	11/15/2021	Soil/Solid (dry weight)
FD-24	1217506038	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-22	1217506039	11/13/2021	11/15/2021	Soil/Solid (dry weight)

Print Date: 12/16/2021 4:48:16PM



Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
DEMO-23	1217506040	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-24	1217506041	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-25	1217506042	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-26	1217506043	11/13/2021	11/15/2021	Soil/Solid (dry weight)
FD-25	1217506044	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-27	1217506045	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-28	1217506046	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-29	1217506047	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-31	1217506048	11/13/2021	11/15/2021	Soil/Solid (dry weight)
DEMO-30	1217506049	11/13/2021	11/15/2021	Soil/Solid (dry weight)
TUG-85	1217506050	11/13/2021	11/15/2021	Soil/Solid (dry weight)
TUG-83	1217506051	11/13/2021	11/15/2021	Soil/Solid (dry weight)
TUG-82	1217506052	11/13/2021	11/15/2021	Soil/Solid (dry weight)
TUG-81	1217506053	11/13/2021	11/15/2021	Soil/Solid (dry weight)
TUG-80	1217506054	11/13/2021	11/15/2021	Soil/Solid (dry weight)
FD-26	1217506055	11/13/2021	11/15/2021	Soil/Solid (dry weight)

Method

Method Description

Print Date: 12/16/2021 4:48:16PM



SGS North America Inc.
CHAIN OF CUSTODY RECORD

1217506

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CLIENT: RSE
 CONTACT: Lisa Koemenen 907-884-4532
 PROJECT: UAW Taxiway
 NAME: Z East PFAK
 PERMIT#: 21-2369
 REPORTS TO: RSE
 E-MAIL: lkoemenen@restorsci.com
 INVOICE TO: RSE

PHONE #: 907-884-4532
 QUOTE #:
 P.O. #:
 Section 1

Instructions: Section 3
 Omissions may

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX MATRIX CODE	Comp	Grab	MI (Multi-incremental)	REMARKS/LOC ID
(1A)	TXY-115A	11/11/21	13:30	SOIL	G	X		
(2A)	TXY-115B	11/11/21	13:35	SOIL	G	X		
(3A)	TXY-115C	11/11/21	13:40	SOIL	G	X		
(4A)	FD-18	11/11/21	13:45	SOIL	G	X		
(5A)	TXY-105A	11/11/21	14:00	SOIL	G	X		
(6A)	TXY-105B	11/11/21	14:05	SOIL	G	X		
(7A)	TXY-112A	11/12/21	8:30	SOIL	G	X		
(8A)	TXY-112B	11/12/21	8:35	SOIL	G	X		
(9A)	FD-19	11/12/21	8:00	SOIL	G	X		
(10A)	TXY-107A	11/12/21	8:45	SOIL	G	X		

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Section 4

DOD Project? Yes No
 Cooler ID:
 Requested Turnaround Time and/or Special Instructions:
 Data Deliverable Requirements:

Section 5

Relinquished By: (1)
 Relinquished By: (2)
 Relinquished By: (3)
 Relinquished By: (4)

Temp Blank °C: 0.4 D65
 or Ambient []
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
 Delivery Method: Hand Delivery [] Commerical Delivery []

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CHAIN OF CUSTODY RECORD

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for analysis.

Page 3 of 4

CLIENT: RSE
CONTACT: Lisa Koenenen 907-884-4532
PROJECT/PMSID/PERMIT#: CHW Takway 21-2369
NAME: 2 East PFAS
REPORTS TO: RSE
E-MAIL: lkoenenen@restorsci.com
INVOICE TO: RSE
QUOTE #: P.O. #:

Section 1
Section 3
Instruction: Omission:

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX MATRIX CODE
Q1A	FD-21	11/12/21	10:35	SOIL
Q2A	DEMO-8	11/12/21	10:58	SOIL
Q3A	DEMO-8	11/12/21	11:10	SOIL
Q4A	DEMO-9	11/12/21	11:30	SOIL
Q5A	TX1-Q2	11/12/21	13:20	SOIL
Q6A	FD-22	11/12/21	13:15	SOIL
Q7A	DEMO-10	11/12/21	11:45	SOIL
Q8A	DEMO-11	11/12/21	13:45	SOIL
Q9A	DEMO-12	11/12/21	14:00	SOIL
Q10A	DEMO-13	11/12/21	14:15	SOIL

Section 2
Section 4
Section 5

COMP	GRAB	MI (Multi-Incremental)	DATE	TIME	MATRIX	RECEIVED BY
X			11/12/21	10:35	SOIL	[Signature]
X			11/12/21	10:58	SOIL	[Signature]
X			11/12/21	11:10	SOIL	[Signature]
X			11/12/21	11:30	SOIL	[Signature]
X			11/12/21	13:20	SOIL	[Signature]
X			11/12/21	13:15	SOIL	[Signature]
X			11/12/21	11:45	SOIL	[Signature]
X			11/12/21	13:45	SOIL	[Signature]
X			11/12/21	14:00	SOIL	[Signature]
X			11/12/21	14:15	SOIL	[Signature]

Section 4
Section 5
Relinquished By: (1) [Signature]
Relinquished By: (2) [Signature]
Relinquished By: (3) [Signature]
Relinquished By: (4) [Signature]

Section 5
Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: 0.4065
or Ambient []
Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

Delivery Method: Hand Delivery [] Commercial Delivery []

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Page 4 of 4

CLIENT: **RSE**

CONTACT: **Lisa Koenenen**
PHONE #: **907-884-4532**

PROJECT: **Oru Taxiway**
PMSID/PERMIT#: **21-2309**

REPORTS TO: **RSE**
E-MAIL: **lkoenenen@regester.si.com**

INVOICE TO: **RSE**
Profile #: **Regester Si.com**

QUOTE #:
P.O. #:

Section 3

Instruction Omission

Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/MATRIX CODE	Comp Grab MI (Multi-incremental)	#	CONTAINERS
	DEMO-14	11/12/21	14:30	SOIL		1	
	FD-23	11/12/21	14:35	SOIL		1	
(31A)	DEMO-14	11/12/21	14:30	SOIL	G	1	X
(32A)	FD-23	11/12/21	14:35	SOIL	G	1	X
(32A)	DEMO-15	11/12/21	14:50	SOIL	G	1	X
(34A)	DEMO-16	11/12/21	15:10	SOIL	G	1	X
(35A)	DEMO-17	11/12/21	15:20	SOIL	G	1	X
(36A)	DEMO-18	11/12/21	15:40	SOIL	G	1	X
(37A)	DEMO-21	11/13/21	8:50	SOIL	G	1	X
(38A)	FD-24	11/13/21	8:45	SOIL	G	1	X

Analysis*

NOTE:
*The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

REMARKS/LOC ID

Section 4

DOD Project? Yes No

Data Deliverable Requirements:

Cooler ID:

Requested Turnaround Time and/or Special Instructions:

Temp Blank °C: **0.4 D65**

or Ambient []

Chain of Custody Seal: (Circle) **ABSENT**

Delivery Method: Hand Delivery Commerical Delivery []

Section 5

Relinquished By: (1)

Relinquished By: (2)

Relinquished By: (3)

Relinquished By: (4)

Date

Received For Laboratory By:

Date

Time

Time

Time

Time

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Page 6 of 6

Instructions: Section 3 Omissions may d

CLIENT: RSE
 CONTACT: Lisa Koenehen
 PHONE #: 907 854-4532
 PROJECT/ PWSID/ PERMIT#: 21-2369
 E-MAIL: lkoenehen@restorazi.com
 Profile #:
 QUOTE #:
 P.O. #:
 REPORTS TO: RSE
 INVOICE TO: RSE

Section 3

Preservative

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX CODE	CONTAINERS			REMARKS/LOC ID
					Comp	Grab	MI (Multi-incre-mental)	
49A	DEMO-31	11/13/21	11:10	SOIL	1	G	X	
49A	DEMO-30	11/13/21	10:40	SOIL	1	G	X	
50A	TUG-85	11/13/21	11:05	SOIL	1	G	X	
51A	TUG-83	11/13/21	11:15	SOIL	1	G	X	
52A	TUG-82	11/13/21	11:20	SOIL	1	G	X	
53A	TUG-81	11/13/21	11:30	SOIL	1	G	X	
54A	TUG-80	11/13/21	11:45	SOIL	1	G	X	
55A	HP-26	11/13/21	12:00	SOIL	1	G	X	

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Relinquished By: (1) *[Signature]*
 Relinquished By: (2) *[Signature]*
 Relinquished By: (3) *[Signature]*
 Relinquished By: (4) *[Signature]*

Section 4 DOD Project? Yes No
 Cooler ID:
 Requested Turnaround Time and/or Special Instructions:

Received By: *[Signature]*
 Received By: *[Signature]*
 Received By: *[Signature]*
 Received For Laboratory By: *[Signature]*

Temp Blank °C: 0.4 DGS
 or Ambient []
 Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT
 Delivery Method: Hand Delivery [X] Commercial Delivery []

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e-Sample Receipt Form

SGS Workorder #:

1217506

1217506

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	absent
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
<input type="checkbox"/> N/A **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 0.4 °C Therm. ID: D65
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
Note: If times differ <1hr, record details & login per COC. *Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	<input type="checkbox"/> N/A ***Exemption permitted for metals (e.g.200.8/6020A).
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
Note to Client: Any "No", answer above indicates non-compliance with standard procedures and may impact data quality.		
Additional notes (if applicable):		



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1217506001-A	No Preservative Required	OK	1217506050-A	No Preservative Required	OK
1217506002-A	No Preservative Required	OK	1217506051-A	No Preservative Required	OK
1217506003-A	No Preservative Required	OK	1217506052-A	No Preservative Required	OK
1217506004-A	No Preservative Required	OK	1217506053-A	No Preservative Required	OK
1217506005-A	No Preservative Required	OK	1217506054-A	No Preservative Required	OK
1217506006-A	No Preservative Required	OK	1217506055-A	No Preservative Required	OK
1217506007-A	No Preservative Required	OK			
1217506008-A	No Preservative Required	OK			
1217506009-A	No Preservative Required	OK			
1217506010-A	No Preservative Required	OK			
1217506011-A	No Preservative Required	OK			
1217506012-A	No Preservative Required	OK			
1217506013-A	No Preservative Required	OK			
1217506014-A	No Preservative Required	OK			
1217506015-A	No Preservative Required	OK			
1217506016-A	No Preservative Required	OK			
1217506017-A	No Preservative Required	OK			
1217506018-A	No Preservative Required	OK			
1217506019-A	No Preservative Required	OK			
1217506020-A	No Preservative Required	OK			
1217506021-A	No Preservative Required	OK			
1217506022-A	No Preservative Required	OK			
1217506023-A	No Preservative Required	OK			
1217506024-A	No Preservative Required	OK			
1217506025-A	No Preservative Required	OK			
1217506026-A	No Preservative Required	OK			
1217506027-A	No Preservative Required	OK			
1217506028-A	No Preservative Required	OK			
1217506029-A	No Preservative Required	OK			
1217506030-A	No Preservative Required	OK			
1217506031-A	No Preservative Required	OK			
1217506032-A	No Preservative Required	OK			
1217506033-A	No Preservative Required	OK			
1217506034-A	No Preservative Required	OK			
1217506035-A	No Preservative Required	OK			
1217506036-A	No Preservative Required	OK			
1217506037-A	No Preservative Required	OK			
1217506038-A	No Preservative Required	OK			
1217506039-A	No Preservative Required	OK			
1217506040-A	No Preservative Required	OK			
1217506041-A	No Preservative Required	OK			
1217506042-A	No Preservative Required	OK			
1217506043-A	No Preservative Required	OK			
1217506044-A	No Preservative Required	OK			
1217506045-A	No Preservative Required	OK			
1217506046-A	No Preservative Required	OK			
1217506047-A	No Preservative Required	OK			
1217506048-A	No Preservative Required	OK			
1217506049-A	No Preservative Required	OK			

Container Id

Preservative

Container
Condition

Container Id

Preservative

Container
Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM - The container was received damaged.

FR - The container was received frozen and not usable for Bacteria or BOD analyses.

IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.

NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

QN - Insufficient sample quantity provided.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1217506

SGS Job Number: FA90919

Sampling Dates: 11/11/21 - 11/13/21

Report to:

SGS North America, Inc
200 W Potter Dr
Anchorage, AK 99518
julie.shumway@sgs.com

ATTN: Julie Shumway

Total number of pages in report: **164**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read "Norm Farmer".

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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Test results relate only to samples analyzed.

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Sample Summary

SGS North America, Inc
1217506

Job No: FA90919

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90919-1	11/11/21	13:30	11/18/21	SO	Soil	TXY-115A
FA90919-2	11/11/21	13:35	11/18/21	SO	Soil	TXY-115B
FA90919-3	11/11/21	13:40	11/18/21	SO	Soil	TXY-115C
FA90919-4	11/11/21	13:45	11/18/21	SO	Soil	FD-18
FA90919-5	11/11/21	14:00	11/18/21	SO	Soil	TXY-105A
FA90919-6	11/11/21	14:05	11/18/21	SO	Soil	TXY-105B
FA90919-7	11/12/21	08:30	11/18/21	SO	Soil	TXY-112A
FA90919-8	11/12/21	08:35	11/18/21	SO	Soil	TXY-112B
FA90919-9	11/12/21	08:00	11/18/21	SO	Soil	FD-19
FA90919-10	11/12/21	08:45	11/18/21	SO	Soil	TXY-107A
FA90919-11	11/12/21	08:50	11/18/21	SO	Soil	TXY-107B
FA90919-12	11/12/21	09:10	11/18/21	SO	Soil	TXY-106A
FA90919-13	11/12/21	09:15	11/18/21	SO	Soil	TXY-106B

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90919

1217506

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90919-14	11/12/21	09:00	11/18/21	SO	Soil	FD-20
FA90919-15	11/12/21	09:30	11/18/21	SO	Soil	TXY-113A
FA90919-16	11/12/21	09:35	11/18/21	SO	Soil	TXY-113B
FA90919-17	11/12/21	09:50	11/18/21	SO	Soil	TXY-114A
FA90919-18	11/12/21	09:55	11/18/21	SO	Soil	TXY-114B
FA90919-19	11/12/21	10:00	11/18/21	SO	Soil	TXY-114C
FA90919-20	11/12/21	10:30	11/18/21	SO	Soil	DEMO-5
FA90919-21	11/12/21	10:35	11/18/21	SO	Soil	FD-21
FA90919-22	11/12/21	10:50	11/18/21	SO	Soil	DEMO-6
FA90919-23	11/12/21	11:10	11/18/21	SO	Soil	DEMO-8
FA90919-24	11/12/21	11:30	11/18/21	SO	Soil	DEMO-9
FA90919-25	11/12/21	13:20	11/18/21	SO	Soil	TXY-92
FA90919-26	11/12/21	13:15	11/18/21	SO	Soil	FD-22

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90919

1217506

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90919-27	11/12/21	11:45	11/18/21	SO	Soil	DEMO-10
FA90919-28	11/12/21	13:45	11/18/21	SO	Soil	DEMO-11
FA90919-29	11/12/21	14:00	11/18/21	SO	Soil	DEMO-12
FA90919-30	11/12/21	14:15	11/18/21	SO	Soil	DEMO-13
FA90919-31	11/12/21	14:30	11/18/21	SO	Soil	DEMO-14
FA90919-32	11/12/21	14:35	11/18/21	SO	Soil	FD-23
FA90919-33	11/12/21	14:50	11/18/21	SO	Soil	DEMO-15
FA90919-34	11/12/21	15:10	11/18/21	SO	Soil	DEMO-16
FA90919-35	11/12/21	15:20	11/18/21	SO	Soil	DEMO-17
FA90919-36	11/12/21	15:40	11/18/21	SO	Soil	DEMO-18
FA90919-37	11/13/21	08:50	11/18/21	SO	Soil	DEMO-21
FA90919-38	11/13/21	08:45	11/18/21	SO	Soil	FD-24
FA90919-39	11/13/21	09:10	11/18/21	SO	Soil	DEMO-22

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary

(continued)

SGS North America, Inc

Job No: FA90919

1217506

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
FA90919-40	11/13/21	09:20	11/18/21	SO	Soil	DEMO-23
FA90919-41	11/13/21	09:30	11/18/21	SO	Soil	DEMO-24
FA90919-42	11/13/21	09:40	11/18/21	SO	Soil	DEMO-25
FA90919-43	11/13/21	09:00	11/18/21	SO	Soil	DEMO-26
FA90919-44	11/13/21	09:45	11/18/21	SO	Soil	FD-25
FA90919-45	11/13/21	10:00	11/18/21	SO	Soil	DEMO-27
FA90919-46	11/13/21	10:15	11/18/21	SO	Soil	DEMO-28
FA90919-47	11/13/21	10:30	11/18/21	SO	Soil	DEMO-29
FA90919-48	11/13/21	11:50	11/18/21	SO	Soil	DEMO-31
FA90919-49	11/13/21	10:40	11/18/21	SO	Soil	DEMO-30
FA90919-50	11/13/21	11:05	11/18/21	SO	Soil	TUG-85
FA90919-51	11/13/21	11:15	11/18/21	SO	Soil	TUG-83
FA90919-52	11/13/21	11:20	11/18/21	SO	Soil	TUG-82

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary (continued)

SGS North America, Inc
1217506

Job No: FA90919

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA90919-53	11/13/21	11:30	11/18/21	SO	Soil	TUG-81
FA90919-54	11/13/21	11:45	11/18/21	SO	Soil	TUG-80
FA90919-55	11/13/21	12:00	11/18/21	SO	Soil	FD-26

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc

Job No: FA90919

Site: 1217506

Report Date 12/16/2021 6:30:02

On 11/18/2021, 55 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90919 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: SO **Batch ID:** OP88656

Sample(s) FA90919-1MS, FA90919-1MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP88657

Sample(s) FA90919-21MS, FA90919-21MSD were used as the QC samples indicated.

Matrix: SO **Batch ID:** OP88658

Sample(s) FA90919-41MS, FA90919-41MSD were used as the QC samples indicated.

General Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN89854

Sample(s) FA90925-17DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89857

Sample(s) FA90919-3DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89868

Sample(s) FA90919-18DUP were used as the QC samples for Solids, Percent.

Matrix: SO **Batch ID:** GN89869

Sample(s) FA90919-38DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90919-1 TXY-115A

Perfluoropentanoic acid	0.00029 J	0.00098	0.00049	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00042 J	0.00098	0.00049	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0011	0.00098	0.00049	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00068 J	0.00098	0.00049	mg/kg	EPA 537M BY ID

FA90919-2 TXY-115B

Perfluorohexanoic acid	0.00056 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00082 J	0.0011	0.00056	mg/kg	EPA 537M BY ID

FA90919-3 TXY-115C

Perfluorohexanoic acid	0.00052 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
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FA90919-4 FD-18

Perfluoropentanoic acid	0.00036 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00028 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00034 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.00051 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00041 J	0.0010	0.00051	mg/kg	EPA 537M BY ID

FA90919-5 TXY-105A

Perfluoropentanoic acid	0.0011 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00066 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00070 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0163	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.0011 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorodecanoic acid	0.0014	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0042	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90919-6 TXY-105B

Perfluorohexanoic acid	0.0010 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00090 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00085 J	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90919-7 TXY-112A

Perfluorooctanoic acid	0.0010	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00048 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0167	0.0010	0.00051	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90919-8 TXY-112B

Perfluorohexanoic acid	0.00073 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0017	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0016	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0012	0.0012	0.00060	mg/kg	EPA 537M BY ID

FA90919-9 FD-19

Perfluorooctanoic acid	0.0015	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorodecanoic acid	0.00028 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00066 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0156	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluorononanesulfonic acid	0.00035 J	0.0010	0.00051	mg/kg	EPA 537M BY ID

FA90919-10 TXY-107A

Perfluorooctanoic acid	0.00042 J	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluorononanoic acid	0.00032 J	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluorodecanoic acid	0.0021	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluoroundecanoic acid	0.0018	0.0010	0.00050	mg/kg	EPA 537M BY ID
Perfluorododecanoic acid	0.0022	0.0010	0.00050	mg/kg	EPA 537M BY ID

FA90919-11 TXY-107B

Perfluorooctanoic acid	0.00048 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00035 J	0.0011	0.00053	mg/kg	EPA 537M BY ID

FA90919-12 TXY-106A

No hits reported in this sample.

FA90919-13 TXY-106B

Perfluorohexanesulfonic acid	0.00032 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
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FA90919-14 FD-20

No hits reported in this sample.

FA90919-15 TXY-113A

Perfluorobutanoic acid	0.00072 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
Perfluoropentanoic acid	0.0028	0.0010	0.00051	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method	
		Perfluorohexanoic acid	0.0034	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluoroheptanoic acid	0.0055	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluorooctanoic acid	0.0245	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluorononanoic acid	0.00042 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluorodecanoic acid	0.00045 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluorohexanesulfonic acid	0.00041 J	0.0010	0.00051	mg/kg	EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0025	0.0010	0.00051	mg/kg	EPA 537M BY ID
FA90919-16		TXY-113B					
		Perfluorooctanoic acid	0.00085 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
		Perfluorononanoic acid	0.0151	0.0011	0.00053	mg/kg	EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0448	0.0011	0.00053	mg/kg	EPA 537M BY ID
FA90919-17		TXY-114A					
No hits reported in this sample.							
FA90919-18		TXY-114B					
		Perfluorohexanoic acid	0.00027 J	0.0011	0.00054	mg/kg	EPA 537M BY ID
FA90919-19		TXY-114C					
		Perfluoropentanoic acid	0.00045 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
		Perfluorooctanoic acid	0.00039 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90919-20		DEMO-5					
		Perfluorohexanesulfonic acid	0.0012 J	0.0013	0.00067	mg/kg	EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0028	0.0013	0.00067	mg/kg	EPA 537M BY ID
		6:2 Fluorotelomer sulfonate	0.0030	0.0013	0.00067	mg/kg	EPA 537M BY ID
FA90919-21		FD-21					
		Perfluorohexanesulfonic acid	0.0010 J	0.0012	0.00061	mg/kg	EPA 537M BY ID
		Perfluorooctanesulfonic acid	0.0025	0.0012	0.00061	mg/kg	EPA 537M BY ID
		6:2 Fluorotelomer sulfonate	0.0026	0.0012	0.00061	mg/kg	EPA 537M BY ID
FA90919-22		DEMO-6					
		Perfluorohexanesulfonic acid	0.00030 J	0.0012	0.00060	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90919-23 DEMO-8

No hits reported in this sample.

FA90919-24 DEMO-9

Perfluoropentanoic acid	0.00033 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00035 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00077 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0029	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0094	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90919-25 TXY-92

No hits reported in this sample.

FA90919-26 FD-22

No hits reported in this sample.

FA90919-27 DEMO-10

No hits reported in this sample.

FA90919-28 DEMO-11

Perfluorooctanoic acid	0.0017	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0027	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90919-29 DEMO-12

Perfluorohexanesulfonic acid	0.00030 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0018	0.0011	0.00057	mg/kg	EPA 537M BY ID

FA90919-30 DEMO-13

Perfluorooctanoic acid	0.00048 J	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0011	0.0010	0.00052	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0016	0.0010	0.00052	mg/kg	EPA 537M BY ID

FA90919-31 DEMO-14

Perfluorooctanoic acid	0.00035 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.00040 J	0.0011	0.00057	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90919-32						
	FD-23					
Perfluorohexanesulfonic acid		0.00032 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90919-33						
	DEMO-15					
Perfluorohexanoic acid		0.00062 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.0022	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.00036 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0039	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0100	0.0012	0.00058	mg/kg	EPA 537M BY ID
PFOSA		0.00091 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate		0.00033 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
FA90919-34						
	DEMO-16					
Perfluorohexanesulfonic acid		0.00056 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90919-35						
	DEMO-17					
Perfluoropentanoic acid		0.00040 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00040 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid		0.00036 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.0016	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0044	0.0011	0.00057	mg/kg	EPA 537M BY ID
FA90919-36						
	DEMO-18					
Perfluorohexanesulfonic acid		0.00052 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00044 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate		0.00033 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
FA90919-37						
	DEMO-21					
Perfluoropentanoic acid		0.00028 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00082 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0018	0.0011	0.00056	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00039 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
FA90919-38						
	FD-24					
Perfluorooctanoic acid		0.00079 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0019	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00081 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate		0.00072 J	0.0012	0.00058	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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FA90919-39 DEMO-22

No hits reported in this sample.

FA90919-40 DEMO-23

Perfluorobutanoic acid	0.0011	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoropentanoic acid	0.0087	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.0041	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0017	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.00052 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0019	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00038 J	0.0011	0.00057	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0023	0.0011	0.00057	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.0784	0.023	0.011	mg/kg	EPA 537M BY ID

FA90919-41 DEMO-24

Perfluoropentanoic acid	0.0015	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00071 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00034 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0012	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0010 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.00036 J	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90919-42 DEMO-25

Perfluoropentanoic acid	0.00078 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00049 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.0014	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.0030	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0033	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid	0.0014	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0015	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90919-43 DEMO-26

Perfluoropentanoic acid	0.00072 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid	0.00063 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid	0.00031 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid	0.00058 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid	0.0018	0.0012	0.00060	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid	0.0794	0.0024	0.0012	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate	0.00053 J	0.0012	0.00060	mg/kg	EPA 537M BY ID

Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
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8:2 Fluorotelomer sulfonate		0.00052 J	0.0012	0.00060	mg/kg	EPA 537M BY ID
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FA90919-44 FD-25

Perfluoropentanoic acid		0.00079 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00064 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluoroheptanoic acid		0.00035 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00069 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorononanoic acid		0.00059 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0020	0.0012	0.00059	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.146	0.0059	0.0030	mg/kg	EPA 537M BY ID
6:2 Fluorotelomer sulfonate		0.00046 J	0.0012	0.00059	mg/kg	EPA 537M BY ID
8:2 Fluorotelomer sulfonate		0.0028	0.0012	0.00059	mg/kg	EPA 537M BY ID

FA90919-45 DEMO-27

Perfluoropentanoic acid		0.00052 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanoic acid		0.00044 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanoic acid		0.00067 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorononanoic acid		0.0011 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0016	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00066 J	0.0012	0.00058	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0064	0.0012	0.00058	mg/kg	EPA 537M BY ID

FA90919-46 DEMO-28

Perfluorohexanesulfonic acid		0.00048 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
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FA90919-47 DEMO-29

No hits reported in this sample.

FA90919-48 DEMO-31

Perfluorooctanesulfonic acid		0.0034	0.0011	0.00056	mg/kg	EPA 537M BY ID
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FA90919-49 DEMO-30

No hits reported in this sample.

FA90919-50 TUG-85

Perfluorohexanesulfonic acid		0.00030 J	0.0011	0.00056	mg/kg	EPA 537M BY ID
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Summary of Hits

Job Number: FA90919
Account: SGS North America, Inc
Project: 1217506
Collected: 11/11/21 thru 11/13/21



Lab Sample ID	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90919-51	TUG-83					
Perfluorooctanesulfonic acid		0.0277	0.0012	0.00060	mg/kg	EPA 537M BY ID
FA90919-52	TUG-82					
Perfluorohexanesulfonic acid		0.00042 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluoroheptanesulfonic acid		0.00042 J	0.0012	0.00062	mg/kg	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0202	0.0012	0.00062	mg/kg	EPA 537M BY ID
FA90919-53	TUG-81					
Perfluorooctanesulfonic acid		0.00092 J	0.0011	0.00053	mg/kg	EPA 537M BY ID
FA90919-54	TUG-80					
Perfluorooctanesulfonic acid		0.0090	0.0012	0.00060	mg/kg	EPA 537M BY ID
FA90919-55	FD-26					
Perfluorooctanesulfonic acid		0.0023	0.0012	0.00059	mg/kg	EPA 537M BY ID

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: TXY-115A	
Lab Sample ID: FA90919-1	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.8
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50308.D	1	12/11/21 01:27	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00049 U	0.00098	0.00049	0.00037	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00029	0.00098	0.00049	0.00024	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00042	0.00098	0.00049	0.00024	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0011	0.00098	0.00049	0.00024	mg/kg	
375-95-1	Perfluorononanoic acid	0.00068	0.00098	0.00049	0.00024	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00049 U	0.00098	0.00049	0.00026	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00049 U	0.00098	0.00049	0.00024	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.00098 U	0.0024	0.00098	0.00049	mg/kg	
2991-50-6	EtFOSAA	0.00098 U	0.0024	0.00098	0.00049	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00049 U	0.00098	0.00049	0.00024	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00049 U	0.00098	0.00049	0.00024	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.1
 4

Report of Analysis

Client Sample ID: TXY-115A	
Lab Sample ID: FA90919-1	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.8
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00049 U	0.00098	0.00049	0.00024	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	84%		50-150%
	13C7-PFUnDA	81%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	36%		30-130%
	d3-MeFOSAA	81%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-115B	
Lab Sample ID: FA90919-2	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.2
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50311.D	1	12/11/21 02:17	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.06 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056	0.0011	0.00056	0.00028	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00082	0.0011	0.00056	0.00028	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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4

Report of Analysis

Client Sample ID: TXY-115B	
Lab Sample ID: FA90919-2	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.2
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	101%		40-140%
	13C5-PFPeA	101%		50-150%
	13C5-PFHxA	102%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	105%		50-150%
	13C6-PFDA	106%		50-150%
	13C7-PFUnDA	102%		40-140%
	13C2-PFDoDA	104%		40-140%
	13C2-PFTeDA	103%		30-130%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	104%		50-150%
	13C8-PFOS	105%		50-150%
	13C8-FOSA	75%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	92%		40-140%
	13C2-4:2FTS	96%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-115C	
Lab Sample ID: FA90919-3	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.3
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50314.D	1	12/11/21 03:07	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052	0.0011	0.00053	0.00027	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.3
 4

Report of Analysis

Client Sample ID: TXY-115C	
Lab Sample ID: FA90919-3	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.3
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	101%		40-140%
	13C5-PFPeA	102%		50-150%
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	105%		50-150%
	13C6-PFDA	104%		50-150%
	13C7-PFUnDA	101%		40-140%
	13C2-PFDoDA	103%		40-140%
	13C2-PFTeDA	102%		30-130%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	102%		50-150%
	13C8-PFOS	106%		50-150%
	13C8-FOSA	100%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	104%		40-140%
	13C2-4:2FTS	96%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	96%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-18		
Lab Sample ID: FA90919-4		Date Sampled: 11/11/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 97.5
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50315.D	1	12/11/21 03:23	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00036	0.0010	0.00051	0.00026	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00028	0.0010	0.00051	0.00026	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00034	0.0010	0.00051	0.00026	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00051	0.0010	0.00051	0.00026	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00041	0.0010	0.00051	0.00026	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.4
 4

Report of Analysis

Client Sample ID: FD-18	
Lab Sample ID: FA90919-4	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.5
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	53%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	88%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-105A	
Lab Sample ID: FA90919-5	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.1
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50316.D	1	12/11/21 03:40	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0011	0.0012	0.00058	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00066	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00070	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0163	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.0011	0.0012	0.00058	0.00029	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.0014	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0042	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.5
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Report of Analysis

Client Sample ID: TXY-105A	
Lab Sample ID: FA90919-5	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.1
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	95%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	95%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	90%		30-130%
	d3-MeFOSAA	92%		40-140%
	d5-EtFOSAA	92%		40-140%
	13C2-4:2FTS	88%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	92%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-105B	
Lab Sample ID: FA90919-6	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.5
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50317.D	1	12/11/21 03:56	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0010	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00090	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00085	0.0012	0.00058	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-105B	
Lab Sample ID: FA90919-6	Date Sampled: 11/11/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.5
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	93%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	91%		30-130%
	d3-MeFOSAA	90%		40-140%
	d5-EtFOSAA	90%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-112A	
Lab Sample ID: FA90919-7	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.6
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50318.D	1	12/11/21 04:13	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0010	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00048	0.0010	0.00051	0.00026	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0167	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.7
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Report of Analysis

Client Sample ID: TXY-112A	
Lab Sample ID: FA90919-7	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.6
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	101%		40-140%
	13C2-PFTeDA	102%		30-130%
	13C3-PFBS	102%		50-150%
	13C3-PFHxS	103%		50-150%
	13C8-PFOS	103%		50-150%
	13C8-FOSA	48%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	95%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	100%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-112B	
Lab Sample ID: FA90919-8	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.9
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50319.D	1	12/11/21 04:29	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00073	0.0012	0.00060	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0017	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0016	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0012	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.8
4

Report of Analysis

Client Sample ID: TXY-112B	
Lab Sample ID: FA90919-8	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.9
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	103%		40-140%
	13C5-PFPeA	104%		50-150%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	104%		50-150%
	13C8-PFOA	107%		50-150%
	13C9-PFNA	107%		50-150%
	13C6-PFDA	108%		50-150%
	13C7-PFUnDA	104%		40-140%
	13C2-PFDoDA	107%		40-140%
	13C2-PFTeDA	104%		30-130%
	13C3-PFBS	102%		50-150%
	13C3-PFHxS	105%		50-150%
	13C8-PFOS	104%		50-150%
	13C8-FOSA	110%		30-130%
	d3-MeFOSAA	110%		40-140%
	d5-EtFOSAA	108%		40-140%
	13C2-4:2FTS	96%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-19		
Lab Sample ID: FA90919-9		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.7
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50320.D	1	12/11/21 04:46	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0015	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00028	0.0010	0.00051	0.00026	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00066	0.0010	0.00051	0.00026	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0156	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00035	0.0010	0.00051	0.00026	mg/kg	J
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.9
4

Report of Analysis

Client Sample ID: FD-19	
Lab Sample ID: FA90919-9	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.7
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	101%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	105%		50-150%
	13C6-PFDA	107%		50-150%
	13C7-PFUnDA	103%		40-140%
	13C2-PFDoDA	105%		40-140%
	13C2-PFTeDA	104%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	106%		50-150%
	13C8-PFOS	104%		50-150%
	13C8-FOSA	51%		30-130%
	d3-MeFOSAA	94%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	98%		50-150%
	13C2-6:2FTS	102%		50-150%
	13C2-8:2FTS	106%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-107A	Date Sampled: 11/12/21
Lab Sample ID: FA90919-10	Date Received: 11/18/21
Matrix: SO - Soil	Percent Solids: 96.8
Method: EPA 537M BY ID IN HOUSE	
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50321.D	1	12/11/21 05:02	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00050 U	0.0010	0.00050	0.00038	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00042	0.0010	0.00050	0.00025	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00032	0.0010	0.00050	0.00025	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.0021	0.0010	0.00050	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.0018	0.0010	0.00050	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.0022	0.0010	0.00050	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00050 U	0.0010	0.00050	0.00026	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00050	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-107A	
Lab Sample ID: FA90919-10	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.8
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00050 U	0.0010	0.00050	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	95%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	100%		40-140%
	13C2-PFTeDA	100%		30-130%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	41%		30-130%
	d3-MeFOSAA	87%		40-140%
	d5-EtFOSAA	87%		40-140%
	13C2-4:2FTS	92%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	96%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.10
4

Report of Analysis

Client Sample ID: TXY-107B	
Lab Sample ID: FA90919-11	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.0
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50322.D	1	12/11/21 05:19	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.08 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00048	0.0011	0.00053	0.00027	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00035	0.0011	0.00053	0.00027	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.11
4

Report of Analysis

Client Sample ID: TXY-107B	
Lab Sample ID: FA90919-11	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 90.0
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	107%		40-140%
	13C5-PFPeA	106%		50-150%
	13C5-PFHxA	107%		50-150%
	13C4-PFHpA	107%		50-150%
	13C8-PFOA	110%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	108%		40-140%
	13C2-PFDoDA	107%		40-140%
	13C2-PFTeDA	107%		30-130%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	109%		50-150%
	13C8-PFOS	106%		50-150%
	13C8-FOSA	102%		30-130%
	d3-MeFOSAA	103%		40-140%
	d5-EtFOSAA	105%		40-140%
	13C2-4:2FTS	99%		50-150%
	13C2-6:2FTS	102%		50-150%
	13C2-8:2FTS	102%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-106A	
Lab Sample ID: FA90919-12	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50323.D	1	12/11/21 05:35	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-106A	
Lab Sample ID: FA90919-12	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		40-140%
	13C5-PFPeA	97%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	97%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	97%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	75%		30-130%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	105%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-106B		
Lab Sample ID: FA90919-13		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.9
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50326.D	1	12/11/21 06:25	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00032	0.0012	0.00058	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.13
4

Report of Analysis

Client Sample ID: TXY-106B	
Lab Sample ID: FA90919-13	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 84.9
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	74%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	76%		50-150%
	13C7-PFUnDA	73%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	76%		30-130%
	d3-MeFOSAA	78%		40-140%
	d5-EtFOSAA	77%		40-140%
	13C2-4:2FTS	69%		50-150%
	13C2-6:2FTS	72%		50-150%
	13C2-8:2FTS	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.13
4

Report of Analysis

Client Sample ID: FD-20		
Lab Sample ID: FA90919-14		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 97.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50327.D	1	12/11/21 06:42	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.14
4

Report of Analysis

Client Sample ID: FD-20	
Lab Sample ID: FA90919-14	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.4
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	87%		30-130%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	58%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	84%		40-140%
	13C2-4:2FTS	79%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-113A	
Lab Sample ID: FA90919-15	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50328.D	1	12/11/21 06:58	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00072	0.0010	0.00051	0.00039	mg/kg	J
2706-90-3	Perfluoropentanoic acid	0.0028	0.0010	0.00051	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0034	0.0010	0.00051	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0055	0.0010	0.00051	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0245	0.0010	0.00051	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00042	0.0010	0.00051	0.00026	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00045	0.0010	0.00051	0.00026	mg/kg	J
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00041	0.0010	0.00051	0.00026	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0025	0.0010	0.00051	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: TXY-113A	
Lab Sample ID: FA90919-15	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 97.2
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxS	83%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	84%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	87%		30-130%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	54%		30-130%
	d3-MeFOSAA	80%		40-140%
	d5-EtFOSAA	82%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.15
4

Report of Analysis

Client Sample ID: TXY-113B	
Lab Sample ID: FA90919-16	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 93.4
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		40-140%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	80%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	62%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.16
4

Report of Analysis

Client Sample ID: TXY-114A	
Lab Sample ID: FA90919-17	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.3
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50330.D	1	12/11/21 07:31	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.17
4

Report of Analysis

Client Sample ID: TXY-114A	
Lab Sample ID: FA90919-17	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 85.3
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	90%		40-140%
	13C2-PFDoDA	91%		40-140%
	13C2-PFTeDA	92%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	91%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	94%		40-140%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-114B		Date Sampled: 11/12/21
Lab Sample ID: FA90919-18		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 91.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50331.D	1	12/11/21 07:48	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00027	0.0011	0.00054	0.00027	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID: TXY-114B	
Lab Sample ID: FA90919-18	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 91.8
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	78%		30-130%
	d3-MeFOSAA	90%		40-140%
	d5-EtFOSAA	92%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.18
4

Report of Analysis

Client Sample ID: TXY-114C		
Lab Sample ID: FA90919-19		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 88.0
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50332.D	1	12/11/21 08:04	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00045	0.0011	0.00057	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00039	0.0011	0.00057	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: TXY-114C	
Lab Sample ID: FA90919-19	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 88.0
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	93%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	77%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	107%		40-140%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	95%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.19
4

Report of Analysis

Client Sample ID: DEMO-5		
Lab Sample ID: FA90919-20		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 73.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50336.D	1	12/11/21 09:10	MV	12/06/21 07:00	OP88656	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00067 U	0.0013	0.00067	0.00051	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
375-95-1	Perfluorononanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00067 U	0.0013	0.00067	0.00035	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0012	0.0013	0.00067	0.00033	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0028	0.0013	0.00067	0.00033	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00067 U	0.0013	0.00067	0.00033	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0013 U	0.0033	0.0013	0.00067	mg/kg	
2991-50-6	EtFOSAA	0.0013 U	0.0033	0.0013	0.00067	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00033	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0030	0.0013	0.00067	0.00033	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID:	DEMO-5	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-20	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	73.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00067 U	0.0013	0.00067	0.00033	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	84%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	88%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.20
4

Report of Analysis

Client Sample ID: FD-21		
Lab Sample ID: FA90919-21		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.8
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23690.D	1	12/15/21 22:06	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0010	0.0012	0.00061	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0025	0.0012	0.00061	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0026	0.0012	0.00061	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.21
4

Report of Analysis

Client Sample ID: FD-21	
Lab Sample ID: FA90919-21	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.8
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		40-140%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	63%		50-150%
	13C8-PFOA	64%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	64%		50-150%
	13C7-PFUnDA	61%		40-140%
	13C2-PFDoDA	59%		40-140%
	13C2-PFTeDA	57%		30-130%
	13C3-PFBS	64%		50-150%
	13C3-PFHxS	59%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	64%		30-130%
	d3-MeFOSAA	62%		40-140%
	d5-EtFOSAA	62%		40-140%
	13C2-4:2FTS	59%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	59%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-6	
Lab Sample ID: FA90919-22	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.0
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	84%		30-130%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	75%		40-140%
	d5-EtFOSAA	76%		40-140%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	84%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-8		
Lab Sample ID: FA90919-23		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.7
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23694.D	1	12/15/21 23:12	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID:	DEMO-8	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-23	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	85.7
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		40-140%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	86%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	86%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	84%		30-130%
	d3-MeFOSAA	69%		40-140%
	d5-EtFOSAA	77%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	88%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.23
4

Report of Analysis

Client Sample ID: DEMO-9		
Lab Sample ID: FA90919-24		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.9
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23697.D	1	12/16/21 00:02	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00033	0.0012	0.00058	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00035	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00077	0.0012	0.00058	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0029	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0094	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.24
4

Report of Analysis

Client Sample ID:	DEMO-9	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-24	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	86.9
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	87%		40-140%
	13C2-PFDoDA	86%		40-140%
	13C2-PFTeDA	82%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	86%		40-140%
	d5-EtFOSAA	94%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	92%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.25
4

Client Sample ID: TXY-92		
Lab Sample ID: FA90919-25		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23698.D	1	12/16/21 00:19	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TXY-92	
Lab Sample ID: FA90919-25	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.4
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	92%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	95%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	97%		50-150%
	13C8-FOSA	88%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	106%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	95%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.25
4

Report of Analysis

Client Sample ID: FD-22		
Lab Sample ID: FA90919-26		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 96.5
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23699.D	1	12/16/21 00:35	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00051 U	0.0010	0.00051	0.00039	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-95-1	Perfluorononanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00051 U	0.0010	0.00051	0.00027	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0025	0.0010	0.00051	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.26
4

Report of Analysis

Client Sample ID: FD-22	
Lab Sample ID: FA90919-26	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 96.5
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00051 U	0.0010	0.00051	0.00025	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	93%		40-140%
	13C2-PFTeDA	88%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	97%		50-150%
	13C8-FOSA	79%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.26
 4

Report of Analysis

Client Sample ID: DEMO-10		
Lab Sample ID: FA90919-27		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23700.D	1	12/16/21 00:52	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.27
4

Report of Analysis

Client Sample ID:	DEMO-10	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-27	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	85.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%		40-140%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	95%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	91%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	90%		30-130%
	d3-MeFOSAA	89%		40-140%
	d5-EtFOSAA	91%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	90%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-11	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-28	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	85.9
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	87%		30-130%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	86%		40-140%
	d5-EtFOSAA	88%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	85%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-12		Date Sampled: 11/12/21
Lab Sample ID: FA90919-29		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 87.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23702.D	1	12/16/21 01:25	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00030	0.0011	0.00057	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0018	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID:	DEMO-12	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-29	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	87.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	92%		40-140%
	13C2-PFTeDA	91%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	90%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.29
4

Report of Analysis

Client Sample ID: DEMO-13	
Lab Sample ID: FA90919-30	Date Sampled: 11/12/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 95.8
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23703.D	1	12/16/21 01:42	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00052 U	0.0010	0.00052	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00048	0.0010	0.00052	0.00026	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00052 U	0.0010	0.00052	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0011	0.0010	0.00052	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0016	0.0010	0.00052	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	
2991-50-6	EtFOSAA	0.0010 U	0.0026	0.0010	0.00052	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-13	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-30	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	95.8
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052 U	0.0010	0.00052	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		40-140%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	95%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	98%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	97%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	71%		30-130%
	d3-MeFOSAA	101%		40-140%
	d5-EtFOSAA	104%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.30
4

Report of Analysis

Client Sample ID: DEMO-14		Date Sampled: 11/12/21
Lab Sample ID: FA90919-31		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 86.9
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23704.D	1	12/16/21 01:58	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00035	0.0011	0.00057	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.00040	0.0011	0.00057	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.31
4

Report of Analysis

Client Sample ID:	DEMO-14	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-31	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	86.9
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	88%		40-140%
	13C2-PFDoDA	84%		40-140%
	13C2-PFTeDA	79%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	78%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	89%		40-140%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	87%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.31
 4

Report of Analysis

Client Sample ID: FD-23		
Lab Sample ID: FA90919-32		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.7
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23705.D	1	12/16/21 02:15	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00032	0.0011	0.00057	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.32
4

Report of Analysis

Client Sample ID: FD-23		Date Sampled: 11/12/21
Lab Sample ID: FA90919-32		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 86.7
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	81%		40-140%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	87%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	87%		30-130%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	71%		40-140%
	d5-EtFOSAA	82%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	89%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-15		Date Sampled: 11/12/21
Lab Sample ID: FA90919-33		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 83.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23706.D	1	12/16/21 02:31	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00062	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0022	0.0012	0.00058	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00036	0.0012	0.00058	0.00029	mg/kg	J
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0039	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0100	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00091	0.0012	0.00058	0.00029	mg/kg	J
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.33
4

Report of Analysis

Client Sample ID:	DEMO-15	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-33	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	83.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00033	0.0012	0.00058	0.00029	mg/kg	J

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	95%		30-130%
	d3-MeFOSAA	116%		40-140%
	d5-EtFOSAA	117%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.33
4

Report of Analysis

Client Sample ID: DEMO-16		Date Sampled: 11/12/21
Lab Sample ID: FA90919-34		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 86.4
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23709.D	1	12/16/21 03:21	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056	0.0011	0.00057	0.00029	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.34
4

Report of Analysis

Client Sample ID:	DEMO-16	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-34	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	86.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		40-140%
	13C5-PFPeA	90%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	81%		30-130%
	13C3-PFBS	92%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	85%		30-130%
	d3-MeFOSAA	95%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.34
 4

Report of Analysis

Client Sample ID: DEMO-17		
Lab Sample ID: FA90919-35		Date Sampled: 11/12/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.1
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23710.D	1	12/16/21 03:38	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00057 U	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00040	0.0011	0.00057	0.00029	mg/kg	J
307-24-4	Perfluoroheptanoic acid	0.00040	0.0011	0.00057	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00036	0.0011	0.00057	0.00029	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0016	0.0011	0.00057	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
355-46-4	Perfluoroheptanesulfonic acid	0.0044	0.0011	0.00057	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0029	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID:	DEMO-17	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-35	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	87.1
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		40-140%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	85%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	83%		30-130%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	81%		30-130%
	d3-MeFOSAA	69%		40-140%
	d5-EtFOSAA	73%		40-140%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	84%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.35
4

Report of Analysis

Client Sample ID: DEMO-18		Date Sampled: 11/12/21
Lab Sample ID: FA90919-36		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 81.0
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23711.D	1	12/16/21 03:54	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00052	0.0012	0.00062	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00044	0.0012	0.00062	0.00031	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00033	0.0012	0.00062	0.00031	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.36
4

Report of Analysis

Client Sample ID:	DEMO-18	Date Sampled:	11/12/21
Lab Sample ID:	FA90919-36	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	81.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		40-140%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	82%		40-140%
	13C2-PFDoDA	82%		40-140%
	13C2-PFTeDA	81%		30-130%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	73%		30-130%
	d3-MeFOSAA	84%		40-140%
	d5-EtFOSAA	90%		40-140%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-21		Date Sampled: 11/13/21
Lab Sample ID: FA90919-37		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 87.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23712.D	1	12/16/21 04:11	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00028	0.0011	0.00056	0.00028	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00082	0.0011	0.00056	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0018	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00039	0.0011	0.00056	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.37
4

Report of Analysis

Client Sample ID:	DEMO-21	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-37	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	87.6
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	91%		40-140%
	13C5-PFPeA	91%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	96%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	94%		40-140%
	13C2-PFTeDA	93%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	77%		30-130%
	d3-MeFOSAA	89%		40-140%
	d5-EtFOSAA	99%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	95%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-24		
Lab Sample ID: FA90919-38		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 85.7
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23713.D	1	12/16/21 04:27	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00079	0.0012	0.00058	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0019	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00081	0.0012	0.00058	0.00029	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00072	0.0012	0.00058	0.00029	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

Client Sample ID:	FD-24	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-38	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	85.7
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	76%		40-140%
	13C2-PFDoDA	73%		40-140%
	13C2-PFTeDA	72%		30-130%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	72%		30-130%
	d3-MeFOSAA	79%		40-140%
	d5-EtFOSAA	83%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.38
4

Report of Analysis

4.39
4

Client Sample ID: DEMO-22	
Lab Sample ID: FA90919-39	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.3
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23714.D	1	12/16/21 04:44	MV	12/06/21 07:00	OP88657	S4Q325
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYL CARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.00061 U	0.0012	0.00061	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00061 U	0.0012	0.00061	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
PERFLUOROOCCTANESULFONAMIDES							
754-91-6	PFOSA	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00061	mg/kg	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-22	
Lab Sample ID: FA90919-39	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 81.3
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00061 U	0.0012	0.00061	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		40-140%
	13C5-PFPeA	88%		50-150%
	13C5-PFHxA	90%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	93%		40-140%
	13C2-PFDoDA	92%		40-140%
	13C2-PFTeDA	89%		30-130%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	82%		30-130%
	d3-MeFOSAA	88%		40-140%
	d5-EtFOSAA	103%		40-140%
	13C2-4:2FTS	90%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	96%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-23	
Lab Sample ID: FA90919-40	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.8
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23715.D	1	12/16/21 05:01	MV	12/06/21 07:00	OP88657	S4Q325
Run #2	4Q23746.D	20	12/16/21 13:45	MV	12/06/21 07:00	OP88657	S4Q325

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2	2.01 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.0011	0.0011	0.00057	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0087	0.0011	0.00057	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.0041	0.0011	0.00057	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.0017	0.0011	0.00057	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00052	0.0011	0.00057	0.00028	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00057 U	0.0011	0.00057	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0019	0.0011	0.00057	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00038	0.0011	0.00057	0.00028	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0023	0.0011	0.00057	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00057	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0784 ^a	0.023	0.011	0.0057	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID: DEMO-23	
Lab Sample ID: FA90919-40	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.8
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00057 U	0.0011	0.00057	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%	88%	40-140%
	13C5-PFPeA	85%	85%	50-150%
	13C5-PFHxA	85%	84%	50-150%
	13C4-PFHpA	86%	88%	50-150%
	13C8-PFOA	86%	88%	50-150%
	13C9-PFNA	88%	97%	50-150%
	13C6-PFDA	92%	100%	50-150%
	13C7-PFUnDA	88%	99%	40-140%
	13C2-PFDoDA	87%	93%	40-140%
	13C2-PFTeDA	84%	97%	30-130%
	13C3-PFBS	90%	101%	50-150%
	13C3-PFHxS	91%	97%	50-150%
	13C8-PFOS	88%	106%	50-150%
	13C8-FOSA	84%	89%	30-130%
	d3-MeFOSAA	77%	87%	40-140%
	d5-EtFOSAA	88%	88%	40-140%
	13C2-4:2FTS	83%	88%	50-150%
	13C2-6:2FTS	131%	138%	50-150%
	13C2-8:2FTS	90%	91%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.40
4

Report of Analysis

Client Sample ID:	DEMO-24	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-41	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	81.8
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50347.D	1	12/11/21 12:13	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.0015	0.0012	0.00059	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00071	0.0012	0.00059	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00034	0.0012	0.00059	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.0012	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0010	0.0012	0.00059	0.00030	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00036	0.0012	0.00059	0.00030	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.41
4

Report of Analysis

Client Sample ID:	DEMO-24	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-41	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	81.8
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		40-140%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	95%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	100%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	96%		40-140%
	13C2-PFDoDA	96%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	98%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	87%		30-130%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	107%		40-140%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	97%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-25		
Lab Sample ID: FA90919-42		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 82.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50350.D	1	12/11/21 13:02	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00078	0.0012	0.00059	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00049	0.0012	0.00059	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.0014	0.0012	0.00059	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.0030	0.0012	0.00059	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0033	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.0014	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0015	0.0012	0.00059	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.42
4

Report of Analysis

Client Sample ID:	DEMO-25	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-42	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	82.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		40-140%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	96%		50-150%
	13C4-PFHpA	97%		50-150%
	13C8-PFOA	98%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	95%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	94%		30-130%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	101%		30-130%
	d3-MeFOSAA	97%		40-140%
	d5-EtFOSAA	95%		40-140%
	13C2-4:2FTS	88%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	92%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-26	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-43	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	82.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50351.D	1	12/11/21 13:19	MV	12/06/21 07:00	OP88658	S3Q707
Run #2	3Q50383.D	2	12/13/21 18:15	MV	12/06/21 07:00	OP88658	S3Q708

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2	2.01 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00072	0.0012	0.00060	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00063	0.0012	0.00060	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00031	0.0012	0.00060	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00058	0.0012	0.00060	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0018	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0794 ^a	0.0024	0.0012	0.00060	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053	0.0012	0.00060	0.00030	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.43
4

Report of Analysis

Client Sample ID:	DEMO-26	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-43	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	82.4
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00052	0.0012	0.00060	0.00030	mg/kg	J

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%	80%	40-140%
	13C5-PFPeA	82%	83%	50-150%
	13C5-PFHxA	83%	83%	50-150%
	13C4-PFHpA	85%	86%	50-150%
	13C8-PFOA	88%	89%	50-150%
	13C9-PFNA	85%	85%	50-150%
	13C6-PFDA	89%	88%	50-150%
	13C7-PFUnDA	87%	86%	40-140%
	13C2-PFDoDA	89%	88%	40-140%
	13C2-PFTeDA	86%	87%	30-130%
	13C3-PFBS	88%	89%	50-150%
	13C3-PFHxS	87%	92%	50-150%
	13C8-PFOS	85%	86%	50-150%
	13C8-FOSA	66%	65%	30-130%
	d3-MeFOSAA	81%	73%	40-140%
	d5-EtFOSAA	79%	72%	40-140%
	13C2-4:2FTS	81%	77%	50-150%
	13C2-6:2FTS	85%	81%	50-150%
	13C2-8:2FTS	84%	81%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: FD-25		
Lab Sample ID: FA90919-44		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.0
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50352.D	1	12/11/21 13:35	MV	12/06/21 07:00	OP88658	S3Q707
Run #2	3Q50384.D	5	12/13/21 18:32	MV	12/06/21 07:00	OP88658	S3Q708

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2	2.03 g	1.0 ml

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00045	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00079	0.0012	0.00059	0.00030	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00064	0.0012	0.00059	0.00030	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00035	0.0012	0.00059	0.00030	mg/kg	J
335-67-1	Perfluorooctanoic acid	0.00069	0.0012	0.00059	0.00030	mg/kg	J
375-95-1	Perfluorononanoic acid	0.00059	0.0012	0.00059	0.00030	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0020	0.0012	0.00059	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.146 ^a	0.0059	0.0030	0.0015	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00046	0.0012	0.00059	0.00030	mg/kg	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.44
4

Report of Analysis

Client Sample ID: FD-25	
Lab Sample ID: FA90919-44	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 83.0
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0028	0.0012	0.00059	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%	97%	40-140%
	13C5-PFPeA	88%	98%	50-150%
	13C5-PFHxA	89%	100%	50-150%
	13C4-PFHpA	90%	100%	50-150%
	13C8-PFOA	92%	105%	50-150%
	13C9-PFNA	84%	99%	50-150%
	13C6-PFDA	92%	102%	50-150%
	13C7-PFUnDA	90%	100%	40-140%
	13C2-PFDoDA	90%	99%	40-140%
	13C2-PFTeDA	89%	97%	30-130%
	13C3-PFBS	91%	105%	50-150%
	13C3-PFHxS	90%	103%	50-150%
	13C8-PFOS	83%	100%	50-150%
	13C8-FOSA	82%	93%	30-130%
	d3-MeFOSAA	91%	93%	40-140%
	d5-EtFOSAA	87%	85%	40-140%
	13C2-4:2FTS	84%	90%	50-150%
	13C2-6:2FTS	87%	95%	50-150%
	13C2-8:2FTS	87%	93%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-27		
Lab Sample ID: FA90919-45		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 86.4
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50387.D	1	12/13/21 19:21	MV	12/06/21 07:00	OP88658	S3Q708
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00058 U	0.0012	0.00058	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00052	0.0012	0.00058	0.00029	mg/kg	J
307-24-4	Perfluorohexanoic acid	0.00044	0.0012	0.00058	0.00029	mg/kg	J
375-85-9	Perfluoroheptanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00067	0.0012	0.00058	0.00029	mg/kg	J
375-95-1	Perfluorononanoic acid	0.0011	0.0012	0.00058	0.00029	mg/kg	J
335-76-2	Perfluorodecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00058 U	0.0012	0.00058	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.0016	0.0012	0.00058	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00066	0.0012	0.00058	0.00029	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0064	0.0012	0.00058	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00058	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.45
4

Report of Analysis

Client Sample ID: DEMO-27	
Lab Sample ID: FA90919-45	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 86.4
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00058 U	0.0012	0.00058	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	83%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	88%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	89%		40-140%
	13C2-PFDoDA	90%		40-140%
	13C2-PFTeDA	90%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	91%		50-150%
	13C8-FOSA	79%		30-130%
	d3-MeFOSAA	70%		40-140%
	d5-EtFOSAA	68%		40-140%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: DEMO-28	
Lab Sample ID: FA90919-46	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 94.0
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50354.D	1	12/11/21 14:09	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00048	0.0011	0.00053	0.00026	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.46
4

Report of Analysis

Client Sample ID:	DEMO-28	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-46	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	94.0
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		40-140%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	79%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	77%		30-130%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	63%		30-130%
	d3-MeFOSAA	77%		40-140%
	d5-EtFOSAA	82%		40-140%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	84%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.47
4

Client Sample ID:	DEMO-29	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-47	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	93.1
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50357.D	1	12/11/21 14:58	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00054 U	0.0011	0.00054	0.00041	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-95-1	Perfluorononanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00054 U	0.0011	0.00054	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0027	0.0011	0.00054	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-29	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-47	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	93.1
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00054 U	0.0011	0.00054	0.00027	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		40-140%
	13C5-PFPeA	93%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	95%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	87%		40-140%
	13C2-PFTeDA	85%		30-130%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	86%		30-130%
	d3-MeFOSAA	93%		40-140%
	d5-EtFOSAA	116%		40-140%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	98%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.47
4

Report of Analysis

4.48
4

Client Sample ID: DEMO-31		Date Sampled: 11/13/21
Lab Sample ID: FA90919-48		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 85.8
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50358.D	1	12/11/21 15:15	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.09 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0034	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecane sulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUORO OCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUORO OCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	DEMO-31	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-48	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	85.8
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	111%		40-140%
	13C5-PFPeA	110%		50-150%
	13C5-PFHxA	111%		50-150%
	13C4-PFHpA	112%		50-150%
	13C8-PFOA	115%		50-150%
	13C9-PFNA	114%		50-150%
	13C6-PFDA	114%		50-150%
	13C7-PFUnDA	112%		40-140%
	13C2-PFDoDA	109%		40-140%
	13C2-PFTeDA	110%		30-130%
	13C3-PFBS	110%		50-150%
	13C3-PFHxS	110%		50-150%
	13C8-PFOS	109%		50-150%
	13C8-FOSA	111%		30-130%
	d3-MeFOSAA	107%		40-140%
	d5-EtFOSAA	111%		40-140%
	13C2-4:2FTS	102%		50-150%
	13C2-6:2FTS	108%		50-150%
	13C2-8:2FTS	111%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.48
4

Report of Analysis

Client Sample ID: DEMO-30	
Lab Sample ID: FA90919-49	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 87.1
Project: 1217506	

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50359.D	1	12/11/21 15:31	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.07 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00055 U	0.0011	0.00055	0.00042	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00055 U	0.0011	0.00055	0.00029	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00055	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.49
4

Report of Analysis

Client Sample ID:	DEMO-30	Date Sampled:	11/13/21
Lab Sample ID:	FA90919-49	Date Received:	11/18/21
Matrix:	SO - Soil	Percent Solids:	87.1
Method:	EPA 537M BY ID IN HOUSE		
Project:	1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00055 U	0.0011	0.00055	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	78%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	77%		40-140%
	13C2-PFDoDA	75%		40-140%
	13C2-PFTeDA	76%		30-130%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	78%		30-130%
	d3-MeFOSAA	72%		40-140%
	d5-EtFOSAA	75%		40-140%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-85		
Lab Sample ID: FA90919-50		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 87.3
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50360.D	1	12/11/21 15:48	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.04 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00056 U	0.0011	0.00056	0.00043	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
375-95-1	Perfluorononanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00056 U	0.0011	0.00056	0.00030	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00030	0.0011	0.00056	0.00028	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0028	0.0011	0.00056	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.50
4

Report of Analysis

Client Sample ID: TUG-85	Date Sampled: 11/13/21
Lab Sample ID: FA90919-50	Date Received: 11/18/21
Matrix: SO - Soil	Percent Solids: 87.3
Method: EPA 537M BY ID IN HOUSE	
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00056 U	0.0011	0.00056	0.00028	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	101%		40-140%
	13C5-PFPeA	100%		50-150%
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	103%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	95%		40-140%
	13C2-PFDoDA	92%		40-140%
	13C2-PFTeDA	92%		30-130%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	97%		30-130%
	d3-MeFOSAA	105%		40-140%
	d5-EtFOSAA	109%		40-140%
	13C2-4:2FTS	93%		50-150%
	13C2-6:2FTS	98%		50-150%
	13C2-8:2FTS	103%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.50
4

Report of Analysis

Client Sample ID: TUG-83		
Lab Sample ID: FA90919-51		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.1
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50361.D	1	12/11/21 16:04	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0277	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.51
4

Report of Analysis

Client Sample ID: TUG-83	Date Sampled: 11/13/21
Lab Sample ID: FA90919-51	Date Received: 11/18/21
Matrix: SO - Soil	Percent Solids: 83.1
Method: EPA 537M BY ID IN HOUSE	
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		40-140%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	80%		40-140%
	13C2-PFDoDA	79%		40-140%
	13C2-PFTeDA	80%		30-130%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	83%		30-130%
	d3-MeFOSAA	83%		40-140%
	d5-EtFOSAA	81%		40-140%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	78%		50-150%
	13C2-8:2FTS	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.52
4

Client Sample ID: TUG-82		
Lab Sample ID: FA90919-52		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 80.5
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50362.D	1	12/11/21 16:21	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.00 g	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
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PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00062 U	0.0012	0.00062	0.00047	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
375-95-1	Perfluorononanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00062 U	0.0012	0.00062	0.00033	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00042	0.0012	0.00062	0.00031	mg/kg	J
375-92-8	Perfluoroheptanesulfonic acid	0.00042	0.0012	0.00062	0.00031	mg/kg	J
1763-23-1	Perfluorooctanesulfonic acid	0.0202	0.0012	0.00062	0.00031	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0031	0.0012	0.00062	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-82	
Lab Sample ID: FA90919-52	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 80.5
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00062 U	0.0012	0.00062	0.00031	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		40-140%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	88%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	87%		40-140%
	13C2-PFDoDA	81%		40-140%
	13C2-PFTeDA	74%		30-130%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	92%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	88%		30-130%
	d3-MeFOSAA	72%		40-140%
	d5-EtFOSAA	80%		40-140%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	91%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

4.53
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Client Sample ID: TUG-81		
Lab Sample ID: FA90919-53		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 93.7
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50363.D	1	12/11/21 16:37	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.03 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00053 U	0.0011	0.00053	0.00040	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-95-1	Perfluorononanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00053 U	0.0011	0.00053	0.00028	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.00092	0.0011	0.00053	0.00026	mg/kg	J
68259-12-1	Perfluorononanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	
2991-50-6	EtFOSAA	0.0011 U	0.0026	0.0011	0.00053	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-81	
Lab Sample ID: FA90919-53	Date Sampled: 11/13/21
Matrix: SO - Soil	Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE	Percent Solids: 93.7
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00053 U	0.0011	0.00053	0.00026	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	99%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	98%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	99%		40-140%
	13C2-PFDoDA	95%		40-140%
	13C2-PFTeDA	95%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	105%		30-130%
	d3-MeFOSAA	110%		40-140%
	d5-EtFOSAA	108%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	98%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: TUG-80		
Lab Sample ID: FA90919-54		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 83.1
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50364.D	1	12/11/21 16:54	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.01 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00060 U	0.0012	0.00060	0.00046	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-95-1	Perfluorononanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00060 U	0.0012	0.00060	0.00032	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0090	0.0012	0.00060	0.00030	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0030	0.0012	0.00060	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.54
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Report of Analysis

Client Sample ID: TUG-80	Date Sampled: 11/13/21
Lab Sample ID: FA90919-54	Date Received: 11/18/21
Matrix: SO - Soil	Percent Solids: 83.1
Method: EPA 537M BY ID IN HOUSE	
Project: 1217506	

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00060 U	0.0012	0.00060	0.00030	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	103%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	97%		40-140%
	13C2-PFTeDA	97%		30-130%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	99%		50-150%
	13C8-FOSA	99%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	99%		40-140%
	13C2-4:2FTS	92%		50-150%
	13C2-6:2FTS	96%		50-150%
	13C2-8:2FTS	96%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: FD-26		
Lab Sample ID: FA90919-55		Date Sampled: 11/13/21
Matrix: SO - Soil		Date Received: 11/18/21
Method: EPA 537M BY ID IN HOUSE		Percent Solids: 84.6
Project: 1217506		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50365.D	1	12/11/21 17:11	MV	12/06/21 07:00	OP88658	S3Q707
Run #2							

	Initial Weight	Final Volume
Run #1	2.02 g	1.0 ml
Run #2		

CAS No. Compound Result LOQ LOD DL Units Q

PERFLUOROALKYL CARBOXYLIC ACIDS

375-22-4	Perfluorobutanoic acid	0.00059 U	0.0012	0.00059	0.00044	mg/kg	
2706-90-3	Perfluoropentanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-24-4	Perfluorohexanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-85-9	Perfluoroheptanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-67-1	Perfluorooctanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-95-1	Perfluorononanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-76-2	Perfluorodecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2058-94-8	Perfluoroundecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
307-55-1	Perfluorododecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
72629-94-8	Perfluorotridecanoic acid	0.00059 U	0.0012	0.00059	0.00031	mg/kg	
376-06-7	Perfluorotetradecanoic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROALKYLSULFONIC ACIDS

375-73-5	Perfluorobutanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
2706-91-4	Perfluoropentanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
355-46-4	Perfluorohexanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
375-92-8	Perfluoroheptanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
1763-23-1	Perfluorooctanesulfonic acid	0.0023	0.0012	0.00059	0.00029	mg/kg	
68259-12-1	Perfluorononanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
335-77-3	Perfluorodecanesulfonic acid	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

PERFLUOROOCCTANESULFONAMIDES

754-91-6	PFOSA	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
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PERFLUOROOCCTANESULFONAMIDOACETIC ACIDS

2355-31-9	MeFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	
2991-50-6	EtFOSAA	0.0012 U	0.0029	0.0012	0.00059	mg/kg	

FLUOROTELOMER SULFONATES

757124-72-4	4:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

4.55
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Report of Analysis

Client Sample ID: FD-26		Date Sampled: 11/13/21
Lab Sample ID: FA90919-55		Date Received: 11/18/21
Matrix: SO - Soil		Percent Solids: 84.6
Method: EPA 537M BY ID IN HOUSE		
Project: 1217506		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.00059 U	0.0012	0.00059	0.00029	mg/kg	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		40-140%
	13C5-PFPeA	98%		50-150%
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	102%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	100%		40-140%
	13C2-PFDoDA	100%		40-140%
	13C2-PFTeDA	99%		30-130%
	13C3-PFBS	100%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	95%		30-130%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	98%		40-140%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	93%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
 LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
 E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

Parameter Certification Exceptions

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
4:2 Fluorotelomer sulfonate	757124-72-4	EPA 537M BY ID	SO	Certified by SOP MS014
6:2 Fluorotelomer sulfonate	27619-97-2	EPA 537M BY ID	SO	Certified by SOP MS014
8:2 Fluorotelomer sulfonate	39108-34-4	EPA 537M BY ID	SO	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	SO	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	SO	Certified by SOP MS014
PFOSA	754-91-6	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorobutanoic acid	375-22-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanesulfonic acid	335-77-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanesulfonic acid	375-92-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanesulfonic acid	68259-12-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorononanoic acid	375-95-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanesulfonic acid	2706-91-4	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoropentanoic acid	2706-90-3	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	SO	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	SO	Certified by SOP MS014

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SGS North America Inc.
CHAIN OF CUSTODY RECORD



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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference: SGS Orlando, FL				Page 1 of 6				
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1217506		PWSID#:		CONTAINER	Preservative Used: NONE	TYPE	C = COMP G = GRAB M = Multi-Incremental Soils	EPA 537 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com										
INVOICE TO: SGS - Alaska <i>LA 361250</i>		QUOTE #:										
env.alaska.accounting@sgs.com		P.O. #: 1217506										
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE	#	MS	MSD	SGS lab #	Location ID			
1	TXY-115A	11/11/2021	13:30:00	Solid	1			1217506001				
2	TXY-115B	11/11/2021	13:35:00	Solid	1			1217506002				
3	TXY-115C	11/11/2021	13:40:00	Solid	1			1217506003				
4	FD-18	11/11/2021	13:45:00	Solid	1			1217506004				
5	TXY-105A	11/11/2021	14:00:00	Solid	1			1217506005				
6	TXY-105B	11/11/2021	14:05:00	Solid	1			1217506006				
7	TXY-112A	11/12/2021	08:30:00	Solid	1			1217506007				
8	TXY-112B	11/12/2021	08:35:00	Solid	1			1217506008				
9	FD-19	11/12/2021	08:00:00	Solid	1			1217506009				
10	TXY-107A	11/12/2021	08:45:00	Solid	1			1217506010				
Relinquished By: (1)		Date	Time	Received By:	DOD Project? <input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO			Data Deliverable Requirements:				
<i>J. Shumway</i>		<i>11/17/21</i>	<i>09:52</i>	<i>Julie Shumway</i>	Report to DL (J Flags)? YES			Level 2				
Relinquished By: (2)		Date	Time	Received By:	Cooler ID:			Requested Turnaround Time and/or Special Instructions:				
		<i>11/18/21</i>	<i>10:15</i>					<i>AIRPORT SAMPLES - MAY BE HOT Full List 24</i>				
Relinquished By: (3)		Date	Time	Received By:	Temp Blank °C:			Chain of Custody Seal: (Circle)				
					<i>2.2</i>			INTACT <input type="checkbox"/> BROKEN <input type="checkbox"/> ABSENT <input type="checkbox"/>				
Relinquished By: (4)		Date	Time	Received For Laboratory By:	or Ambient []							

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[. 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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INITIAL ASSESSMENT *[Signature]*
LABEL VERIFICATION *PH*

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5.2
5

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CHAIN OF CUSTODY RECORD



FA 90919

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference:				Page 2 of 6			
CONTACT: Julie Shumway PHONE NO: (907) 562-2343				Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217506		PWSID#:		#		Preservative Used: NONE					
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com		CONTAINER		TYPE					
		Env.Alaska.RefLabTeam@sgs.com		A		C = COMP					
INVOICE TO: SGS - Alaska		QUOTE #: 686230		I		G = GRAB					
env.alaska.accounting@sgs.com		P.O. #: 1217506		N		MI = Multi Incremental Soils					
				E		EPA 537 PFAS: CONFIRM LIST					
				R				MS		MSD	
				S						SGS lab #	
RESERVED for lab use		SAMPLE IDENTIFICATION		DATE mm/dd/yy		TIME HHMM		MATRIX/MATRIX CODE		Location ID	
11		TXY-107B		11/12/2021		08:50:00		Solid 1		1217506011	
12		TXY-106A		11/12/2021		09:10:00		Solid 1		1217506012	
13		TXY-106B		11/12/2021		09:15:00		Solid 1		1217506013	
14		FD-20		11/12/2021		09:00:00		Solid 1		1217506014	
15		TXY-113A		11/12/2021		09:30:00		Solid 1		1217506015	
16		TXY-113B		11/12/2021		09:35:00		Solid 1		1217506016	
17		TXY-114A		11/12/2021		09:50:00		Solid 1		1217506017	
18		TXY-114B		11/12/2021		09:55:00		Solid 1		1217506018	
19		TXY-114C		11/12/2021		10:00:00		Solid 1		1217506019	
20		DEMO-5		11/12/2021		10:30:00		Solid 1		1217506020	
Relinquished By: (1)		Date		Time		Received By:		DOD Project? 0		Data Deliverable Requirements:	
<i>Julie Shumway</i>		11/17/21		0952		<i>Carly...</i>		Report to DL (J Flags)? If J- Report as DL/LOD/LOQ. YES		Level 2	
Relinquished By: (2)		Date		Time		Received By:		Cooler ID:			
		11/18/21		1015				Requested Turnaround Time and/or Special Instructions: AIRPORT SAMPLES - MAY BE HOT Full List 24			
Relinquished By: (3)		Date		Time		Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)	
								or Ambient []		INTACT BROKEN ABSENT	
Relinquished By: (4)		Date		Time		Received For Laboratory By:					

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FA90919: Chain of Custody

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference:				Page 3 of 6																																																																													
CONTACT: Julie Shumway		PHONE NO: (907) 562-2343		Additional Comments: All soils report out in dry weight unless																																																																																	
PROJECT NAME: 1217506		PWSID#:		<table border="1"> <tr> <td>#</td> <td>Preservative Used:</td> <td rowspan="3">NONE</td> <td rowspan="3">EPA 817 PFAS-CONFIRM LIST</td> <td rowspan="3">MS</td> <td rowspan="3">MSD</td> <td rowspan="3">SGS lab #</td> <td rowspan="3">Location ID</td> </tr> <tr> <td>C</td> <td>TYPE</td> </tr> <tr> <td>O</td> <td>C = COMP</td> </tr> <tr> <td>N</td> <td>S = GRAB</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>T</td> <td>MI = Multi Incremental Soils</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>A</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>I</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>N</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>E</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>R</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>S</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>						#	Preservative Used:	NONE	EPA 817 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID	C	TYPE	O	C = COMP	N	S = GRAB							T	MI = Multi Incremental Soils							A								I								N								E								R								S							
#	Preservative Used:	NONE	EPA 817 PFAS-CONFIRM LIST							MS	MSD							SGS lab #	Location ID																																																																		
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REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com																																																																																			
		Env.Alaska.ReflabTeam@sgs.com																																																																																			
INVOICE TO: SGS - Alaska		QUOTE #:																																																																																			
env.alaska.accounting@sgs.com		P.O. #: 1217506																																																																																			
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	#	Preservative Used:	EPA 817 PFAS-CONFIRM LIST	MS	MSD	SGS lab #	Location ID																																																																										
21	FD-21	11/12/2021	10:35:00	Solid	1		X			1217506021																																																																											
22	DEMO-6	11/12/2021	10:50:00	Solid	1		X			1217506022																																																																											
23	DEMO-8	11/12/2021	11:10:00	Solid	1		X			1217506023																																																																											
24	DEMO-9	11/12/2021	11:30:00	Solid	1		X			1217506024																																																																											
25	TXY-92	11/12/2021	13:20:00	Solid	1		X			1217506025																																																																											
26	FD-22	11/12/2021	13:15:00	Solid	1		X			1217506026																																																																											
27	DEMO-10	11/12/2021	11:45:00	Solid	1		X			1217506027																																																																											
28	DEMO-11	11/12/2021	13:45:00	Solid	1		X			1217506028																																																																											
29	DEMO-12	11/12/2021	14:00:00	Solid	1		X			1217506029																																																																											
30	DEMO-13	11/12/2021	14:15:00	Solid	1		X			1217506030																																																																											
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Data Deliverable Requirements:																																																																													
<i>Julie Shumway</i>		11/17/21	09:50	<i>Carol H. Delgado</i>		0		Level 2																																																																													
Relinquished By: (2)		Date	Time	Received By:		Report to DL (J Flags)?		Cooler ID:																																																																													
		11/18/21	10:15			If J- Report as DL/LOD/LOQ. <i>Neg</i>		Requested Turnaround Time and-or Special Instructions: <i>AIRPORT SAMPLES - MAY BE HOT</i>																																																																													
Relinquished By: (3)		Date	Time	Received By:		Full List		<i>24</i>																																																																													
Relinquished By: (4)		Date	Time	Received For Laboratory By:		Temp Blank °C:		Chain of Custody Seal: (Circle)																																																																													
						or Ambient []		INTACT BROKEN ABSENT																																																																													

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference:				Page 4 of 6				
CONTACT: Julie Shumway PHONE NO: (907) 562-2343				Additional Comments: All soils report out in dry weight unless								
PROJECT NAME: 1217506		PWSID#:		NPDL#:		#		Preservative Used: NONE				
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com		Env.Alaska.RefLabTeam@sgs.com		CONCENTRATION		TYPE				
INVOICE TO: SGS - Alaska <i>6861230</i>		QUOTE #:		P.O. #: 1217506		EPA 537 PFAS-CONFIRM LIST		C = COMP				
env.alaska.accounting@sgs.com						S = GRAB		MI = Multi Incremental Soils				
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE					MS	MSD	SGS lab #	Location ID
31	DEMO-14	11/12/2021	14:30:00	Solid 1	1	X					1217506031	
32	FD-23	11/12/2021	14:35:00	Solid 1	1	X					1217506032	
33	DEMO-15	11/12/2021	14:50:00	Solid 1	1	X					1217506033	
34	DEMO-16	11/12/2021	15:10:00	Solid 1	1	X					1217506034	
35	DEMO-17	11/12/2021	15:20:00	Solid 1	1	X					1217506035	
36	DEMO-18	11/12/2021	15:40:00	Solid 1	1	X					1217506036	
37	DEMO-21	11/13/2021	08:50:00	Solid 1	1	X					1217506037	
38	FD-24	11/13/2021	08:45:00	Solid 1	1	X					1217506038	
39	DEMO-22	11/13/2021	09:10:00	Solid 1	1	X					1217506039	
40	DEMO-23	11/13/2021	09:20:00	Solid 1	1	X					1217506040	
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Data Deliverable Requirements:				
<i>J. Shumway</i>		<i>11/19/21</i>	<i>0952</i>	<i>Callie J. Poff</i>		0		Level 2				
Relinquished By: (2)		Date	Time	Received By:		Report to DL (J Flags)?		Cooler ID:		Requested Turnaround Time and-or Special Instructions:		
		<i>11/18/21</i>	<i>1015</i>			If J-Report as DL/LOD/LOQ. <i>YES</i>				<i>AIR PORT SAMPLES - MAY BE HOT Full List 24</i>		
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)				
						or Ambient []		INTACT BROKEN ABSENT				
Relinquished By: (4)		Date	Time	Received For Laboratory By:								

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference:				Page 5 of 6					
CONTACT: Julie Shumway PHONE NO: (907) 562-2343				Additional Comments: All soils report out in dry weight unless									
PROJECT NAME: 1217506		PWSID#:		NPD#:		#		Preservative Used:		NONE			
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com		Env.Alaska.Ref.Lab.Team@sgs.com		C O N T A I N E R S		TYPE					
INVOICE TO: SGS - Alaska <i>W. Shumway</i>		QUOTE #:		P.O. #: 1217506		EPA SBT PFAS-CONFIRM LIST		C = COMP					
env.alaska.accounting@sgs.com						S = GRAB		MI = Multi Incremental Soils					
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/MATRIX CODE						MS	MSD	SGS lab #	Location ID
	41 DEMO-24	11/13/2021	09:30:00	Solid 1			X					1217506041	
	42 DEMO-25	11/13/2021	09:40:00	Solid 1			X					1217506042	
	43 DEMO-26	11/13/2021	09:00:00	Solid 1			X					1217506043	
	44 FD-25	11/13/2021	09:45:00	Solid 1			X					1217506044	
	45 DEMO-27	11/13/2021	10:00:00	Solid 1			X					1217506045	
	46 DEMO-28	11/13/2021	10:15:00	Solid 1			X					1217506046	
	47 DEMO-29	11/13/2021	10:30:00	Solid 1			X					1217506047	
	48 DEMO-31	11/13/2021	11:50:00	Solid 1			X					1217506048	
	49 DEMO-30	11/13/2021	10:40:00	Solid 1			X					1217506049	
	50 TUG-85	11/13/2021	11:05:00	Solid 1			X					1217506050	
Relinquished By: (1)		Date	Time	Received By:		DOD Project?		Report to DL (J Flags)?		Data Deliverable Requirements:			
<i>J. Shumway</i>		11/17/21	0952	<i>Julie M. Shumway</i>				If J-Report as DL/LOD/LOQ YES		Level 2			
Relinquished By: (2)		Date	Time	Received By:		Cooler ID:		Requested Turnaround Time and-or Special Instructions:					
		11/16/21	1615					AIRPORT SAMPLES - MAY BE HOT Full List 24					
Relinquished By: (3)		Date	Time	Received By:		Temp Blank °C:		Chain of Custody Seal: (Circle)					
Relinquished By: (4)		Date	Time	Received For Laboratory By:		or Ambient []		INTACT		BROKEN ABSENT			

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CLIENT: SGS North America Inc. - Alaska Division				SGS Reference:				Page 6 of 6			
CONTACT: Julie Shumway PHONE NO: (907) 562-2343				Additional Comments: All soils report out in dry weight unless							
PROJECT NAME: 1217506		PWSID#:		NPD#:		#		Preserv-ative Used:			
REPORTS TO: Julie Shumway		E-MAIL: Julie.Shumway@sgs.com		Env Alaska RefLabTeam@sgs.com		CON		TYPE			
INVOICE TO: SGS - Alaska (686230)		QUOTE #:		P.O. #: 1217506		T		C = COMP			
env.alaska.accounting@sgs.com						A		S = GRAB			
						I		MI = Multi Incremental Soils			
						N		EPA 537 PFAS - CONFIRM LIST			
RESERVED for lab use		SAMPLE IDENTIFICATION		DATE mm/dd/yy		TIME HHMM		MATRIX/MATRIX CODE		MS MSD SGS lab # Location ID	
		S1 80 TUG-83		11/13/2021		11:15:00		Solid 1		X 1217506051	
		S2 TUG-82		11/13/2021		11:20:00		Solid 1		X 1217506052	
		S3 TUG-81		11/13/2021		11:30:00		Solid 1		X 1217506053	
		S4 TUG-80		11/13/2021		11:45:00		Solid 1		X 1217506054	
		S5 FD-26		11/13/2021		12:00:00		Solid 1		X 1217506055	
Relinquished By: (1)		Date		Time		Received By:		DOD Project?		Data Deliverable Requirements:	
<i>J. Shumway</i>		11/17/21		1452		<i>Julie Shumway</i>		0		Level 2	
Relinquished By: (2)		Date		Time		Received By:		Report to DL (J Flags)?		Cooler ID:	
		11/16/21		1015				If J-Report as DL/LOD/LOQ. YES		Requested Turnaround Time and-or Special Instructions:	
Relinquished By: (3)		Date		Time		Received By:				AIRPORT SAMPLES MAY BE HOT Full List 24	
Relinquished By: (4)		Date		Time		Received For Laboratory By:		Temp Blank °C:		Chain of Custody Seal: (Circle)	
								or Ambient []		INTACT BROKEN ABSENT	

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SGS Sample Receipt Summary

Job Number: FA90919

Client: ALASKA

Project: 1217506

Date / Time Received: 11/18/2021 10:00:00 AM

Delivery Method: UPS

Airbill #s: 1Z 74A 435 01 4271 6892

Therm ID: IR 1;

Therm CF: 0.2;

of Coolers: 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2);

Cooler Temps (Corrected) °C: Cooler 1: (2.4);

Cooler Information

Y or N

- 1. Custody Seals Present
- 2. Custody Seals Intact
- 3. Temp criteria achieved
- 4. Cooler temp verification IR Gun
- 5. Cooler media Ice (Bag)

Trip Blank Information

Y or N N/A

- 1. Trip Blank present / cooler
 - 2. Trip Blank listed on COC
- W or S N/A
- 3. Type Of TB Received

Sample Information

Y or N N/A

- 1. Sample labels present on bottles
- 2. Samples preserved properly
- 3. Sufficient volume/containers recvd for analysis:
- 4. Condition of sample Intact
- 5. Sample recvd within HT
- 6. Dates/Times/IDs on COC match Sample Label
- 7. VOCs have headspace
- 8. Bottles received for unspecified tests
- 9. Compositing instructions clear
- 10. Voa Soil Kits/Jars received past 48hrs?
- 11. % Solids Jar received?
- 12. Residual Chlorine Present?

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #: pH 0-3 230315

pH 10-12 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: CARLOSD

Date: 11/18/2021 10:00:00

Reviewer: _____

Date: _____

FA90919: Chain of Custody

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MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-MB	3Q50307.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 40-140%
	13C5-PFPeA	102% 50-150%
	13C5-PFHxA	102% 50-150%
	13C4-PFHpA	102% 50-150%
	13C8-PFOA	105% 50-150%
	13C9-PFNA	105% 50-150%
	13C6-PFDA	105% 50-150%
	13C7-PFUnDA	102% 40-140%

Method Blank Summary

Job Number: FA90919
Account: SGS/SAK North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-MB	3Q50307.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	104% 40-140%
	13C2-PFTeDA	103% 30-130%
	13C3-PFBS	101% 50-150%
	13C3-PFHxS	101% 50-150%
	13C8-PFOS	100% 50-150%
	13C8-FOSA	106% 30-130%
	d3-MeFOSAA	111% 40-140%
	d5-EtFOSAA	108% 40-140%
	13C2-4:2FTS	96% 50-150%
	13C2-6:2FTS	99% 50-150%
	13C2-8:2FTS	98% 50-150%

6.1.1

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Method Blank Summary

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-MB	3Q50346.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	88% 40-140%
	13C5-PFPeA	88% 50-150%
	13C5-PFHxA	89% 50-150%
	13C4-PFHpA	89% 50-150%
	13C8-PFOA	91% 50-150%
	13C9-PFNA	90% 50-150%
	13C6-PFDA	91% 50-150%
	13C7-PFUnDA	88% 40-140%

Method Blank Summary

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-MB	3Q50346.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	90% 40-140%
	13C2-PFTeDA	89% 30-130%
	13C3-PFBS	88% 50-150%
	13C3-PFHxS	90% 50-150%
	13C8-PFOS	88% 50-150%
	13C8-FOSA	87% 30-130%
	d3-MeFOSAA	96% 40-140%
	d5-EtFOSAA	93% 40-140%
	13C2-4:2FTS	82% 50-150%
	13C2-6:2FTS	85% 50-150%
	13C2-8:2FTS	85% 50-150%

Method Blank Summary

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-MB	4Q23689.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	0.50	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	0.50	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	0.50	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	0.50	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	0.50	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	0.50	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	0.50	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	0.50	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	0.50	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	0.50	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	0.50	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.50	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	0.50	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.50	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.50	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	0.50	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	0.50	0.25	ug/kg	
754-91-6	PFOSA	ND	0.50	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.50	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.50	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	79% 40-140%
	13C5-PFPeA	77% 50-150%
	13C5-PFHxA	77% 50-150%
	13C4-PFHpA	77% 50-150%
	13C8-PFOA	77% 50-150%
	13C9-PFNA	79% 50-150%
	13C6-PFDA	77% 50-150%
	13C7-PFUnDA	75% 40-140%

Method Blank Summary

Job Number: FA90919
Account: SGS/SAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-MB	4Q23689.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	75% 40-140%
	13C2-PFTeDA	72% 30-130%
	13C3-PFBS	77% 50-150%
	13C3-PFHxS	76% 50-150%
	13C8-PFOS	77% 50-150%
	13C8-FOSA	82% 30-130%
	d3-MeFOSAA	77% 40-140%
	d5-EtFOSAA	74% 40-140%
	13C2-4:2FTS	71% 50-150%
	13C2-6:2FTS	73% 50-150%
	13C2-8:2FTS	72% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q707-IBLK	3Q50267.D	1	12/10/21	MV	n/a	n/a	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20, FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	108% 50-150%
	13C4-PFHpA	109% 50-150%
	13C8-PFOA	112% 50-150%
	13C9-PFNA	110% 50-150%
	13C6-PFDA	111% 50-150%
	13C7-PFUnDA	108% 50-150%
	13C2-PFDoDA	108% 50-150%
	13C2-PFTeDA	108% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q707-IBLK	3Q50267.D	1	12/10/21	MV	n/a	n/a	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20, FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	107% 50-150%
	13C3-PFHxS	107% 50-150%
	13C8-PFOS	106% 50-150%
	d3-MeFOSAA	117% 50-150%
	d5-EtFOSAA	114% 50-150%
	13C3-HFPO-DA	104% 50-150%

6.1.4

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Instrument Blank

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q708-IBLK	3Q50371.D	1	12/13/21	MV	n/a	n/a	S3Q708

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-43, FA90919-44, FA90919-45

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C5-PFHxA	109% 50-150%
	13C4-PFHpA	110% 50-150%
	13C8-PFOA	111% 50-150%
	13C9-PFNA	109% 50-150%
	13C6-PFDA	110% 50-150%
	13C7-PFUnDA	108% 50-150%
	13C2-PFDoDA	109% 50-150%
	13C2-PFTeDA	106% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q708-IBLK	3Q50371.D	1	12/13/21	MV	n/a	n/a	S3Q708

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-43, FA90919-44, FA90919-45

CAS No.	ID Standard Recoveries	Limits
	13C3-PFBS	109% 50-150%
	13C3-PFHxS	110% 50-150%
	13C8-PFOS	109% 50-150%
	d3-MeFOSAA	99% 50-150%
	d5-EtFOSAA	96% 50-150%
	13C3-HFPO-DA	121% 50-150%

6.1.5
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Instrument Blank

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23660.D	1	12/15/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	101% 50-150%
	13C5-PFPeA	100% 50-150%
	13C5-PFHxA	100% 50-150%
	13C4-PFHpA	102% 50-150%
	13C8-PFOA	100% 50-150%
	13C9-PFNA	105% 50-150%
	13C6-PFDA	105% 50-150%
	13C7-PFUnDA	104% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23660.D	1	12/15/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	100% 50-150%
	13C2-PFTeDA	99% 50-150%
	13C3-PFBS	101% 50-150%
	13C3-PFHxS	98% 50-150%
	13C8-PFOS	103% 50-150%
	13C8-FOSA	110% 50-150%
	d3-MeFOSAA	105% 50-150%
	d5-EtFOSAA	102% 50-150%
	13C2-4:2FTS	93% 50-150%
	13C2-6:2FTS	95% 50-150%
	13C2-8:2FTS	97% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23741.D	1	12/16/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	1.0	0.38	ug/kg	
2706-90-3	Perfluoropentanoic acid	ND	1.0	0.25	ug/kg	
307-24-4	Perfluorohexanoic acid	ND	1.0	0.25	ug/kg	
375-85-9	Perfluoroheptanoic acid	ND	1.0	0.25	ug/kg	
335-67-1	Perfluorooctanoic acid	ND	1.0	0.25	ug/kg	
375-95-1	Perfluorononanoic acid	ND	1.0	0.25	ug/kg	
335-76-2	Perfluorodecanoic acid	ND	1.0	0.25	ug/kg	
2058-94-8	Perfluoroundecanoic acid	ND	1.0	0.25	ug/kg	
307-55-1	Perfluorododecanoic acid	ND	1.0	0.25	ug/kg	
72629-94-8	Perfluorotridecanoic acid	ND	1.0	0.27	ug/kg	
376-06-7	Perfluorotetradecanoic acid	ND	1.0	0.25	ug/kg	
375-73-5	Perfluorobutanesulfonic acid	ND	1.0	0.25	ug/kg	
2706-91-4	Perfluoropentanesulfonic acid	ND	1.0	0.25	ug/kg	
355-46-4	Perfluorohexanesulfonic acid	ND	1.0	0.25	ug/kg	
375-92-8	Perfluoroheptanesulfonic acid	ND	1.0	0.25	ug/kg	
1763-23-1	Perfluorooctanesulfonic acid	ND	1.0	0.25	ug/kg	
68259-12-1	Perfluorononanesulfonic acid	ND	1.0	0.25	ug/kg	
335-77-3	Perfluorodecanesulfonic acid	ND	1.0	0.25	ug/kg	
754-91-6	PFOSA	ND	1.0	0.25	ug/kg	
2355-31-9	MeFOSAA	ND	1.0	0.25	ug/kg	
2991-50-6	EtFOSAA	ND	1.0	0.25	ug/kg	
757124-72-44:2	Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	1.0	0.25	ug/kg	

CAS No.	ID Standard Recoveries	Limits
	13C4-PFBA	100% 50-150%
	13C5-PFPeA	99% 50-150%
	13C5-PFHxA	99% 50-150%
	13C4-PFHpA	100% 50-150%
	13C8-PFOA	102% 50-150%
	13C9-PFNA	105% 50-150%
	13C6-PFDA	104% 50-150%
	13C7-PFUnDA	105% 50-150%

Instrument Blank

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23741.D	1	12/16/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M QSM5.3 B-15

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	ID Standard Recoveries	Limits
	13C2-PFDoDA	102% 50-150%
	13C2-PFTeDA	102% 50-150%
	13C3-PFBS	98% 50-150%
	13C3-PFHxS	95% 50-150%
	13C8-PFOS	104% 50-150%
	13C8-FOSA	109% 50-150%
	d3-MeFOSAA	111% 50-150%
	d5-EtFOSAA	112% 50-150%
	13C2-4:2FTS	92% 50-150%
	13C2-6:2FTS	97% 50-150%
	13C2-8:2FTS	96% 50-150%

6.1.7

6

Blank Spike Summary

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-BS	3Q50306.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.4	94	70-130
2706-90-3	Perfluoropentanoic acid	10	9.5	95	70-130
307-24-4	Perfluorohexanoic acid	10	9.1	91	70-130
375-85-9	Perfluoroheptanoic acid	10	9.2	92	70-130
335-67-1	Perfluorooctanoic acid	10	9.0	90	70-130
375-95-1	Perfluorononanoic acid	10	9.4	94	70-130
335-76-2	Perfluorodecanoic acid	10	9.2	92	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.0	90	70-130
307-55-1	Perfluorododecanoic acid	10	9.1	91	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.3	93	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.3	93	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.7	97	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.5	95	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.2	92	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.3	93	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.6	96	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.5	95	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.4	94	65-135
754-91-6	PFOSA	10	9.3	93	70-130
2355-31-9	MeFOSAA	10	9.4	94	70-130
2991-50-6	EtFOSAA	10	9.3	93	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.5	95	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.1	91	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.5	95	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	40-140%
	13C5-PFPeA	109%	50-150%
	13C5-PFHxA	108%	50-150%
	13C4-PFHpA	110%	50-150%
	13C8-PFOA	112%	50-150%
	13C9-PFNA	111%	50-150%
	13C6-PFDA	110%	50-150%
	13C7-PFUnDA	109%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-BS	3Q50306.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	111%	40-140%
	13C2-PFTeDA	110%	30-130%
	13C3-PFBS	109%	50-150%
	13C3-PFHxS	109%	50-150%
	13C8-PFOS	108%	50-150%
	13C8-FOSA	104%	30-130%
	d3-MeFOSAA	115%	40-140%
	d5-EtFOSAA	115%	40-140%
	13C2-4:2FTS	109%	50-150%
	13C2-6:2FTS	111%	50-150%
	13C2-8:2FTS	110%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-BS	3Q50345.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.2	92	70-130
2706-90-3	Perfluoropentanoic acid	10	9.4	94	70-130
307-24-4	Perfluorohexanoic acid	10	9.0	90	70-130
375-85-9	Perfluoroheptanoic acid	10	8.9	89	70-130
335-67-1	Perfluorooctanoic acid	10	8.9	89	70-130
375-95-1	Perfluorononanoic acid	10	9.1	91	70-130
335-76-2	Perfluorodecanoic acid	10	8.8	88	70-130
2058-94-8	Perfluoroundecanoic acid	10	8.9	89	70-130
307-55-1	Perfluorododecanoic acid	10	9.0	90	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.0	90	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.0	90	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.5	95	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.3	93	70-130
355-46-4	Perfluorohexanesulfonic acid	10	8.7	87	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.1	91	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.3	93	70-130
68259-12-1	Perfluorononanesulfonic acid	10	9.2	92	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.0	90	65-135
754-91-6	PFOSA	10	9.1	91	70-130
2355-31-9	MeFOSAA	10	9.1	91	70-130
2991-50-6	EtFOSAA	10	9.2	92	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.3	93	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.2	92	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	9.4	94	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	98%	40-140%
	13C5-PFPeA	98%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	99%	50-150%
	13C7-PFUnDA	97%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-BS	3Q50345.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	99%	40-140%
	13C2-PFTeDA	99%	30-130%
	13C3-PFBS	98%	50-150%
	13C3-PFHxS	100%	50-150%
	13C8-PFOS	99%	50-150%
	13C8-FOSA	67%	30-130%
	d3-MeFOSAA	103%	40-140%
	d5-EtFOSAA	101%	40-140%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	98%	50-150%
	13C2-8:2FTS	99%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-BS	4Q23688.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	Compound	Spike ug/kg	BSP ug/kg	BSP %	Limits
375-22-4	Perfluorobutanoic acid	10	9.5	95	70-130
2706-90-3	Perfluoropentanoic acid	10	9.5	95	70-130
307-24-4	Perfluorohexanoic acid	10	9.5	95	70-130
375-85-9	Perfluoroheptanoic acid	10	9.3	93	70-130
335-67-1	Perfluorooctanoic acid	10	9.2	92	70-130
375-95-1	Perfluorononanoic acid	10	9.3	93	70-130
335-76-2	Perfluorodecanoic acid	10	9.3	93	70-130
2058-94-8	Perfluoroundecanoic acid	10	9.4	94	70-130
307-55-1	Perfluorododecanoic acid	10	9.5	95	70-130
72629-94-8	Perfluorotridecanoic acid	10	9.6	96	70-130
376-06-7	Perfluorotetradecanoic acid	10	9.3	93	70-130
375-73-5	Perfluorobutanesulfonic acid	10	9.6	96	70-130
2706-91-4	Perfluoropentanesulfonic acid	10	9.5	95	70-130
355-46-4	Perfluorohexanesulfonic acid	10	9.6	96	70-130
375-92-8	Perfluoroheptanesulfonic acid	10	9.8	98	70-130
1763-23-1	Perfluorooctanesulfonic acid	10	9.6	96	70-130
68259-12-1	Perfluorononanesulfonic acid	10	10.1	101	70-130
335-77-3	Perfluorodecanesulfonic acid	10	9.3	93	65-135
754-91-6	PFOSA	10	9.5	95	70-130
2355-31-9	MeFOSAA	10	9.5	95	70-130
2991-50-6	EtFOSAA	10	9.8	98	70-130
757124-72-44:2	Fluorotelomer sulfonate	10	9.6	96	70-130
27619-97-2	6:2 Fluorotelomer sulfonate	10	9.9	99	70-130
39108-34-4	8:2 Fluorotelomer sulfonate	10	10.1	101	70-130

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	97%	40-140%
	13C5-PFPeA	98%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	98%	50-150%
	13C8-PFOA	99%	50-150%
	13C9-PFNA	100%	50-150%
	13C6-PFDA	99%	50-150%
	13C7-PFUnDA	98%	40-140%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90919
Account: SGSAKA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-BS	4Q23688.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	99%	40-140%
	13C2-PFTeDA	97%	30-130%
	13C3-PFBS	97%	50-150%
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	99%	30-130%
	d3-MeFOSAA	98%	40-140%
	d5-EtFOSAA	99%	40-140%
	13C2-4:2FTS	97%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	96%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/SAK North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-MS	3Q50309.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707
OP88656-MSD	3Q50310.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707
FA90919-1	3Q50308.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	Compound	FA90919-1 ug/kg	Spike Q ug/kg	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
375-22-4	Perfluorobutanoic acid	0.98 U		10.1	9.8	97	9.88	9.4	95	4	70-130/30
2706-90-3	Perfluoropentanoic acid	0.29	J	10.1	10.1	97	9.88	9.8	96	3	70-130/30
307-24-4	Perfluorohexanoic acid	0.98 U		10.1	9.8	97	9.88	9.4	95	4	70-130/30
375-85-9	Perfluoroheptanoic acid	0.42	J	10.1	9.7	92	9.88	9.6	93	1	70-130/30
335-67-1	Perfluorooctanoic acid	1.1		10.1	10.5	93	9.88	10.1	91	4	70-130/30
375-95-1	Perfluorononanoic acid	0.68	J	10.1	10.4	96	9.88	10.1	95	3	70-130/30
335-76-2	Perfluorodecanoic acid	0.98 U		10.1	9.4	93	9.88	9.0	91	4	70-130/30
2058-94-8	Perfluoroundecanoic acid	0.98 U		10.1	9.2	91	9.88	8.9	90	3	70-130/30
307-55-1	Perfluorododecanoic acid	0.98 U		10.1	9.5	94	9.88	9.2	93	3	70-130/30
72629-94-8	Perfluorotridecanoic acid	0.98 U		10.1	9.3	92	9.88	9.2	93	1	70-130/30
376-06-7	Perfluorotetradecanoic acid	0.98 U		10.1	9.5	94	9.88	9.3	94	2	70-130/30
375-73-5	Perfluorobutanesulfonic acid	0.98 U		10.1	9.9	98	9.88	9.8	99	1	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.98 U		10.1	9.7	96	9.88	9.6	97	1	70-130/30
355-46-4	Perfluorohexanesulfonic acid	0.98 U		10.1	9.4	93	9.88	9.2	93	2	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	0.98 U		10.1	9.6	95	9.88	9.6	97	0	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	0.98 U		10.1	9.7	96	9.88	9.8	99	1	70-130/30
68259-12-1	Perfluorononanesulfonic acid	0.98 U		10.1	9.3	92	9.88	9.7	98	4	70-130/30
335-77-3	Perfluorodecanesulfonic acid	0.98 U		10.1	9.5	94	9.88	9.2	93	3	65-135/30
754-91-6	PFOA	0.98 U		10.1	9.5	94	9.88	9.1	92	4	70-130/30
2355-31-9	MeFOSAA	2.4 U		10.1	9.5	94	9.88	9.3	94	2	70-130/30
2991-50-6	EtFOSAA	2.4 U		10.1	9.5	94	9.88	9.4	95	1	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	0.98 U		10.1	9.7	96	9.88	9.4	95	3	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.98 U		10.1	9.5	94	9.88	9.3	94	2	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.98 U		10.1	9.7	96	9.88	9.3	94	4	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-1	Limits
	13C4-PFBA	84%	96%	79%	40-140%
	13C5-PFPeA	84%	95%	80%	50-150%
	13C5-PFHxA	82%	96%	82%	50-150%
	13C4-PFHpA	83%	95%	82%	50-150%
	13C8-PFOA	85%	96%	85%	50-150%
	13C9-PFNA	83%	96%	83%	50-150%
	13C6-PFDA	83%	96%	84%	50-150%
	13C7-PFUnDA	81%	94%	81%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88656-MS	3Q50309.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707
OP88656-MSD	3Q50310.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707
FA90919-1	3Q50308.D	1	12/11/21	MV	12/06/21	OP88656	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-1, FA90919-2, FA90919-3, FA90919-4, FA90919-5, FA90919-6, FA90919-7, FA90919-8, FA90919-9, FA90919-10, FA90919-11, FA90919-12, FA90919-13, FA90919-14, FA90919-15, FA90919-16, FA90919-17, FA90919-18, FA90919-19, FA90919-20

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-1	Limits
	13C2-PFDoDA	83%	93%	82%	40-140%
	13C2-PFTeDA	83%	94%	83%	30-130%
	13C3-PFBS	84%	94%	81%	50-150%
	13C3-PFHxS	83%	97%	83%	50-150%
	13C8-PFOS	84%	91%	83%	50-150%
	13C8-FOSA	53%	58%	36%	30-130%
	d3-MeFOSAA	80%	89%	81%	40-140%
	d5-EtFOSAA	83%	94%	81%	40-140%
	13C2-4:2FTS	82%	94%	76%	50-150%
	13C2-6:2FTS	83%	95%	79%	50-150%
	13C2-8:2FTS	85%	97%	81%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/SAK North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-MS	3Q50348.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707
OP88658-MSD	3Q50349.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707
FA90919-41	3Q50347.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	Compound	FA90919-41 ug/kg	Spike Q	MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
375-22-4	Perfluorobutanoic acid	1.2	U	12.1	11.2	93	12.1	11.3	93	1	70-130/30
2706-90-3	Perfluoropentanoic acid	1.5		12.1	12.4	90	12.1	12.6	92	2	70-130/30
307-24-4	Perfluorohexanoic acid	0.71	J	12.1	11.2	87	12.1	11.3	87	1	70-130/30
375-85-9	Perfluoroheptanoic acid	0.34	J	12.1	10.9	87	12.1	10.8	86	1	70-130/30
335-67-1	Perfluorooctanoic acid	1.2		12.1	12.0	89	12.1	11.1	82	8	70-130/30
375-95-1	Perfluorononanoic acid	1.2	U	12.1	10.7	88	12.1	11.0	91	3	70-130/30
335-76-2	Perfluorodecanoic acid	1.2	U	12.1	10.4	86	12.1	10.8	89	4	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.2	U	12.1	10.5	87	12.1	10.6	88	1	70-130/30
307-55-1	Perfluorododecanoic acid	1.2	U	12.1	10.6	88	12.1	10.9	90	3	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.2	U	12.1	10.4	86	12.1	10.6	88	2	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.2	U	12.1	10.7	88	12.1	10.8	89	1	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.2	U	12.1	11.3	93	12.1	11.5	95	2	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.2	U	12.1	11.3	93	12.1	11.3	93	0	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.0	J	12.1	12.3	93	12.1	11.5	87	7	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	0.36	J	12.1	11.0	88	12.1	11.3	90	3	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	1.2	U	12.1	11.2	93	12.1	11.4	94	2	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.2	U	12.1	10.8	89	12.1	11.4	94	5	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.2	U	12.1	10.5	87	12.1	10.9	90	4	65-135/30
754-91-6	PFOA	1.2	U	12.1	10.6	88	12.1	11.1	92	5	70-130/30
2355-31-9	MeFOSAA	3.0	U	12.1	10.8	89	12.1	11.0	91	2	70-130/30
2991-50-6	EtFOSAA	3.0	U	12.1	10.5	87	12.1	10.7	88	2	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.2	U	12.1	11.0	91	12.1	11.0	91	0	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	1.2	U	12.1	10.8	89	12.1	10.8	89	0	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.2	U	12.1	11.0	91	12.1	11.0	91	0	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-41	Limits
13C4-PFBA		86%	71%	93%	40-140%
13C5-PFPeA		86%	71%	94%	50-150%
13C5-PFHxA		86%	72%	95%	50-150%
13C4-PFHpA		88%	73%	97%	50-150%
13C8-PFOA		89%	74%	100%	50-150%
13C9-PFNA		88%	73%	99%	50-150%
13C6-PFDA		87%	72%	100%	50-150%
13C7-PFUnDA		86%	71%	96%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/KA SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88658-MS	3Q50348.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707
OP88658-MSD	3Q50349.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707
FA90919-41	3Q50347.D	1	12/11/21	MV	12/06/21	OP88658	S3Q707

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-41, FA90919-42, FA90919-43, FA90919-44, FA90919-45, FA90919-46, FA90919-47, FA90919-48, FA90919-49, FA90919-50, FA90919-51, FA90919-52, FA90919-53, FA90919-54, FA90919-55

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-41	Limits
13C2-PFDoDA		86%	72%	96%	40-140%
13C2-PFTeDA		86%	71%	94%	30-130%
13C3-PFBS		87%	71%	98%	50-150%
13C3-PFHxS		87%	72%	98%	50-150%
13C8-PFOS		88%	71%	99%	50-150%
13C8-FOSA		65%	60%	87%	30-130%
d3-MeFOSAA		87%	73%	102%	40-140%
d5-EtFOSAA		92%	75%	107%	40-140%
13C2-4:2FTS		85%	71%	89%	50-150%
13C2-6:2FTS		87%	72%	94%	50-150%
13C2-8:2FTS		89%	75%	97%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/SAK/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-MS	4Q23691.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325
OP88657-MSD	4Q23692.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325
FA90919-21	4Q23690.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	Compound	FA90919-21		MS ug/kg	MS %	Spike ug/kg	MSD ug/kg	MSD %	RPD	Limits Rec/RPD	
		ug/kg	Q								
375-22-4	Perfluorobutanoic acid	1.2 U		12.1	12.0	99	11.9	11.7	98	3	70-130/30
2706-90-3	Perfluoropentanoic acid	1.2 U		12.1	12.0	99	11.9	11.6	97	3	70-130/30
307-24-4	Perfluorohexanoic acid	1.2 U		12.1	11.8	97	11.9	11.6	97	2	70-130/30
375-85-9	Perfluoroheptanoic acid	1.2 U		12.1	11.6	96	11.9	11.2	94	4	70-130/30
335-67-1	Perfluorooctanoic acid	1.2 U		12.1	11.5	95	11.9	11.6	97	1	70-130/30
375-95-1	Perfluorononanoic acid	1.2 U		12.1	11.4	94	11.9	11.3	95	1	70-130/30
335-76-2	Perfluorodecanoic acid	1.2 U		12.1	11.6	96	11.9	11.3	95	3	70-130/30
2058-94-8	Perfluoroundecanoic acid	1.2 U		12.1	11.5	95	11.9	11.3	95	2	70-130/30
307-55-1	Perfluorododecanoic acid	1.2 U		12.1	12.0	99	11.9	11.5	97	4	70-130/30
72629-94-8	Perfluorotridecanoic acid	1.2 U		12.1	11.5	95	11.9	11.5	97	0	70-130/30
376-06-7	Perfluorotetradecanoic acid	1.2 U		12.1	11.7	96	11.9	11.3	95	3	70-130/30
375-73-5	Perfluorobutanesulfonic acid	1.2 U		12.1	11.8	97	11.9	11.5	97	3	70-130/30
2706-91-4	Perfluoropentanesulfonic acid	1.2 U		12.1	11.7	96	11.9	11.4	96	3	70-130/30
355-46-4	Perfluorohexanesulfonic acid	1.0	J	12.1	13.1	100	11.9	13.0	101	1	70-130/30
375-92-8	Perfluoroheptanesulfonic acid	1.2 U		12.1	11.8	97	11.9	11.2	94	5	70-130/30
1763-23-1	Perfluorooctanesulfonic acid	2.5		12.1	14.0	95	11.9	13.8	95	1	70-130/30
68259-12-1	Perfluorononanesulfonic acid	1.2 U		12.1	12.3	101	11.9	11.8	99	4	70-130/30
335-77-3	Perfluorodecanesulfonic acid	1.2 U		12.1	11.7	96	11.9	11.2	94	4	65-135/30
754-91-6	PFOSA	1.2 U		12.1	11.4	94	11.9	11.2	94	2	70-130/30
2355-31-9	MeFOSAA	3.1 U		12.1	11.5	95	11.9	11.3	95	2	70-130/30
2991-50-6	EtFOSAA	3.1 U		12.1	11.9	98	11.9	11.8	99	1	70-130/30
757124-72-44:2	Fluorotelomer sulfonate	1.2 U		12.1	12.0	99	11.9	11.7	98	3	70-130/30
27619-97-2	6:2 Fluorotelomer sulfonate	2.6		12.1	14.4	97	11.9	14.4	99	0	70-130/30
39108-34-4	8:2 Fluorotelomer sulfonate	1.2 U		12.1	12.4	102	11.9	11.9	100	4	70-130/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-21	Limits
13C4-PFBA		91%	90%	62%	40-140%
13C5-PFPeA		98%	98%	64%	50-150%
13C5-PFHxA		98%	97%	63%	50-150%
13C4-PFHpA		99%	99%	63%	50-150%
13C8-PFOA		101%	98%	64%	50-150%
13C9-PFNA		100%	100%	65%	50-150%
13C6-PFDA		100%	99%	64%	50-150%
13C7-PFUnDA		98%	98%	61%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90919
Account: SGS/SGS North America, Inc
Project: 1217506

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88657-MS	4Q23691.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325
OP88657-MSD	4Q23692.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325
FA90919-21	4Q23690.D	1	12/15/21	MV	12/06/21	OP88657	S4Q325

The QC reported here applies to the following samples:

Method: EPA 537M BY ID

FA90919-21, FA90919-22, FA90919-23, FA90919-24, FA90919-25, FA90919-26, FA90919-27, FA90919-28, FA90919-29, FA90919-30, FA90919-31, FA90919-32, FA90919-33, FA90919-34, FA90919-35, FA90919-36, FA90919-37, FA90919-38, FA90919-39, FA90919-40

CAS No.	ID Standard Recoveries	MS	MSD	FA90919-21	Limits
	13C2-PFDoDA	97%	97%	59%	40-140%
	13C2-PFTeDA	99%	98%	57%	30-130%
	13C3-PFBS	97%	96%	64%	50-150%
	13C3-PFHxS	96%	96%	59%	50-150%
	13C8-PFOS	100%	100%	64%	50-150%
	13C8-FOSA	96%	95%	64%	30-130%
	d3-MeFOSAA	102%	103%	62%	40-140%
	d5-EtFOSAA	102%	102%	62%	40-140%
	13C2-4:2FTS	99%	99%	59%	50-150%
	13C2-6:2FTS	103%	103%	62%	50-150%
	13C2-8:2FTS	101%	101%	59%	50-150%

* = Outside of Control Limits.

Appendix E – ADEC Laboratory Data Review Checklists

Laboratory Data Review Checklist

Completed By:

Lucus Gamble

Title:

Qualified Environmental Professional

Date:

January 6, 2022

Consultant Firm:

Restoration Science & Engineering, LLC

Laboratory Name:

SGS North America, Inc

Laboratory Report Number:

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

ADEC File Number:

N/A

Hazard Identification Number:

N/A

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

SGS North America, Inc

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No N/A Comments:

SGS Anchorage transfers PFAS soil samples to SGS Orlando

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

COC provided on pages 5 – 11 in the SGS lab report

b. Correct analyses requested?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

The temperature blank was 3.8° C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

No chemical preservation required

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

Sample condition documented on page 12 in the SGS lab report

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No N/A Comments:

No discrepancies requiring documentation

e. Data quality or usability affected?

Comments:

Data quality and usability not affected

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

Case Narrative provided on page 2 in the SGS lab report

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

No discrepancies, errors or QC failures requiring identification

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions required

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No effect on data quality or usability

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

b. All applicable holding times met?

Yes No N/A Comments:

Holding times met for all samples

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Dry weight results are reported in addition to contaminant levels

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

The PFOA LOQ was above the PFOA cleanup level of 0.0017 mg/Kg for samples TXY-87C, TXY-130B, TXY-131A, TXY-131B, TXY-132B, TXY-134B and TXY-135B due to low percent solids.

e. Data quality or usability affected?

Data quality and usability not affected

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Method blank results provided on page 168 – 175 in the SGS lab report

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

All method blank results LOQs are less than the Cleanup Levels for both PFOA and PFOS

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

SGS Orlando refers to LCS/LCSD samples as Instrument Blanks. Instrument blank results provided on page 176 – 187 in the SGS lab report

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

1216187

Laboratory Report Date:

October 10, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Matrix spike results provided on page 196 – 203 in the SGS lab report

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

1216187

Laboratory Report Date:

October 10, 2021

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ANC Taxiway Z East Expansion Area

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

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ANC Taxiway Z East Expansion Area

iv. Data quality or usability affected?

Comments:

Data quality and usability not affected

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

Yes No N/A Comments:

No trip blank or VOA samples for PFAS EPA 537M samples

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Soil samples FD-1 (TXY-133A), FD-2 (TXY-93A), FD-3 (TXY-95D), FD-4 (TXY-96D), FD-5 (TXY-100A) and FD-6 (TXY-98B) and are blind field duplicates

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CS Site Name:

ANC Taxiway Z East Expansion Area

ii. Submitted blind to lab?

Yes No N/A Comments:

Soil samples FD-1 (TXY-133A), FD-2 (TXY-93A), FD-3 (TXY-95D), FD-4 (TXY-96D), FD-5 (TXY-100A) and FD-6 (TXY-98B) and are blind field duplicates

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

All blind duplicate and parent samples were non-detect except for FD-5/TXY-100A. The PFOA RPD = 10.5%; the PFOS RPD = 91.9%

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

iii. Data quality or usability affected?

Comments:

Data quality and usability not affected

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7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A Comments:

Data flag and qualifier definitions found at the bottom of the Report of Analysis for each sample

Laboratory Data Review Checklist

Completed By:

Lucus Gamble

Title:

Qualified Environmental Professional

Date:

January 6, 2022

Consultant Firm:

Restoration Science & Engineering, LLC

Laboratory Name:

SGS North America, Inc

Laboratory Report Number:

1217416

Laboratory Report Date:

December 14, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

ADEC File Number:

N/A

Hazard Identification Number:

N/A

1217416

Laboratory Report Date:

December 14, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

SGS North America, Inc

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No N/A Comments:

SGS Anchorage transfers PFAS soil samples to SGS Orlando

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

However, RSE provided a copy in the report attachments

b. Correct analyses requested?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

The temperature blank was 0.0° C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

No chemical preservation required

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

Sample intake form provided in the attachments

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No N/A Comments:

Discrepancy in sample IDs corrected via email. Email is contained in the lab report

e. Data quality or usability affected?

Comments:

Data quality and usability not affected

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

Case Narrative provided on page 9 in the SGS lab report

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

No discrepancies, errors or QC failures requiring identification

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions required

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No effect on data quality or usability

1217416

Laboratory Report Date:

December 14, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

b. All applicable holding times met?

Yes No N/A Comments:

Holding times met for all samples

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Dry weight results are reported in addition to contaminant levels

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

All LOQs are less than the applicable Cleanup Levels

e. Data quality or usability affected?

Data quality and usability not affected

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Method blank results for PFAS are provided on page 166 – 177 in the SGS lab report

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

All method blank results LOQs are less than the Cleanup Levels for both PFOA and PFOS

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

SGS Orlando refers to LCS/LCSD samples as Instrument Blanks. Instrument blank results provided on page 178 – 191 in the SGS lab report

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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CS Site Name:

ANC Taxiway Z East Expansion Area

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Matrix spike results provided on page 204 – 215 in the SGS lab report

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

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ANC Taxiway Z East Expansion Area

iv. Data quality or usability affected?

Comments:

Data quality and usability not affected

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No N/A Comments:

No trip blank or VOA samples for PFAS EPA 537M samples

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Soil samples FD-7 (TXY-89A), FD-8 (TUG-59A), FD-9 (TXY-141A), FD-10 (TUG-78A) and FD-11 (TXY-123A) are blind field duplicates

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CS Site Name:

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ii. Submitted blind to lab?

Yes No N/A Comments:

Soil samples FD-7 (TXY-89A), FD-8 (TUG-59A), FD-9 (TXY-141A), FD-10 (TUG-78A) and FD-11 (TXY-123A) are blind field duplicates

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

All blind duplicate and parent samples were non-detect except for FD-8/TUG-59A (PFOS RPD = 26.4%; FD-10/TUG-78A (PFOA RPD = 4.3% and PFOS RPD = 103.9%); and FD-11/TXY-123A (PFOS RPD = 175.4%)

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

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iii. Data quality or usability affected?

Comments:

Data quality and usability not affected

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A

Comments:

Data flag and qualifier definitions found at the bottom of the Report of Analysis for each sample

Laboratory Data Review Checklist

Completed By:

Lucus Gamble

Title:

Qualified Environmental Professional

Date:

January 6, 2022

Consultant Firm:

Restoration Science & Engineering, LLC

Laboratory Name:

SGS North America, Inc

Laboratory Report Number:

1216187

Laboratory Report Date:

December 27, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

ADEC File Number:

N/A

Hazard Identification Number:

N/A

1216187

Laboratory Report Date:

December 27, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

SGS North America, Inc

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No N/A Comments:

SGS Anchorage transfers PFAS soil samples to SGS Orlando

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

COC provided on pages 5 – 14 in the SGS lab report

b. Correct analyses requested?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

The temperature blank was 0.1° C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

No chemical preservation required

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

Sample condition documented on page 15 in the SGS lab report

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No N/A Comments:

No discrepancies requiring documentation

e. Data quality or usability affected?

Comments:

Data quality and usability not affected

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

Case Narrative provided on page 2 in the SGS lab report

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

No discrepancies, errors or QC failures requiring identification

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions required

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No effect on data quality or usability

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CS Site Name:

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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

b. All applicable holding times met?

Yes No N/A Comments:

Holding times met for all samples

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Dry weight results are reported in addition to contaminant levels

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

All reported LOQs are less than the Cleanup Levels for PFOA and PFOS

e. Data quality or usability affected?

Data quality and usability not affected

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Method blank results provided on page 226 – 235 in the SGS lab report

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

All method blank results LOQs are less than the Cleanup Levels for both PFOA and PFOS

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

SGS Orlando refers to LCS/LCSD samples as Instrument Blanks. Instrument blank results provided on page 236 – 251 in the SGS lab report

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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CS Site Name:

ANC Taxiway Z East Expansion Area

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Matrix spike results provided on page 262 – 271 in the SGS lab report

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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CS Site Name:

ANC Taxiway Z East Expansion Area

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

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ANC Taxiway Z East Expansion Area

iv. Data quality or usability affected?

Comments:

Data quality and usability not affected

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

Yes No N/A Comments:

No trip blank or VOA samples for PFAS EPA 537M samples

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Soil samples FD-12 (TUG-70A), FD-12** (TXY-127A), FD-13 (TUG-61), FD-14 (TUG-69A), FD-15 (TXY-119B), FD-16 (TXY-103A) and FD-17 (TXY-104A) are blind field duplicates

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CS Site Name:

ANC Taxiway Z East Expansion Area

ii. Submitted blind to lab?

Yes No N/A Comments:

Soil samples FD-12 (TUG-70A), FD-12** (TXY-127A), FD-13 (TUG-61), FD-14 (TUG-69A), FD-15 (TXY-119B), FD-16 (TXY-103A) and FD-17 (TXY-104A) are blind field duplicates

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

Many blind duplicate and parent samples were non-detect except for FD-12/TUG70A (PFOS RPD = 10.5%), FD-12**/TXY-127A (PFOS RPD = 125%), FD-13/TUG-61 (PFOA RPD = 35.9%; PFOS RPD = 68.8%), FD-14/TUG-69A (PFOS RPD = 12.2%), FD-15/TXY-119B (PFOS RPD = 194%), FD-16/TXY-103A (PFOA RPD = 87.7%; PFOS RPD = 36.1%) and FD-17/TXY-104A (PFOS RPD = 6.5%)

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

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Laboratory Report Date:

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CS Site Name:

ANC Taxiway Z East Expansion Area

iii. Data quality or usability affected?

Comments:

Data quality and usability not affected

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A

Comments:

Data flag and qualifier definitions found at the bottom of the Report of Analysis for each sample

Laboratory Data Review Checklist

Completed By:

Lucus Gamble

Title:

Qualified Environmental Professional

Date:

January 6, 2022

Consultant Firm:

Restoration Science & Engineering, LLC

Laboratory Name:

SGS North America, Inc

Laboratory Report Number:

1217506

Laboratory Report Date:

December 12, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

ADEC File Number:

N/A

Hazard Identification Number:

N/A

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Laboratory Report Date:

December 12, 2021

CS Site Name:

ANC Taxiway Z East Expansion Area

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes No N/A Comments:

SGS North America, Inc

b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes No N/A Comments:

SGS Anchorage transfers PFAS soil samples to SGS Orlando

2. Chain of Custody (CoC)

a. CoC information completed, signed, and dated (including released/received by)?

Yes No N/A Comments:

COC provided on pages 5 – 10 in the SGS lab report

b. Correct analyses requested?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes No N/A Comments:

The temperature blank was 0.4° C

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No N/A Comments:

No chemical preservation required

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c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No N/A Comments:

Sample condition documented on page 11 in the SGS lab report

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No N/A Comments:

No discrepancies requiring documentation

e. Data quality or usability affected?

Comments:

Data quality and usability not affected

4. Case Narrative

a. Present and understandable?

Yes No N/A Comments:

Case Narrative provided on page 2 in the SGS lab report

b. Discrepancies, errors, or QC failures identified by the lab?

Yes No N/A Comments:

No discrepancies, errors or QC failures requiring identification

c. Were all corrective actions documented?

Yes No N/A Comments:

No corrective actions required

d. What is the effect on data quality/usability according to the case narrative?

Comments:

No effect on data quality or usability

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5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No N/A Comments:

PFAS compounds by EPA 537M (full list)

b. All applicable holding times met?

Yes No N/A Comments:

Holding times met for all samples

c. All soils reported on a dry weight basis?

Yes No N/A Comments:

Dry weight results are reported in addition to contaminant levels

d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes No N/A Comments:

All reported LOQs are less than the Cleanup Levels for PFOA and PFOS

e. Data quality or usability affected?

Data quality and usability not affected

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Method blank results provided on page 152 – 157 in the SGS lab report

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes No N/A Comments:

All method blank results LOQs are less than the Cleanup Levels for both PFOA and PFOS

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iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No N/A Comments:

SGS Orlando refers to LCS/LCSD samples as Instrument Blanks. Instrument blank results provided on page 158 – 165 in the SGS lab report

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from LCS/LCSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

- c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

- i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

Matrix spike results provided on page 172 – 177 in the SGS lab report

- ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes No N/A Comments:

No metal or inorganic samples

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes No N/A Comments:

All percent recoveries (%R) are reported and w/in method and/or lab limits

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iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes No N/A Comments:

All RPDs are reported and less than the method and/or lab limits

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

No affected samples

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

No affected samples

vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

Data quality and usability not affected

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

i. Are surrogate/IDA recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No N/A Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes No N/A Comments:

iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined?

Yes No N/A Comments:

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iv. Data quality or usability affected?

Comments:

Data quality and usability not affected

e. Trip Blanks

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?
(If not, enter explanation below.)

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC?
(If not, a comment explaining why must be entered below)

Yes No N/A Comments:

No trip blank or VOA samples for PFAS EPA 537M samples

iii. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No trip blank for PFAS EPA 537M samples

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

v. Data quality or usability affected?

Comments:

Data quality and usability not affected

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No N/A Comments:

Soil samples FD-18 (TXY-115A), FD-19 (TXY-112A), FD-20 (TXY-106A), FD-21 (DEMO-5), FD-22 (TXY-92), FD-23 (DEMO-14), FD-24 (DEMO-21), FD-25 (DEMO-25) and FD-26 (TUG-80) are blind field duplicates

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ii. Submitted blind to lab?

Yes No N/A Comments:

Soil samples FD-18 (TXY-115A), FD-19 (TXY-112A), FD-20 (TXY-106A), FD-21 (DEMO-5), FD-22 (TXY-92), FD-23 (DEMO-14), FD-24 (DEMO-21), FD-25 (DEMO-25) and FD-26 (TUG-80) are blind field duplicates

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% water, 50% soil)

$$RPD (\%) = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2) / 2)} \times 100$$

Where R₁ = Sample Concentration
R₂ = Field Duplicate Concentration

Yes No N/A Comments:

Many blind duplicate and parent samples were non-detect except for FD-18/TXY-115A (PFOA RPD = 73.3%), FD-19/TXY-112A (PFOA RPD = 40%; PFOS RPD = 6.8%), FD-21/DEMO-5 (PFOS RPD = 11.3%), FD-24/DEMO-21 (PFOA RPD = 3.7%), FD-25/DEMO-25 (PFOA RPD = 134%; PFOS RPD = 196%) and FD-26/TUG-80 (PFOS RPD = 119%)

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Data quality and usability not affected

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

i. All results less than LOQ and project specified objectives?

Yes No N/A Comments:

No decontamination or equipment blanks for required for this project

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No affected samples

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iii. Data quality or usability affected?

Comments:

Data quality and usability not affected

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes No N/A

Comments:

Data flag and qualifier definitions found at the bottom of the Report of Analysis for each sample

Appendix F – Copies of RSE Field Notes

9/18/21 K.W. 21-2369 50°F PARTLY CLOUDY

800 - ON SITE, MEET EMILY CREW
LU + TWO FROM DISCOVERY DRILLING
SAFETY MEETING.

830 - INSIDE ADA WAIT ON OPS FOR DIRECTION.

845 - TIM L. ON SITE.

900 - PREPARE TO SET UP AT TXY-87(15)'
CALIBRATE RSC-2 PID W/100 ppm
CYTIC - 99.6, CAL CHECK 99.8, GOOD.
WILL DIRECT SCREEN DRIVES.

915 - AT TXY-87 PUNCH ASPHALT - DRIVE
MC-5 TO 5'

920 - DRIVE TO 10'. 5' DRIVE, NO LINER, ASPHALT
6" - 5"
WILL STEP OUT FOR 0-5'

925 - TROUBLE REGENERATING 5-10'.

933 - RECOVER 5-10' - 4.8' REC FULL
0-1' = GRAY BRN SGT GU
1'-4.8' = LT BRN DEMO SGT
0.0 PID

938 - COLLECT TXY-873 938 FROM 2.5'(7.5)'

943 - DRIVE ~ 10'-15'. UNABLE TO RECOVER (LOST)

1000 - MOVE AND DRIVE 0-5' - 1.9' REC PID=0.0
GRY BRN GU/SGT/SD 50/30/20

1002 - COLLECT TXY-87A 1002 FROM MIDDLE (1.0)


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1006 - PREVIOUS DRIVE WAS ONLY 0'-2.5'
DRILLER NOT DRIVING TO 5' TO
AVOID LINER CRIMPING (SAMPLE LOSS)

≈ 2.5 - 5' - 2' REC. PID=0.0

0 - 0.6 - BRN GU SLT SD 50/30/20

0.6 - 2' - LT BRN DENSE SLT (DAMP) + CLAY

1009 - COLLECT **TRY-87A1** **1009** 60/40 → 1.8-2.0

1012 - DRIVING AT TRY-87(2) ~ 1' SOUTH.

1020 - DRIVE TO 15', DRIVE 10'-15' - N/A

1028 - DRIVE 5-10, 10-15 IN 87(2) STUCK IN
LINER (SAMPLE LOSS), DD TO GET
EXTRACTION TOOL FROM SHOP.

1044 - EMILY + ^{TWO} LO OFF SITE FOR TOOL., LO STANDBY.

1145 - TWO BACK ON SITE.

1154 - RECOVER 10-15' DRIVE 3.6' RECOVERY

100% SLT/CLY ~~70~~ 70/30

PID=0.0 COLLECT

2

FROM MIDDLE

TRY-87C **1154**

1157 - DD EXTRACTING OTHER LOST RECOVERY
FROM DRIVE BARRELS.

1206 - BACKFILL BORINGS W/ WTINGS, TAMP+PATCH.



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1214 - MOVE TO ~~FRY-33~~^{KV} TXY-133

1221 - DRIVE TO 2.5' BGS. - 1.8' REC 100%

GV/SLT/SD 40/20/40

PID=0.0 COLLECT **TXY-133A** **1223**

+ DUP **FD-1** **1225** FROM 1.8'

1227 - DRIVE 2.5'-5'. 2.2' REC.

0-1' = GV/SLT/SD 40/20/40 PID=0.0

1'-2.2' = LT BRN DENSE SLT

1230 - DRIVE 5'-7.5' - 3.6' REC

0-0.3 - GV/SLT/SD 40/20/40 PID=0.0

0.3-3.6 LT BRN DENSE SLT

1233 - COLLECT **TXY-133B** **1233** FROM 3.6'

1234 - DRIVE 7.5'-10' - 2.9' REC

ALL LT BRN DENSE SLT EXCEPT PID=0.0

0.6'-1.0' GV/SLT/SD 40/40/20

1237 - TAMP + PATCH, MOVE TO TXY-132 NEXT

1253 - AT TXY-132, PUNCH ASPHALT.

1301 - DRIVE 0'-2.5' - 2.1' REC GV/SD/SLT GRAY

40/40/20 PID=0.0

1303 - COLLECT **TXY-132A** **1303** FROM 1.0' (MIDDLE)

1305 - DRIVE 2.5'-5' - 1.9' GV/SD/SLT 40/40/20
PID=0.0

1310 - DRIVE 5'-7.5' - 3.2' REC PID=0.3

0-1.6' - GV/SD/SLT 40/40/20 H.S. 1=1.1

1.6'-3.2' DENSE LT BRN SLT PPM

1315 - COLLECT **TXY-132B** **1315** FROM 3.2'

 /lw

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TXY-132

- 1317 - DRIVE 7.5' - 10' - 2.7' REC
0 - 1.7' GRV/SD/SLT ^{GRY} 40/40/20 PID=0.0
1.7 - 2.7' - LT BRN DENSE SLT w/ MINOR
CLAY (DAMP)
1323 - BACKFILL TAMP + PATCH
-

- 1324 - MOVE TO TXY-131
1329 - DRIVE TO 0' - 5' - 3.3' REC
GRY BRN GRV/SD/SLT 40/40/20 DAMP AT 2.4-2.5
PID=0.0

1337 - COLLECT TXY-131A 1337

- 1339 - DRIVE 5' - 10' - 3.8' REC
0' - 1.3' GRV GRV/SD/SLT 40/40/20 PID=0.0
1.3' - 2.8' - LT BRN DENSE SLT
2.8' - 3.8' - RD BRN DENSE SLT DAMP MINOR
CLAY

1342 - COLLECT TXY-131B 1342 FROM 2.8'

BACKFILL - TAMP - PATCH

1346 - MOVE TO 134 (TXY-134)

- 1359 - DRIVE 0' - 5' - 2.6' GRV - BRN
GRV/SD/SLT 40/30/30 PID=0.0

1402 - COLLECT TXY-134A 1402 FROM MIDDLE

- 1403 - DRIVE 5' - 10' - 4.1' REC
0 - 1.4' GRV/SD/SLT 40/40/20 PID=0.0
1.4' - 4.1' - BRN DENSE SLT MINOR CLAY SLIGHTLY
DAMP

1408 - COLLECT TXY-134B 1408 FROM MIDDLE

BACKFILL - TAMP - PATCH



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1411 - MOVE TO TXY-130.

DRIVE 0'-5' - 1.9' REC

BRN SD/~~SD~~/SLT/GU 50/40/10

PID=0.0

1418 - COLLECT [TXY-130A] [1418] FROM MIDDLE

1419 - DRIVE 5'-10' - 4.8' (FULL) RECOVERY

0.0 - 0.2' SAND BRN

PID=0.0

0.2 - 3.0' DENSE LT BRN SLT

3.0 - 4.8' DENSE LT BRN SLT + CLAY DAMP

1422 - COLLECT [TXY-130B] [1422] FROM MIDDLE

BACKFILL

1424 - AT TXY-129

DRIVE 0'-5' - 4' REC.

0.0 - 3.3 BRN SLT/GU/SD 60/30/10

3.3 - 4' 100% SAND PID=0.0

1432 - COLLECT [TXY-129A] [1432] FROM MIDDLE

1436 - DRIVE 5'-10' - 4.8' FULL RECOVERY

100% DENSE LT BRN SLT PID=0.0

1438 - COLLECT [TXY-129B] [1438] FROM MIDDLE

BACKFILL



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1444 - SET UP AT TRY-128

1454 - DRIVE 0'-5' - 4.8' REC (FULL)

0.0-3.1 BRN SLT/GV 60/40

3.1-4.1 GRAY GV/SD/SLT 40/40/20

4.1-4.8 LT BRN DENSE SLT

PID=0.0

1503 - COLLECT TRY-128A 1503 FROM MIDDLE

1504 - DRIVE 5'-10' - 4.8' REC (FULL)

0.0-0.6 GRAY GV/SD/SLT 30/40/30

0.6-3.3 BRN GRAY DENSE SLT

3.3-4.8' - RD BRN DENSE SLT W/CLAY

PID=0.0

1509 - COLLECT TRY-128B 1509 FROM MIDDLE

BACKFILL

1516 - AT TRY-135

DRIVE 0'-5' - 4.0' RECOVERY

0'-3.6' GRAY BRN GV/SD/SLT 40/40/20

3.6'-4.0' BRN DENSE SLT PID=0.0

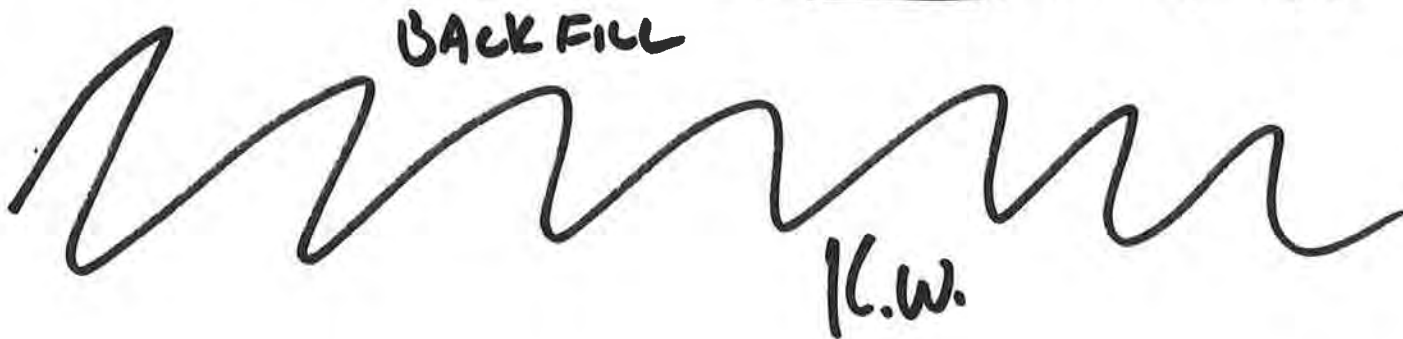
1523 - COLLECT TRY-135A 1523 FROM MIDDLE

DRIVE 5'-10' - 4.8' FULL RECOVERY

100 SANDY/SLT 20/80 DENSE PID=0.0

1530 - COLLECT TRY-135B 1530 FROM MIDDLE

BACKFILL



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1555 - AT DEMO-20

DRIVE TO 5', 0-5' - 3.5' REC

GRY BRN GU/SD/SLT 50/40/10

PID=0.0

1600 - COLLECT DEMO-20 1600 MIDDLE

BACKFILL TAMP PATCH

1602 - AT TRY-138

DRIVE 0'-5' - 3.8' REC

PID=0.0

GRY BRN GU/SD/SLT 40/30/10

1610 - COLLECT TRY-138A 1610 FROM MIDDLE

1611 - DRIVE 5'-10' - 4.8' FULL REC.

0.0 - 0.6 GRY SLT/GU 80/10

0.6 - 4.8 - DENSE BRN SLT, SANDY AT 4.2 - 4.5

DAMP 4.6 - 4.8 PID=0.0

1615 - COLLECT TRY-138B 1615 FROM MIDDLE

1617 - DRIVE 10'-15' - 4.8' (FULL) REC.

BRN DENSE SLT, DAMP WITH MINOR CLAY

2.3 - 2.9 AND 3.8 - 4.1' PID=0.0

1620 - COLLECT TRY-138C 1620 FROM MIDDLE

BACKFILL TAMP PATCH.



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1624 - AT TRY-120

DRIVE 0'-5' - 3.5' REC

GRY BRN GU/SO/SLT 40/50/10 PID=0.0

1635 - COLLECT TRY-120A 1635 MIDDLE

DRIVE 5'-10' - 4.4' REC

0.0-1.9 - GRY BRN GU/SO/SLT 30/50/20

1.9-4.4' BRN DENSE SLT

MINOR CLAY + DAMP 2.4-2.7

1640 - COLLECT TRY-120B 1640 MIDDLE PID=0.0

DRIVE 10'-15' - 4.8' REC FULL

0.0-1.0 GRY GU/SO/SLT 30/60/10

1.0-4.8 - GRY BRN SLT/CLY 50/50 DAMP

PID=0.0

1650 - COLLECT TRY-120C 1650 MIDDLE

BACK FILL, TAMP, PATCH

1701 - GAC DD DECON WATER IN GRASSY VEG AREA ON SITE.

1725 - STAGE GEOPROBE WITHIN ADA.

1731 - DEPART



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34°F

①

0750 - ON SITE OUTSIDE CLEAR
AOA. EMILY (CIRW) ON SITE.

0800 - DD ONSITE LO + TWO
INSIDE AOA. WAIT ON OPS.

0855 - SET UP AT TRY-93

0905 - CALIBRATE RBE-2 PID W/ 100 PPM
CYH₂ 99.7, CAL CHECK 100.1 PPM

909 - DRIVE 0'-5' - 4.8' REC FULL
0-0.2 ORGANICS BLACK PID=0.0

0.2-4.8 DENSE LT BRN SLT

910 - COLLECT TRY-93A 910 + DUP FD-2 911
MIDDLE

913 - DRIVE 5'-10' - 4.8' FULL REC
0.0-4.8 ~~BRN~~ LT BRN SLT PID=0.0

915 - COLLECT TRY-93B 915 FROM MIDDLE

916 - DRIVE 10'-15' - 4.8' FULL REC
0.0-4.8' LT BRN DENSE SLT

917 - COLLECT TRY-93C 917 MIDDLE

BACK FILL



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932 - AT TX4-94.

939 - DRIVE 0'-5' - 4.6' REC

0.0-0.2 BLACK ORGANICS

PID=0.0

0.2-4.6' - LT BRN DENSE SLT

SAND 3.2'-3.3'

944 - COLLECT TX4-94A 944 FROM MIDDLE

945 - DRIVE 5'-10' - 4.7' REC

0.0-4.7 LT BRN DENSE SLT

PID=0.0

948 - COLLECT TX4-94B 948 F/MIDDLE

949 - DRIVE 10'-15' - 4.8' REC FULL

0.0-4.8' LT BRN DENSE SLT

PID=0.0

952 - COLLECT TX4-94C 952 F/MIDDLE

BACK FILL

954 - AT TX4-95

958 - 0'-5' - 3.5' REC

0.0-0.2 BLACK ORGANICS

PID=0.0

0.2-0.8 - MEDIUM SAND (DK GRAY BRN)

0.8-3.4 - LT BRN DENSE SLT

3.4-3.5' - MEDIUM SAND (DK GRAY BRN)

1001 - COLLECT TX4-95A 1001 F/MIDDLE

1004 - 5'-10' - 3.6' REC

PID=0.0

0.0-3.6 LT BRN DENSE SLT (RD BRN FLUE 0.5)

1005 - COLLECT TX4-95B 1005 F/MIDDLE (-1.9')



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TRY-95

1010 - DRIVE 10'-15' - 4.5' REC

0.0 - 3.5 - RED BRN SLT/SO (VF) 50/50

3.5 - 4.5' - LT BRN DENSE SLT PID=0.0

1012 - COLLECT TRY-95C 1012 F/MIDDLE

1013 - DRIVE 15'-20' - 4.8' REC FULL

0.0 - 4.8 LT BRN DENSE SLT ¹⁶ PID=0.0

DAMP w/ CLAY 2.0 - ~~2.5~~ 4.8' (50/50) SLT/CL

1017 - COLLECT TRY-95D 1017 + DUP

FD-3 1018 F/MIDDLE BACKFILL

1021 - TRY-96 DRIVE 0'-5' - 4.4' REC

0.0 - 0.8 - BLK ORG PID=0.0

0.8 - 4.4 - LT ~~2.5~~ BRN DENSE SLT

1024 - COLLECT TRY-96A 1024 F/MIDDLE

1028 - DRIVE 5'-10' - 4.5' REC

0.0 - 4.5 LT BRN DENSE SLT PID=0.0

1032 - COLLECT TRY-96B 1032 F/MIDDLE

1033 - DRIVE 10'-15' - 4.8' REC FULL

0.0 - 4.8 LT BRN DENSE SLT PID=0.0

1036 - COLLECT TRY-96C 1036 F/MIDDLE.

1038 - DRIVE 15'-20' - 4.8' REC FULL PID=0.0

0.0 - 4.8 LT BRN DENSE SLT

TRAIL VF SAND 4.0 - 4.3

1047 - COLLECT TRY-96D 1047 + DUP FD-4 1048

BACKFILL



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1051 - AT TRY-97, DRIVE 0'-5'-4.6'
0.0-0.6 BLK ORGANICS
0.6-1.0 - BRN DAMP SLT/CLY 50/50
1.0-4.6 - LT BRN DENSE SLT PID=0.0

1055 - TRY-97A 1055 F/MIDDLE

1057 - 5'-10' - 4.8' REC FULL
0.0-4.8 LT BRN SLT DENSE PID=0.0

1103 - TRY-97B 1103 F/MIDDLE

1109 - 10'-15' - 4.8' REC FULL
0.0-4.8 LT BRN SLT DENSE PID=0.0

1110 - TRY-97C 1110 F/MIDDLE

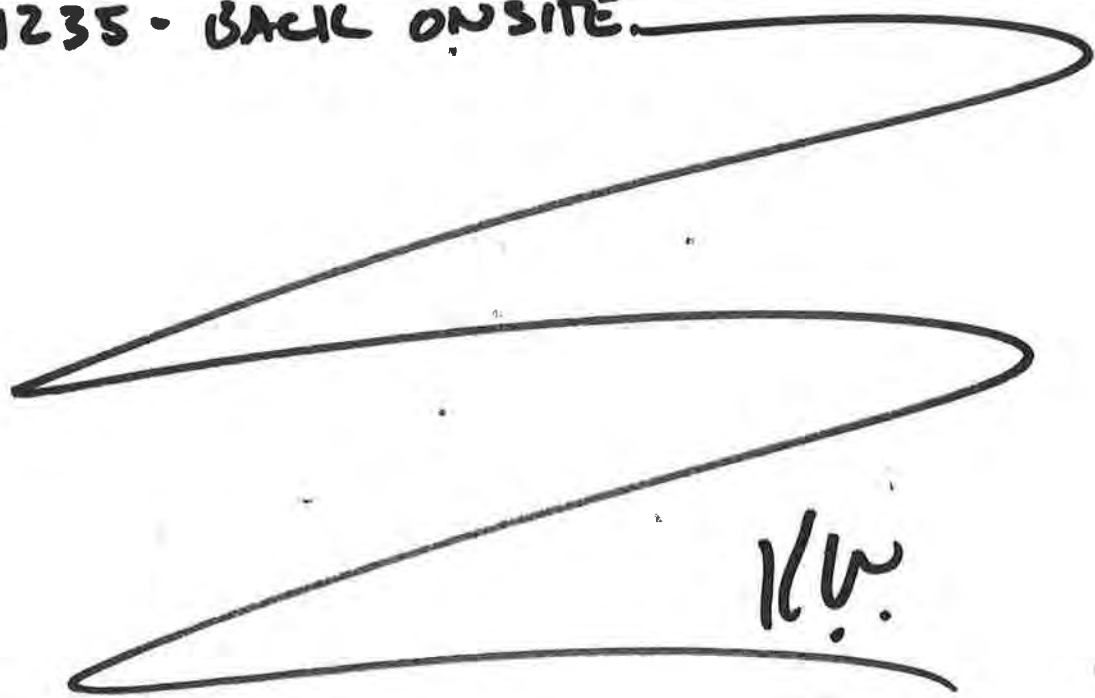
1111 - DRIVE 15'-20' - PART SAMPLE LOSS DURING
RECOVERY, 2.8' REC, LT BRN SLT DENSE
MINOR SAND + CLAY PID=0.0

1121 - TRY-97D 1121 F/MIDDLE

BALIFILL

1125 - BREAK LUNCH OUTSIDE AOA

1235 - BACK ONSITE.



K.W.

9/19/21 K.W. 21-2369

5

1251 - SET UP AT TRY-100

1259 - DRIVE 5' - 4.8' FULL REC.

0.0 - 0.3 - BLK ORG.

0.3 - 4.8' - LT BRN DENSE SLT, RD BRN HUG

1303 - TRY-100A 1303 + DUP FD-25 1304
PID=0.0
K

1305 - DRIVE 5' - 10' - 4.7' REC.

0.0 - 1.6 - RD BRN DENSE SLT

1.6 - 2.7 - LT BRN DENSE SLT PID=0.0

2.7 - 3.0 - MED SAND BRN

3.0 - 4.7 - LT BRN DENSE SLT

MINOR GV AT 1.7'

TRY-100B 1308

1308 - DRIVE 10' - 15' - 4.1' REC

F/MIDDLE

0.0 - 0.3 - BRN MED SAND

0.3 - 2.0 DENSE BRN SLT PID=0.0

2.0 - 3.0 BRN SLT / CLY 50/50 DAMP

3.0 - 4.1 DENSE BRN SLT

1318 - TRY-100C 1318 F/MIDDLE

1322 - DRIVE 15' - 20' - 4.8' REC FULL

0.0 - 4.8 - BRN DENSE SLT

LT BRN 0.8' - 2.0', 4.1 - 4.8' PID=0.0

BRN SLT / CLY 50/50 3.2' - 3.5'

1328 - TRY-100D 1328 F/MIDDLE

1330 - DRIVE 20' - 25' - 4.8' FULL REC

0.0 - 3.5, 3.8 - 4.8' - BRN LT DENSE SLT

3.5' - 3.8' BRN SLT / CLY 50/50 PID=0.0

1333 - TRY-100E 1333 F/MIDDLE

QACIL FILL → / K.W.

9/19/21 K.W. 21-2369

(6)

1335 - AT TX4-99, 0'-5'-4.6' REC
0.0-0.8 - ULC ORG
0.8-4.6 - DENSE BRN SGT PID=0.0

1338 - TX4-99A 1338 F/MIDDLE

1341 - 5'-10'-4.8' REC FULL PID=0.0
0.0-4.8 BRN-LT SGT MINOR CL/SID

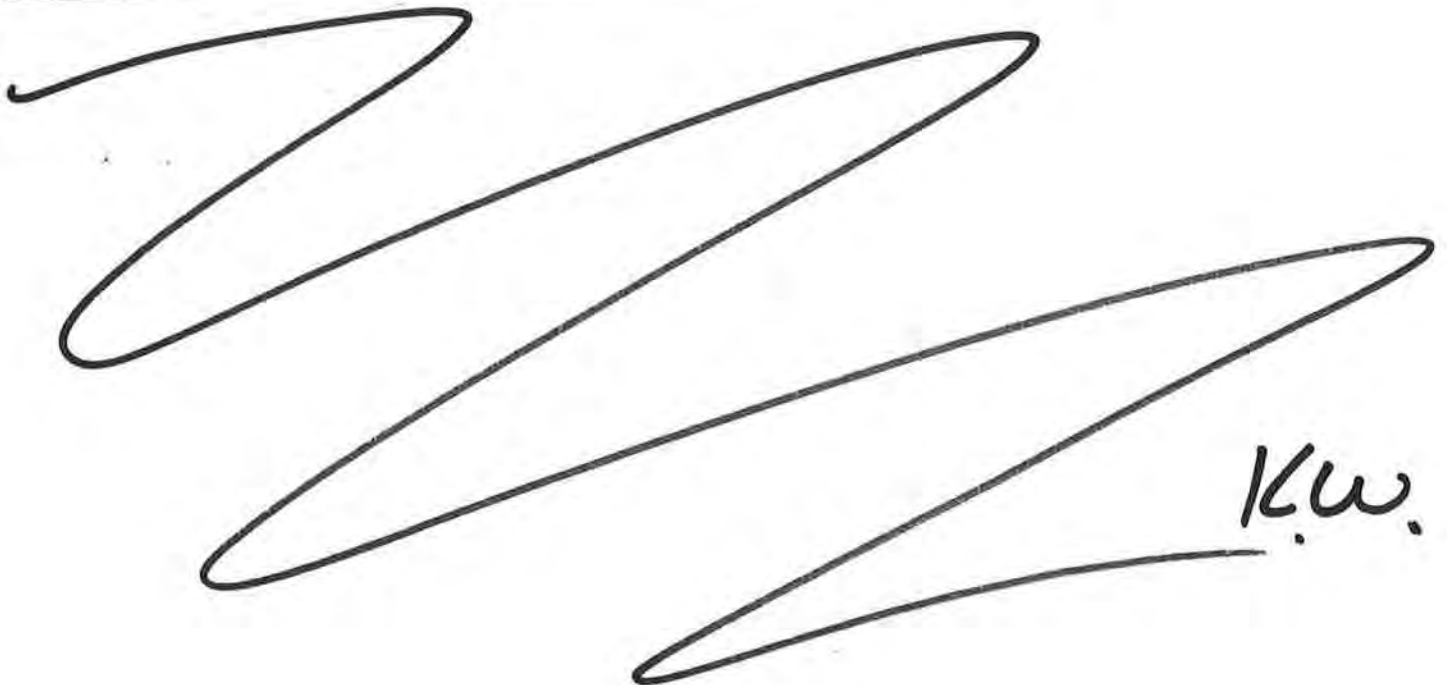
1343 - TX4-99B 1343 F/MIDDLE.

1345 - DRIVE 10'-15'-3.4' REC
0.0-0.6 - BRN SGT/CL 50/50 PID=0.0
0.6-3.4 LT BRN DENSE SGT

1347 - TX4-99C 1347 I/MIDDLE

1352 - DRIVE 15'-20' - DIFFICULT RECOVERY
MOST SAMPLE LOST 0.1' RECOVERY
LT BRN SGT T/ VF. SD

1412 - TX4-99D 1412 FROM TOTAL REC.
NO PID
BACKFILL



K.W.

9/19/21 K.W. 21-2364

(7)

1417 - AT TXY-98, 0'-5'-4.3' REC

0.0-0.9 - SLIC ORGANICS. PID=0.0

0.9-4.3' - LT BRN SLT DENSE

1420 - TXY-98A 1420 F/MIDDLE

1425 - DRIVE 5'-10'-4.8' REC FULL PID=0.0

0.0-4.8 - LT BRN SLT DENSE

1426 - TXY-98B 1426 + DUP ~~T~~ FD-6 F/M

1428 - DRIVE 10'-15'-4.8' FULL 1427 PID=0.0

0.0-4.8 - LT BRN SLT REC

DENSE T/JF. SD

1430 - TXY-98C 1430 F/MIDDLE

1432 - DRIVE 15'-20' - DIFFICULT RECOVERY
MOST SAMPLE LOST RECOVER 0.2'

LT BRN SLT PID=0.0

1445 - TXY-99D 1445 FROM 0.2' REC.

1450 - RIG DOWN

1451 - G.A.C. DD DECON WATER
IN GRASSY VEG AREA ON SITE.

1515 - DEPART SITE.

K.W.

3000	10	TXY-88	
3001	10	TXY-89	
3002	10	TXY-90	
3003	15	TXY-91	
3004	5	TXY-92	
3005	15	TXY-93	3
3006	15	TXY-94	3
3007	20	TXY-95	4
3008	20	TXY-96	4
3009	20	TXY-97	4
3010	20	TXY-98	4
3011	20	TXY-99	5
3012	25	TXY-100	5
3013	15	TXY-101	
3014	15	TXY-102	
3015	15	TXY-103	
3016	15	TXY-104	
3017	10	TXY-105	
3018	10	TXY-106	
3019	10	TXY-107	
3020	10	TXY-108	
3021	10	TXY-109	
3022	10	TXY-110	
3023	10	TXY-111	
3024	10	TXY-112	
3025	10	TXY-113	
3026	15	TXY-114	
3027	15	TXY-115	
3028	15	TXY-116	
3029	15	TXY-117	
3030	5	TXY-118	
3031	15	TXY-119	
3032	15	TXY-120	3
3033	20	TXY-121	
3034	20	TXY-122	
3035	20	TXY-123	
3036	20	TXY-124	
3037	20	TXY-125	
3038	20	TXY-126	
3039	20	TXY-127	
3040	10	TXY-128	2
3041	10	TXY-129	2
3042	10	TXY-130	2
3043	10	TXY-131	2
3044	10	TXY-132	2
3045	10	TXY-133	2
3046	10	TXY-134	2

18
25
43
+13
56

2000	5	TUG-53	
2001	5	TUG-54	
2002	5	TUG-55	
2003	10	TUG-56	
2004	15	TUG-57	
2005	20	TUG-58	
2006	20	TUG-59	
2007	15	TUG-60	
2008	5	TUG-61	
2009	5	TUG-62	
2010	5	TUG-63	
2011	5	TUG-64	
2012	5	TUG-65	
2013	5	TUG-66	
2014	15	TUG-67	
2015	15	TUG-68	
2016	10	TUG-69	
2017	15	TUG-70	
2018	15	TUG-71	
2019	20	TUG-72	
2020	20	TUG-73	
2021	20	TUG-74	
2022	20	TUG-75	
2023	20	TUG-76	
2024	15	TUG-77	
2025	10	TUG-78	
2026	5	TUG-79	
2027	5	TUG-80	
2028	5	TUG-81	
2029	5	TUG-82	
2030	5	TUG-83	
2031	5	TUG-84	
2032	5	TUG-85	

4000	5	DEMO-1	
4001	5	DEMO-2	
4002	5	DEMO-3	
4003	5	DEMO-4	
4004	5	DEMO-5	
4005	5	DEMO-6	
4006	5	DEMO-7	
4007	5	DEMO-8	
4008	5	DEMO-9	
4009	5	DEMO-10	
4010	5	DEMO-11	
4011	5	DEMO-12	
4012	5	DEMO-13	
4013	5	DEMO-14	
4014	5	DEMO-15	
4015	5	DEMO-16	
4016	5	DEMO-17	
4017	5	DEMO-18	
4018	5	DEMO-19	
4019	5	DEMO-20	
4020	5	DEMO-21	
4021	5	DEMO-22	
4022	5	DEMO-23	
4023	5	DEMO-24	
4024	5	DEMO-25	
4025	5	DEMO-26	
4026	5	DEMO-27	
4027	5	DEMO-28	
4028	5	DEMO-29	
4029	5	DEMO-30	
4030	5	DEMO-31	

3047	10	TXY-135	2
3048	15	TXY-136	
3049	15	TXY-137	
3050	15	TXY-138	3
3051	15	TXY-139	
3052	10	TXY-140	
3053	20	TXY-141	
3054	15	TXY-87	3

Prepare • Respond • Manage

1/6

21-2361
L. Koenenon
28° cloudy
11/8/21



NO DEMO-1, NO 3000 (TX4-88)

5'

8:10 4002 (DEMO-2)

PID 31 0.3

4' Rec light gray silt dry

DEMO-2

8:30 4002 (DEMO-3)

PID 0.5' light brown-tan
5' Rec dry silt

5'

DEMO-3

8:40 4003 (DEMO-4)

PID 0.4 dry, tan silt
4.5' Rec

5'

DEMO-4

8:45
3001 (TX4-89)

PID 0.2 moist l. gray
3' Rec (0.5) silt

10'

* PD-7 from
TX4-89A

5-10
PID 0.7

3' Rec moist l. gray silt
algae

~~TX4-89B~~

1051 2005 (TX4-58)

20'

waiting for hammer recharge kit (P300)



11/8/21 ^{2/8}
28°
L. Kaeneman
21-2369

9:00 - 9:30 delay - waiting for ~~the~~ hammer
recharge kit (Disco)

9:40 2005 (TUG-58)

(20')

0-5'
PID 0.0 dry l. brown silt w/ sand → gravel
3.5' Rec ~~TUG-58A~~

5-10'
PID 0.1 moist li gray clay w/ brown organics
3.5' Rec VERY smelly - manure? TUG-58B

10-15'
PID 0.5 SAME as 5-10
3' Rec ~~SD~~ smelly TUG-58C

10:15 2006 (TUG-59) near FF bldg (20')

0-5'
PID 0.1 moist, l. brown - tan silt w/ sand
2' Rec TUG-59A + ~~FD-8~~

5-10
PID 0.4 moist l. brown - li. gray silt w/ gravel & orgs
3' Rec TUG-59B

(40)

TUG-59 cont

10-15

PID 0.2

3' Rec

moist l. gray silt w/
clay

TUG-54C

15-20

PID 0.7

4' Rec

moist l. gray silt w/day

TUG-54D

10:45 TUG-~~57A~~ 600 w/HC

15'

0-5

PID 0.3

4.5' Rec

dry l. brown-tan silt

TUG-~~57A~~ 600A

5-10

PID 0.2

5' Rec

" "

TUG-~~57B~~ 600B

10-15

PID 0.3

5' Rec

dry l. gray silt w/
sand + clay

TUG-~~57C~~ 600C

11:00

(TX4-90)

0-5

1-2

2-3

3-5

l. brown silt clay
l. gray c/sand clay
l. brown silt moist

10'

~~#~~ TX4-90A

48:0

Rec

l. brown - l. gray moist silt

TX4-90B

w/HC

25'



11:15 4XY-91
0-5 (15')
PID 0.3 dry fan silt 4XY-91A
3' Rec
5-10
PID 0.5 3' Rec dry fan silt 4XY-91B
10-15
PID 0.8 dry fan silt w/ woody debris 4XY-91C
Rec 3'

11:45 4XY-101
0-5' (15')
PID 0.5 dry fan silt 4XY-101A
5' Rec
5-10
PID 0.0 " " 4XY-101B
5' Rec
0-15
PID 0.0 dry fan silt w/ dry sand 4XY-101C
5' Rec

2:30 - 13:30 - lunch
- got CEW vehicle permit for suburban @ lunch

11/8/21 5/4
Li Koonenen
21-2369
28° sunny

13:45 TX4-141

0-5

PID 6.4

dry tan silt

5' Rec

5-10

PID 8.0

dry tan silt

Rec

10-15

PID 0.5

dry to moist tan silt

Rec

TX4-141A →

FD-9 13:45
14:05

TX4-141B

13:50

13:55

TX4-141D 14:00

15-20

PID 3.2

Rec

14:15

TX4-1410

0-5

dry tan silt

D 2.8

Rec

(10')

TX4-141A 14:15

-10

D 2.4

Rec

dry to moist tan silt
w/ly sand

TX4-141B 14:20

14:40

TX4-139

5'

D 2.4

Rec

dry l. brown. tan silt w/clay

(15')

TX4-139A

45

11/5/21

21-2369

L. Koenenen
28"

TXY-139 (cont)

5-10

PID 3.4

5' Rec

must tan sitt

TXY-139B

10-15

PID 2.1

5' Rec

TXY-139C

14:50

throttle on GeoProbe broken
fix down

waiting on Disco crew to bring parts

15:45

- got it working again

15:50

TXY-118

0-5

PID

Rec

(5')

TXY-118

16:30

wrapped up for today



VK

FS

1/7

11/9/21
L. Koereman
21-2369
15° clear

7:30 @ gate w/ DISCO Luke from CRW this morning
8:00 TUG-79 (set up) **(5')**

PID 0.4 asphalt 6" moist TUG-79 8:15
2.5' Rec dark gray w/ gyp sand

8:30 TUG-78 **(10')**

0-5' 0-4 moist dark brown TUG-78A 8:30

PID 0.2 c/s sand w/ gyp + FD-10 8:20
5' Rec 4-5 moist tan silt

5-10 5-10 moist tan silt TUG-78B 8:35
PID Rec

8:40 TUG-77 ~~asphalt Rec~~ **(15')**

0-5' moist tan silt w/ clay TUG-77A 8:40
PID 0.4 Rec

10 moist tan silt w/ clay + sand TUG-77B 8:45
PID 0.2 Rec

0-15 " " TUG-77C 8:50
PID 0.0 3.5' **(30)**

Prepare • Respond • Manage

L. Koeman
11/9/11
21-2369

1.00
- Sale has to leave by 3 PM
- Spoke to LG + DT
- Disco will send someone else out @ 2:30 to switch out, so we can drill til 4-5 217

8:55 TUG-76 asphalt 8" (20')

0-5 0-2 dk brown cg sand w/gul
PID 1.8 2-5 TUG-76A

5' Rec moist fm silt w/clay + sand

5-10 TUG-76B
PID 0.8 moist fm silt w/clay + sand
Rec

10-15 MC-5 crumpled had to collect
PID 0.0 sample from sleeve TUG-76C
? Rec

15-20 moist fm silt w/lenses of
PID 0.0 cg sand TUG-76D
5' Rec

~~9:30~~ 9:30 TUG-75 asphalt 8" (20')
0-5 0-4 dry dk brown cg sand
PID 0.5 w/gul TUG-75A

5' Rec 4-5 fm dry silt
5-10 fm dry silt w/cg sand lenses TUG-75B
PID 0.4

5' Rec 10-12 fm dry silt TUG-75C
PID 0.4 12-13 dry lg gray cg sand

5' Rec 13-15 fm dry silt (40)

21-2369

10:00 Prepare • Respond • Manage

Emily back/Luke gone

- need concrete cutter for

TUG-75 (Cont)

TUG-74 to TUG-73 - bring tomorrow (D)

10:05 - spoke to Emily + Luke (CRW) about Saturday. We will be able to work Saturday w/ Luke helping to fill in.

- let Lucas + DS know

815-20

dry to moist tan silt w/og sand lenses

TUG-75D

PID 0.4

5' Rec

(need concrete cutter for TUG-74 to TUG-73)

16:20

~~TX4-125~~ asphalt 14"

(20')

dry, l. brown cy sand w/gvl

TX4-125A 10:20

0-5

PID 0.4

3.5 Rec

5-10

dry l. brown - tan silt

TX4-125B 10:25

PID 2.3

5' Rec

10-15

moist tan silt

TX4-125C 10:30

PID 1.6

5' Rec

15-20

crumpled ME-5 - had to collect sample from spoon

~~TX4~~

TX4-125D 10:35

PID 0.0

5' Rec

11:00

TX4-124 asphalt 16"

(20')

0-5

dry l. gray - l. brown cy sand w/gvl (fill)

TX4-124A 11:00

PID 0.4

5' Rec

5-7 fill

5-10

7-10 dry tan - silt

TX4-124B 11:05

PID 0.0

5' Rec

11/9/21

L. Koenecker

19° light snow

21-2369

TX4-124C 11:10

TX4-124 (cont)

16-15 moist-wet tan silt w/ clay sand

PID 0.0

5' Rec

15-20 moist tan silt w/ clay

PID 0.0

5' Rec

TX4-124D 11:15

11:36 TX4-123 asphalt 12"

(20')

U-5 D-2 dry lignite - l. brown fill

PID 0.0 25 moist tan silt w/ clay

TX4-123A 11:30

FD-U 11:50

2.5' Rec

5-10 moist tan silt w/ clay

TX4-123B 11:35

PID 0.0

5' Rec

10-15 moist tan silt w/ clay

TX4-123C 11:40

PID 0.0

5' Rec

15-20 " "

TX4-123D 11:45

PID 0.0

5' Rec

12:15 lunch

- turned in all samples collected
SD for

12:15 back

20

11/9/21
L. Koeneven
21-2369
18° sunny

13:20 TXY-122 asphalt 12"
0-5

(20')
TXY-122A 13:20

PID 0.1 0-2 dry fill dk gray
2.5' Pcc 2-5 tan dry silt w/clay
5-10

TXY-122B 13:25

PID 0.9 moist tan silt w/clay
5' Pcc > fgy sand

TXY-122C 13:30

10-15 Me-s crumpled - collected
PID 0.0 from spoon
? Pcc

15-20 dry tan silt w/fgy sand
PID 0.1

TXY-122D 13:35

5' Pcc

14:00 TXY-121 asphalt 12"
0-5

(20')
TXY-121A

PID 0.2 0-2 fill dry dk gray
3.5' Pcc 2-5 tan moist silt w/clay
5-10 fgy sand

TXY-121B

PID Pcc 0.0 tan dry silt w/fgy sand
Pcc

TXY-121C

0-15 10-12 " "
PID 0.1 12-15 tan dry silt w/clay
5' Pcc

TXY-121D 40

20 tan dry-moist silt w/clay
PID 0.5 Pcc 5'

14:30 - Sale (Disco) switched out and Mason on site to finish today's drilling

21° sunny 11/9/21
L. Koenenen
21-2369

14:45 TUG-72 asphalt 12" (20)
 0-5 0.2 dry dk gray fill # TUG-72A 14:45
 PID 0.3 2-5 dry tan silt w/fy sand
 5' Rec (dry tan silt w/fy sand)
 5-10 TUG-72B 14:50
 PID 0.1 5' Rec
 10-15 dry tan silt w/fy sand TUG-72C 14:55
 PID 0.3 5' Rec
 15-20 dry tan silt w/fy sand TUG-72D 15:00
 PID 0.2 5' Rec

15:40 TUG-71 (grass) (15)
 0-5 0-0.5 topsoil dk brown dry TUG-71A
 PID 0.0 0.5-5 dry tan silt w/fy sand
 5' Rec
 5-10 dry tan silt w/fy sand TUG-71B
 PID 0.0 5' Rec
 0-15 moist tan silt w/fy sand TUG-71C
 PID 0.0 to clay
 5' Rec

11/9/21
L. Koeneken
21-2369

16:00 TUG-70 (grass)
 0-5 0-0.5 dk brown topsoil dry
 PID 0.0 0.5-5 dry tan silt w/ fy sand
 2.5' Rec
 5-16 dry tan silt w/ fy sand
 PID 0.0 &
 Rec
 10-15 moist tan silt w/ fy sand
 PID 0.0 + clay
 5' Rec

15'
 TUG-70A 16:00
 +FD-12 16:30
 TUG-70B 16:05
 TUG-70C 16:10

14:45 packed up & headed out.



11/10/21
L. Roemer
21-2369
19° cloudy

8:00 - meet @ gate #13
- talk about plan
- set up

8:15 10G-84 (grass)
1-5 moist dk brown silt
PID 0.1 w/gul
3' Rec

(5)
TUG-84 8:30

8:45 TX4-137 (grass) ditch
0-5 0-0.5 dk brown topsoil - moist
PID 0.1 0.5-5 dry tan silt w/gul
2.5' Rec moist @ 4'
5-10 moist tan silt w/fy sand
PID + clay
Rec

(15)
TX4-137A 8:45

6:15 moist to wet tan silt w/clay
PID
Rec

TX4-137B 8:50

TX4-137C 8:55

9:10 TX4-136
5 0-0.5 dk brown topsoil moist
PID 0.1 0.5-4 dry tan silt
Rec 4-5 moist dk brown fy sand
0 5-8 moist dk brown fy sand
PID 0.4 8-10 moist tan silt w/clay
Rec

(15)
TX4-136A 9:10

TX4-136B 9:15

11/10/21

L. Koonenen

21-2369

TX4-136 (cont)

10-15 10-12 moist ~~to moist~~ tan dk brown
 silt w/clay + fy sand
 PID 0.4
 5' Rec 12-15 wet 1 brown silt w/clay

TX4-136C 9:20

9:30

TX4-127

(grass)

(20')

0-5 0-1 dk brown topsoil moist
 PID 0.1 1-5 moist tan silt w/clay
 5' Rec

TX4-127A + 9:30

FD-13 9:25

5-10 moist tan silt w/clay

TX4-127B 9:35

PID 0.1
 5' Rec

10-15 10-12 moist tan silt w/clay
 PID 0.0 12-14 moist l. gray ~~old~~ clay
 5' Rec 14-15 moist tan silt w/clay
 5-20

TX4-127C 9:40

moist to wet tan silt w/clay

TX4-127D 9:45

TX4-126

(grass)

(20')

0-4 clay dk gray fill
 0-5 4-5 moist tan silt w/clay
 PID 0.6
 5' Rec

TX4-126A 10:00

moist tan silt w/clay

TX4-126B 10:05

40

11/10/21
L. Kreneman
21-2369

TX4-126 (cont)

10-15 10-12 moist tan silt w/clay
DID 0.0 12-15 moist l. gray clay
5' Rec

TX4-126C 10:10

15-20 moist l. gray clay
PID 0.0
5' Rec

TX4-126D 10:15

moved TUG-74 20ft to east off concrete slab (ANG BLDG)

10:45 TUG-74 asphalt 14"
0-5 dry dk brown fill
PID 0.1

(20')
TUG-74A 10:45

5-7 dry dk brown fill

7-10 moist tan silt w/clay

TUG-74B 10:50

10-15 moist tan silt w/clay

TUG-74C 10:55

15-20 moist tan silt w/clay
to fly sand lenses

TUG-74D 11:00

moved TUG-73 ~20ft to west off concrete slab (ANG BLDG)

TUG-73 asphalt 16"

(20')

0-5 dry dk brown fill
PID 0.6
Rec

TUG-73A 11:15

started snowing @ 11:30

11/10/21

L. Koeneken

21-2369

17° cloudy

TUG-73 (cont)

5-10 5-7 dry dk brown fill

PID 0.8 7-10 moist tan silt w/clay
5' Rec

TUG-73B 11:20

10-15 crumpled Me-5 collected sample
DID 0.0 from spoon - tan silt w/clay
? Rec clay

TUG-73C 11:25

15-20 crumpled Me-5, collected sample
PID 0.0 from spoon - dry tan silt w/fy sand
? Rec

TUG-73D 11:30

12:00 ~~12:45~~ lunch 12:00 - 13:00

- looking back over notes, I realized that I mislabeled samples for ~~TUG-60~~ TUG-60 as TUG-57

- emailed Chuck/Lucas to have SIS change the names of those three samples

12:45 the names of those three samples

13:20 TUG-61 (grass)
0-5 0-1 dk brown topsoil moist

(5')

TUG-61 13:20

FD-13 13:15

PID 0.4
5' Rec

13:30 TUG-62 grass
PID 0.2 dark brown fill dry
5' Rec

(5')

TUG-62 13:30

11/10/21

L. Koeneken

21-2369

2nd snowing (lightly)

(5')

TUG-63 13:40

13:40

TUG-63

PID 0.4

dry dk gray fill

3' Rec

13:45

TUG-64

0-5

dry dk gray fill

PID 0.6

2.5' Rec

(5')

TUG-63 13:45

13:55

TUG-65

0-5

dry dk brown fill

PID 0.0

3' Rec

(5')

TUG-65 13:55

14:00

TUG-66

0-5

0-4 dry dk brown fill

PID 0.0

5' Rec

4-5 dry tan silt

(5')

TUG-66 14:00

14:10

TXY-102

0-5 0-1 dry dk brown fill

PID 0.1 1-4 dry tan silt

5' Rec 4-5 moist tan silt w/clay

5-10 moist tan silt w/clay

PID Rec

(15')

TXY-102A 14:10

TXY-102B 14:25

35

11/10/21
L. Koeneken
21-2369

TX4-102 (cont)

10-15 moist tan silt w/clay

TX4-102C 14:20

PID 0.2
5' Rec

14:45 TX4-110 asphalt 8"
0-5 moist dk brown fg sand

(10')
TX4-110A 14:45

PID 0.2
3.5' Rec

5-10 5-7 moist dk brown fg sand
7-10 moist tan silt w/clay

TX4-110B 14:50

PID 0.6
4.5' Rec

14:55 TX4-109 asphalt 10"

(10')
TX4-109A 14:55

0-5 dry dk brown fg sand

5-10 5-7 moist dk brown fg sand
7-10 moist tan silt w/clay

TX4-109B 15:00

PID
5' Rec

15:20 TX4-108 asphalt 12"
0-5 moist dk brown fg sand

(10')
TX4-108A 15:20

PID 0.0
5' Rec

5-10 5-7 " "
7-10 moist tan silt w/clay

TX4-108B 15:25
30

PID 0.4 Rec 5'

11/10/21
L. Koenecker
21-2369

15:40 TX4-III asphalt 16"
0-5 0-4 dry dk gray fill
PID 0.3 4-5 moist l. gray clay
4.5' Pce
5-10 moist l. gray clay
PID 0.7
5' Pce

(10')
TX4-III A 15:40

TX4-III B 15:45

16:00 packing up

~~Rec'd~~ 5-10' in TX4-III wouldn't go back down hole. Put it in a 5-gallon bucket and put it in the back of the truck for now. Let Lewis know.

Prepare • Respond • Manage

drillers 20ish min late

~ 5 inches of snow upon arrival

11/11/21

L. Koeramen

calibrated PID @ office

21-2369

AA 0.1 ✓
100 99.7 ✓

20" snowing

~~8:30 TX4-107~~

~~107~~

TX4-107A ~~8:45~~

0-5

PID

NOT YET
PLACED ELSEWHERE BY
T. STUCKER (OPS)

5-10

PID

Rec

TX4-107B ~~8:55~~

9:00

DEMO-19

asphalt 18"

(5')

0-5

dry dk gray fill

#DEMO-19

DID 0.0

5' Rec

9:30

TX4-119

(15')

0-5

dry dk brown fill

TX4-119A 9:00

DID 0.0

5' Rec

5-5.5 dry dk brown fill

TX4-119B 9:05

5-10

5.5-10 must fan silt w/ clay

#D-15 11:00

DID 0.0

5' Rec

must fan silt w/ clay

TX4-119C 9:10

5-15

PID 0.0

5' Rec

11/11/21
L. Koenen
21-2369

10:00 TUG-69 asphalt 12" (10')
0-5 dry dk gray fill TUG-69A 11:00
PID 0.0
2 Pcc → PD-14 9:55
5-10 dry to moist tan
PID 0.4 silt w/clay TUG-69B 10:05
5' Pcc

10:15 TUG-68 asphalt 12" (15')
0-5 0-0.5 dry dk brown fill TUG-68A 10:15
PID 0.0 0.5 dry tan silt w/fg sand
5' Pcc
5-10
PID 0.0
5' Pcc TUG-68B 10:20

10:15 TUG-68C 10:25
PID 0.0
5' Pcc

10:45 TXY-116 asphalt 16" (15')
0-5 moist dk brown fill TXY-116A 10:45
PID 0.0
Pcc

10:50 TXY-116B 10:50
PID 0.0 dry tan silt w/clay +
' Pcc fg sand
40

the snow is slowing things down a bit throughout the day

11/1/21
L. Koereman
21-2369
snowing

3/3

TX4-116 (cont)
10-15 moist br silt w/ TX4-116C 10:55
PID 0.0 fgsad to clay
Rec 5'

11:15 TX4-103 asphalt 18" (15')
0-5 dry dk brown fill TX4-103A 11:15
PID 0.0
2' Rec PD-16 11:30

5-10 dry fm silt w/ TX4-103B 11:20
PID 0.0 fgs sand
5' Rec

10-15 dry fm silt w/ TX4-103C 11:35
PID 0.1 fgs sand to clay
5' Rec

11:40 TX4-104 asphalt 16" (15')
0-5 0-1 dry dk brown fill TX4-104A 11:40
PID 0.0 1-5 dry fm silt w/ clay PD-17 12:00

4.5 Rec
5-10 dry fm silt w/ clay TX4-104B 11:55
PID 0.0
5' Rec

10-15 " " TX4-104C 11:58
PID 0.0
5' Rec

12:30 - lunch to bring samples to lab
- pick up more PFAAS jars

13:30 TX4-115 asphalt 16" (15')
0-5 dry dk brown fill TX4-115A 13:30
PID 0.0 PD-18 13:45

2' Rec
5-10 dry fm silt w/ fgs sand TX4-115B 13:35
PID 0.1
5' Rec

10-15 " " TX4-115C 13:40
PID 0.5
5' Rec

14:00 TX4-105 asphalt 16" (10')
0-5 dry dk brown fill TX4-105A 14:00
PID 0.6
2.5 Rec

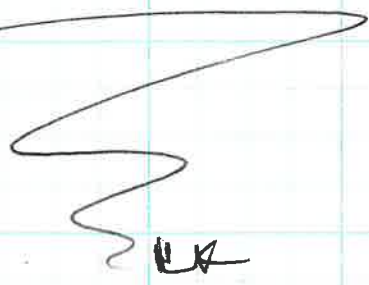
5-10 dry fm silt TX4-105B 14:05
PID 0.0
5' Rec

2:30 - talked to J. Stucker (OPS) about plowing. we need snow plowed to continue, they can't plow for at least another hour. We called it a day, OPS will have this area plowed for us first thing tomorrow and we will finish these last 5.

- called Lucas to let him know
- packing up

15:00 done

30



25

7:00 calibrated PID @ office
 AA 0.0 ✓
 180 98.8 ✓

L.S. Koeneken
 21-2369
~~11/12/21~~ 11/12/21
 21° ~~20°~~ snowing lightly

1/2

8:00 @ gate
 - waiting for OPS, see and checking if area is plowed

8:30 TX4-112 asphalt 18" (10')
 0-5 dry dk gray fill TX4-112A 8:30
 PID 0.5 FD-19 8:00
 4' Rec

5-10 moist dk gray clay w/silt TX4-112B 8:35
 PID 0.0
 5' Rec

8:45 TX4-107 asphalt 18" (6')
 0-5 0-4 dry dk gray fill TX4-107A 8:45
 PID 0.0 4-5 moist dk gray
 4' Rec clay w/silt

5-10 moist dk gray clay w/silt TX4-107B 8:50
 PID 0.0
 5' Rec

9:10 TX4-106 asphalt 16" (10')
 0-5 dry dk brown fill TX4-106A 9:10
 PID 2.1 FD-20 9:00
 3' Rec

5-10 moist dk brown silt TX4-106B 9:15
 PID 0.8 w/clay
 5' Rec

9:30 TX4-113 asphalt 18" (10')
 0-5 dry dk gray fill TX4-113A 9:30
 PID 0.0

5-10 moist dk gray clay w/silt TX4-113B 9:35
 PID 0.0
 Rec

9:50 TX4-114 asphalt 16" (15)
 0-5 dry dk gray fill TX4-114A 9:50
 PID 1.8

4' Rec
 5-10 dry tan silt TX4-114B 9:55
 PID 1.9

5' Rec
 10-15 dry tan silt TX4-114C 10:00
 PID 0.0
 6' Rec

10:30 DEMO-5 asphalt 12" (5)
 0-5 dry dk gray fill DEMO-5 10:30
 PID 0.5 FD-21 10:35
 3' Rec

10:50 DEMO-6 asphalt 12" (5)
 0-5 dry dk gray fill DEMO-5 10:50
 PID 0.7 w/oxidization (some)

2' Rec
 11:10 DEMO-8 asphalt 12" (5)
 0-5 Me-5 crumpled, collected DEMO-8 11:10
 PID 0.5 from spoon
 ? Rec dry tan silt

11:30 DEMO-9 asphalt 12" (5)
 0-5 dry dk brown fill DEMO-9 11:30
 PID 0.4

3' Rec
 11:45 DEMO-10 asphalt (5)
 0-5 dry dk brown fill DEMO-10 11:45
 PID 2.1

2.5 Rec
 11:45 DEMO-10 asphalt (5)
 0-5 dry dk brown fill DEMO-10 11:45
 PID 2.1

2.5 Rec
 40

11/12/21
L. Koerner
21-2369
21° cloudy

lunch 12:15 - 13:15

13:20 TX4-92 asphalt 12" (5)
0-5 dry dk brown fill TX4-92
PID 1.7 13:20
3 Rec 5' Rec PD-22 13:15

13:45 DEMO-11 asphalt 12" (5)
0-5 dry dk brown fill DEMO-11
PID 1.8 13:45
4 Rec 2' Rec

14:00 DEMO-12 asphalt 12" (5)
0-5 dry dk brown fill DEMO-12
PID 0.9 14:00
5' Rec 5' Rec

14:15 DEMO-13 asphalt 12" (5)
0-5 dry dk brown fill DEMO-13
PID 0.0 14:15
4' Rec ~~4' Rec~~

14:30 DEMO-14 asphalt 12" (5)
0-5 0-4 dry dk brown fill DEMO-14
PID 0.7 14:30
4 Rec 4-5 dry tan silt PD-23 14:35

14:50 DEMO-15 asphalt 12" (5)
0-5 dry dk gray fill DEMO-15
PID 0.0 14:50
5' Rec

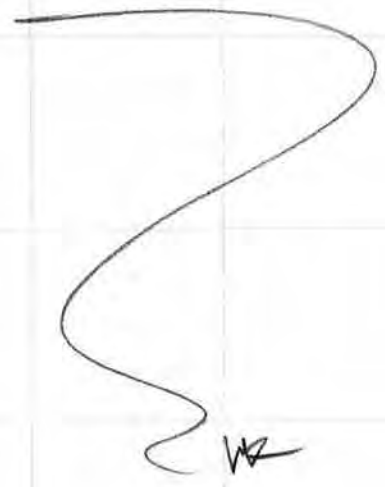
15:00 Luke + Emily CPW
switching out for the rest
of the day

15:10 DEMO-16 asphalt 12" (5)
0-5 0-4 dry dk brown fill DEMO-16
PID 0.0 4-5 dry tan silt 15:10
5' Rec

15:20 DEMO-17 asphalt 12" (5)
0-5 dry dk gray fill DEMO-17
PID 0.0 15:20
2' Rec

15:40 DEMO-18 asphalt 12" (5)
0-5 dry dk brown fill DEMO-18
PID 0.2 15:40
5' Rec

16:00 - packing up
- not safe on tug road after
dark even w/ lights + high
vis gear
- drop off samples
@ lab



L. Koeremmen
11/13/21
21-2369
15° clear

BPP!

8:50 DEMO-21 asphalt 12" (5)
PID 0.4 0-4 dry dk brown
5' Rec fill
0-5 8-9-5 dry tan silt

10:15 DEMO-28 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
4 Rec DEMO-28

~~8:50~~ 9:10 DEMO-22 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
2' Rec

10:30 DEMO-29 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
4 Rec DEMO-29 10:30

9:20 DEMO-23 asphalt 12" (5)
0-5 0-4 dry dk brown fill
PID 0.0 4-5 dry dk brown silt
5' Rec DEMO-23 9:20

10:40 DEMO-30 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
5' Rec DEMO-30 10:40

9:30 DEMO-24 asphalt 12" (5)
0-5 dry dk brown fill
PID
Rec DEMO-24

11:00 DEMO-31 ditch asphalt (5)
0-5 dry dk brown fill
PID 0.0
5 Rec DEMO-31 11:00

9:40 DEMO-25 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
2' Rec DEMO-25

11:05 TUG-85 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
5' Rec TUG-85 11:05

9:50 DEMO-26 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.2
3 Rec DEMO-26 9:50
DEMO-25 9:50
FD-25 9:45

11:15 TUG-83 ditch (5)
0-5 dry dk brown fill
PID 0.0
5' Rec TUG-83 11:15

10:00 DEMO-27 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
4' Rec DEMO-27 10:00

11:20 TUG-82 asphalt 12" (5)
0-5 dry dk brown fill
PID 0.0
5' Rec TUG-82 11:20

L. Koeneken
2-2369
11/13/21

4:30
0-5
PIP 0.0
5' Pcu

TUR-81
dry dk brown fill

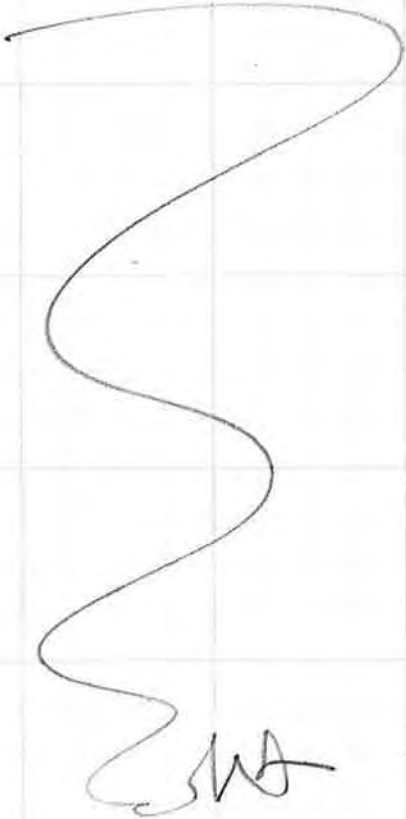
(5)
TUR-81 11:20

11:45
0-5
PIP 0.0
2.5 Pcu

TUR-80
dry dk brown
fill

(5)
TUR-80 11:45
TD-26 12:00

12:00 done
-packing up
-called LG + DN
to let them know



Appendix G – Soil Boring Survey Data

CRW ENGINEERING GROUP, LLC
 CRW ANC TAXIWAY Z EAST EXPANSION PROJECT
 SOIL BORING LOCATION DATA

SOUTH TUG ROAD SOIL BORING LOCATIONS					
RSE SOIL BORING ID	T.D. (ft)	CRW POINT ID	NORTHING	EASTING	ELEVATION (ft msl)
TUG-58	20	1002005	321450.994	331406.958	125.679
TUG-59	20	1002006	321437.663	331505.752	126.696
TUG-60	15	1002007	321415.689	331603.713	122.829
TUG-61	5	1002008	321409.124	331705.105	102.962
TUG-62	5	1002009	321406.825	331805.186	110.7
TUG-63	5	1002010	321408.024	331905.096	109.924
TUG-64	5	1002011	321409.023	332007.412	109.365
TUG-65	5	1002012	321413.565	332096.122	108.93
TUG-66	5	1002013	321410.16	332206.585	109.578
TUG-68	15	1002015	321406.735	332403.348	111.107
TUG-69	10	1002016	321412.222	332510.129	111.38
TUG-70	15	1002017	321407.637	332601.422	114.129
TUG-71	15	1002018	321428.327	332700.698	114.394
TUG-72	20	1002019	321412.91	332802.348	115.314
TUG-73	20	1002020	321410.26	332905.063	115.337
TUG-74	20	1002021	321410.125	333006.184	115.403
TUG-75	20	1002022	321413.41	333106.287	115.293
TUG-76	20	1002023	321420.422	333207.727	114.691
TUG-77	15	1002024	321413.221	333297.675	109.928
TUG-78	10	1002025	321406.334	333407.255	103.089
TUG-79	5	1002026	321407.915	333504.138	98.32
TUG-80	5	1002027	321377.303	333600.273	97.571
TUG-81	5	1002028	321437.035	333653.786	95.692
TUG-82	5	1002029	321513.134	333705.317	94.727
TUG-83	5	1002030	321594.789	333757.34	93.898
TUG-84	5	1002031	321672.071	333814.381	92.112
TUG-85	5	1002032	321717.831	333899.122	94.205

**Northing and Easting in Bowl2K coordinate system

TAXIWAY Z SOIL BORING LOCATIONS					
RSE SOIL BORING ID	T.D. (ft)	CRW POINT ID	NORTHING	EASTING	ELEVATION (ft msl)
TXY-89	10	1003001	321592.108	331442.737	120.464
TXY-90	10	1003002	321588.821	331511.475	121.562
TXY-91	15	1003003	321589.849	331588.407	121.341
TXY-92	5	1003004	321587.542	331662.846	111.547
TXY-93	15	1003005	321586.387	331738.543	121.76
TXY-94	15	1003006	321585.207	331811.904	121.102
TXY-95	20	1003007	321583.01	331882.051	121.287
TXY-96	20	1003008	321584.166	331953.204	121.573
TXY-97	20	1003009	321582.962	332027.737	121.359
TXY-98	20	1003010	321579.579	332096.481	122.026
TXY-99	20	1003011	321577.284	332162.993	122.078
TXY-100	25	1003012	321568.149	332221.416	122.284
TXY-101	15	1003013	321565.0281	332298.0601	--
TXY-102	15	1003014	321415.43	332336.317	110.014
TXY-103	15	1003015	321311.158	332343.174	111.248
TXY-104	15	1003016	321188.469	332346.589	111.954
TXY-105	10	1003017	321046.064	332350.073	112.692
TXY-106	10	1003018	320902.666	332354.716	113.376
TXY-107	10	1003019	320754.76	332355.84	114.091
TXY-108	10	1003020	320608.997	332356.965	114.877
TXY-109	10	1003021	320492.651	332352.425	115.051
TXY-110	10	1003022	320464.186	332415.433	113.326
TXY-111	10	1003023	320613.579	332420.075	115.114
TXY-112	10	1003024	320761.635	332421.138	114.447
TXY-113	10	1003025	320904.936	332421.137	113.712
TXY-114	15	1003026	321051.851	332421.212	112.997
TXY-115	15	1003027	321191.905	332425.737	112.223
TXY-116	15	1003028	321319.124	332425.708	111.64
TXY-118	5	1003030	321522.193	332400.35	101.018
TXY-119	15	1003031	321529.187	332503.533	110.365
TXY-120	15	1003032	321547.456	332611.317	110.681
TXY-121	20	1003033	321566.004	332719.216	111.823
TXY-122	20	1003034	321572.812	332816.988	112.705
TXY-123	20	1003035	321573.971	332915.872	113.792
TXY-124	20	1003036	321578.68	333015.917	113.966
TXY-125	20	1003037	321576.337	333118.206	113.916
TXY-126	20	1003038	321663.722	333053.816	110.726
TXY-127	20	1003039	321660.161	332936.53	111.294
TXY-128	10	1003040	321746.442	332925.019	104.054
TXY-129	10	1003041	321844.118	332891.705	102.393
TXY-130	10	1003042	321941.077	332895.073	100.403
TXY-131	10	1003043	322018.091	332850.256	100.766
TXY-132	10	1003044	322061.762	332803.152	100.907
TXY-133	10	1003045	322063.894	332670.648	99.73
TXY-134	10	1003046	321933.832	332797.374	102.548
TXY-135	10	1003047	321777.492	332808.987	104.581
TXY-136	15	1003048	321677.468	332815.709	105.16
TXY-137	15	1003049	321667.084	332724.903	107.604
TXY-138	15	1003050	321639.11	332619.334	108.457
TXY-139	15	1003051	321622.047	332493.144	108.272
TXY-140	10	1003052	321619.724	332393.387	103.767
TXY-141	20	1003053	321616.198	332291.327	115.406
TXY-87	15	1003054	322071.684	332493.677	100.959

**Northing and Easting in Bowl2K coordinate system

TUG ROAD DEMO AREA SOIL BORING LOCATIONS					
RSE SOIL BORING ID	T.D. (ft)	CRW POINT ID	NORTHING	EASTING	ELEVATION (ft msl)
DEMO-1	5	1004000	321409.976	330907.557	116.678
DEMO-2	5	1004001	321478.0918	330967.8597	--
DEMO-3	5	1004002	321517.454	331058.854	114.356
DEMO-4	5	1004003	321606.971	331107.1	113.585
DEMO-5	5	1004004	321693.861	331160.13	112.964
DEMO-6	5	1004005	321704.966	331269.301	112.719
DEMO-8	5	1004007	321699.902	331468.893	112.007
DEMO-9	5	1004008	321705.357	331571.912	111.439
DEMO-10	5	1004009	321696.066	331673.645	111.117
DEMO-11	5	1004010	321704.597	331775.057	110.664
DEMO-12	5	1004011	321697.18	331874.952	110.249
DEMO-13	5	1004012	321708.799	331971.742	109.929
DEMO-14	5	1004013	321699.687	332068.504	109.518
DEMO-15	5	1004014	321710.572	332166.886	109.173
DEMO-16	5	1004015	321702.19	332274.701	108.699
DEMO-17	5	1004016	321713.85	332368.472	108.248
DEMO-18	5	1004017	321704.919	332462.615	107.732
DEMO-19	5	1004018	321712.741	332567.21	107.599
DEMO-20	5	1004019	321712.932	332676.053	106.882
DEMO-21	5	1004020	321719.405	332769.85	106.359
DEMO-22	5	1004021	321712.121	332869.771	105.864
DEMO-23	5	1004022	321724.136	332975.614	105.186
DEMO-24	5	1004023	321716.712	333073.963	104.209
DEMO-25	5	1004024	321729.298	333174.311	102.908
DEMO-26	5	1004025	321721.062	333272.639	101.811
DEMO-27	5	1004026	321731.939	333372.526	100.657
DEMO-28	5	1004027	321722.177	333470.885	99.452
DEMO-29	5	1004028	321731.042	333575.802	98.12
DEMO-30	5	1004029	321720.567	333674.181	96.912
DEMO-31	5	1004030	321740.197	333763.352	95.196

**Northing and Easting in Bowl2K coordinate system